
≈CHICAGO≈
RAILWAY SIGNAL
AND SUPPLY COMPANY

GENERAL OFFICES

C·H·I·C·A·G·O

Printed and Bound for the
Chicago Railway Signal & Supply Co.
By Baker, Jones & Co., Buffalo, New York

1914

Catalogue and Price List

of

Electric and Mechanical Railway Signals

Highway Crossing Alarms

Signaling Materials and Signal Accessories

RAILROAD SUPPLIES

for

Steam and Electric Railroads

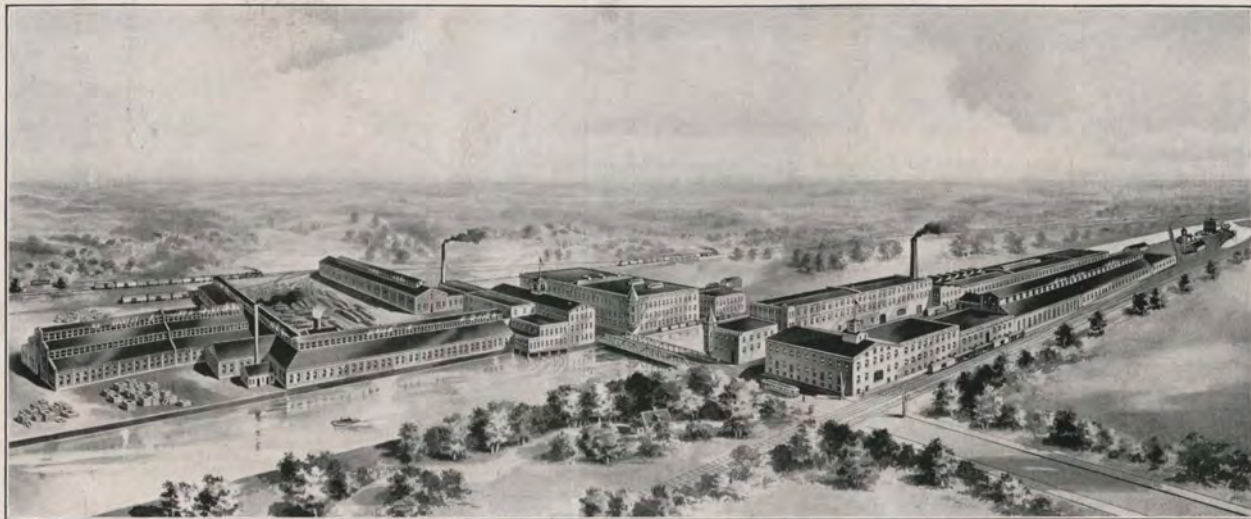


Manufactured By

Chicago Railway Signal & Supply Company

Main Office—Chicago, Illinois

Works—Carpentersville, Illinois



Works—Carpentersville, Illinois

The Works of the Chicago Railway Signal & Supply Company are located at Carpentersville, Illinois, (just north of Elgin), 48 miles northwest of Chicago, on Chicago & North-Western Railroad and the Aurora, Elgin & Chicago Ry. The plant occupies both sides of the Fox River, is modern throughout, equipped with up-to-date machinery and special equipment for the manufacture of our products with accuracy and at a low cost of production. Plant is operated by water, steam and electric power, and consists of complete machine shops, forge shops, wood-working plant, electro-plating works, pattern shop, iron, brass, copper and zinc foundries.

1914

CATALOGUE AND PRICE LIST

SECTION A

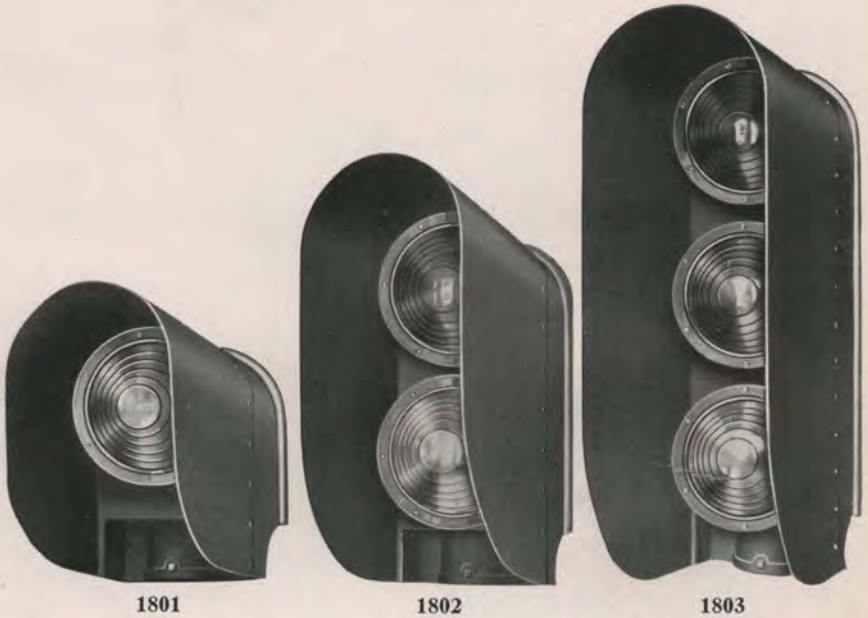
Annunciators

Electric Light Block Signals

Switch Indicators

Tower Indicators

ELECTRIC LIGHT BLOCK SIGNALS



These Signals have been designed to give DAY LIGHT as well as NIGHT indications by LIGHT ONLY.

The Signals consist of a heavy iron lamp case with a sliding door in back and 8 $\frac{3}{8}$ " colored lenses in front. The lenses are shielded by a heavy sheet iron hood, the inside of which is painted dead black which intensifies the day light indications so they can be distinctly seen for 1,800 feet or more under the most unfavorable day light conditions (bright sun and fresh snow on ground) or the night indications with strong headlights illuminating the Signal. At the proper focal point behind each lens, two sockets are provided to hold the incandescent lamps.

These Sockets are adjustable to any height so any size lamp may be used. On Steam Railways lamps usually consist of two 12 Volt, Five Watt Mazda Lamps, which if supplied with a somewhat lower Voltage, give very brilliant indications and at same time lamps will have a long life. On Electric Railways for locations where power current is available, lamps of standard voltages are used.

The Signals are provided with pipe sockets on lower end to fit over 4" (4 $\frac{1}{2}$ " O. D.) pipe which allow Signals to be focused to any desired angle. They are usually supported on top of signal mast or on one of our hollow brackets on side of masts. Brackets are furnished to fit all pole sizes from 3 $\frac{1}{2}$ " O. D. to 10 $\frac{3}{4}$ " O. D. so signals may be easily attached to side of any existing pole.

Trade No.	DESCRIPTION	List Price
1801	Single Indication Light Signal (specify color of lens) as shown	.....
1802	Double " " " " " " " " " " " " " " " "	.....
1803	Triple " " " " " " " " " " " " " " " "	.....
	Above can be equipped with 2 $\frac{3}{8}$ " Rear Light Roundels behind each indication. For each Rear Light, add to list price	.....

Incandescent Lamps are not included in above, and should be ordered separately.

ELECTRIC LIGHT BLOCK SIGNALS



116-1



116-2

Signals shown are equipped with our Standard Combination Relay and Battery Box to hold the required Batteries, Relays, Lightning Arresters, etc. Signal is 16 feet high and mast is made of 4" (4½" O. D.) pipe. Standard Cable Outlets together with Signal Case together with Messenger Wire Clamp is furnished and wires may be brought into top or bottom of either Signal Case.

Signals shown are designed especially for Steam Roads where standard Two or Three Position Signaling is required. Prices and Layouts for any variation of the above on request. Signals as listed include Relay Case, Anchor Bolts, Mast, Ladder, Cable Outlet, Messenger Clamp, Light Signal complete with Bracket and U Bolts.

Trade No.	DESCRIPTION	List Price
116-1	Electric Light Block Signal (Two Light Indication) complete as shown .....	.....
116-2	Electric Light Block Signal (Three Light Indication) complete as shown .....	.....

ELECTRIC LIGHT BLOCK SIGNALS



117-1



117-2

These Signals are substantially the same as shown on preceding page, except that they are equipped with Standard Relay Boxes, pressed steel pole steps are furnished in place of ladders. Signals are equipped with our Style "C" Base.

Signals as shown are especially designed for Electric Street Railway work for Single Track Block Signaling, but can be used for any number of other purposes, both on Electric and Steam Roads. Signals as listed include Mast, Style "C" Base, Anchor Bolts, Relay Box, Pole Steps, Cross Arms, Cable Pinnacle, Messenger Wire Clamp, Light Signal complete with Bracket and U Bolts.

Trade No.	DESCRIPTION	List Price
117-1	Electric Light Block Signal (One Light Indication) complete as shown . . . . .	. . . . .
117-2	Electric Light Block Signal (Two Light Indication) complete as shown with Style "A" Relay Box . . . . .	. . . . .

ELECTRIC LIGHT BLOCK SIGNALS



117-3



117-4

These Signals are same as those shown on previous pages except that the pole steps are replaced by standard ladders. Signals as shown are intended to be used principally for Two or Three Position Block Signaling on Steam Railroads, although they may be used for a number of other purposes. Signals as listed include Mast, Style "C" Base, Anchor Bolts, Relay Box, Ladder, Cable Pinnacle, Cable Outlets, Messenger Wire Clamp and Light Signal complete with Bracket and U Bolts.

Trade No.	DESCRIPTION	List Price
117-3	Electric Light Block Signal (Two Light Indication) complete as shown with Style "C" Relay Box.....	.....
117-4	Electric Light Block Signal (Three Light Indication) complete as shown with Style "A" Relay Box.....	.....

IRON CASE TOWER INDICATOR

Style "A"



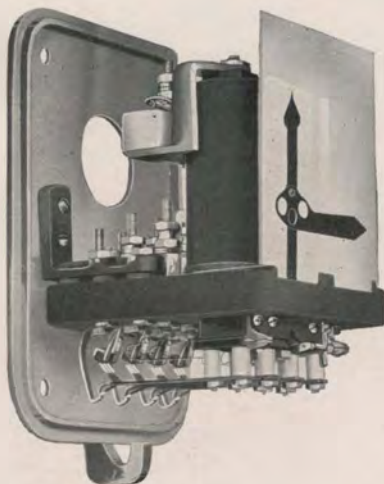
Style "A" Tower Indicator

Size, $6\frac{1}{2}$ " x $7\frac{1}{4}$ " x $9\frac{1}{2}$ "

This design of Indicator is used in towers. It is enclosed in a removable Iron Cover, which when removed allows easy access to all Binding Posts, Contacts and working parts for inspection and repair. This type is built compact and with straight sides so that any number may be banked side by side to present a Single Unit without waste of space or a sacrifice in appearance. This arrangement also simplifies repairs as each Indicator is a Unit by itself and the works of each may easily and quickly be removed from the case. Ample space is allowed for neat and quick wiring through back of case, allowing wires to be brought into Indicator from any direction.

IRON CASE TOWER INDICATOR

Style "A"



**Style "A" Tower Indicator with Cover Removed with Four Front
and Back Contacts**

The Magnets are form-wound, easily removable and wound up to 3,000 Ohms. Magnet Terminals are on a separate Porcelain Base, provided with Spark Gap. Front Contacts are Graphite and Back Contacts Platinum. All Binding Posts are R. S. A. Standard and general R. S. A. Specifications on Relays are adhered to. Indicator may be equipped with as many as four Front and Back Contacts or four Independent Contacts; provisions are made so that Extra Contacts may be added while Indicators are in service, we guaranteeing interchangeable parts.

Indicators are furnished Upper or Lower Quadrant Semaphore either right or left aspect, disc type or any other special form desired. The Adjustments are such that practically any desired "Pick-up" and "Release" may be obtained, so that Indicators may be used on almost any Circuit.

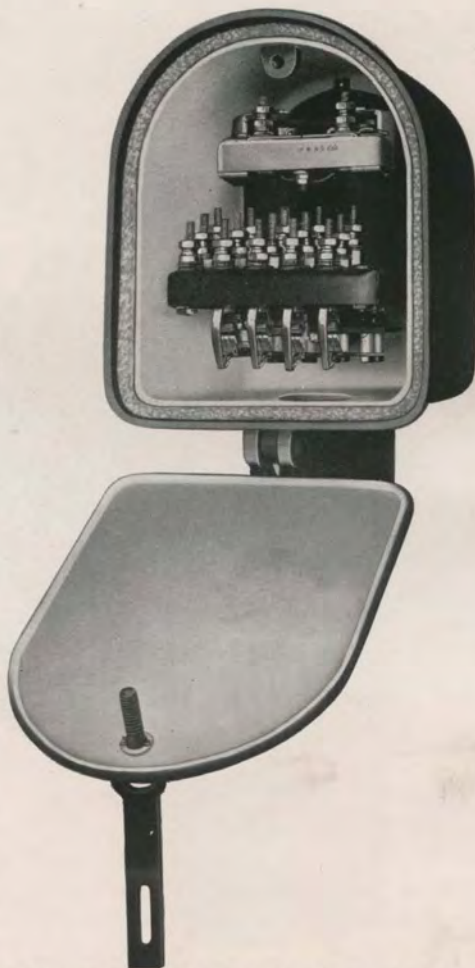
STYLE "B" SWITCH INDICATOR



Style "B" Switch Indicator

Style "B" Switch Indicator is furnished with Semaphore Indications in either Right Hand or Left Hand Aspect and in upper and lower Quadrant positions, also with or without push buttons as listed elsewhere. The Indication is displayed behind a $5\frac{1}{2}$ " heavy clear wire glass roundel which allows the use of a comparatively large Semaphore Blade. The case is well gasketed and absolutely waterproof, the locking arrangement is simple and positive, holding door tightly against the gasket.

STYLE "B" SWITCH INDICATOR



Style "B" Switch Indicator with Door Open, Showing
Simplicity and Accessibility of Parts

The Magnets are form-wound, removable, large and highly efficient, Terminals are brought to a separate porcelain base equipped with Spark Gaps. Indicator may be equipped with four Front and Back Contacts or four Independent Contacts. Entire works are removable from case as a Unit.

All parts of Style "B" Indicator are interchangeable with our other Standard Indicators.

STYLE "C" SWITCH INDICATOR



Style "C" Switch Indicator

This Indicator is the same as our Style "B" Indicator except that it is provided with a case sufficiently large to hold four Standard Lightning Arresters, Wire Terminals, etc. The Case is waterproof and is provided with a locking arrangement that holds door tightly against the rubber gasket.

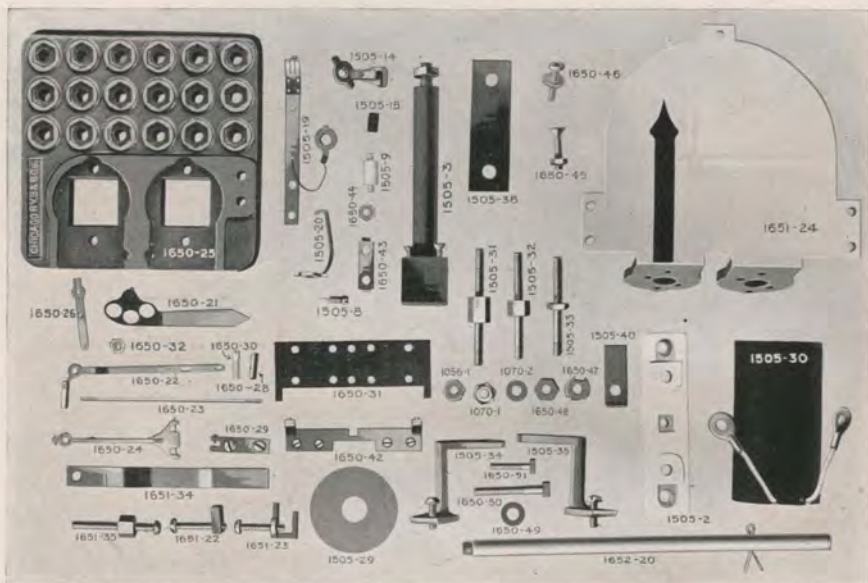
STYLE "C" SWITCH INDICATOR



**Style "C" Switch Indicator with Door Open, Showing Simplicity
and Accessibility of Parts**

The above view shows two of our Lightning Arresters mounted upon the Insulating Base provided for mounting Lightning Arresters, Terminals, etc. Base is amply large to accommodate any Standard Lightning Arresters. The entire Mechanism is mounted on Insulated Base which is removable as a Unit. All Contacts, working parts, etc., are easily accessible for inspection and repairs and are interchangeable with our other Standard Indicators.

STYLE "C" SWITCH INDICATOR



Parts of Style "C" Switch Indicator

Trade No.	DESCRIPTION	List Price
1652-1	Style "C" Indicator, Upper Quadrant with Push Button, R. H. Aspect . . .	\$41.50
1652-2	" " " Lower " " " " " " " " " " " "	41.50
1652-3	" " " Upper " " " " " " " " " " " "	38.00
1652-4	" " " Lower " " " " " " " " " " " "	38.00
1652-5	" " " Upper " " " " " " " " " " " " L. H. " "	41.50
1652-6	" " " Lower " " " " " " " " " " " " " " " "	41.50
1652-7	" " " Upper " " " " " " " " " " " " " " " "	38.00
1652-8	" " " Lower " " " " " " " " " " " " " " " "	38.00
Above list prices are for Indicators without Contacts and with Magnets 50 Ohms or less. Lightning Arresters are not included in list prices and when desired orders should state number and kind for each Indicator.		
PLATINUM CONTACTS		
For each additional independent Platinum to Graphite Front Contact, add to list price		2.30
For each additional independent Platinum to Platinum Back Contact, add to list price		1.50
For each additional combination Front and Back Contact, add to list price		2.95
SILVER CONTACTS		
For each additional independent Silver to Graphite Front Contact, add to list price		1.30
For each additional independent Silver to Silver Back Contact, add to list price		1.00
For each additional combination Front and Back Contact, add to list price		2.05
MAGNETS		
For Magnets wound 51 to 150 Ohms, add		1.80
" " " 151 " 500 " "		3.00
" " " 501 " 1000 " " "		4.80
" " " 1001 " 3000 " " "		6.50

Orders should state Magnet Resistance and number of Contacts required. When Disc or other types of Indicators are required orders must so specify. When specified, Indicators may be furnished with Carbon to Carbon, or Carbon to Copper Contacts for High Voltages, also with plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts, prices upon request. Repairs should be ordered according to numbers shown on illustration.

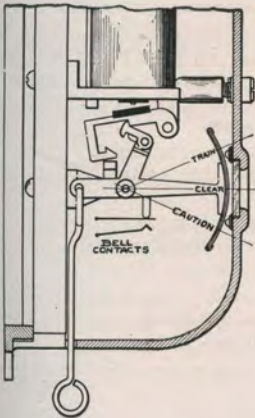
UNIVERSAL TRAIN ANNUNCIATOR

These Annunciators may be RESET WHILE TRAIN IS ON CIRCUIT, thus stopping the Bell. When reset while train is on circuit the card occupies the THIRD POSITION indicating clearly to the operator (by showing a red indication) that Latch has been reset while train is still on circuit.

When restored either MANUALLY or MAGNETICALLY with train on circuit the Latch assumes the normal position AUTOMATICALLY when train leaves the circuit and is then ready for next indication by next train. When restored with no train on circuit Annunciator assumes normal position.

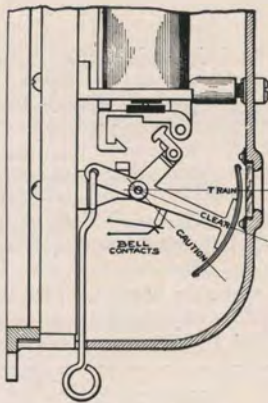
They are furnished with handle for MANUAL RESTORE or with "Magnetic Restore" which allows operator to restore and stop Bell from a push button or foot push located at any convenient point.

These Annunciators overcome the objectionable feature of Bell ringing constantly while train occupies setting circuit, thus doing away with temptation of tower men to "plug" Annunciator. Only one bell or buzzer is required for any number of Annunciators.



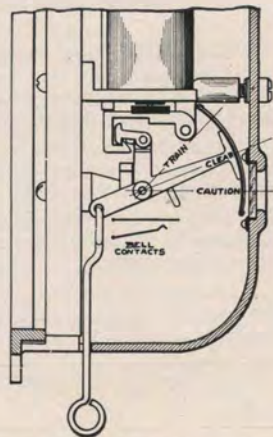
Normal

Card Displaying "Clear"
Local Bell Contacts Open



Train in Circuit

Card Showing "Train"
Local Bell Contacts Closed

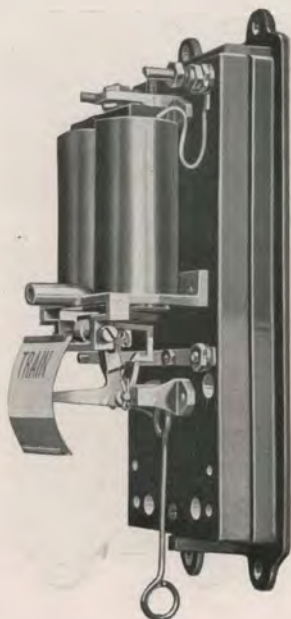


Restored while Train is on Circuit

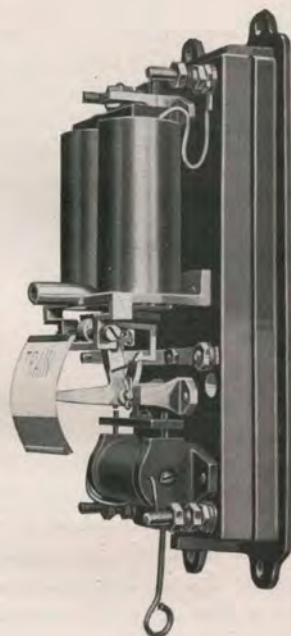
Showing Red Color
Local Bell Contacts Open

Diagrams Showing Operation of Three Position Universal Annunciators

UNIVERSAL TRAIN ANNUNCIATOR



No. 1610
(Cover Removed)



No. 1611
(Cover Removed)

The UNIVERSAL ANNUNCIATOR is of the Unit type, size 5" x 5" x 11" high. Furnished with dust and bug proof iron cover. Works are mounted upon slate and equipped with contacts for bells or buzzers. They are narrow enough to be set between tower windows and when banked close present a unit appearance.

Standard Resistance is 25 Ohms, but can be furnished any desired resistance up to 1,000 Ohms. The operation of these Annunciators is very simple and positive. Parts are made heavy and durable to withstand rough and continued usage.

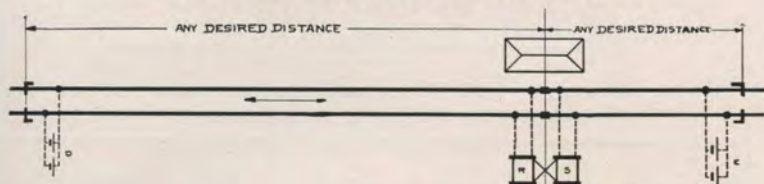
They are highly efficient and require very little current to operate and when furnished with 4 Ohm magnets can be used connected directly to track circuits without intervening relays.

Indicator card shows clear white for normal, "TRAIN" in large block letters when the annunciator has been tripped by an approaching train and RED when annunciator has been restored, to stop bell from ringing while train is in circuit.

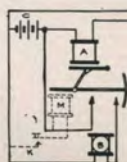
Trade No.	DESCRIPTION	List Price
1610	Universal Annunciator with Manual Restoring Handle	\$26.00
1611	" " " " Magnetic Restore	32.00
1610-50	3" Dust Proof Enclosed Monitor Bell for above	2.00
1610-51	3" Skeleton Frame Bell for above	3.00
1610-52	Enclosed Dust Proof Buzzer for above	1.25

For 4" to 8" Single Stroke or Vibrating Bells, for above, see Style "S" Bells.

ANNUNCIATOR CIRCUITS



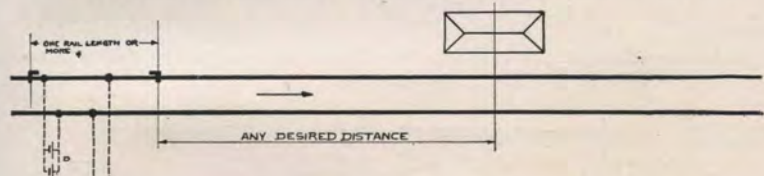
- A—No. 1610 or 1611 Annunciator.
- B—No. 1610-50; 1610-51 or Style "S" Bell or 1610-52 Buzzer.
- C—Annunciator Batteries.
- D and E—Track Batteries in C. I. Battery Chutes.
- K—No. 220 Strap Key.
- R—S One Way Interlocking Relay.



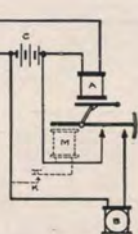
Annunciator Circuit No. 5104

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Closed Track Circuit Annunciator. Operated by Trains in One Direction Only



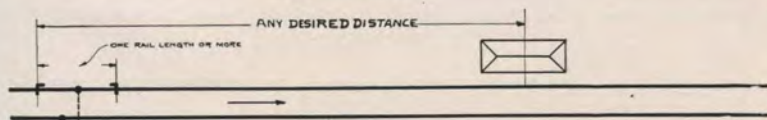
- A—No. 1610 or 1611 Annunciator.
- B—1610-50; 1610-51; Styles "S" Bell or 1610-52 Buzzer.
- C—Annunciator Batteries.
- D—Track Batteries.
- K—No. 220 Strap Key.
- R—Low Resistance Track Relay in C. I. Relay Box.
- L—Lightning Arresters.



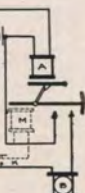
Annunciator Circuit No. 5103

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Normally Open Track Circuit Control Annunciator Connected Through Track Relay For Double Track



- A—No. 1610 or 1611 Annunciator.
- B—No. 1610-50; 1610-51; Style "S" Bell or 1610-52 Buzzer.
- D—Track.
- K—No. 220 Strap Key.
- R—Low Resistance Track Relay in C. I. Relay Box.
- L—Lightning Arresters.

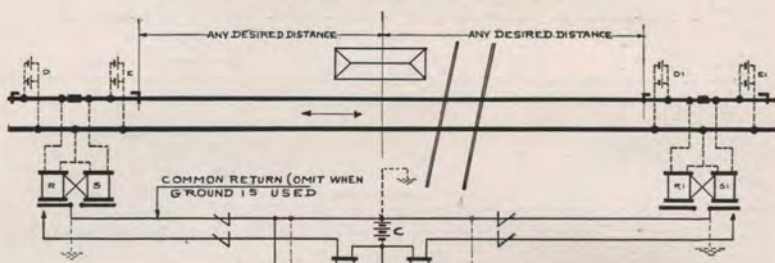


Annunciator Circuit No. 5102

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Normally Open Track Circuit Control Annunciator Connected Through Track Relay For Double Track

ANNUNCIATOR CIRCUITS

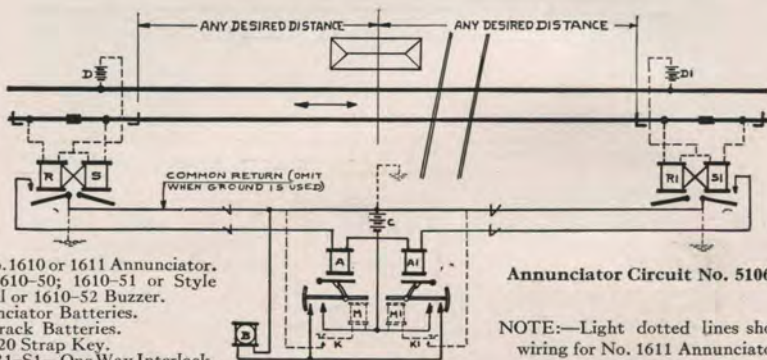


- L—Lightning Arresters.
 A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51 or Style "S" Bell or 1610-52 Buzzer.
 D—D1 Track Batteries.
 E—E1 Track Batteries.
 K—K1 Strap Key
 R—S and R1—S1 One Way Interlocking Relay.

Annunciator Circuit No. 5105

NOTE:—Dotted lines show wiring for Automatic Reset.

Single Track—Closed Circuit Control. Interlocking Relays. Independently Operated Annunciators

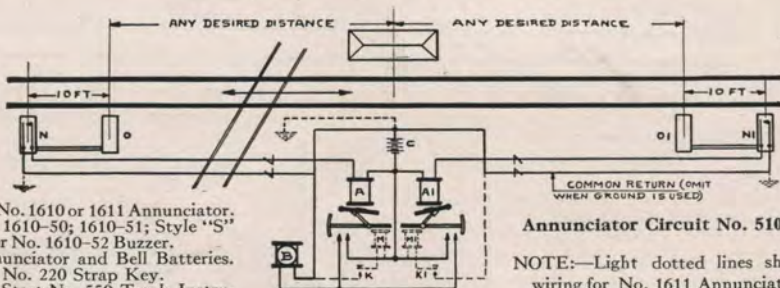


- A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51 or Style "S" Bell or 1610-52 Buzzer.
 C—Annunciator Batteries.
 D—D1 Track Batteries.
 K—K1 220 Strap Key.
 R—S and R1—S1—One Way Interlocking Relay.
 L—Lightning Arresters.

Annunciator Circuit No. 5106

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Single Track—Open Track Circuit Control. Interlocking Relays. Independently Operated Annunciators



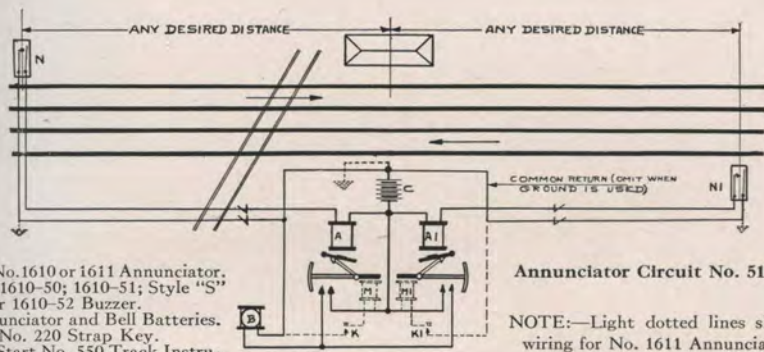
- A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51; Style "S" Bell or No. 1610-52 Buzzer.
 C—Annunciator and Bell Batteries.
 K—K1 No. 220 Strap Key.
 N—N1 Start No. 550 Track Instrument.
 O—O1 Stop No. 551 Track Instrument.
 L—Lightning Arresters.

Annunciator Circuit No. 5107

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Single Track with Track Instruments. Independently Operated Annunciators

ANNUNCIATOR CIRCUITS

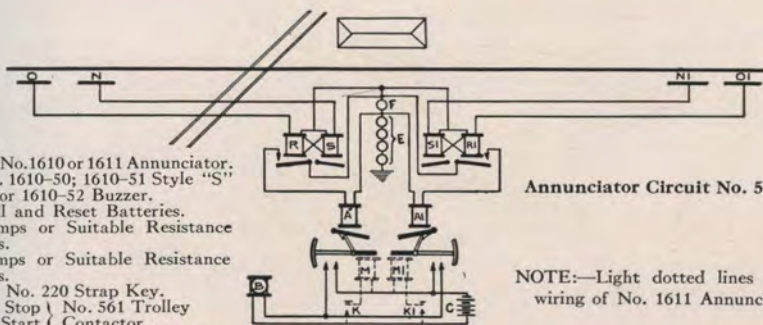


- A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51; Style "S"
 Bell or 1610-52 Buzzer.
 C—Annunciator and Bell Batteries.
 K—K1 No. 220 Strap Key.
 N—N1 Start No. 550 Track Instru-
 ment.
 L—Lightning Arrester.

Annunciator Circuit No. 5108

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator.

Double Track with Track Instruments. Independently Operated Annunciators

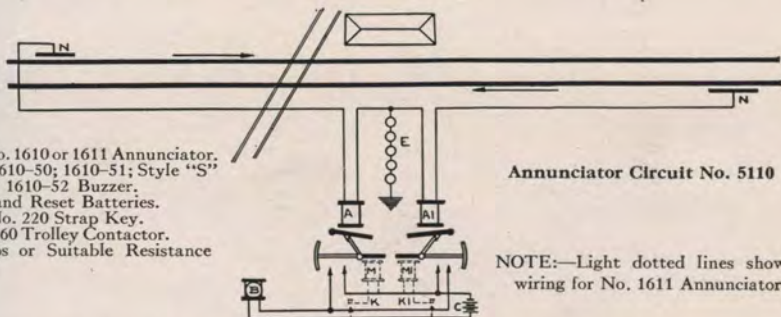


- A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51; Style "S"
 Bell or 1610-52 Buzzer.
 C—Bell and Reset Batteries.
 E—Lamps or Suitable Resistance
 Units.
 F—Lamps or Suitable Resistance
 Units.
 K—K1 No. 220 Strap Key.
 N—N1 Stop No. 561 Trolley
 O—O1 Start / Contactor.
 R—S—R1-S1—One Way Interlock-
 ing Relay.

Annunciator Circuit No. 5109

NOTE:—Light dotted lines show wiring of No. 1611 Annunciator.

Single Track with Trolley Contacts. Independently Operated Annunciators



- A—A1 No. 1610 or 1611 Annunciator.
 B—No. 1610-50; 1610-51; Style "S"
 Bell or 1610-52 Buzzer.
 C—Bell and Reset Batteries.
 K—K1 No. 220 Strap Key.
 N—N1 Start / Contactor.
 E—Lamps or Suitable Resistance
 Units.

Annunciator Circuit No. 5110

NOTE:—Light dotted lines show wiring for No. 1611 Annunciator

Double Track with Trolley Contacts. Independently Operated Annunciators

1 9 1 4

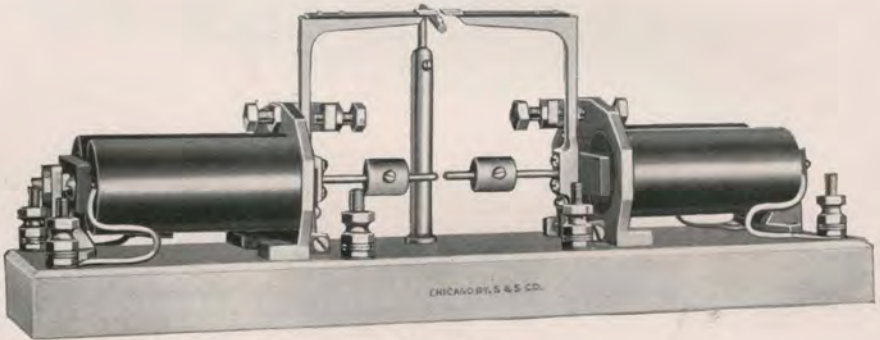
CATALOGUE AND PRICE LIST

SECTION B

RELAYS

Interlocking
Line
Neutral
Neutral High Voltage
Polarized
Slow Release
Time
Track

STYLE "A" UNIVERSAL CROSSING BELL RELAY



No. 1500

Style "A" Relay for Normally Closed Track Circuit with One Interlocking Contact

Size, 15½" x 4½" x 6" High

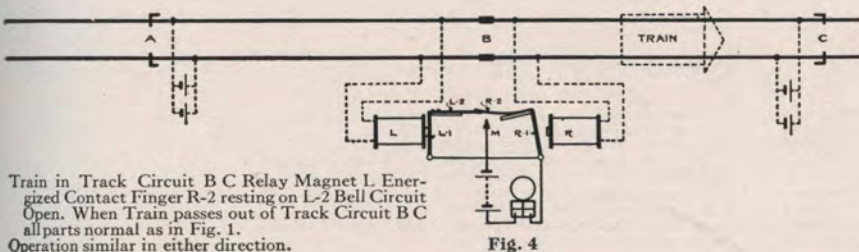
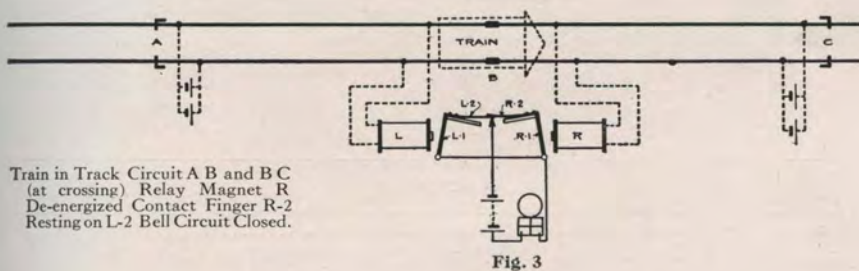
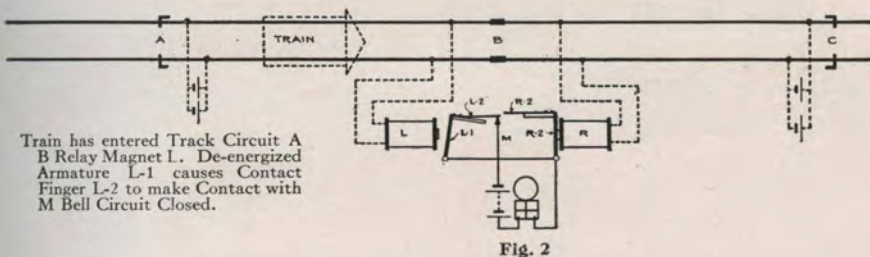
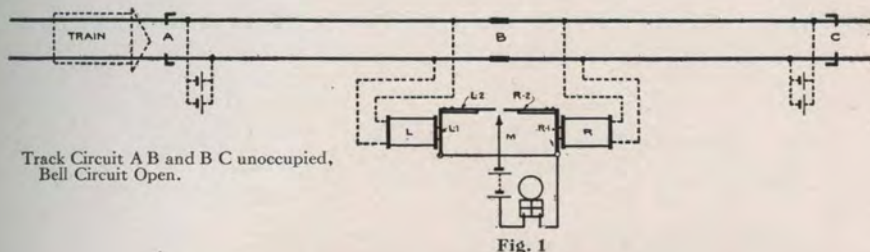
This Relay although low in cost, is warranted to operate equally as well and as efficient as any higher priced Crossing Bell Relay on the market, and has the distinct advantage that by a simple change in Contacts it can be used as "Open" or "Closed" Circuits and extra Front, Back or Interlocking Contacts may be attached easily and quickly.

The Relay is made to R. S. A. Specifications, as far as a non-inclosed type of Relay admits. The Armature and Contacts are gravity operated and the adjustable weights allow of a wide range of adjustments for "Pick up" and "Release". Binding Posts are R. S. A. Standard and entire Relay is mounted upon a very heavy porcelain base.

Each Armature may be equipped with as many as three extra Front or Back Contacts in addition to Interlocking Contact. Relay may also be equipped with as many as four Interlocking Contacts, which may be "Standard" or "One Way" Contacts operating from either "normally closed" or "normally open" track or line circuits. The porcelain base has holes provided for additional Contacts and Binding Posts which may be applied in the field. All parts are interchangeable and warranted to fit.

From above description it will be seen that this Relay is **Universal** in its application, and is especially well adapted as a Standard relay for crossing bells, annunciators, indicators, etc., under all track conditions, same being well adapted for use in Block Signal Territory on single or double track as well as in other locations.

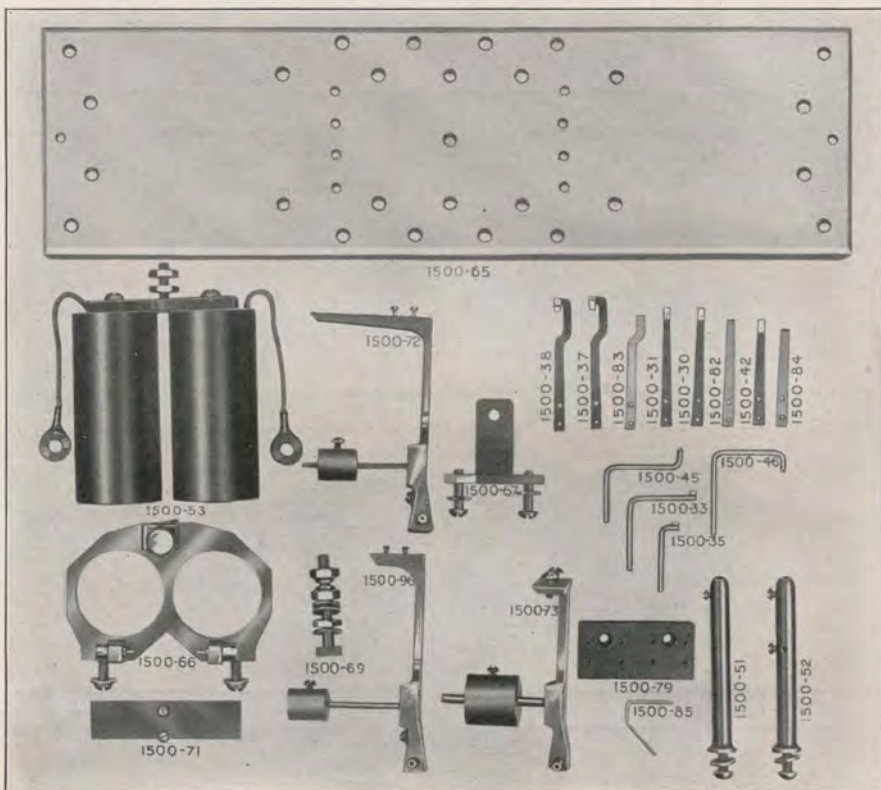
STYLE "A" UNIVERSAL CROSSING BELL RELAY



Above diagrammatic sketches illustrate the simplicity of Interlocking feature of Style "A" Relay.

Note that there are no moving parts except armatures, all Contacts being stationary, no "dogs" or "catches" being employed. All Contacts are sliding and self-cleaning.

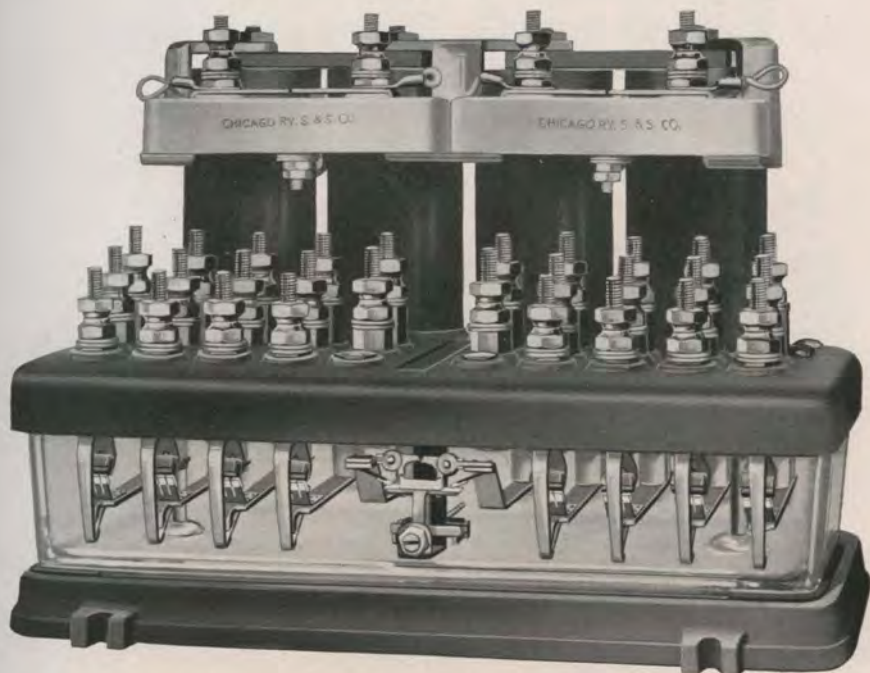
STYLE "A" UNIVERSAL CROSSING BELL RELAY



Trade No.	DESCRIPTION	List Price
1500	Style "A" Relay Normally Closed Circuit as shown	\$45.00
1500-1	" " " " " Open Circuit	45.00
1500-2	" " " " " Closed Circuit with one "One Way" Contact for Annunciators, etc.	45.00
1500-3	Same as above except Normally Open Circuit	45.00
	For each extra Independent Front or Back Contact, add	3.00
	" " " " " Combination	4.00
	" " " " " Interlocking Contact, add	5.00
	" " " " " "One Way" "	5.00
	For each Magnet Wound between 10 and 150 Ohms, add	1.80
	" " " " " 151 " 500 "	3.00
	" " " " " 501 " 1000 " "	4.80
1500-65	Porcelain Base	6.00
1500-53	Magnets complete as shown (under 10 Ohms)	12.00
1500-51	Contact Post for No. 1500 complete as shown	1.00
1500-52	" " " " with extra Binding Post for Wire Connection	1.10
1500-38	Ivory "One Way" Interlocking Contact Spring for 1500-3 and 1500-1 Relay	1.10
1500-37	Platinum Interlocking Contact Spring for Relay	1.10
1500-83	Aluminum Support for No. 1500-38 and 1500-37	.40
1500-31	Ivory "One Way" Contact Spring for 1500 Relay	1.10
1500-30	Platinum Interlocking Contact Spring for No. 1500 Relay	1.10
1500-82	Aluminum Support for No. 1500-30	.20
1500-42	Front or Back Non-interlocking Platinum Contact Spring for No. 1500-79	1.10
1500-84	Aluminum Support for No. 1500-42	.20
1500-45	Long Contact Bar Platinum Pointed for Extra Contacts	.80
1500-33	Standard Contact Bar for No. 1500	.80
1500-35	Short Platinum Contact Bar Pointed for Extra Contacts	.80
1500-46	Contact Bar for No. 1500-1 Relay or Extra Front Contacts	.80

GLASS ENCLOSED INTERLOCKING RELAY

Style "B"



Style "B" Interlocking Relay, with No. 2 Locking, Shelf Type, with One Interlocking Contact and Four Front and Back Contacts on Each Armature

Size, $11\frac{1}{2}''$ x $6\frac{3}{4}''$ x $8\frac{1}{2}''$

This Relay employs same parts as our Glass Enclosed Track and Line Relays. The Interlocking feature is extremely simple and positive in action. Each Armature may be equipped with four independent or four Front and Back Contacts.

The construction of Relay is in accordance with R. S. A. Specifications. Coils are form-wound and easily removable without interference with Contacts or Armatures.

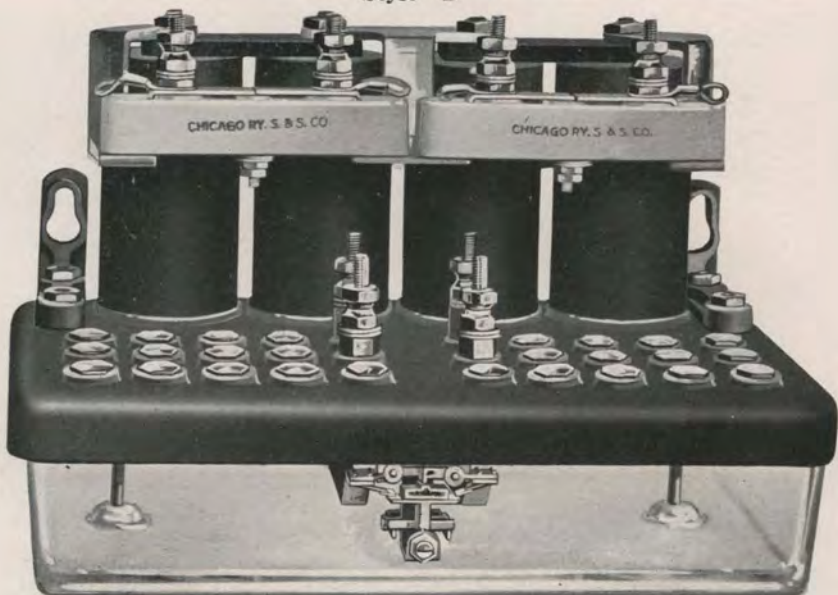
All Binding Posts are R. S. A. Standard and are on front of Relay. Binding Posts and Contacts have non-turnable heads and cannot be loosened or interfered with from outside of Relay without breaking seal on glass cover. Extra Front Contacts are Platinum against Graphite and Back Contacts Platinum against Platinum. Silver, Copper or Silver Plated Contacts will be furnished upon request.

Each Relay is thoroughly tested and calibrated before shipment and provided with Inspector's certificate inside of glass case showing results of tests which we warrant to be accurate and absolutely reliable.

Style "B" Relay can be furnished with two styles of locking, governing the Front and Back Contacts for Signal Circuits, etc. In Locking No. 1 all the functions of an ordinary Relay take place, viz.: all Back Contacts close and all Front Contacts open, on each Armature, this style of Locking will always be furnished unless otherwise specified. In Locking No. 2, Front Contacts open and Back Contacts close on one Armature, but Contacts on the other Armature remain stationary. Locking No. 1 and No. 2 are illustrated on following page.

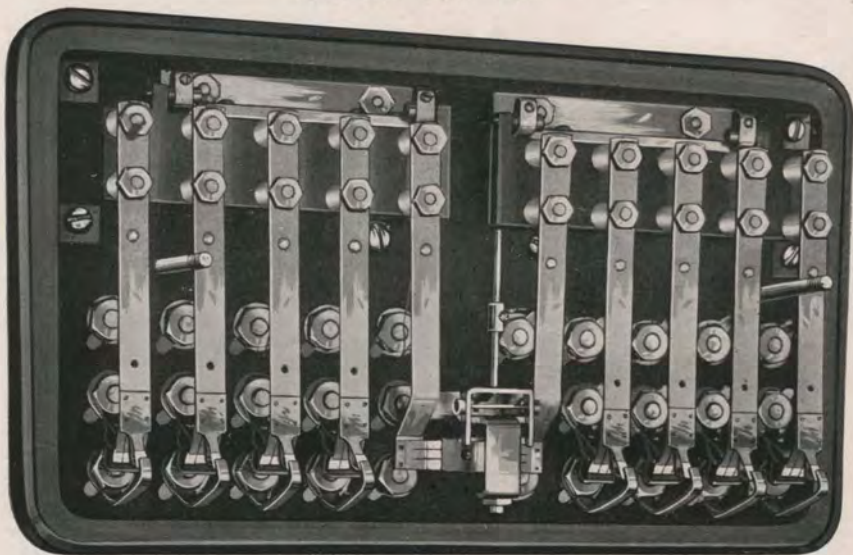


GLASS ENCLOSED INTERLOCKING RELAY
Style "B"



Style "B" Interlocking Relay. Wall Type, with Interlocking Contact Only.
(Relay may be Equipped with Four Extra Front and Back
Contacts on Each Armature)

Size, $11\frac{1}{2}''$ x $6\frac{3}{4}''$ x $7\frac{3}{4}''$



Bottom View Style "B" Interlocking Relay with Full
Complement of Extra Contacts



GLASS ENCLOSED INTERLOCKING RELAY

Style "B"

Trade No.	DESCRIPTION	List Price
1524	Style "B" Shelf Type Interlocking Relay with one Interlocking Contact Only.....	\$50.00
1525	Style "B" Wall Type Interlocking Relay with one Interlocking Contact Only.....	50.00
1524-51	Style "B" Shelf Type Relay with one "One Way Only" Interlocking Contact.....	50.00
1525-51	Style "B" Wall Type Relay with one "One Way Only" Interlocking Contact.....	50.00
	Orders should specify whether Locking No. 1 or Locking No. 2 is required.	
EXTRA CONTACTS		
	For each additional independent PLATINUM to Graphite Front Contact, add.....	2.30
	For each additional independent SILVER to Graphite Front Contact, add.....	1.30
	For each additional independent PLATINUM to Platinum Back Contact, add.....	1.50
	For each additional independent SILVER to Silver Back Contact, add.....	1.00
	For each additional combination Front and Back Contact, PLATINUM to Graphite Front and PLATINUM to Platinum Back, add.....	2.95
	For each additional combination Front and Back Contact, SILVER to Graphite Front and SILVER to Silver Back, add.....	2.05
	Each Armature may be equipped with a maximum of four Front and Back Contacts. Unless otherwise specified extra Front Contacts will be furnished PLATINUM to Graphite and Extra Back Contacts PLATINUM to Platinum.	
MAGNETS		
	Above prices are for Relays with Magnets 50 Ohms Resistance or less.	
	For Magnets Wound 51 to 150 Ohms, add for each Magnet..	1.80
	" " " 151 " 500 " " " " " " " "	3.00
	" " " 501 " 1000 " " " " " " " "	4.80
	" " " 1001 " 3000 " " " " " " " "	6.50
	Magnets above 1000 Ohms are one inch longer and increase height of Relay 1 1/8".	

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with Plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts. Prices upon request.

GLASS ENCLOSED INTERLOCKING RELAY

Style "B"

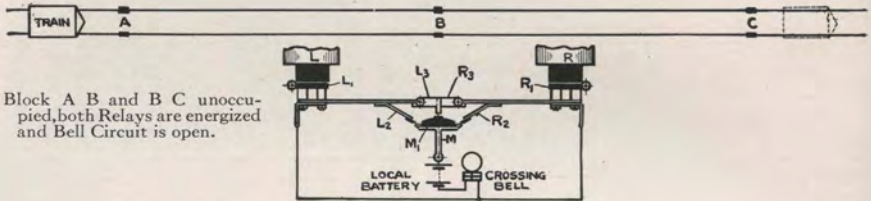


Fig. 1

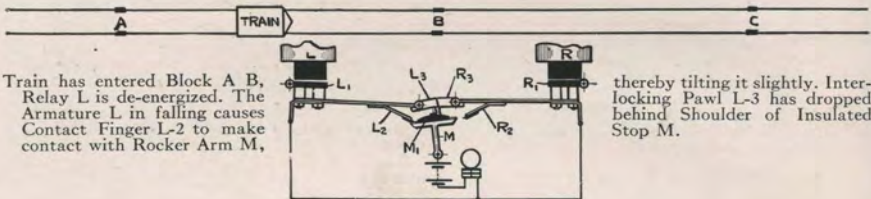


Fig. 2

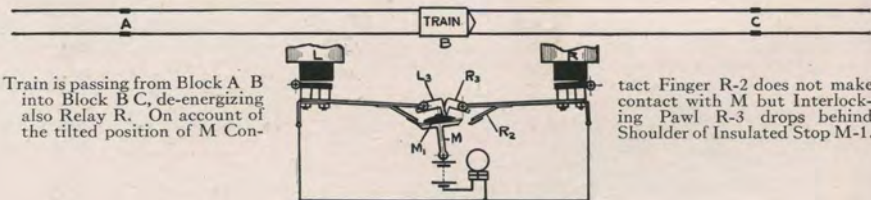


Fig. 3

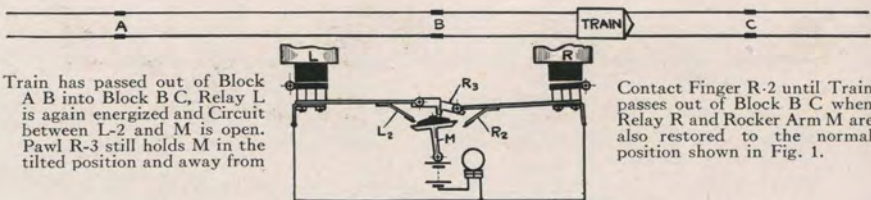


Fig. 4

Diagrammatic illustrations of operations of Interlocking Contact on Style "B" Relay. Entire operation is gravity actuated and not dependent upon springs, etc.

GLASS ENCLOSED INTERLOCKING RELAY

Style "B"

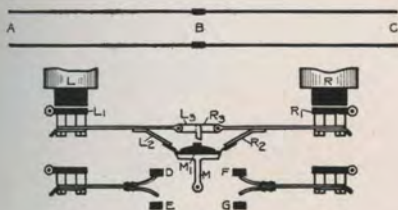


Fig. 1

Block A B and B C unoccupied, both Relays L and R energized.

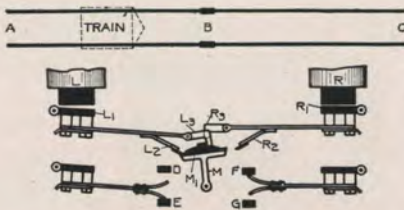


Fig. 2

Train has entered Block A B, Relay L de-energized.

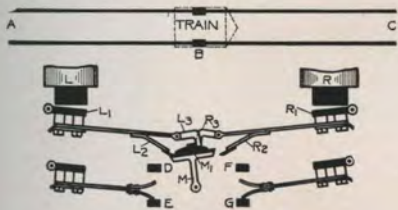


Fig. 3

Train is entering Block B C.
Both Relays L and R de-energized.

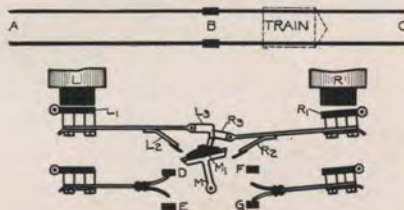


Fig. 4

Train has passed into Block B C, Relay L energized,
Relay R de-energized, when train passes out of
Block B C both Relays L and R are energized as
in Fig. 1.

Locking No. 1

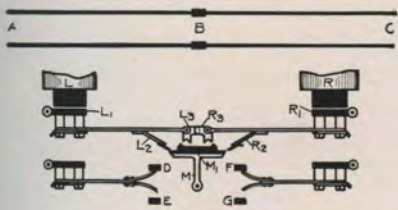


Fig. 1

Blocks A B and B C unoccupied, both Relays L and R energized.

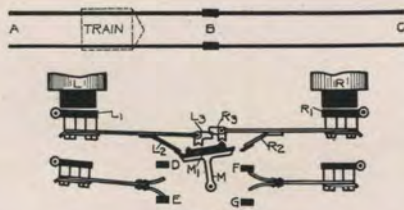


Fig. 2

Train has entered Block A B, Relay L de-energized.

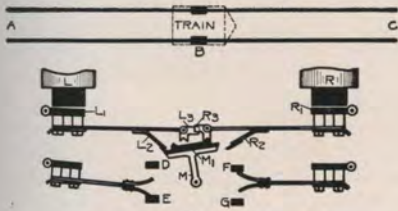


Fig. 3

Train is entering Block B C.
Both Relays L and R de-energized.

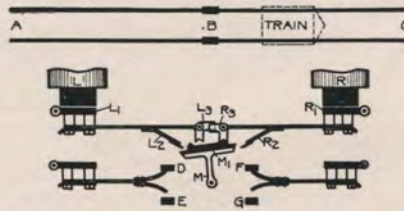


Fig. 4

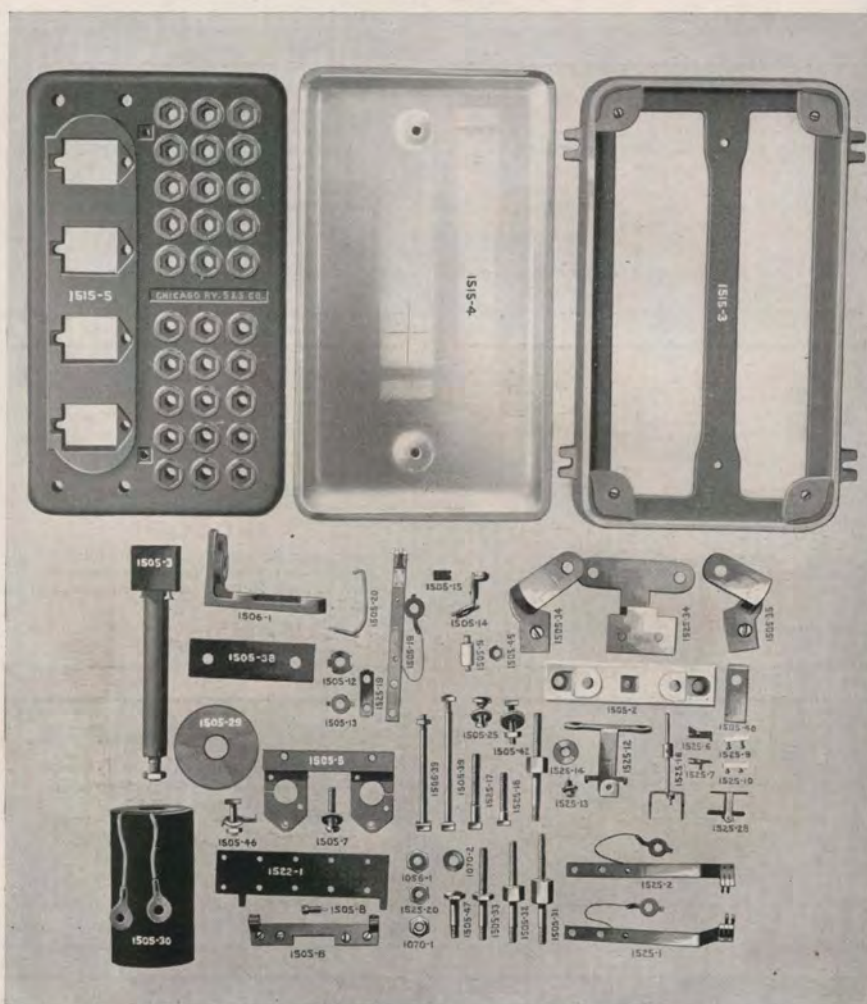
Train has passed into Block B C, Relay L energized,
Relay R de-energized, when train passes out of
Block B C both Relays L and R are energized as
in Fig. 1.

Locking No. 2

Diagrammatic illustration of operation of Non-independent Front and Back Contacts on Style "B" Relay.

GLASS ENCLOSED INTERLOCKING RELAY

Style "B"



Style "B" Interlocking Relay Parts

Trade No.	DESCRIPTION	List Price
1505-19	Front and Back Contact Spring	
1505-22	" " " " Platinum Contacts	
1505-23	" " " " Silver Contacts	
1505-24	Front Contact Spring	
1505-25	" " Silver Contact	
1505-26	Back " " Platinum Contact	
1505-27	" " Silver Contact	
1505-14	Front Contact Holder	
1505-15	Carbon or Graphite Contact Block (specify)	
1505-20	Back Contact Platinum	
1505-21	" " Silver	

Repair parts not listed should be ordered as per numbers shown above.

STYLE "C" NEUTRAL RELAY



Style "C" Relay, Shelf Type, with Six Front and Back Contacts

Size, 7" Wide, 6 $\frac{3}{4}$ " Deep, 8 $\frac{1}{2}$ " High

Style "C" Neutral Relay is made in accordance with R. S. A. Specifications, and may be equipped with as many as six Contact Fingers, thus providing for a maximum of six Front and Back Contacts. Unless otherwise specified, Front Contacts are furnished Platinum to Graphite and Back Contacts Platinum to Platinum. Silver, Copper, Carbon or Silver Plated Contacts can be furnished on request.

All Contacts and parts of Relay are interchangeable and warranted to fit accurately.

STYLE "C" NEUTRAL RELAY



Style "C" Neutral Relay, Wall Type with Six Front and Back Contacts
Size, 7" Wide, 6 $\frac{3}{4}$ " Deep, 8" High

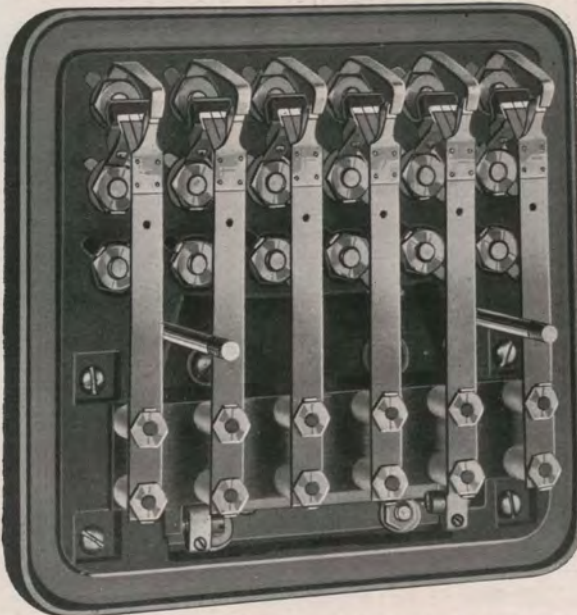
The Magnets are form-wound and removable without interfering with Contacts or breaking seal on glass cover. Magnets are furnished wound any desired resistance up to and including 3,000 Ohms. Magnet Terminals are brought to Binding Posts on a separate porcelain base so each coil may be tested or removed separately. Magnet-Terminals-Base is provided with a spark gap which will prevent magnet coils from burning out by static currents.

Relays are thoroughly tested and calibrated at works and provided with inspector's ticket under the sealed glass cover showing results of tests as called for by R. S. A. Specifications. All Binding Posts and Contacts are provided with non-turnable heads which cannot become loose or be loosened from outside of Relay.

STYLE "C" NEUTRAL RELAY



Top View Style "C" Neutral Relay with Six Front and Back Contacts



Bottom View Style "C" Neutral Relay with Six Front and Back Contacts

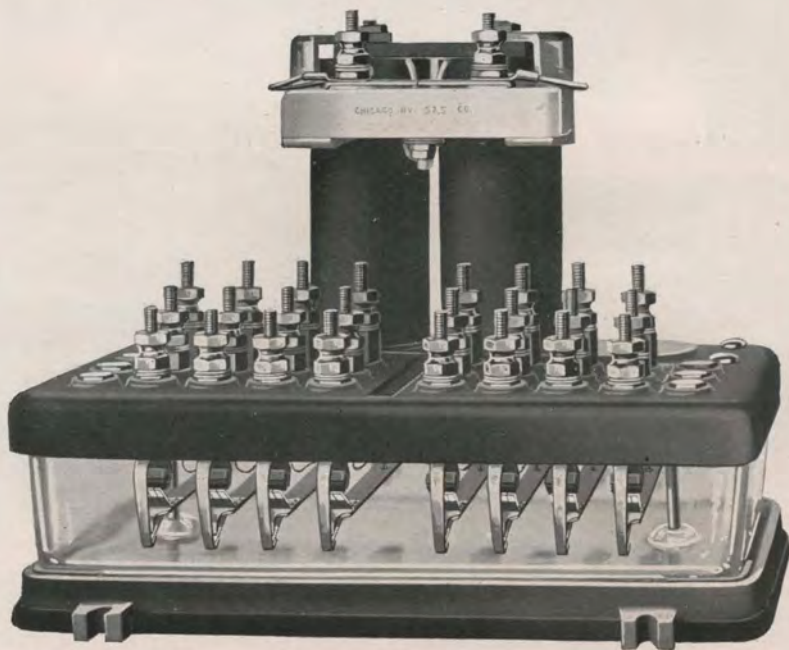


STYLE "C" NEUTRAL RELAY

Trade No.	DESCRIPTION	List Price
PLATINUM CONTACTS		
1505-75	Style "C" Shelf Type Relay, 50 Ohms or less, with two Front and Back Contacts.....	\$29.80
1505-76	Same as above but with three Front and Back Contacts....	32.75
1505-77	“ “ “ “ “ four “ “ “ “	35.70
1505-78	“ “ “ “ “ five “ “ “ “	38.65
1505-79	“ “ “ “ “ six “ “ “ “	41.60
1505-85	Style "C" Wall Type Relay, 50 Ohms or less, with two Front and Back Contacts.....	29.80
1505-86	Same as above but with three Front and Back Contacts....	32.75
1505-87	“ “ “ “ “ four “ “ “ “	35.70
1505-88	“ “ “ “ “ five “ “ “ “	38.65
1505-89	“ “ “ “ “ six “ “ “ “	41.60
	For each additional independent PLATINUM to Graphite Front Contact, add to list price of Relay.....	2.30
	For each additional independent PLATINUM to Platinum Back Contact, add to list price of Relay.....	1.50
	For each additional combination Front and Back Contact, add to list price of Relay.....	2.95
SILVER CONTACTS		
1505-90	Style "C" Shelf Type Relay, 50 Ohms or less, with two Front and Back Contacts.....	28.00
1505-91	Same as above but with three Front and Back Contacts....	30.05
1505-92	“ “ “ “ “ four “ “ “ “	32.10
1505-93	“ “ “ “ “ five “ “ “ “	34.15
1505-94	“ “ “ “ “ six “ “ “ “	36.20
1505-95	Style "C" Wall Type Relay, 50 Ohms or less, with two Front and Back Contacts.....	28.00
1505-96	Same as above but with three Front and Back Contacts....	30.05
1505-97	“ “ “ “ “ four “ “ “ “	32.10
1505-98	“ “ “ “ “ five “ “ “ “	34.15
1505-99	“ “ “ “ “ six “ “ “ “	36.20
	For each additional independent SILVER to Graphite Front Contact, add to list price of Relay.....	1.30
	For each additional independent SILVER to Silver Back Contact, add to list price of Relay.....	1.00
	For each additional combination Front and Back Contact, add to list price of Relay.....	2.05
MAGNETS		
	For Magnets Wound 51 to 150 Ohms, add.....	1.80
	“ “ “ “ 151 “ 500 “ “	3.00
	“ “ “ “ 501 “ 1000 “ “	4.80
	“ “ “ “ 1001 “ 3000 “ “	6.50
	Magnets above 1000 Ohms are one inch longer and increase height of Relay 1 7/8".	

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts.

STYLE "D" NEUTRAL RELAY



Style "D" Relay, Shelf Type, with Eight Front and Back Contacts

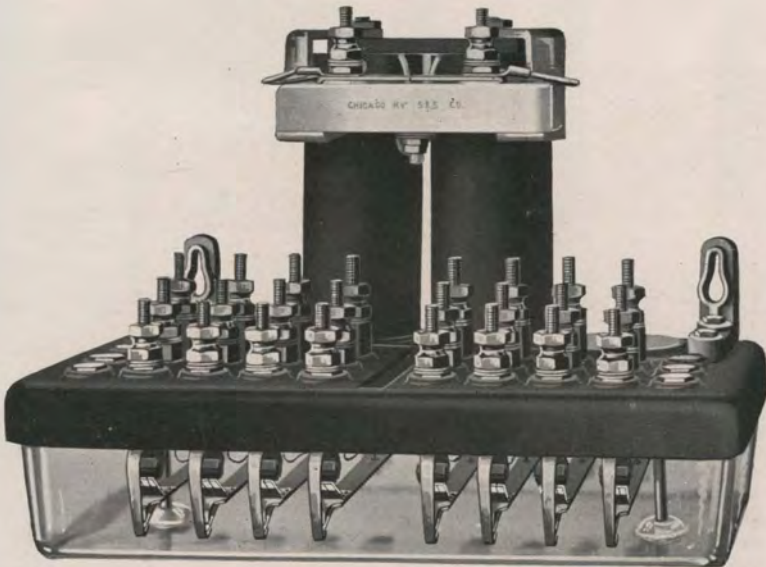
Size, $11\frac{1}{2}''$ x $6\frac{3}{4}''$ x $9\frac{1}{2}''$

This Relay is built to R. S. A. Specifications and is regularly equipped with eight Front and Back Contacts, but may be furnished with ten Front and Back Contacts.

The Magnets are form-wound, extra large and highly efficient and may be wound as high as 3,000 Ohms without using unduly fine wire. Contacts are of the three finger type, Silver or Platinum against Graphite on Front Contacts. Back Contacts Platinum to Platinum or Silver to Silver, as specified.

Contacts are also furnished of Silver Plated Graphite or Carbon as well as Copper to Carbon for High Voltage Circuits.

STYLE "D" NEUTRAL RELAY

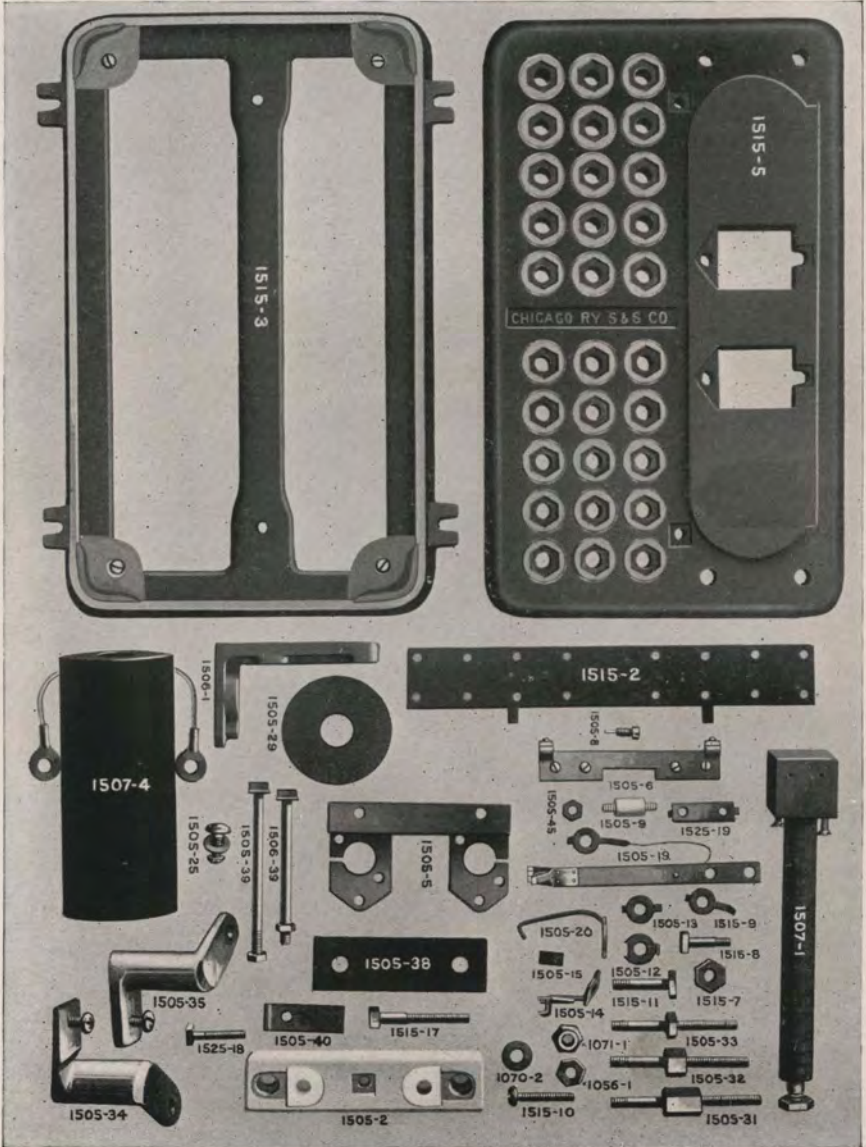


Style "D" Relay, Wall Type, with Eight Front and Back Contacts

Size, $11\frac{1}{2}''$ x $6\frac{3}{4}''$ x $9''$

All Binding Posts and Contacts are on Front of Relay and are equipped with non-turnable heads. Terminal Binding Posts are on a separate Porcelain Base and are equipped with Spark Gaps which positively prevent the coils from burning out. The Contacts are so located that each may be clearly seen through the clear glass cover which encloses all working parts of Relay. The glass cover has a rubber gasket between it and the base which prevents breakage. Glass covers are sealed at factory and are provided with Inspection Certificate showing results of tests which we warrant to be accurate.

STYLE "D" NEUTRAL RELAY



Parts of Style "D" Neutral Relay

Repair parts should be ordered as per numbers shown above.



STYLE "D" NEUTRAL RELAY

Trade No.	DESCRIPTION	List Price
PLATINUM CONTACTS		
1515-64	Style "D" Shelf Type Relay, 50 Ohms or less with four Front and Back Contacts.....	\$42.40
1515-65	Same as above but with five Front and Back Contacts.....	45.35
1515-66	" " " " " " six " " " " " "	48.30
1515-67	" " " " " " seven " " " " " "	51.25
1515-68	" " " " " " eight " " " " " " .....	.....
1516-64	Style "D" Wall Type Relay, 50 Ohms or less with four Front and Back Contacts.....	42.40
1516-65	Same as above but with five Front and Back Contacts.....	45.35
1516-66	" " " " " " six " " " " " "	48.30
1516-67	" " " " " " seven " " " " " "	51.25
1516-68	" " " " " " eight " " " " " " .....	.....
	For each additional independent PLATINUM to Graphite Front Contact, add to list price of Relay.....	2.30
	For each additional independent PLATINUM to Platinum Back Contact, add to list price of Relay.....	1.50
	For each additional combination Front and Back Contact, add to list price of Relay.....	2.95
SILVER CONTACTS		
1515-74	Style "D" Shelf Type Relay, 50 Ohms or less with four Front and Back Contacts.....	38.80
1515-75	Same as above but with five Front and Back Contacts.....	40.85
1515-76	" " " " " " six " " " " " "	42.90
1515-77	" " " " " " seven " " " " " "	44.95
1515-78	" " " " " " eight " " " " " "	47.00
1516-74	Style "D" Wall Type Relay, 50 Ohms or less with four Front and Back Contacts.....	38.80
1516-75	Same as above but with five Front and Back Contacts.....	40.85
1516-76	" " " " " " six " " " " " "	42.90
1516-77	" " " " " " seven " " " " " "	44.95
1516-78	" " " " " " eight " " " " " "	47.00
	For each additional independent Silver to Graphite Front Contact, add to list price of Relay.....	1.30
	For each additional independent Silver to Silver Back Contact, add to list price of Relay.....	1.00
	For each combination Front and Back Contact, add to list price of Relay.....	2.05
MAGNETS		
	For Magnets wound 51 to 150 Ohms, add.....	1.80
	" " " " " 151 " 500 " "	3.00
	" " " " " 501 " 1000 " "	4.80
	" " " " " 1001 " 3000 " "	5.50

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with Plain, or Silver Plated Carbon or Silver Plated Graphite Front Contacts. Prices upon request.

DOUBLE NEUTRAL RELAY

Style "E"



Double Neutral Relay, Style "E", Shelf Type, with Four Front and Back Contacts on Each Armature

Size, 11½" Wide, 7½" Deep, 8½" High

This type of Relay has been designed to meet the demand of two Relays on one Base, thus economizing in room and wiring connections as well as in price, this Double Relay costing less than two Relays which perform the same functions. It is also used as a series Relay operating both Armatures simultaneously. Relay may be equipped with a maximum of four Front and Back Contacts on each Armature.

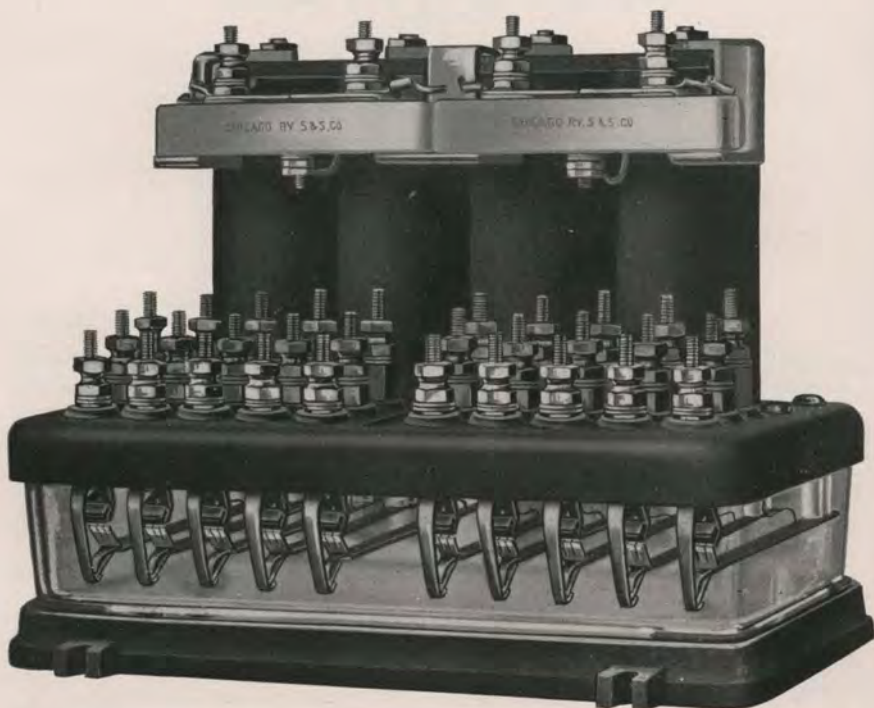
Coils are form-wound and removable without interfering with Contacts or Connections. Terminals terminate on separate porcelain bases equipped with spark gaps. All Binding Posts and Contacts are on front of Relay and are equipped with non-turnable heads which prevent interference from outside.

Glass case has ground surfaces between which, and the base a substantial rubber gasket is held in place, sealing all working parts and preventing breakage of glass.

Relay is built according to latest recommendations of the **Railway Signal Association** and is provided, under the glass case, with Inspector's Certificate stating results of all required tests which are fully guaranteed. All parts of Relay are interchangeable with our other Standard Relays.

DOUBLE NEUTRAL RELAY

Style "F"



Double Neutral Relay, Style "F", Shelf Type, with Five Front and Back Contacts on each Armature

Size, 11½" Long, 6¾" Deep, 9" High

This type of Relay is equipped with two Magnets and two separate Armatures, and may be used in place of two separate Relays or as one Relay by connecting Magnets in series or multiple. Each Armature may be equipped with a maximum of five Front and Back Contacts which may be Silver or Platinum against Graphite, Carbon or Silver Plated Carbon. The Magnets are extra large and highly efficient and allow winding same with a comparatively coarse wire which, together with spark gaps, provided on Magnet Terminals, eliminate the trouble usually experienced from lightning with Magnets having but a small winding space.

All Contacts and Binding Posts are located on front of Relay where they are easily accessible for inspection and repairs. Relay is built in accordance with specifications of the **Railway Signal Association** and is provided with Inspector's Certificate underneath the glass cover showing results of tests which are guaranteed to be accurate and reliable.

All parts of this Relay are interchangeable with our other Relays and repair or extra parts are warranted to fit this Relay.



DOUBLE NEUTRAL RELAY

Style "F"

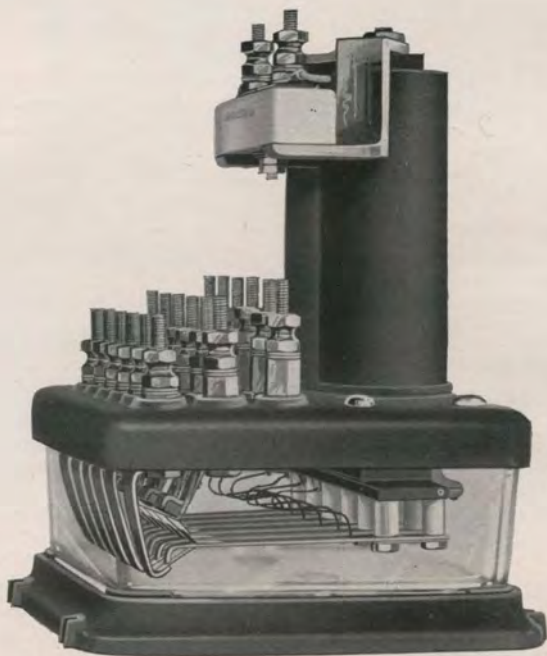
Trade No.	DESCRIPTION	List Price
PLATINUM CONTACTS		
1522-21	Double Neutral Relay, Style "F", Shelf Type, Magnets 50 Ohms or less, with one Front and Back Contact on each Armature.....	\$52.05
1522-22	Same as above but with two Front and Back Contacts.....	55.00
1522-23	“ “ “ “ “ three “ “ “ “ “	57.95
1522-24	“ “ “ “ “ four “ “ “ “ “	60.90
1522-25	“ “ “ “ “ five “ “ “ “ “	63.85
1523-21	Double Neutral Relay, Style "F", Wall Type, Magnets 50 Ohms or less, with one Front and Back Contact on each Armature.....	52.05
1523-22	Same as above but with two Front and Back Contacts.....	55.00
1523-23	“ “ “ “ “ three “ “ “ “ “	57.95
1523-24	“ “ “ “ “ four “ “ “ “ “	60.90
1523-25	“ “ “ “ “ five “ “ “ “ “	63.85
	For each additional independent PLATINUM to Graphite Front Contact, add to list price of Relay.....	2.30
	For each additional independent PLATINUM to Platinum Back Contact, add to list price of Relay.....	1.50
	For each additional combination Front and Back Contact, add to list price of Relay.....	2.95
SILVER CONTACTS		
1522-31	Double Neutral Relay, Style "F", Shelf Type, Magnets 50 Ohms or less, with one Front and Back Contact on each Armature.....	51.15
1522-32	Same as above but with two Front and Back Contacts.....	53.20
1522-33	“ “ “ “ “ three “ “ “ “ “	55.25
1522-34	“ “ “ “ “ four “ “ “ “ “	57.30
1522-35	“ “ “ “ “ five “ “ “ “ “	59.35
1523-31	Double Neutral Relay, Style "F", Wall Type, Magnets 50 Ohms or less, with one Front and Back Contact on each Armature.....	51.15
1523-32	Same as above but with two Front and Back Contacts.....	53.20
1523-33	“ “ “ “ “ three “ “ “ “ “	55.25
1523-34	“ “ “ “ “ four “ “ “ “ “	57.30
1523-35	“ “ “ “ “ five “ “ “ “ “	59.35
	For each additional independent SILVER to Graphite Front Contact, add to list price of Relay.....	1.30
	For each additional independent SILVER to Silver Back Contact, add to list price of Relay.....	1.00
	For each additional combination Front and Back Contact, add to list price of Relay.....	2.05
MAGNETS		
	For Magnets Wound 51 to 150 Ohms, add for each Magnet	1.80
	“ “ “ “ 151 “ 500 “ “ “ “ “ “	3.00
	“ “ “ “ 501 “ 1000 “ “ “ “ “ “	4.80
	“ “ “ “ 1001 “ 3000 “ “ “ “ “ “	5.50

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts. Prices upon request.

Repair parts on this Relay are interchangeable with our other Styles of Relays.

SLOW RELEASE—NEUTRAL RELAY

Style "G"



Slow Release Neutral Relay, Style "G" with Six Front and Back Contacts

Size, Wall Type, 7" x 6 $\frac{3}{4}$ " x 9"

Size, Shelf Type, 7" x 6 $\frac{3}{4}$ " x 9 $\frac{1}{2}$ "

This Relay is similar to our Style "C" Relay excepting that it is equipped with extra large Magnets having the slow release feature added as sometimes required by polarized wireless rail circuits where it is necessary to prevent the opening of signal circuit during the reversal of current through the polarized Track Relay. This Relay is also used where line wire circuits controlling annunciators, indicators, etc., are used with Track Instruments or short rail section to prevent circuit being opened or closed with each car passing over same. All parts on this Relay are interchangeable with our other Relays and Relay is built strictly in accordance with R. S. A. Specifications.



SLOW RELEASE—NEUTRAL RELAY

Style "G"

Trade No.	DESCRIPTION	List Price
PLATINUM CONTACTS		
1509-22	Style "G" Slow Release Neutral Relay, Shelf Type, Magnets 50 Ohms or less, with two Front and Back Contacts.	\$40.00
1509-23	Same as above but with three Front and Back Contacts.	42.30
1509-24	“ “ “ “ “ four “ “ “ “	44.60
1509-25	“ “ “ “ “ five “ “ “ “	46.90
1509-26	“ “ “ “ “ six “ “ “ “	51.20
1509-32	Style "G" Slow Release Neutral Relay, Wall Type, Magnets 50 Ohms or less, with two Front and Back Contacts.	40.00
1509-33	Same as above but with three Front and Back Contacts.	42.30
1509-34	“ “ “ “ “ four “ “ “ “	44.60
1509-35	“ “ “ “ “ five “ “ “ “	46.90
1509-36	“ “ “ “ “ six “ “ “ “	51.20
	For each additional independent PLATINUM to Graphite Front Contact, add to list price of Relay	2.30
	For each additional independent PLATINUM to Platinum Back Contact, add to list price of Relay	1.50
	For each additional combination Front and Back Contact, add to list price of Relay	2.95
SILVER CONTACTS		
1509-42	Style "G" Slow Release Neutral Relay, Shelf Type, Magnets 50 Ohms or less, with two Front and Back Contacts.	38.20
1509-43	Same as above but with three Front and Back Contacts.	40.25
1509-44	“ “ “ “ “ four “ “ “ “	42.30
1509-45	“ “ “ “ “ five “ “ “ “	44.35
1509-46	“ “ “ “ “ six “ “ “ “	46.40
1509-52	Style "G" Slow Release Neutral Relay, Wall Type, Magnets 50 Ohms or less, with two Front and Back Contacts.	38.20
1509-53	Same as above but with three Front and Back Contacts.	40.25
1509-54	“ “ “ “ “ four “ “ “ “	42.30
1509-55	“ “ “ “ “ five “ “ “ “	44.35
1509-56	“ “ “ “ “ six “ “ “ “	46.40
	For each additional independent SILVER to Graphite Front Contact, add to list price of Relay	1.30
	For each additional independent SILVER to Silver Back Contact, add to list price of Relay	1.00
	For each additional combination Front and Back Contact, add to list price of Relay	2.05
MAGNETS		
	For Magnets Wound 51 to 150 Ohms, add.	1.80
	“ “ “ 151 “ 500 “ “	3.00
	“ “ “ 501 “ 1000 “ “	4.80
	“ “ “ 1001 “ 3000 “ “	5.50

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts. Prices upon request.



STYLE "H" POLARIZED RELAY



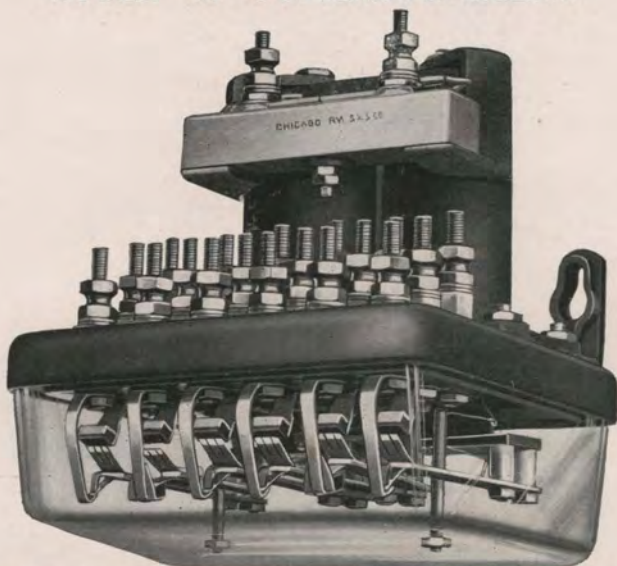
Style "H" Polarized Relay, Shelf Type, with Four Front and Four Back Neutral Contacts and Two Front and Two Back Polar Contacts
Size, 7" x 6 $\frac{3}{4}$ " x 8 $\frac{1}{2}$ "



Inverted View of Style "H" Polarized Relay Showing Arrangement of Armatures and Polar Contacts

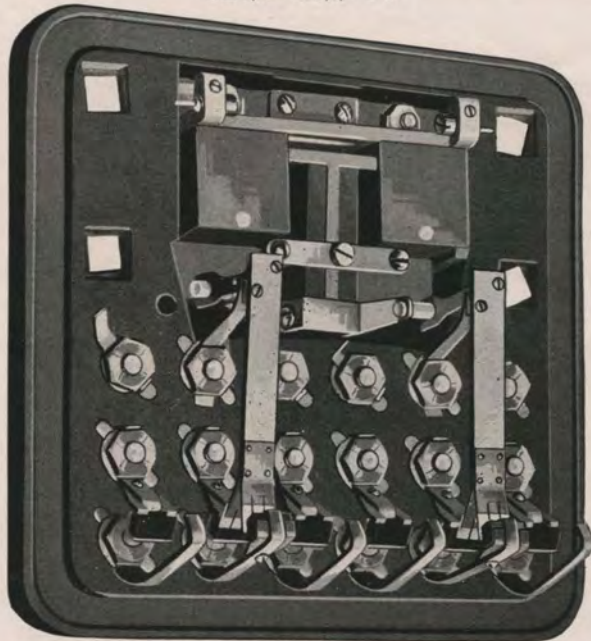


STYLE "H" POLARIZED RELAY

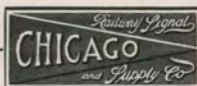


Style "H" Polarized Relay, Wall Type, with Four Front and Four Back Neutral Contacts and Two Front and Two Back Polar Contacts

Size, 7" x 6 $\frac{3}{4}$ " x 8"



Inverted View Style "H" Polarized Relay Showing Arrangement of Polarized Armatures and Contacts. (Neutral Armature and Neutral Contact Fingers removed)



STYLE "H" POLARIZED RELAY

This Relay corresponds in general to our Style "C" Relay except that Polarized Armatures and Contacts are added. The Relay is built within the specifications of the **Railway Signal Association**, is provided with Binding Posts and Contacts having non-turnable heads, spark gap, form-wound removable coils with terminals on a separate Base. Relays are tested, properly adjusted and sealed before leaving our works. An inspector's inspection certificate accompanies each Relay showing results of tests which we warrant to be accurate.

The Contacts and Binding Posts are all on Front of Relay where they may be easily inspected and tested. Reversal of permanent magnets by lightning is entirely overcome in the design of this Relay as shown by exhaustive long time tests under most severe conditions. Relay is guaranteed to be fully as or more efficient than any polarized relay on the market, the "pick-up" and drop-away" of the Neutral Armature being entirely within **R. S. A.** Specifications.

Relay is furnished in Shelf or Wall Type and only with two Polarized Contact Fingers but with as many as four Front and Back Neutral Contacts.



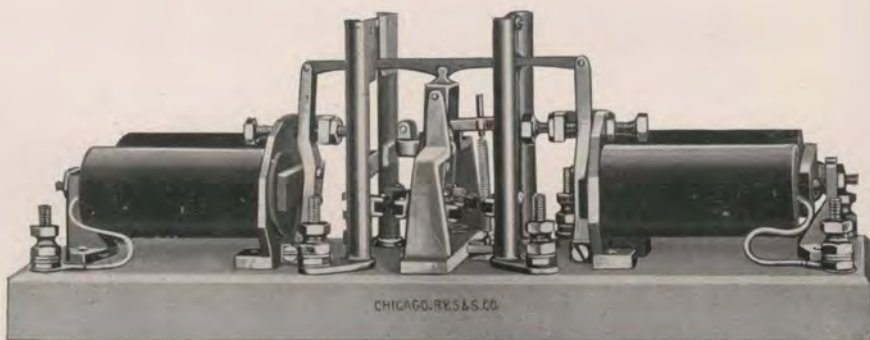
STYLE "H" POLARIZED RELAY

Trade No.	DESCRIPTION	List Price
PLATINUM CONTACTS		
1510-22	Style "H" Shelf Type Polarized Relay with two Front and Back Neutral Contacts and two Front and Back (both Platinum to Graphite) Polarized Contacts, Magnet resistance 50 Ohms or less.	\$45.60
1511-22	Same as above, except Wall Type Relay.	45.60
	For each additional independent PLATINUM to Graphite Front Contact, add to list price of Relay.	2.30
	For each additional independent PLATINUM to Platinum Back Contact, add to list price of Relay.	1.50
	For each additional combination Front and Back Contact, add to list price of Relay.	2.95
SILVER CONTACTS		
1510-32	Style "H" Shelf Type Polarized Relay with two Front and Back Neutral Contacts and two Front and Back (both Silver to Graphite) Polarized Contacts, Magnet resistance 50 Ohms or less.	42.00
1511-32	Same as above, except Wall Type Relay.	42.00
	For each additional independent SILVER to Graphite Front Contact, add to list price of Relay.	1.30
	For each additional independent SILVER to Silver Back Contact, add to list price of Relay.	1.00
	For each additional combination Front and Back Contact, add to list price of Relay.	2.05
MAGNETS		
	For Magnets wound 51 to 150 Ohms, add.	1.80
	" " " 151 " 500 " "	3.00
	" " " 501 " 1000 " "	4.80
	" " " 1001 " 3000 " "	6.50

When specified, Relay may be furnished with Carbon to Carbon, or, Carbon to Copper Contacts for High Voltages, also with plain or Silver Plated Carbon or Silver Plated Graphite Front Contacts.

Prices upon request.

STYLE "K" HIGH VOLTAGE RELAY



Style "K" No. 1503-2 Relay

Size, $15\frac{1}{2}$ " x $4\frac{1}{2}$ " x $5\frac{3}{4}$ " High

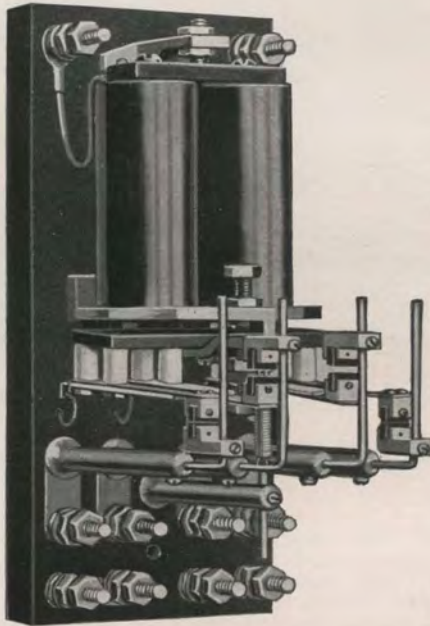
Style "K" Relay is designed especially for Electric Street Railway Signal Service, where a voltage of from 450 to 650 is maintained. It operates with a quick snap action, making it possible to break the high potentials on Contacts without excessive arcing. Although low in price, it is a highly efficient Relay with simplicity a feature, and when once adjusted to the proper working condition, it will operate continuously without any further attention.

All parts are mounted on a heavy Porcelain Base, Binding Posts are R. S. A. with non-turnable heads, and R. S. A. Specifications are followed where possible. Contacts are of ample proportion for large carrying capacity and mechanically strong to insure heavy and continuous duty. Relay No. 1503-1 is equipped with one Contact. Relay 1503-2 is equipped with one Front and one Back Contact. All parts are machined and jig drilled to insure accuracy and interchangeability. Base, Magnets, etc., are interchangeable with our Style "A" Relay.

Style "K" Relay is used for controlling Block Signal Circuits, also for turning on and off Electric Lamps in Stations, Electrical Illuminated Semaphores, Flag Station Signals, etc., which are located in remote places where traffic does not warrant the constant attendance of a man and for numerous other purposes.

Relay is furnished wound to 50 Ohms, but may be wound to any resistance up to 1,000 Ohms at an additional price.

STYLE "J" NEUTRAL RELAY



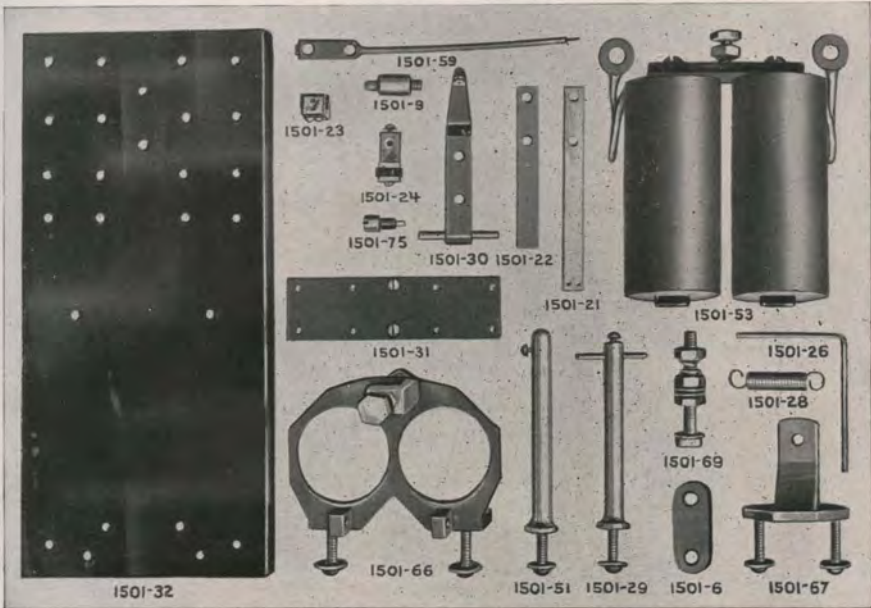
Style "J" Neutral Relay

Size, $9\frac{1}{2}$ " Long, $4\frac{1}{2}$ " Wide, 6" High

This Relay may be used as a Wall or Shelf Type Relay. Armature is gravity actuated, but is also equipped with an adjustable Tension Spring, for quick make or break contacts when used on high voltage. Relay is furnished with Magnets of any desired resistance up to 8,000 Ohms for operation on Electric Railways. Contacts may be "Carbon to Carbon", "Silver to Graphite" or "Platinum to Platinum", and are interchangeable for Front or Back Contacts. The Contacts are large and mechanically strong for heavy and continuous duty, and may be adjusted to give large breaks for high voltage circuits as required on Highway Crossing Bells on Electric Street Railways.

Orders should state resistance of Magnets, kind and number of Contacts required.

STYLE "J" NEUTRAL RELAY



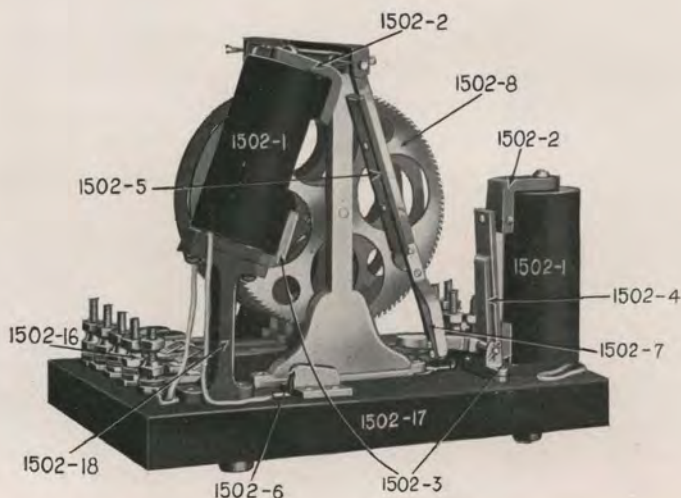
Parts of Style "J" Neutral Relay

Trade No.	DESCRIPTION	List Price
1501-1	Style "J" Neutral Relay, Magnets 9 Ohms or less with one Carbon to Carbon Contact.....	\$22.00
1501-2	Same as above but with two Contacts.....	24.00
1501-3	“ “ “ “ “ three “	26.00
1501-4	“ “ “ “ “ four “	28.00
1501-53	Magnets complete as shown, 10 Ohms or under.....	12.00
1501-21	Contact Spring.....	.40
1501-22	“ “ Support.....	.20
1501-26	“ “ Bar.....	.50
1501-24	Graphite Contact for Contact Bar.....	.70
1501-23	“ “ “ “ Spring.....	.70
1501-51	Contact Post.....	1.00
	For Silver to Graphite Contacts, add to list price, each.....	1.00
	For Platinum to Platinum Contacts, add to list price, each..	1.50
	For Magnets wound 10 to 150 Ohms, add to list price.....	1.80
	“ “ “ 151 “ 500 “ “ “ “ “	3.00
	“ “ “ 501 “ 1000 “ “ “ “ “	4.80
	“ “ “ 1001 “ 8000 “ “ “ “ “	6.00

Order should specify whether "Carbon to Carbon", "Silver to Graphite" or "Platinum to Platinum" Contacts are wanted.

Repair part orders should give part numbers as shown above.

TIME RELAY

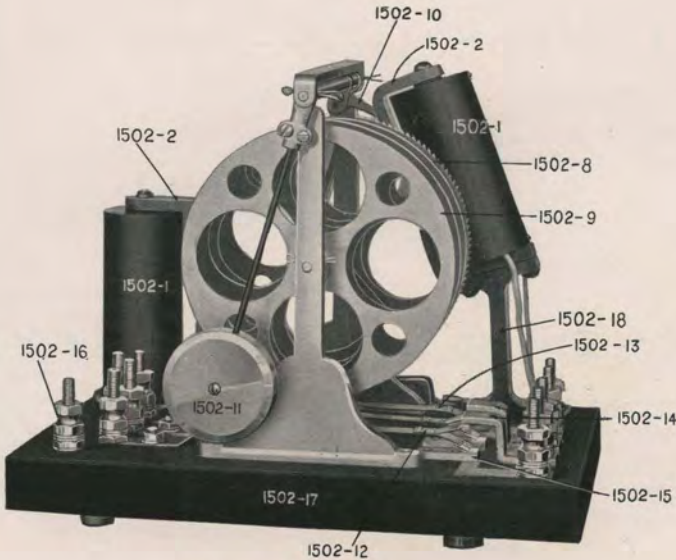


Front View No. 1502 Time Relay

This Relay is intended for use at all places where an electrically controlled time element is required, as with line wire operated Crossing Bells, Locking and Release Circuits, etc. Upon current being sent through the high resistance releasing magnet, Armature is attracted and this allows pendulum to swing towards the other side of Relay. When pendulum is nearly across, the operating Magnet attracts same and completes the movement. The operation is continued with the expenditure of but very little current and pendulum continues to swing forward and backward as reliably as on approved electrically operated clocks.

At the first stroke of the pendulum, two front Contacts are closed and two back Contacts are opened. These Contacts are restored to their normal position at the end of the predetermined time for which the Relay may be set, the time being one and one-half minutes or any fraction thereof. From this it will be self evident that a single impulse of current through the releasing magnet will keep the front Contacts closed and back Contacts open for any predetermined time to operate Crossing Bells, Locking Circuits, etc., or whenever it is desired to have certain Circuits closed or opened for any predetermined time.

TIME RELAY



Rear View No. 1502 Time Relay

There are no springs or delicate parts to become disarranged. Entire Relay is mounted upon a heavy slate base, Magnets are encased in hard rubber shells, standard clearance of $\frac{3}{8}$ " is provided between all contact springs and current carrying parts. Binding Posts are R. S. A. Standard, and Relay will fit into Standard Relay Boxes. Size, $10\frac{1}{2}$ " wide, $8\frac{1}{2}$ " high and $6\frac{1}{2}$ " deep.

Trade No.	DESCRIPTION	List Price
1502-1	Time Relay complete as shown with two Normally Open and two Normally Closed Contacts for Operation on Low Voltage (6 to 10 Volts)	\$80.00
1502-2	Time Relay complete with one Normally Closed and one Normally Open Contact with Magnets for Operation on Low Voltage (6 to 10 Volts)	70.00
	For Relays to operate on 110 Volts, add to list price	4.00
	“ “ including Standard Resistance to Operate Relays on 550 Volts, add to list price	8.00

1914

CATALOGUE AND PRICE LIST

SECTION C

CIRCUIT CONTROLLING AND
CIRCUIT BREAKING DEVICES

Switch Box and Commutator
Lever Lock and Floor Push
Electric Table Levers for Operating
Power Operated Signals
Track Instruments and Trolley Contacts
Pole Changing and Knife Switches
Strap Keys

SWITCH BOX

Style 1720



No. 1720

THIS SWITCH BOX POSSESSES THE FOLLOWING ADVANTAGES:

“Contacts are forced open and forced closed.”

“Contacts may be adjusted, independently of each other to “open” or “close” at any part of stroke.”

“Adjustments allow Contacts to be “opened” or “closed” with any desired amount of movement of Switch Point.”

“Wire Entrance and Binding Posts are in front compartment while mechanism is in separate compartment. Both are dust and water proof.”

“Crank is reversible and can be used on either side of Box.”

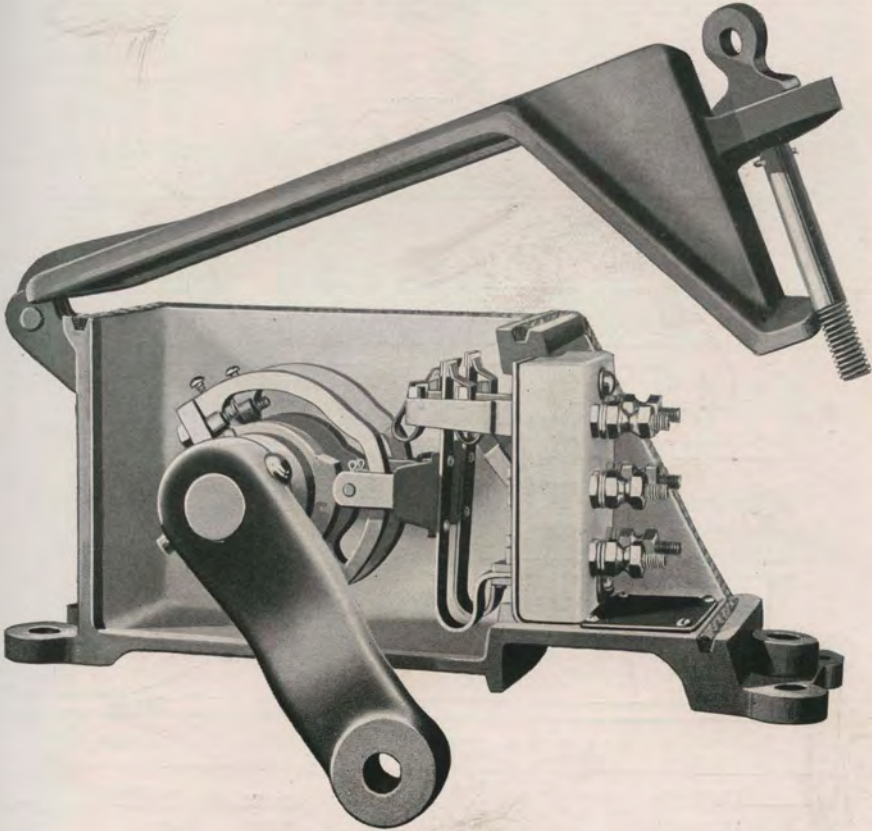
“It is built on the “unit principle” each Contact with all its parts being one unit allows additions or removals without affecting balance.”

“Arranged to Operate in Two or Three Positions.”

“Vibrations of the Operating Rod are not transmitted to Contacts.”

SWITCH BOX

Style 1720



Sectional View

Contacts are triple fingered and make a positive self-cleaning Contact with large carrying capacity.

Spring action on contact fingers is arrested after a slight scraping movement has taken place, thus guarding effectively against fused points.

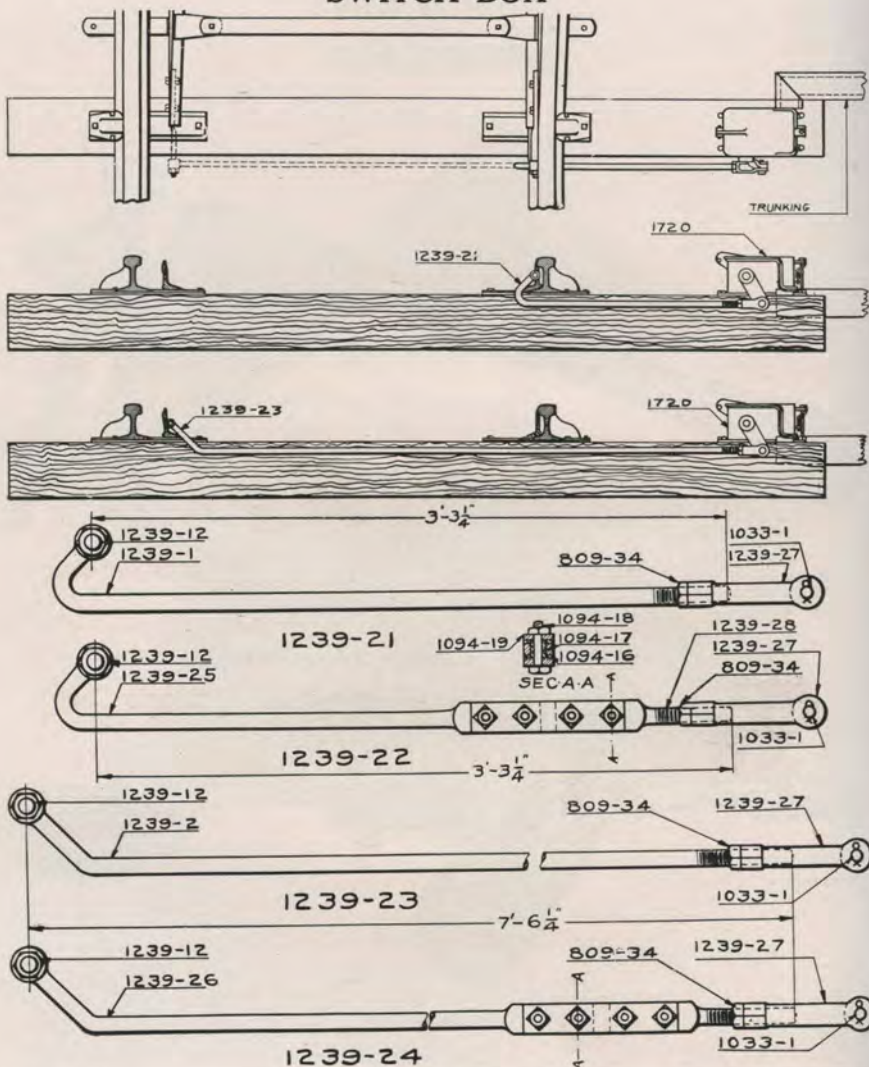
Size of Box, viz., $5\frac{1}{2}$ " high by 12" long, allows use of same within close proximity to Track.

All Current Carrying Parts are mounted on Insulated Bases and have $\frac{3}{8}$ " or greater distance between them, Binding Posts are Standard R. S. A.

Box is furnished for any number of Contacts up to ten Front and Back Contacts.

Box is furnished with Standard R. S. A. Connecting Rod, both insulated or plain.

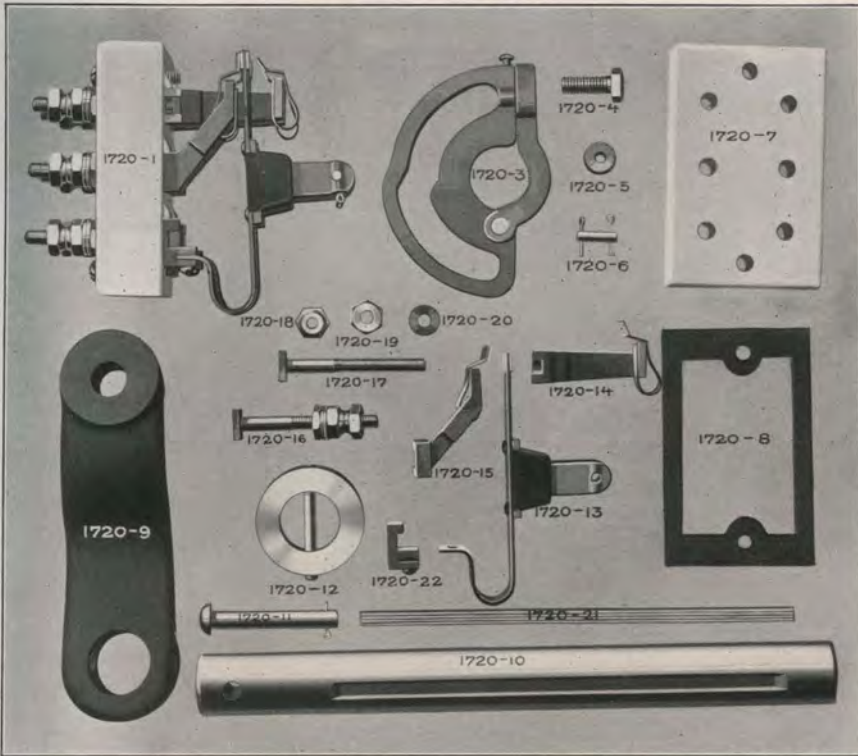
SWITCH BOX



Trade No.	DESCRIPTION	List Price
1720-76	Two Way Switch Box complete with Two Single Contacts.....	\$23.00
1720-78	Four " " " " " Four " "	29.75
1720-80	Six " " " " " Six " "	36.75
1720-82	Ten " " " " " Eight " "	44.75
1720-84	Ten " " " " " Ten " "	48.25
	For each Double Contact in place of Single Contacts on Switch Box, add to list price.....	1.40
1239-21	Connecting Rod complete as shown with R. S. A. Switch Point Lug, Screw Jaw, Nut, Jaw Pin and Bolts for fastening to Switch Points.....	5.25
1239-22	Same as above except Insulated.....	7.50
1239-23	Connecting Rod complete as shown with R. S. A. Switch Point Lug, Screw Jaw, Nut, Jaw Pin and Bolts for fastening to Switch Points.....	5.75
1239-24	Same as above except Insulated.....	8.00

Connecting Rods not included in list price, desired connecting rods must be ordered separately.

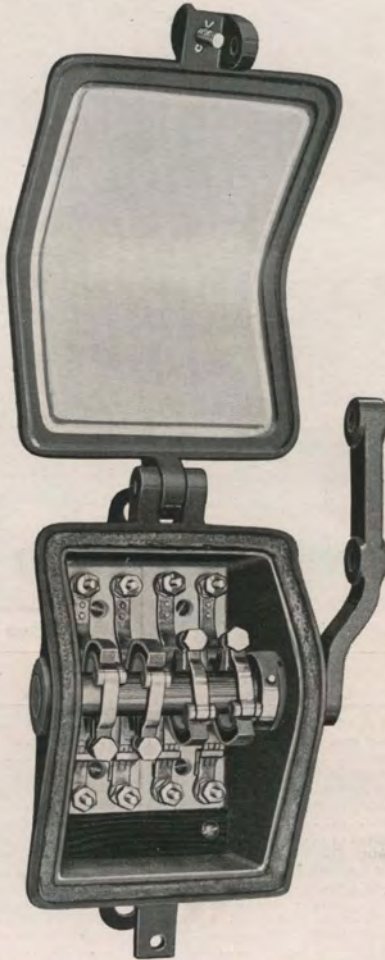
SWITCH BOX



Repair Parts for 1720 Switch Box

Trade No.	DESCRIPTION	List Price
1720-1	Complete Unit for Switch Box with Two Front and Two Back Contacts, Binding Posts and Base.....	.....
1720-2	Adjustable Cam.....	.....
1720-3	Steel Operating Roller.....	.....
1720-4	Screw for Adjustable Cam.....	.....
1720-5	Operating Roller Pin with Two Cotter.....	.....
1720-6	Porcelain Base.....	.....
1720-7	Gasket for Base.....	.....
1720-8	Operating Crank.....	.....
1720-9	Lock Bolt, Specify Capacity of Switch Box.....	.....
1720-10	Operating Crank Pin.....	.....
1720-11	Collar.....	.....
1720-12	Main Contact Spring.....	.....
1720-13	Front " complete.....	.....
1720-14	Back ".....	.....
1720-15	Binding Post.....	.....
1720-16	" " Screw.....	.....
1720-17	R. S. A. Brass Nut.....	.....
1720-18	" " 1/8" Brass Nut.....	.....
1720-19	" " Washer.....	.....
1720-20	Adjusting Key, Specify Capacity of Switch Box.....	.....
1720-21	Main Spring Holder.....	.....
1720-22	Two Way Switch Box Case.....	.....
1720-23	Cover for Two Way Switch Box.....	.....
1720-24	Four Way Switch Box Case.....	.....
1720-25	Cover for Four Way Switch Box.....	.....
1720-26	Six Way Switch Box Case.....	.....
1720-27	Cover for Six Way Switch Box.....	.....
1720-28	Ten Way Switch Box Case.....	.....
1720-29	Cover for Ten Way Switch Box.....	.....
1720-30	Lock Bolt with Cotter.....	.....

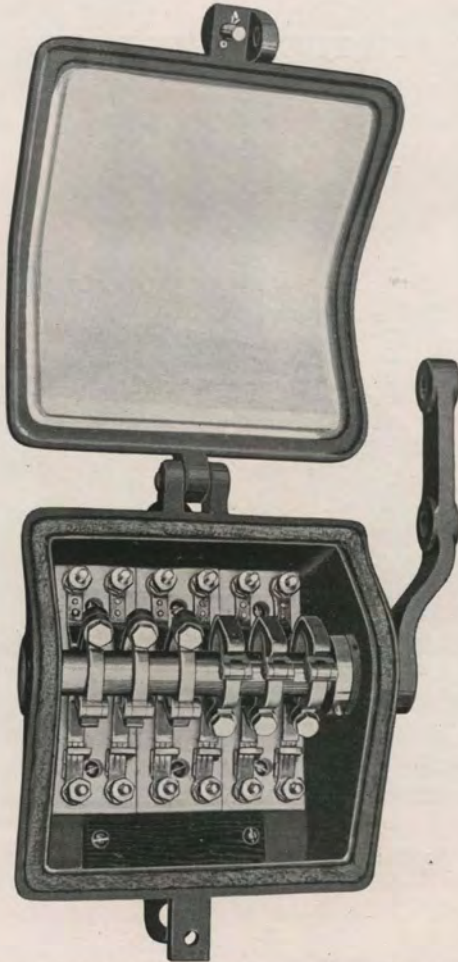
TYPE 1700 COMMUTATOR



Type 1700 Commutator Furnished with One to Four Contacts

This Commutator is small, compact, waterproof and may be equipped with a maximum of six Contacts. The Adjustments are positive and permanent and may be arranged to open or close circuits at any part of the stroke, this making it possible to operate in two or three positions. The Contacts "Open" or "Close" with a quick snap action.

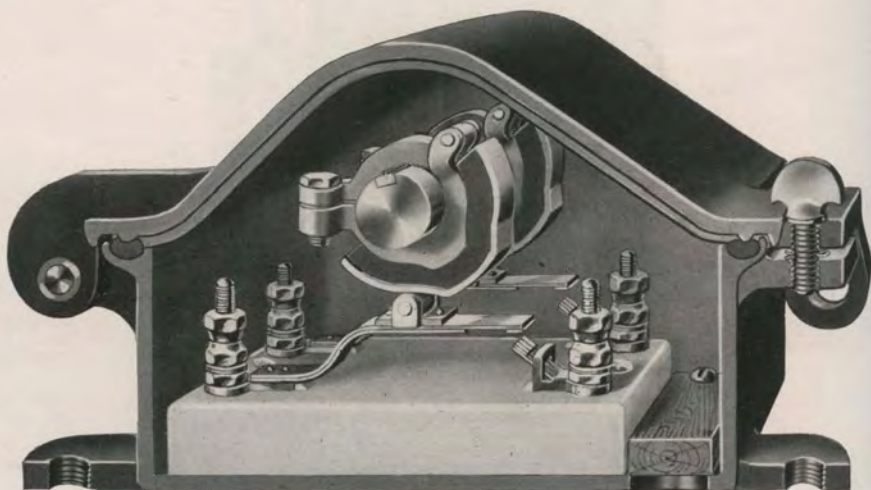
TYPE 1700 COMMUTATOR



Type 1700 Commutator as Furnished with Five or Six Contacts

The Contact Springs are heavy phosphor bronze and stationary Contacts are provided with triple fingered Platinum or Silver Contacts as specified. The flexible contact spring roller rides on a steel faced insulated cam which assures positive alignment under all conditions. Vibrations on operating rod are not transmitted to the Contacts, thus assuring permanency and long life of Contact Points.

TYPE 1700 COMMUTATOR

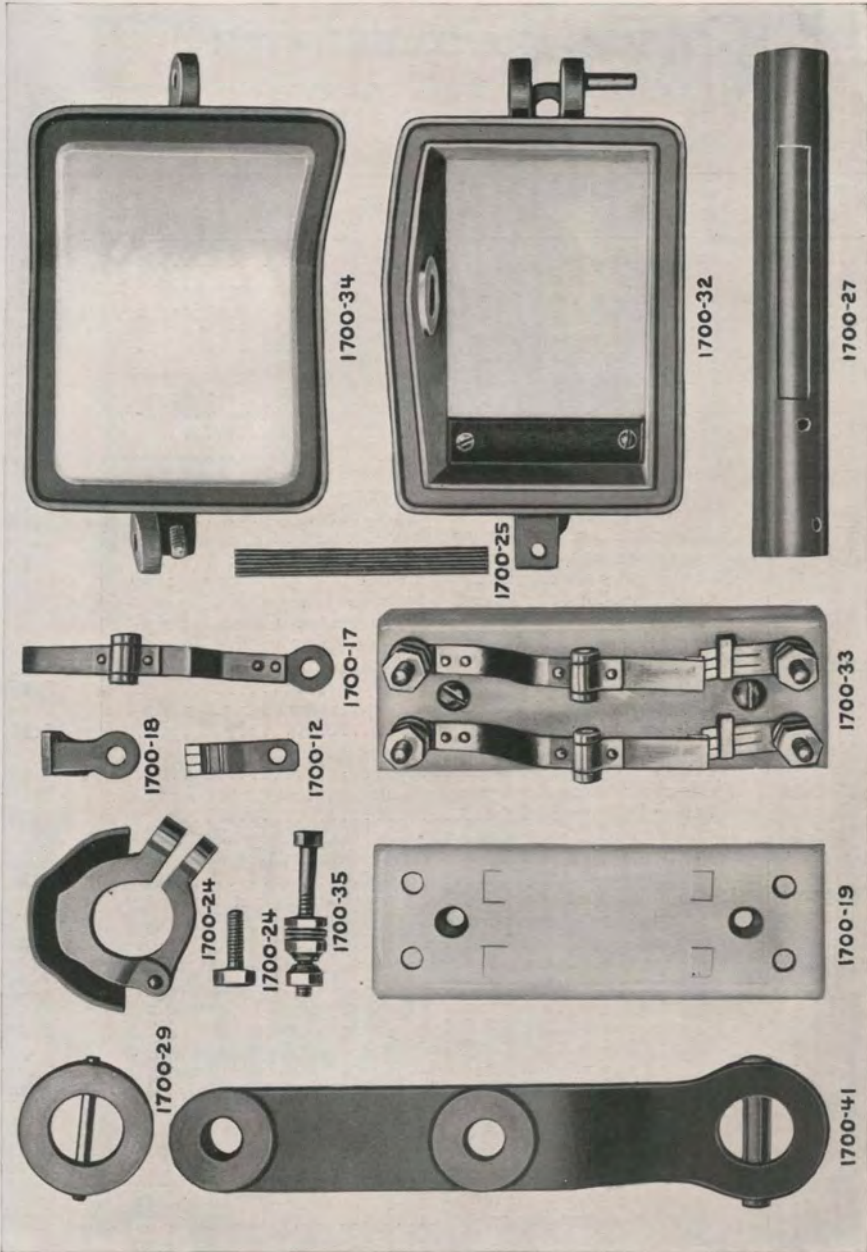


Sectional View Type 1700 Commutator

The working parts are heavy and strong, Contacts are mounted on Insulated Bases, two on a base, removable complete with Binding Posts as a Unit. The Case is heavy and is provided with a substantial gasket. The Cover has a simple and positive locking device which holds the door down tightly against the gasket on case, making the box absolutely water and dust proof.

Commutators are furnished complete with U Bolts and Hollow Bracket for fastening to Signal Poles as listed, or with fittings to operate Commutators as per various illustrations and listing on succeeding pages.

TYPE 1700 COMMUTATOR



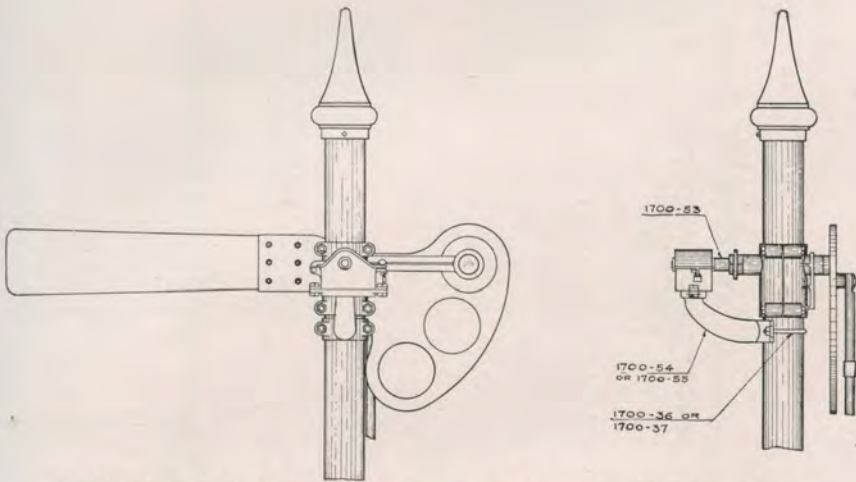
Parts of Type 1700 Commutator



TYPE 1700 COMMUTATOR

Trade No.	DESCRIPTION	List Price
1700-1	Commutator complete with One Contact.....	\$10.40
1700-2	“ “ “ Two “	13.10
1700-3	“ “ “ Three “	15.80
1700-4	“ “ “ Four “	18.50
1700-5	“ “ “ Five “	22.20
1700-6	“ “ “ Six “	24.90
1700-7	“ “ “ Seven “	28.60
1700-8	“ “ “ Eight “	31.40
1700-9	“ “ “ Nine “	34.00
1700-10	“ “ “ Ten “	36.70
1700-11	All required parts for one extra Contact ready to mount into Case, including Cam and Contact Springs complete with Binding Posts on Porcelain Base.....	2.70
	Above prices are based upon Silver Contacts, for each Platinum Contact add to list price.....	1.30
	Commutators are furnished with three sizes of Cases, viz.: for One, Two, Three or Four Contacts, for Five or Six Contacts and for Seven, Eight, Nine or Ten Contacts. Cases are fitted to receive additional Contacts which can be applied in field.	
1700-80	Fittings complete for fastening Commutators as per Application “A” for 4” Pipe.....	3.25
1700-81	Fittings complete for fastening Commutators as per Application “A” for 5” Pipe.....	3.25
1700-82	Fittings complete for fastening Commutators as per Application “B” for 4” Pipe.....	2.50
1700-83	Fittings complete for fastening Commutators as per Application “B” for 5” Pipe.....	2.50
1700-63	Rod, Jaw and Clamp complete with Pins, Cotter, Bolts and Lag Screws to attach Commutators to Interlocking Machines, per Application “C”.....	2.10
1700-64	Rod, Jaw, Pin and Lock Nut, Tail Lever Attachment, complete for applying Commutator to Interlocking Machines, per Application “D”.....	1.80
1700-65	Rod, Jaw and Clamp complete with Pins, etc., for attaching Commutator, per Application “E”.....	4.25
1700-66	Connecting Rod, Jaw, Pins and Bolts complete for attaching Commutators to Switch Points, per Application “F”.....	3.50
1700-56	Insulated Connecting Rod, Screw Jaw, Jaw Pin, Nut, Switch Point Lug and Bolts for attaching Commutator to Switch Points, per Application “F”.....	6.75
1700-57	Connecting Rod, Screw Jaw, Jaw Pin, Nut, Switch Point Lug and Bolts for attaching Commutator to Switch Points, per Application “F”.....	4.00
1700-58	Insulated Connecting Rod, Screw Jaw, Jaw Pin, Nut, Switch Point Lug and Bolts for attaching Commutator to Switch Points, per Application “F”.....	7.25
1700-84	Bracket, U Bolt and Shaft Sleeve for attaching Commutator to 4” (4½” O. D.) Steel Pipe Pole, per Application “G”.....	5.50
1700-85	Bracket, U Bolt and Shaft Sleeve for attaching Commutator to 5” (5½”) Steel Pipe Pole, per Application “G”.....	5.50

TYPE 1700 COMMUTATOR

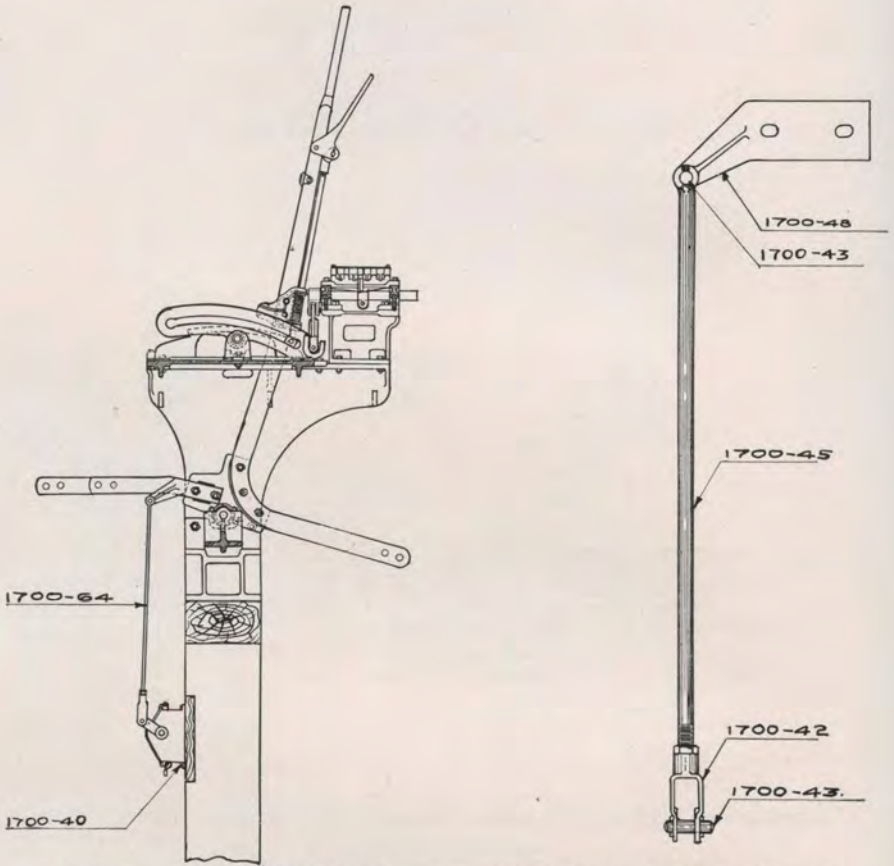


Application "G" of Style 1700 Commutator as Applied Directly to Semaphore Shaft

We illustrate above, method of applying Commutator directly to shaft of mechanically operated Semaphore Signals. The Bracket which supports the Commutator is hollow for wires to pass from Signal Pole into Commutator without exposing them to weather or wear from mechanical friction. For illustrations and prices of Commutators, see separate listing elsewhere.

Trade No.	DESCRIPTION	List Price
1700-84	Bracket, U Bolt and Shaft Sleeve for attaching Commutator to 4" (4½" O. D.) Steel Pipe Pole, per Application "G" . . .	\$5.50
1700-85	Bracket, U Bolt and Shaft Sleeve for attaching Commutator to 5" (5⅞" O. D.) Steel Pipe Pole, per Application "G" . . .	5.50
1700-53	Shaft Sleeve Only for above	1.25
1700-54	Hollow Bracket and Commutator Bolts Only for 1700-84. . .	4.00
1700-36	U Bolt for Bracket for 4" Pipe . . . . .	.45
1700-55	Hollow Bracket and Commutator Bolts Only for 1700-85. . .	4.00
1700-37	U Bolt for Bracket for 5" Pipe . . . . .	.45

TYPE 1700 COMMUTATOR

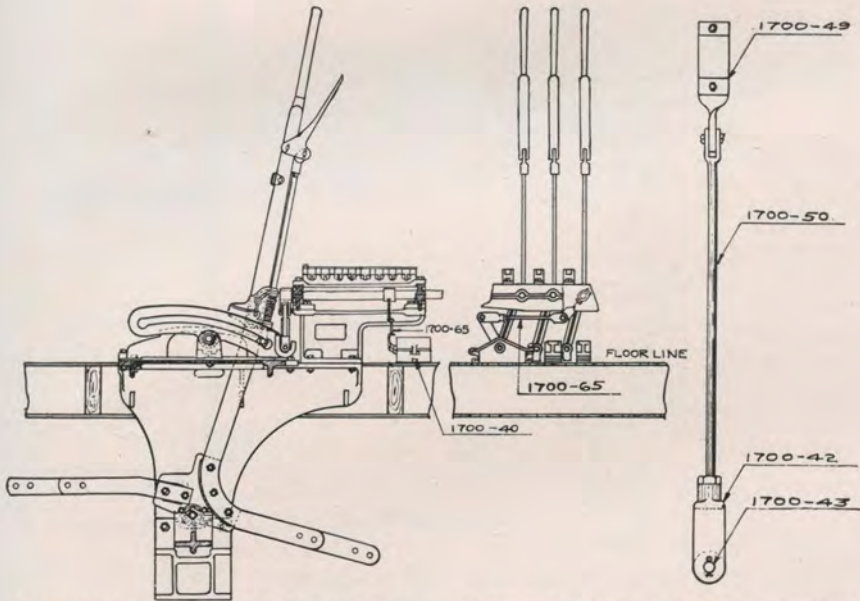


Application "D" of Style 1700 Commutator as Applied to Front Lever of Interlocking Machines

Above illustration shows method of application of Style 1700 Commutators to Front Levers of Interlocking Machines. For prices and illustrations of Commutators, see separate listing.

Trade No.	DESCRIPTION	List Price
1700-64	Rod, Jaw with Pin and Lock Nut, Tail Lever Attachment complete for applying Commutator to Interlocking Machines, per Application "D".....	\$1.80
1700-42	Jaw Only.....	.50
1700-43	" Pin with Cotter Only.....	.14
1700-45	Connecting Rod with Lock Nut Only (length 2').....	.60
1700-48	Lever Attachment complete with Two Attaching Bolts.....	.40
1700-40	Lag Screws for fastening Commutator, each.....	.06

TYPE 1700 COMMUTATOR

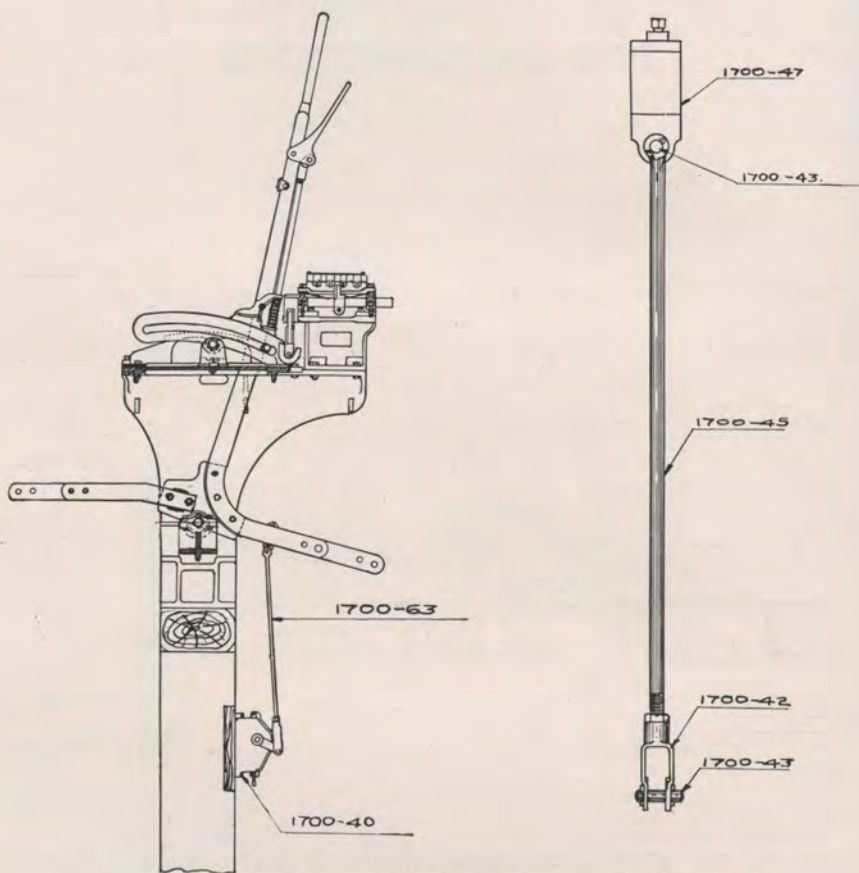


Application "E" of Style 1700 Commutator as Applied to Locking Shaft of Interlocking Machines

Style 1700 Commutator may be applied directly to Locking of S. & F. Interlocking Machines as illustrated above. For illustrations and prices of Commutators, see separate catalogue illustrations.

Trade No.	DESCRIPTION	List Price
1700-65	Rod, Jaw and Clamp complete with Pins, etc., for attaching Commutator, per Application "E".....	\$4.25
1700-42	Jaw Only.....	.50
1700-43	" Pin with Cotters Only.....	.14
1700-49	Wrought Iron Forged Clamp complete with Bolts for Locking Shaft.....	3.00
1700-50	Connecting Rod complete with Cross Bolt (length 12").....	1.25
1700-40	Lag Screws for fastening Commutator, each.....	.06

TYPE 1700 COMMUTATOR

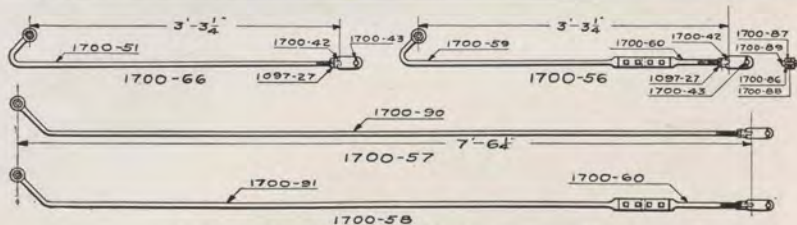
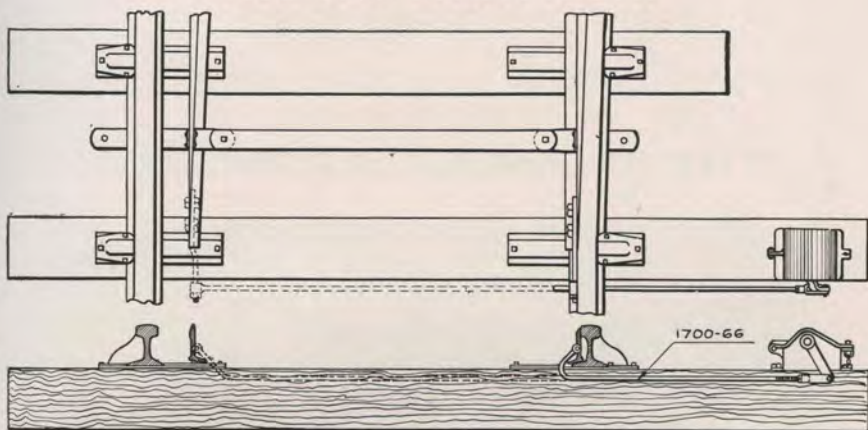


Application "C" of Type 1700 Commutator to Tail Lever of Interlocking Machines

The Fittings listed below are for use in attaching Type 1700 Commutators to Tail Levers of Interlocking Machines, per Application "C" illustrated above. For illustrations and prices of Commutators, see elsewhere.

Trade No.	DESCRIPTION	List Price
1700-63	Rod, Jaw and Clamp complete with Pins, Cotters, Bolts and Lag Screws to attach Commutators to Interlocking Machines, per Application "C".....	\$2.10
1700-42	Jaw Only.....	.50
1700-43	" Pin with Cotters Only.....	.14
1700-45	Connecting Rod with Lock Nut (length 2' 0").....	.60
1700-47	Adjustable Clamp complete with Set Screw.....	.60
1700-40	Lag Screws for fastening Commutator, each.....	.06

TYPE 1700 COMMUTATOR



Application "F" Type 1700 Commutator

Type 1700 Commutator has such positive Contacts and Box is absolutely dust and water proof, besides being but $5\frac{1}{2}$ " high that same is admirably adapted for use on Switch Points where only six or less single Contacts are required. Connections shown are universal and can be used on right or left hand Switches.

Trade No.	DESCRIPTION	List Price
1700-66	Connecting Rod complete as shown with Switch Point Lug, Screw Jaw, Nut and Jaw Pin	\$3.50
1700-56	Same as above except Insulated.	6.75
1700-57	Connecting Rod complete as shown with Switch Point Lug, Screw Jaw, Nut and Jaw Pin	4.00
1700-58	Same as above except Insulated.	7.25
1700-42	Screw Jaw Only . . . . .	.50
1700-43	Jaw Pin with Cotter . . . . .	.14
1700-52	Switch Point Lug with Bolts	1.50
1700-51	Rod Only for 1700-66 Connection	1.25
1700-60	Threaded Half Rod for 1700-56 and 1700-58	1.12
1700-59	Half Rod for 1700-59	1.70
1700-90	Rod Only for 1700-57	1.50
1700-91	Half Rod Only for 1700-58	2.20
1700-86	Splice Plate for Insulated Rods . . . . .	.36
1700-87	Fibre " . . . . .	.18
1700-88	Bushings for Insulated Rods, per C	5.40
1700-89	Bolts and Nuts for Insulated Rods . . . . .	.11
427-61	$\frac{3}{4}$ " x $2\frac{1}{2}$ " Bolt with Hexagon Nut, Lock Washer and Cotter for fastening Switch Point Lug to Switch Points . . . . .	.14
427-62	$\frac{3}{4}$ " x $3\frac{1}{2}$ " Bolt with Hexagon Nut, Lock Washer and Cotter for fastening Switch Point Lug to Reinforced Switch Points . . . . .	.16

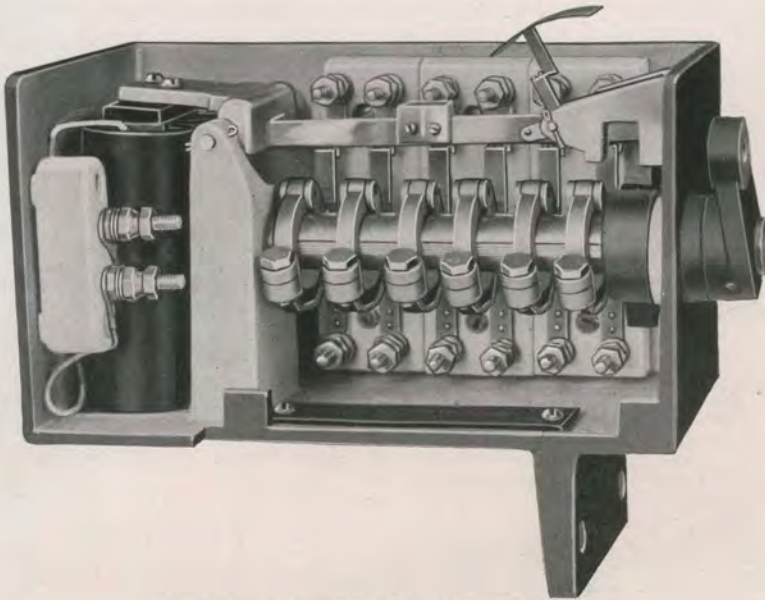
STYLE "A" UNIVERSAL ELECTRIC LOCK



Style "A" Universal Electric Lock
Size Over All, 7" High, 12" Long, and 7" Wide

This Electric Lock is applicable to Saxby & Farmer, Johnson, National or Standard Interlocking Machines. It is provided with a visual indicator of good size showing through a heavy glass window to indicate whether Lock is in "Locked" or "Unlocked" position. As many as six Contacts are provided on the Operating Shaft. These Contacts are similar to our Commutator Contacts and are mounted upon heavy porcelain bases of ample strength. The Contacts are adjustable to open or close circuits at any point of stroke, and may be normally closed or open as required. The Contact Fingers are heavy three fingered Silver or Platinum pointed Contacts with large carrying capacity. They open and close with a snap action permitting the use of high Voltages.

STYLE "A" UNIVERSAL ELECTRIC LOCK



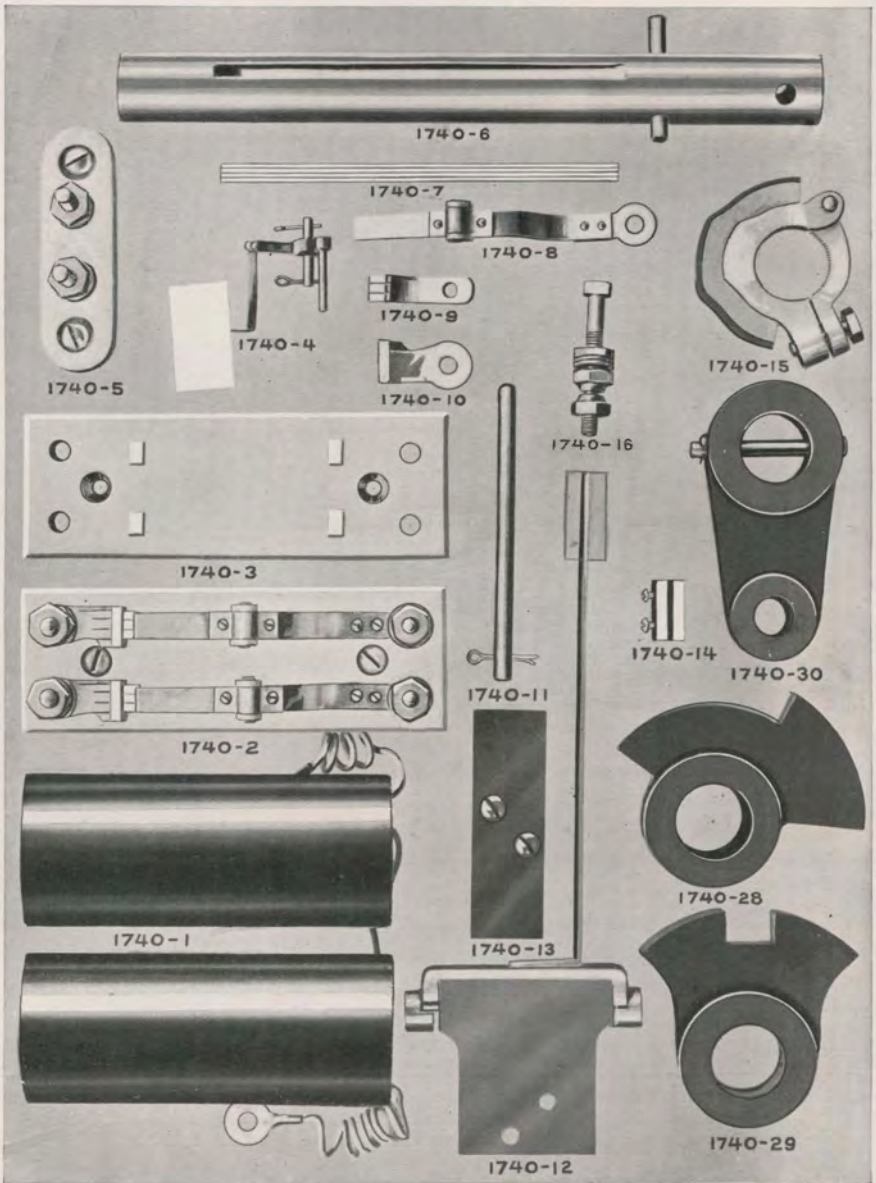
Style "A" Electric Lock (Cover Open)

The Magnets are large and powerful and are encased in a hard rubber protecting shell. Terminal wires from Magnets terminate on a Standard R. S. A. Terminal, all Binding Posts are R. S. A. Standard. A substantial hasp is provided for locking the instrument. When the cover is removed, all parts are in plain sight for inspection, and can be easily removed if required.

As the Lock is applicable to all standard type machines, fittings for the various applications are not included in list price, and must be ordered separately as indicated on following pages.

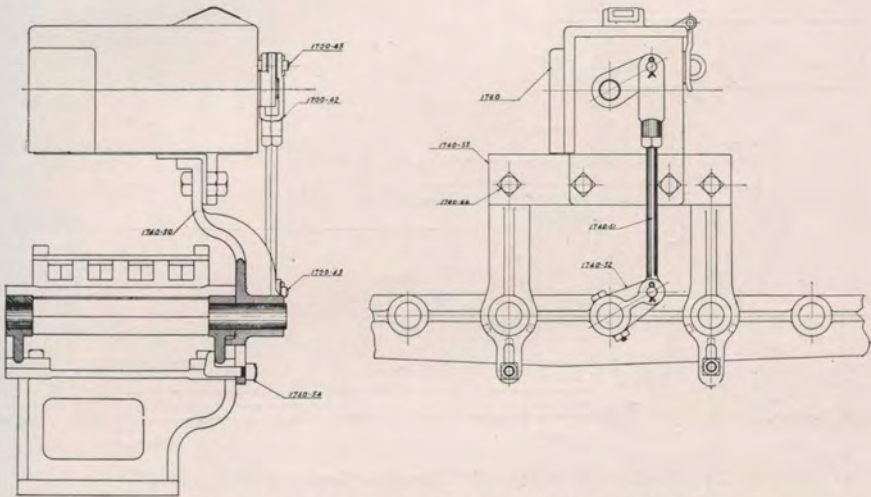
Trade No.	DESCRIPTION	List Price
1740-1	Electric Lever Lock with Six Contacts and "Normal" Lock Dog. Specify Magnet Resistance.....	\$48.00
1740-2	Same as above with "Full Reverse" Lock Dog.....	48.00
1740-3	" " " " "Half Reverse" " ".....	48.00
	For each Contact complete, not required on above, deduct from list price.....	2.70
	Above prices are based upon Silver Contacts, for each Platinum Contact add to list price.....	1.30

STYLE "A" UNIVERSAL ELECTRIC LOCK



Parts of Style "A" Electric Lock

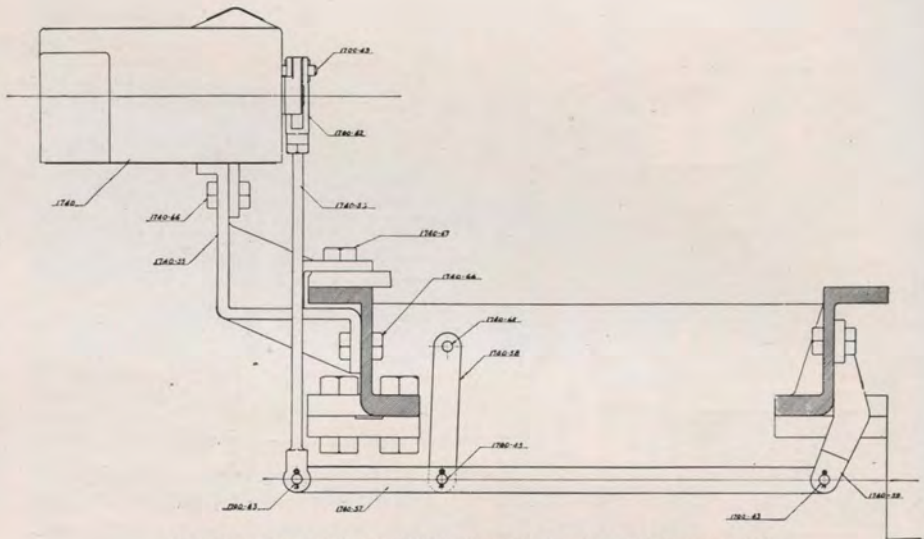
STYLE "A" UNIVERSAL ELECTRIC LOCK



Application of Style "A" Electric Lock to Saxby & Farmer Interlocking Machine

Trade No.	DESCRIPTION	List Price
1740-75	Fittings complete to apply Lock to S. & F. Interlocking Machine.....	\$6.50
1740-50	Bracket, each.....	1.65
1740-51	Connecting Rod.....	.70
1740-52	Locking Shaft Crank with Bolt and Nut.....	1.10
1740-53	Angle Iron Support.....	.50
1740-54	Hook Bolt, each.....	.15
1700-42	Jaw for Connecting Rod.....	.50
1700-43	" Pin.....	.14
1740-66	Bolts and Nuts for 1740-53; each.....	.05

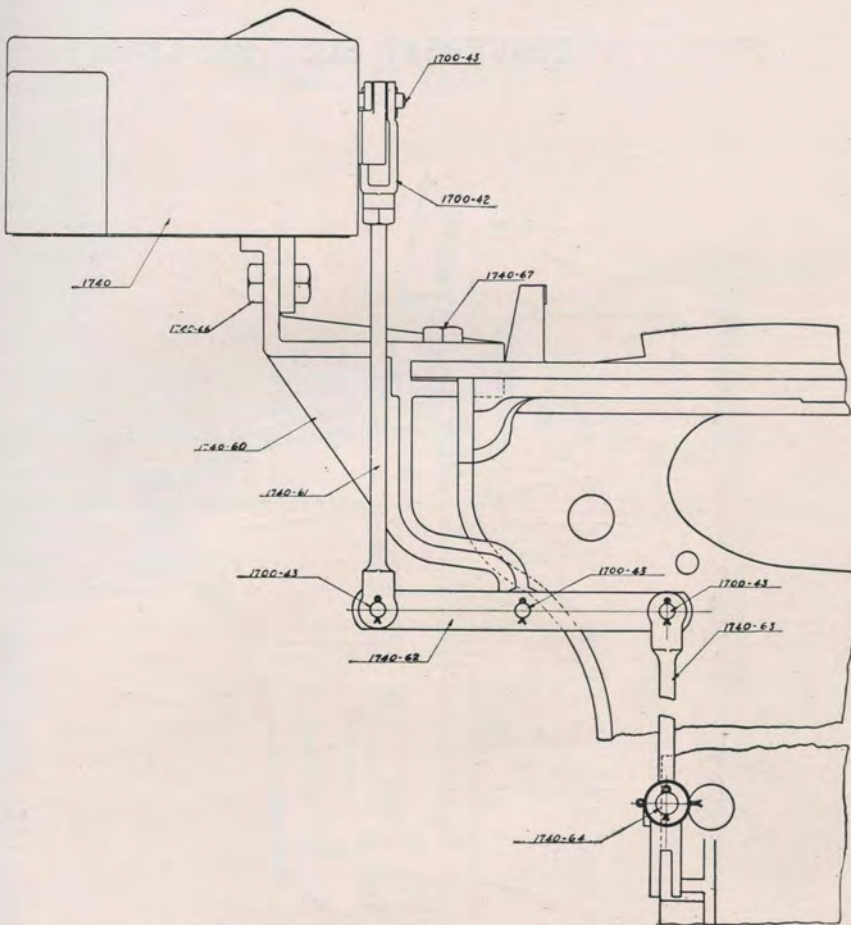
STYLE "A" UNIVERSAL ELECTRIC LOCK



Application of Style "A" Electric Lock to "Standard" Interlocking Machines

Trade No.	DESCRIPTION	List Price
1740-76	Fittings complete to apply Lock to "Standard" Interlocking Machines.....	\$8.50
1740-55	Lever Bracket.....	3.35
1740-66	Bolts and Nuts for above, each.....	.05
1740-56	Connecting Rod.....	1.00
1740-57	" Link.....	1.34
1740-58	" ".....	.55
1740-59	Lock Bracket with Bolts and Nuts.....	.73
1700-42	Jaw.....	.50
1700-43	" Pin with Cotters.....	.14
1740-67	1/2" x 1" Hexagon Head Cap Screws.....	.04
1740-65	Pin with Cotter for fastening to Rocker of Machine.....	.10

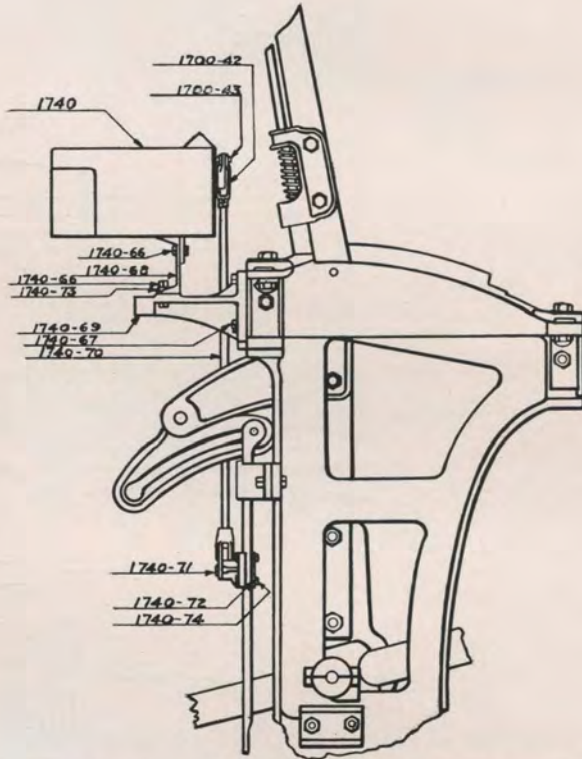
STYLE "A" UNIVERSAL ELECTRIC LOCK



Application of Style "A" Electric Lock to "National" Interlocking Machines

Trade No.	DESCRIPTION	List Price
1740-77	Fittings complete to apply Lock to "National" Interlocking Machine.....	\$7.50
1740-60	Bracket complete with Cap Screws (1740-67) and Bolts (1740-66).....	1.70
1740-61	Connecting Rod.....	1.00
1740-62	Lever.....	.38
1740-63	Tappet Connecting Rod.....	3.08
1740-64	Pin with Cotters.....	.14
1700-42	Jaw.....	.50
1700-43	" Pin with Cotters.....	.14

STYLE "A" UNIVERSAL ELECTRIC LOCK



Application of Style "A" Universal Electric Lock to "Johnson" Interlocking Machine

Trade No.	DESCRIPTION	List Price
1740-78	Fittings complete to apply Electric Lock to "Johnson" Interlocking Machine.....	\$8.50
1740-69	Bracket complete with Cap Screws (1740-67).....	1.56
1740-68	Channel Support complete with Bolts (1740-66) and Washers (1740-73).....	.75
1740-70	Connecting Link.....	1.65
1740-71	Tappet Bar Bracket.....	.35
1740-72	" " Clamp and Bolts (1740-74).....	.30
1700-42	Jaw.....	.50
1700-43	" Pin and Cotters.....	.14

STYLE "A" FLOOR PUSH

This Floor Push has been especially designed for use in Interlocking Towers and Block Stations to control Electric Lock Circuits, Code Signal Circuits, etc.

The entire working parts are located on ceiling below the operating floor and are enclosed in an iron case which may be locked with a padlock when desired. The Contacts are triple fingered sliding and self-cleaning heavy phosphor bronze springs to insure perfect operation.

The upper end of Floor Push is so arranged that no water or dirt can run down into Contacts or other working parts.

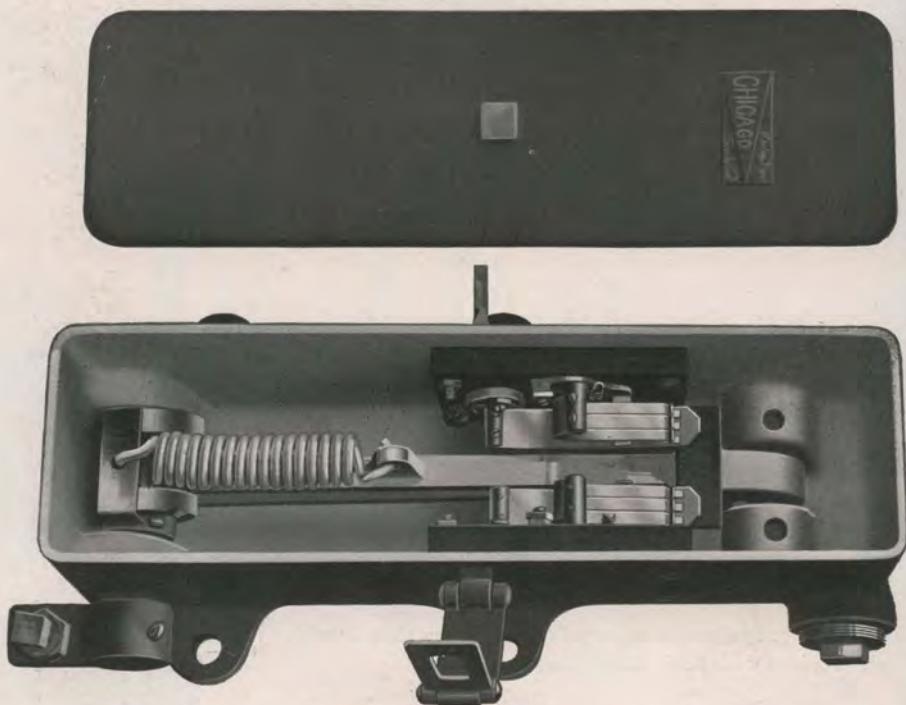
Contact Springs are mounted upon a heavy slate base and provided with R. S. A. Binding Posts.



Trade No.	DESCRIPTION	List Price
1608-1	Style "A" Floor Push complete with One Normally Closed Contact.....	\$6.00
1608-2	Style "A" Floor Push complete with One Normally Open Contact.....	
1608-3	Style "A" Floor Push complete as shown with One Normally Closed and One Normally Open Contact.....	6.00
1608-10	Triple Fingered Normally Open Contact Spring complete with Fastening Rivets.....	7.50
1608-12	Center Contact Spring complete with Fastening Rivets.....	1.50
1608-11	Triple Fingered Normally Closed Contact Spring complete with Fastening Rivets.....	1.50

In ordering, specify distance between ceiling below and top of floor, so proper length pipe No. 1608-26 may be sent.

TRACK INSTRUMENTS



No. 550 Track Instrument

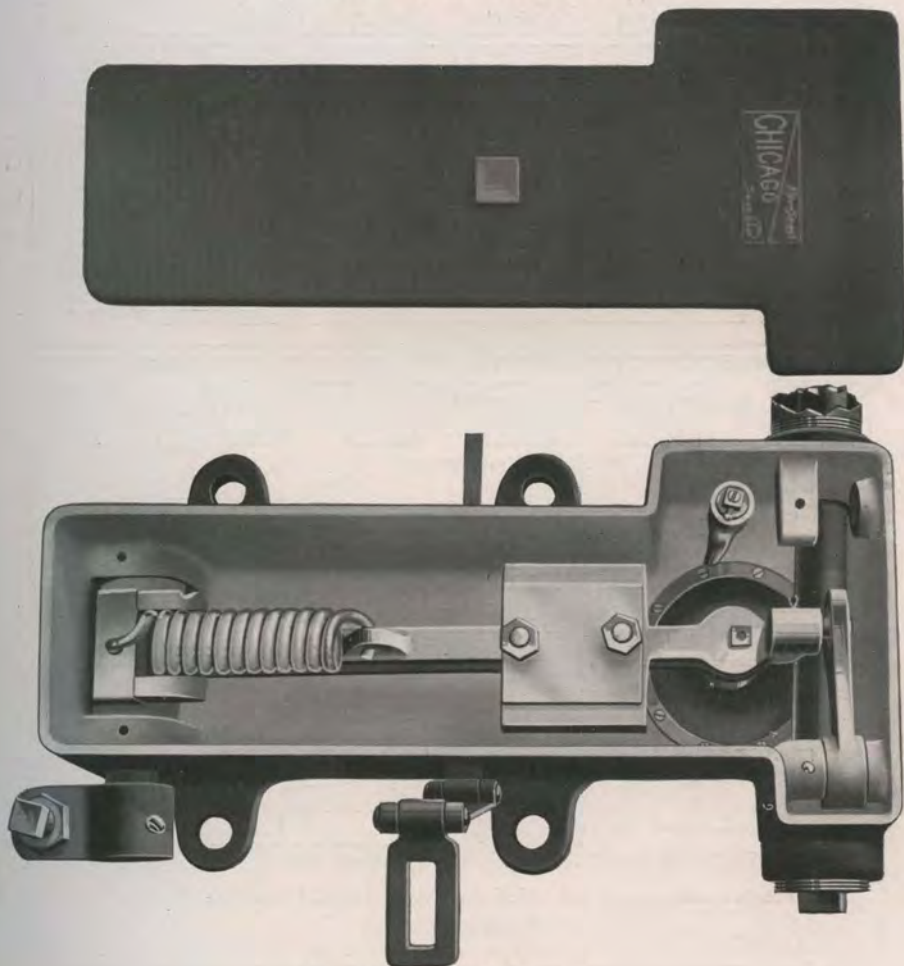
This Track Instrument is used in connection with Highway Crossing Alarms, Indicators, Annunciators, etc., etc., operated by means of line wires. The Instrument is supported upon two heavy steel straps between two ties, on outside of rail, and is operated by the natural spring and depressions of the rail as a train or car passes over same.

The Contact Instrument (No. 550) is furnished with one or two sets of Contacts. The Contacts are mounted upon heavy enameled slate bases within the case, and consist of heavy three fingered silver pointed phosphor bronze springs adjustable to large quick breaks for high voltages. The instrument is very sensitive, and is so adjustable that the slightest depression of rail from cars passing over same will open and close the Contacts.



Track Instruments as Installed on Single Track to Give Indications for Trains Running from Right to Left

TRACK INSTRUMENTS

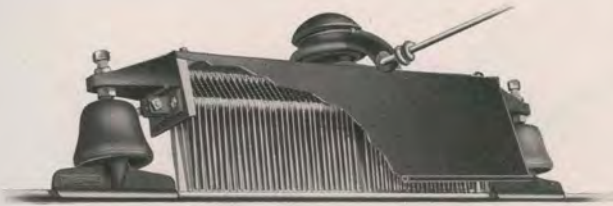


No. 551 Track Instrument

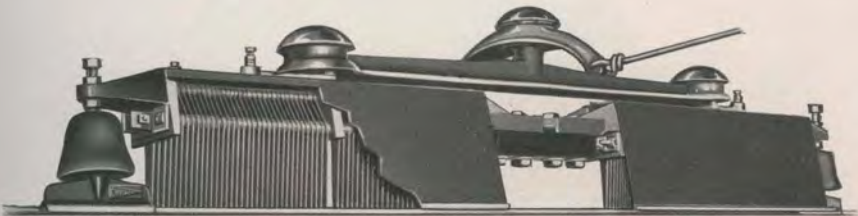
Track Instrument No. 551 is used in connection with the Contact Instrument when used on "Single Track" to close or open circuits for trains running in **one direction only**: the two Instruments, about 10 feet apart, are connected with 2" pipe carrying the operating pipe which has a Steel Plunger on the end within the "Contact Instrument." The Plunger locks the Contact operating arm of the "Contact Instrument", and prevents operation of the Contacts for trains approaching from direction so as to first pass over the No. 551 Instrument. Trains running in opposite direction, viz.: over "Contact Instrument," first, will cause the arm to raise and operate the Contacts before the Plunger from the other Instrument can lock it into neutral position. An air dash pot is provided in No. 551 Instrument to prevent too early unlocking for slow train movements.

Both Instruments are so arranged that they may be connected right or left, and when ordered for "Single Track" operation are shipped complete as shown, ready to attach to ties and rail. The tops of Instruments when properly installed are considerably below top of rail, and being heavy and strong are not likely to become broken from hanging equipment.

TROLLEY WIRE CONTACTS



Single Trolley Contact



Double Trolley Contact

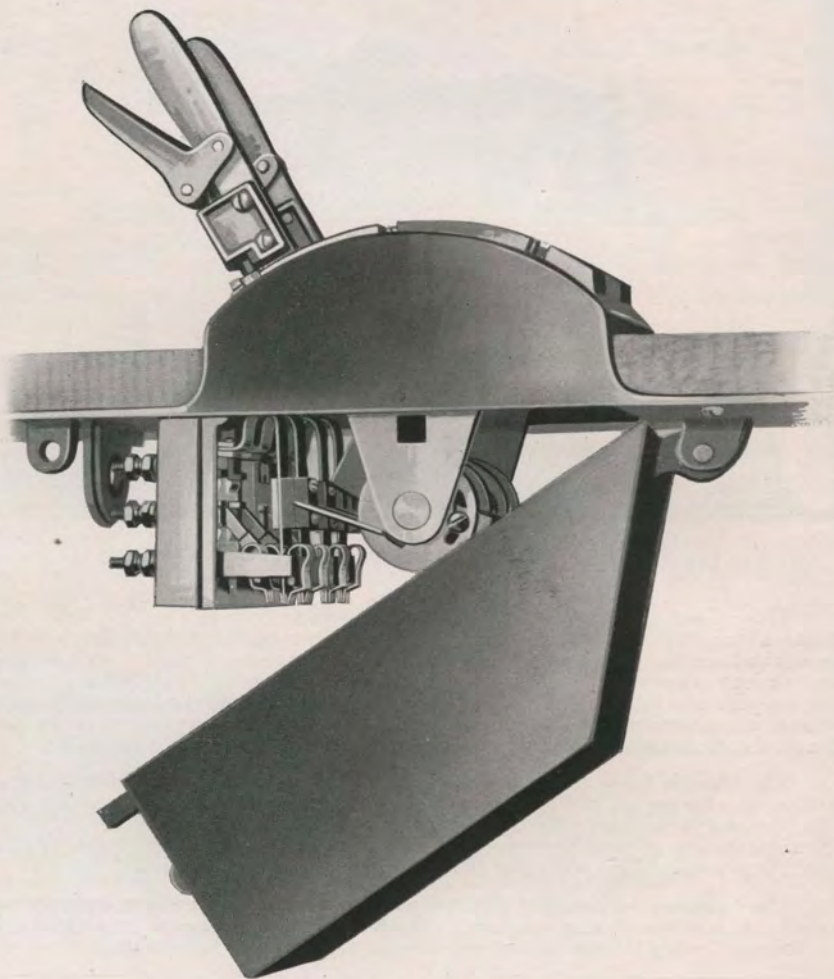
These Contacts are used on Electric Railways to operate Crossing Bells, Block Signals, Indicators, Annunciators, etc., etc., Single Contacts at locations where a Contact is required each time a trolley wheel passes, Double Contacts on single track lines where it is desired to operate signals for trains running in one direction only, which is accomplished with two Relays or "One Way" Interlocking Relays, Triple Contacts (not illustrated) in connection with Block Signals, etc., where Three Contacts, one after the other, by passing trolley wheels is required.

The Electric Contact is made between the phosphor bronze Contact Springs to trolley wire by passing trolley wheels and is positive in operation at any trolley speed. The Contact Springs are protected from rain and sleet by a weatherproof hood. The instruments are adjustable to any required condition, and if properly installed are warranted to cause Contacts to be made by each passing trolley wheel.

The Contacts are arranged to screw into studs of hangers and are equipped with ears to support the wire in usual way. Orders must specify size of hanger stud, kind and size of Trolley Wire so that proper hangers and ears may be furnished.

Trade No.	DESCRIPTION	List Price
560	Single Trolley Contact complete as shown ready to attach to Stud of Hanger, each	\$28.00
561	Double Trolley Contact complete as shown ready to attach to Stud of Hanger, each	56.00
562	Triple Trolley Contact complete, ready to attach to Stud of Hanger, each	90.00

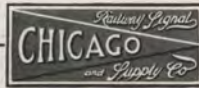
ELECTRIC TABLE LEVER



Electric Table Lever

Size above Table:—Width $5\frac{3}{4}$ " , Length 9" , Height $7\frac{1}{2}$ " .

Used to operate Two or Three Position Manually Controlled Power Operated Signals, Electric Train Order Signals, Outlying Electric Switch Locks and Electrically Operated Switch Movements.



ELECTRIC TABLE LEVERS

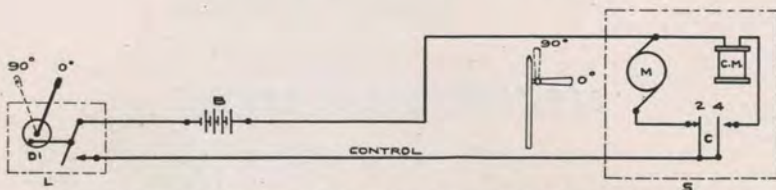
These Levers are small and compact and each Lever can be equipped with a maximum of two Front and two Back Contacts or any combination thereof. They are furnished in Two Lever Units which may be mounted alongside each other and will present a Single Unit appearance, regardless of number of Levers. Locking between any two Levers is furnished when specified.

Contacts can be adjusted to make or break at any part of the stroke by means of easily accessible slotted discs. The Contact Springs are made of heavy phosphor bronze, Front and Back Contact Spring are three fingered Platinum or Silver, all are insulated from the frame and mounted on a heavy Two Unit Porcelain Base equipped with R. S. A. Standard Binding Posts. All working parts are substantially constructed, and are guaranteed to stand up under severe working conditions.

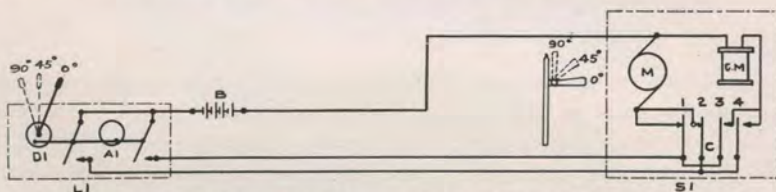
Cover on under side of table can be locked. These Levers may be used for a variety of cases, where Manually Controlled Electric Signals are used such as Electric Train Order or Manually Controlled Electric Block Signals, Electric Switch Locks, Power Operated Switch Movements, etc., as shown on the following pages.

Trade No.	DESCRIPTION	List Price
610-1	Two Lever Three Position Electric Table Lever with Locking, Lever equipped with Two Front or Two Back Contacts . . . . .	. . . . .
610-4	Same as above except without Locking . . . . .	. . . . .
610-5	One Lever Three Position Electric Table Lever equipped with Two Front or Two Back Contacts . . . . .	. . . . .
610-2	Two Lever Two Position Electric Table Lever with Locking, each Lever equipped with One Front or One Back Contact . . . . .	. . . . .
610-3	Same as above except without Locking . . . . .	. . . . .
610-6	One Lever Two Position Electric Table Lever equipped with One Front or One Back Contact . . . . .	. . . . .
	Above prices are based on Silver Contacts, for each Platinum Contact in place of Silver Contact add to list price	\$1.30
	Orders should specify whether Contacts are to be Front or Back Contacts. (Front Contacts are normally closed with Lever in normal position.)	
	Upon receipt of Specifications, Levers can be furnished with any desired combination of Contacts other than listed above. When ordering Locking on Levers, style of Locking required must be specified.	

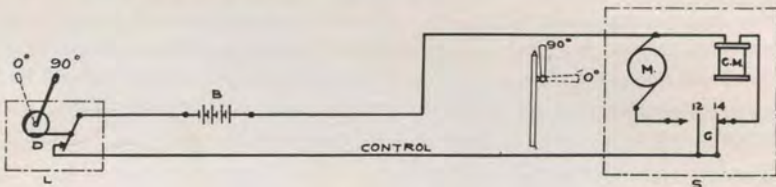
ELECTRIC TABLE LEVER



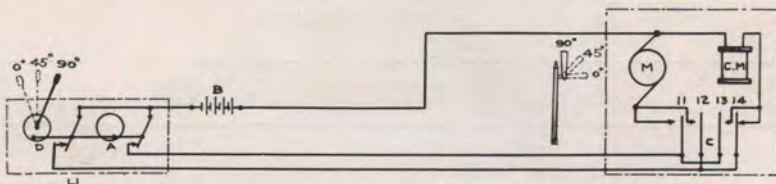
Two Position (Normal Danger) Manually Controlled Signal Circuit No. 5201



Three Position (Normal Danger) Manually Controlled Signal Circuit No. 5202



Two Position (Normal Clear) Manually Controlled Signal Circuit No. 5203



Three Position (Normal Clear) Manually Controlled Signal Circuit No. 5204

L—Two Position Electric Table Lever.

L1—Three “ “ “ “

A—45 deg. Segment Open when Lever is pulled half way.

A'—45 deg. Segment Closed when Lever is pulled half way.

D—90 deg. Open when Lever is pulled entirely over.

D'—90 deg. Closed when Lever is pulled entirely over.

B'—Battery or Power.

S—Two Position Motor Driven Semaphore Signal.

S1—Three “ “ “ “

M—Motor.

CM—Clutch Magnet.

C—Circuit Controller.

11—Closes at 45 deg.

12—“ “ 90 “

13—“ “ 47 “

Opens at 43 “

14—“ “ 88 “

1—“ “ 45 “

2—“ “ 90 “

3—Closes at 43 “

Opens at 47 “

4—Closes at 88 “

STRAP KEYS AND SWITCHES

This Strap Key is especially made for heavy duty Railway Signal Work. It is furnished with heavy Porcelain Base, non-turnable Binding Posts and with one normally closed and one normally open Contact. Contact Spring is of best Phosphor Bronze equipped with a large Hard Rubber Button. The Contacts are sliding and self-cleaning and of large carrying capacity. Size 5" x 2 3/8".



No. 220



No. 221-2



No. 222-1



No. 223-1



No. 224-1

Trade No.	DESCRIPTION	List Price
220	Porcelain Base Strap Key as shown.....	\$3.00
221-1	Hard Rubber Switch with Binding Posts, One Point, each...	2.00
221-2	“ “ “ “ “ “ Two “ “ ...	2.50
221-3	“ “ “ “ “ “ Three “ “ ...	3.00
221-4	“ “ “ “ “ “ Four “ “ ...	3.50
222-1	Hard Rubber Nickel Trimmed Pole Changing Switch, Back Connected.....	3.50
222-2	Hard Rubber Nickel Trimmed Pole Changing Switch, Front Connected.....	4.00
223-1	Single Pole Single Throw, 15 Ampere Knife Switch.....	.75
223-2	“ “ Double “ 15 “ “ “ “	1.30
224-1	Double “ Single “ 15 “ “ “ “ .....	.90
224-2	“ “ Double “ 15 “ “ “ “	1.65

1914

CATALOGUE AND PRICE LIST

SECTION D

Cable Poles
Cable Poles with Relay Boxes
Cable Poles with Indicators
Cable Poles with Relay Boxes and Battery Chutes
Indicators with Posts
Relay Boxes with Posts
Relay Boxes with Posts and Battery Chutes
Foundation Bases
Pinnacles
Cable Outlets
Ventilators

CABLE POSTS



No. 100-1



No. 100



No. 100-2

Above Cable Posts are furnished with 3" pipe ($3\frac{1}{2}$ " O. D.) and 4" ($4\frac{1}{2}$ " O. D.) pipe as listed. Height above bases, 9 feet. Pipe is well fastened and calked into bases and pinnacles, and messenger wire clamp fastened to pipe. For detail description of bases, pinnacles, etc., see separate catalogue illustrations.

Trade No.	DESCRIPTION	List Price
100	Cable Posts complete with Style A Base, 9 feet 3" Pipe, Cable Pinnacle and Messenger Clamp, each.....	\$15.00
100-4	Same as above but with 9 feet 4" Pipe.....	18.00
100-1	Cable Post complete with Style B Base, 9 feet 3" Pipe, Cable Pinnacle and Messenger Clamp, each.....	15.75
100-5	Same as above but with 9 feet 4" Pipe.....	19.00
100-2	Cable Post complete with Style C Base, 9 feet 3" Pipe, Cable Pinnacle and Messenger Clamp.....	15.50
100-6	Same as above but with 9 feet 4" Pipe.....	18.50

CABLE POLES WITH RELAY BOXES



No. 102-4

These Cable Poles and Relay Boxes are furnished with 3" (3½" O. D.) or 4" (4½" O. D.) steel pipe in one piece and are preferred by some as joints in pipe are obviated. They are equipped with Standard Cable Post Pinnacles and Messenger Wire Clamps and are furnished with any of our Standard Bases as listed.

They are furnished with any Relay Box which is held to pole with U Bolts and Iron Filler Blocks. The Filler Blocks have large wire openings which completely conceal and protect the wires where they pass from pole into box.

For detail description, sizes, etc., see separate catalogue illustrations elsewhere.



No. 101-23

Trade No.	DESCRIPTION	List Price
101-4	Cable Pole and Relay Box complete with Style A Relay Box, Cable Pinnacle, Messenger Clamp, Style A Base, 3" (3½" O. D.) Pole, height 9'.....	\$47.90
101-22	Same as above but with Style B Relay Box.....	39.25
101-23	" " " " " " C " " ".....	37.40
101-24	" " " " " " D " " ".....	34.15
101-25	" " " " " " E " " ".....	32.15
102-4	" " No. 101-4 but with 4" (4½" O. D.) Pole.....	51.90
102-22	" " above but with Style B Relay Box.....	43.25
102-23	" " " " " " C " " ".....	41.40
102-24	" " " " " " D " " ".....	38.15
102-25	" " " " " " E " " ".....	36.15
	For Style B Base on No. 101 Poles, add to list price.....	.75
	" " " " " " 102 " " " " " ".....	1.00
	" " C " " " " 101 " " " " " ".....	.50
	" " " " " " " 102 " " " " " ".....	.50
	For No. 189 Ventilator on any of above Relay Boxes, add to list price for each Ventilator.....	1.20

Above can also be furnished with any desired type wood Relay Box. Orders should specify style of base required on above and whether box shall be ventilated or plain.

CABLE POLES AND RELAY BOXES



No. 101-7

This style Cable Pole and Relay Box has one piece of pipe from Base to Pinnacle thus eliminating joints. The Relay Boxes are supported on hollow brackets which allow large wire holes in pipe. Poles are furnished with any of our Relay Boxes and with 3" (3½" O. D.) or 4" (4½" O. D.) pipe as specified. They are also furnished with Style B or C Bases. Total height unless otherwise specified 9 feet.

For detailed description of parts see separate illustrations elsewhere.



No. 101-14

Trade No.	DESCRIPTION	List Price
101-7	Cable Post with Relay Box complete consisting of 3" Pole, Style A Relay Box, Hollow Bracket complete, Style A Base, Cable Pinnacle and Messenger Wire Clamp.....	\$50.70
101-14	Same as above but with Style B Relay Box.....	42.55
101-15	" " " " " " " C " "	40.70
101-16	" " " " " " " D " "	37.50
101-17	" " " " " " " E " "	35.45
102-7	" " No. 101-7 but with 4" (4½" O. D.) Pole.....	53.70
102-14	" " above but with Style B Relay Box.....	45.55
102-15	" " " " " " " C " "	43.70
102-16	" " " " " " " D " "	40.50
102-17	" " " " " " " E " "	38.45
	For Style B Base on No. 101 Poles, add to list price.....	.75
	" " " " " " " 102 " " " " " "	1.00
	" " C " " " " " 101 " " " " " " .....	.50
	" " " " " " " 102 " " " " " " .....	.50
	For No. 189 Ventilators on any of above Relay Boxes, add to list price for each Ventilator.....	1.20

Orders should specify style of base required on above and whether box shall be ventilated or plain.

CABLE POLES WITH TWO RELAY BOXES



No. 102-10

The Cable Poles here listed are similar to our other styles except that two Relay Boxes are supported by means of two hollow brackets. Poles are 9' high and are furnished in 3" (3½" O. D.) or 4" (4½" O. D.) pipe, also equipped with any of our Standard Bases as specified. The wire holes in poles are large and permit easy wiring from pole into boxes and between boxes.

For detail description of parts see separate illustrations elsewhere.

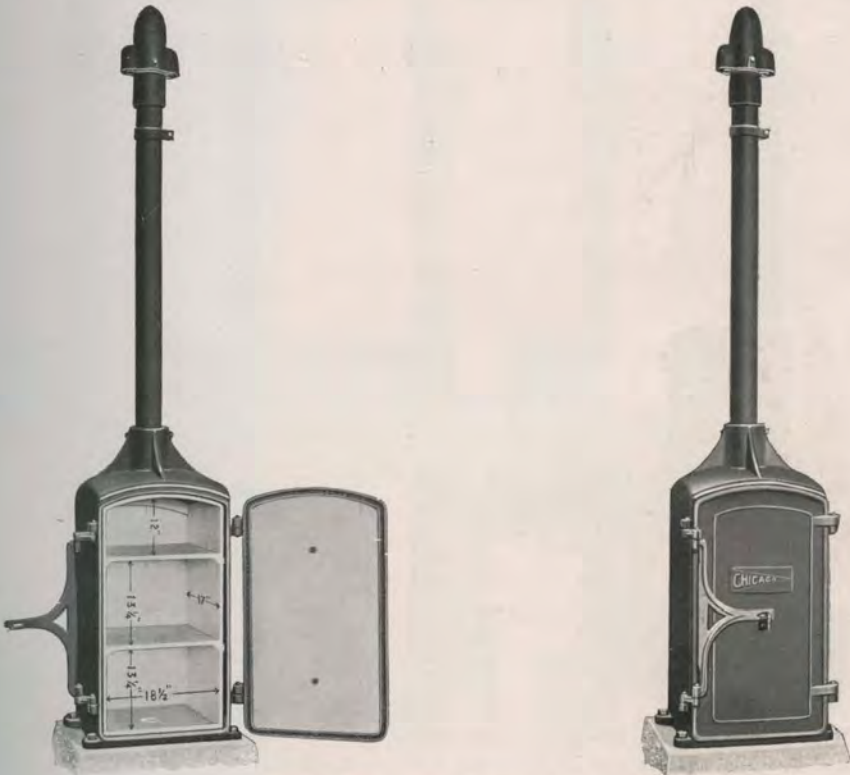


No. 101-18

Trade No.	DESCRIPTION	List Price
101-10	Cable Pole with two Style A Relay Boxes, complete with 9 feet 3" Pipe, Cable Pinnacle, Messenger Clamp and Style A Base	\$83.80
101-18	Same as above but with two Style B Relay Boxes	68.50
101-19	“ “ “ “ “ “ “ C “ “	64.80
101-20	“ “ “ “ “ “ “ D “ “	58.30
101-21	“ “ “ “ “ “ “ E “ “	54.30
102-10	“ “ No. 101-10 except with 9 feet 4" Pipe	86.80
102-18	“ “ above but with two Style B Relay Boxes	71.50
102-19	“ “ “ “ “ “ “ C “ “	67.80
102-20	“ “ “ “ “ “ “ D “ “	61.30
102-21	“ “ “ “ “ “ “ E “ “	57.30
	For Style B Base on No. 101 Poles, add to list price	.75
	“ “ “ “ “ “ “ 102 “ “ “ “ “	1.00
	“ “ C “ “ “ “ 101 “ “ “ “ “	.50
	“ “ “ “ “ “ “ 102 “ “ “ “ “	.50
	For No. 189 Ventilators on any of above Relay Boxes, add to list price for each Ventilator	1.20

Orders should specify style of base required on above and whether box shall be ventilated or plain.

CABLE POLE WITH SPECIAL LARGE RELAY BOX

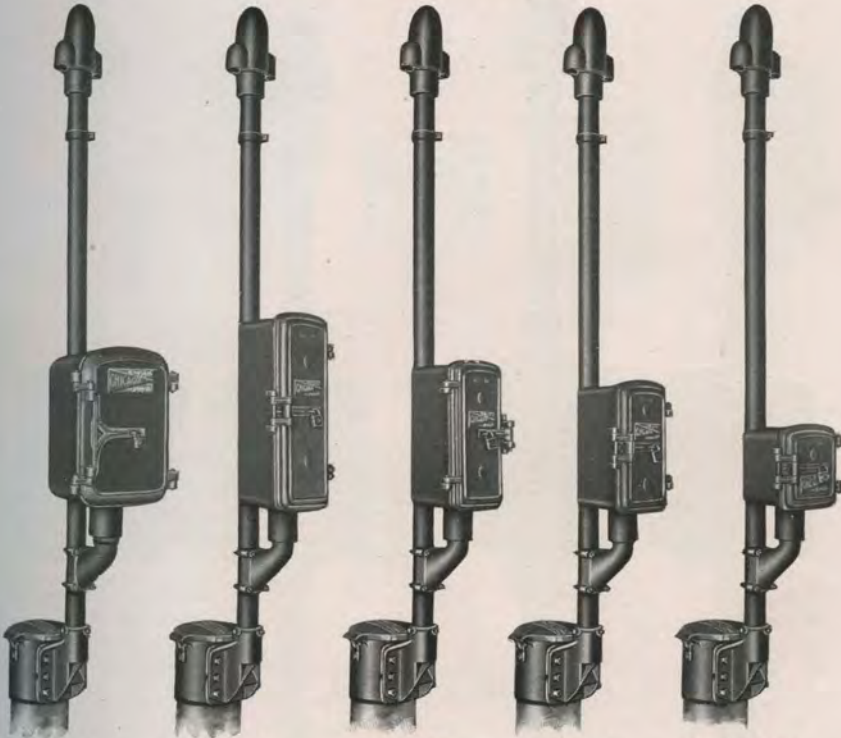


Combination Cable Pole and Relay Box No. 102-13

This style Cable Pole with Relay Box is used at locations requiring many Relays, Lightning Arresters, Terminals and often soda or storage batteries. The Relay Box is very heavy and strong, and has a wood inner lining with a dead air space all around making it dust and frost proof. The outer iron door has a spring-backed wood frost door that closes tightly on wood lining. The iron door is provided with double toggle locking device, which holds door closed tightly against gasket. Furnished with 4" (4½" O. D.) pipe pole complete with Cable Pinnacle and Messenger Clamp or with special poles as specified. Relay Box may be divided differently with special wood compartments having more suitable dimensions if desired. Foundation Bolt Spacing on No. 350 Relay Box is 15½" x 23½".

Trade No.	DESCRIPTION	List Price
102-13	Cable Pole with No. 350 Relay Box, complete as illustrated . .	\$113. 50
102-27	Same as above but equipped with two No. 189 Ventilators . .	115. 90
350	Relay Box only complete with wood lining (no pole or pinnacle)	95. 50
350-27	Same as above but equipped with two No. 189 Ventilators . .	97. 90

RELAY BOXES WITH CABLE POSTS AND BATTERY CHUTES

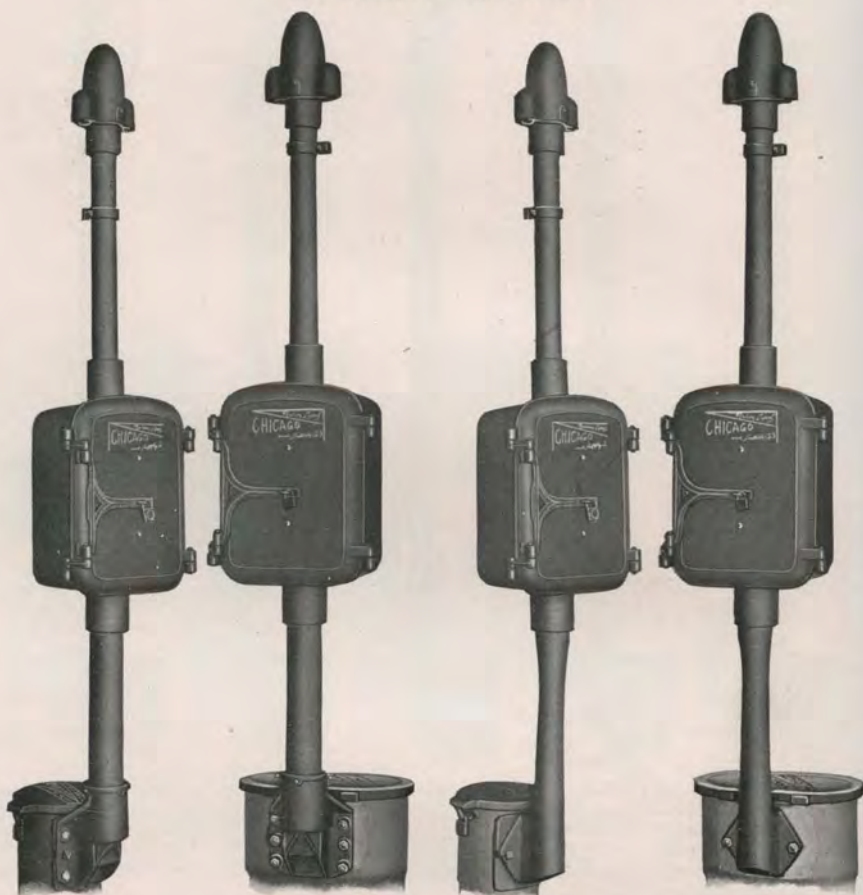


No. 105-3 No. 105-10 No. 105-11 No. 105-12 No. 105-13

These Combination Cable Posts with Relay Boxes and Battery Chutes are furnished with Single or Double Battery Chutes of any length and capacity. The Relay Boxes are supported on strong hollow iron brackets which allow ease of wiring and at the same time make a very substantial outfit.

Trade No.	DESCRIPTION	List Price
105-3	Combined Cable Post, Relay Box and Battery Chute, complete as shown, consisting of 3½" O. D. Pipe, Style A Relay Box, complete with Bracket and U Bolts, Socket No. 134, Cable Pinnacle No. 150, Guy Wire Clamp and Battery Chute as specified.	.....
106-3	Same as above, but with 4½" O. D. Pipe, Cable Pinnacle No. 151, with Bracket and U Bolts and Socket No. 135.	.....
105-10	Same as 105-3 but with Style B Relay Box.	.....
106-10	" " 106-3 " " " " " "	.....
105-11	" " 105-3 " " " C " "	.....
106-11	" " 106-3 " " " " " "	.....
105-12	" " 105-3 " " " D " "	.....
106-12	" " 106-3 " " " " " "	.....
105-13	" " 105-3 " " " E " "	.....
106-13	" " 106-3 " " " " " "	.....

RELAY BOXES WITH CABLE POSTS AND BATTERY CHUTES



No. 105
With Single
Battery Chute

No. 105
With Double
Battery Chute

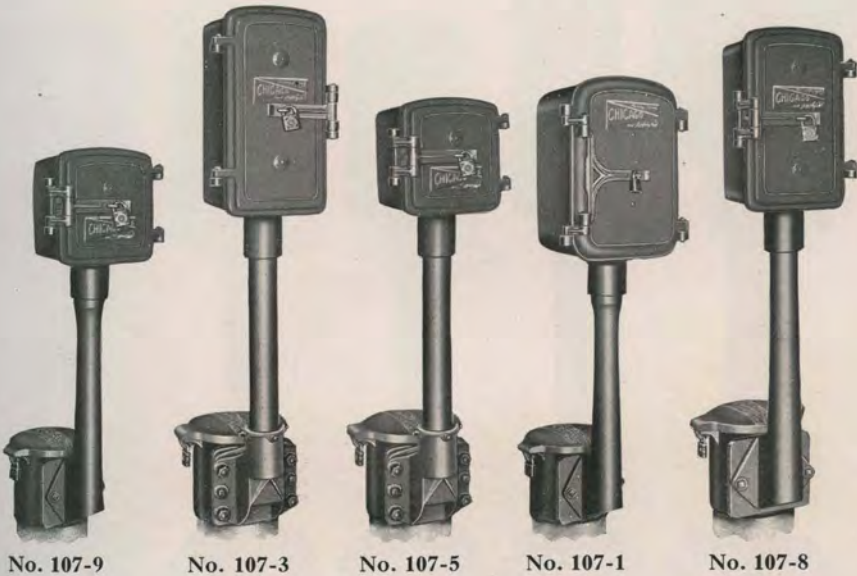
No. 105-1
With Single
Battery Chute

No. 105-1
With Double
Battery Chute

The above styles correspond to our Standard Style Relay Boxes and Cable Posts except that a suitable Battery Chute is used instead of foundation base. Furnished fitted up complete with single or double chute of any length and required elevators. For description of Relay Boxes, Battery Chutes, etc., see separate listing elsewhere.

Trade No.	DESCRIPTION	List Price
105	Combined Cable Post, Relay Box and Battery Chute, consisting of Relay Box No. 160-2, Cable Pinnacle No. 150, Socket No. 134 and Guy Wire Clamp, 3½" Pipe throughout, (specify Trade No. of Chute desired), complete as shown .....	.....
106	Same as above but with Relay Box No. 160-3 Socket No. 135, 3½" Pipe on top and 4½" Pipe on bottom .....	.....
105-1	Combined Cable Post, Relay Box and Battery Chute, Relay Box No. 160-2 Cable Pinnacle No. 150, Combination Bracket and Post No. 139 and Guy Wire Clamp, (specify Trade No. of Battery Chute desired) .....	.....
106-1	Same as above but with 160-3 and Combination Bracket and Post No. 139 .....	.....

RELAY BOXES AND BATTERY CHUTES



These Relay Boxes and Posts correspond to our Standard Styles except that a Battery Chute is used for foundation. Furnished complete as shown with any of our single or double chutes, the trade number of which should be specified on orders. For detail description of parts see separate illustrations elsewhere.

Trade No.	DESCRIPTION	List Price
107	Combined Style A Relay Box, Battery Chute and 2½ feet 3" Pipe fastened in Chute Socket and Relay Box.....	.....
107-2	Same as above except with Style B Relay Box.....	.....
107-3	“ “ “ “ “ “ C “ “ .....	.....
107-4	“ “ “ “ “ “ D “ “ .....	.....
107-5	“ “ “ “ “ “ E “ “ .....	.....
108	Same as No. 107 except with 4" (4½" O. D.) Pipe.....	.....
108-2	“ “ above except with Style B Relay Box.....	.....
108-3	“ “ “ “ “ “ C “ “ .....	.....
108-4	“ “ “ “ “ “ D “ “ .....	.....
108-5	“ “ “ “ “ “ E “ “ .....	.....
107-1	Combined Style A Relay Box, Battery Chute and one piece Base No. 139 fastened in Relay Box and to Chute.....	.....
107-6	Same as above except with Style B Relay Box.....	.....
107-7	“ “ “ “ “ “ C “ “ .....	.....
107-8	“ “ “ “ “ “ D “ “ .....	.....
107-9	“ “ “ “ “ “ E “ “ .....	.....

Above can also be furnished with any desired style wood Relay Boxes.

RELAY BOXES AND POSTS



No. 103

No. 103-4

No. 103-5

No. 103-6

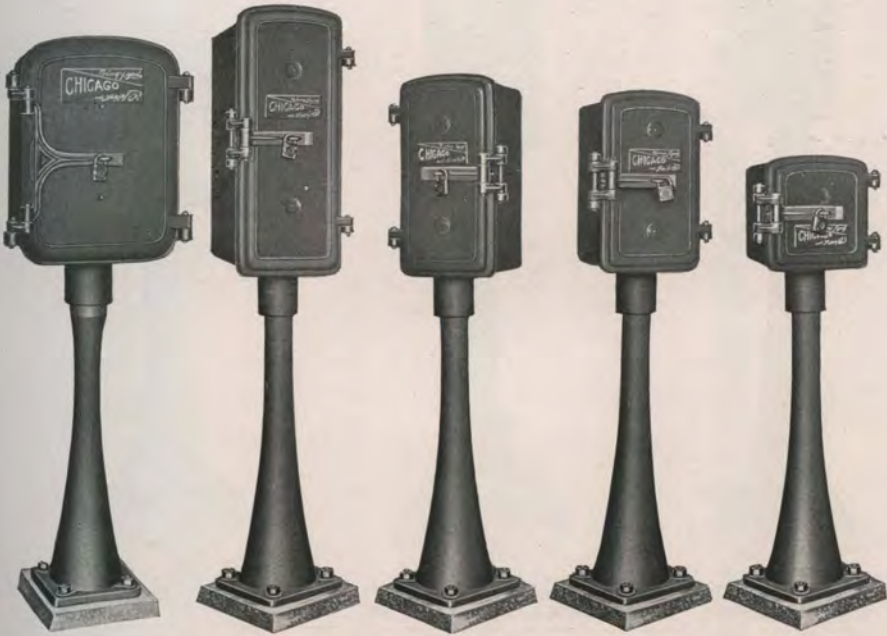
No. 103-7

These Posts are furnished equipped with any of our different Relay Boxes or Bases. Above illustrations serving to show only a few combinations. Posts are shipped complete as shown with all joints well fastened and calked. For detail description of Relay Boxes and Bases, see separate illustrations elsewhere.

Trade No.	DESCRIPTION	List Price
103	Relay Box and Post complete with Style A Relay Box, Style A Base and 3 feet 3" (3½" O. D.) Pipe.....	\$39.25
103-4	Same as above but with Style B Relay Box.....	31.60
103-5	“ “ “ “ “ “ C “ “	29.75
103-6	“ “ “ “ “ “ D “ “	26.50
103-7	“ “ “ “ “ “ E “ “	24.50
	Style B Base on any above, extra.....	.75
	“ C “ “ “ “ “ “ .....	.50
104	Same as No. 103 except with 3 feet 4" (4½" O. D.) Pipe....	39.80
104-4	“ “ “ “ “ “ “ “ “	32.15
104-5	“ “ “ “ “ “ C “ “	30.30
104-6	“ “ “ “ “ “ D “ “	27.05
104-7	“ “ “ “ “ “ E “ “	25.05
	Style B Base on any above, extra.....	1.00
	“ C “ “ “ “ “ “ .....	.50
	For No. 189 Ventilator on any of the above Relay Boxes add to list price for each Ventilator.....	1.20

Orders should specify style of Base required on above and whether Box shall be ventilated or plain.

RELAY BOXES AND POSTS



No. 103-3

No. 103-8

No. 103-9

No. 103-10

No. 103-11

The above Combination Posts with Relay Boxes have the advantage that Base and Post is a one-piece casting, symmetrical and neat in appearance, and of great strength. There are no joints to work loose. The Base is hollow, allowing easy wiring. For detailed description of Relay Boxes and Bases see separate listing elsewhere.

Trade No.	DESCRIPTION	List Price
103-3	Style A Relay Box with No. 138-1 Base and Post.....	\$39.30
103-8	“ B “ “ “ “ “ “ “ “ “	31.15
103-9	“ C “ “ “ “ “ “ “ “ “	29.30
103-10	“ D “ “ “ “ “ “ “ “ “	26.05
103-11	“ E “ “ “ “ “ “ “ “ “	24.05
104-3	Style A Relay Box with No. 138 Base and Post.....	39.30
104-8	“ B “ “ “ “ “ “ “ “ “	31.15
104-9	“ C “ “ “ “ “ “ “ “ “	29.30
104-10	“ D “ “ “ “ “ “ “ “ “	26.05
104-11	“ E “ “ “ “ “ “ “ “ “	24.05
	For No. 189 Ventilator on any of the above Relay Boxes add to list price for each Ventilator.....	1.20

INDICATORS WITH POSTS



Indicator with Style 138 Base Post



Indicator with Style C Base and 2 1/2" Pipe Post



Two Indicators with Style A Base and 3" Pipe Post

Trade No.	DESCRIPTION	List Price
115-41	Post with Style 138 Base complete with one 1651-1 Indicator.	\$44.20
115-42	" " " " " " " " " " 1651-2 " "	44.20
115-43	" " " " " " " " " " 1651-3 " "	40.70
115-44	" " " " " " " " " " 1651-4 " "	40.70
115-45	" " " " " " " " " " 1652-1 " "	48.20
115-46	" " " " " " " " " " 1652-2 " "	48.20
115-47	" " " " " " " " " " 1652-3 " "	44.70
115-48	" " " " " " " " " " 1652-4 " "	44.70
115-51	Post with Style C Base and 2 1/2" Pipe with one 1651-1 Indicator.	44.30
115-52	" " " " " " " " " " " " 1651-2 " "	44.30
115-53	" " " " " " " " " " " " 1651-3 " "	40.80
115-54	" " " " " " " " " " " " 1651-4 " "	40.80
115-55	" " " " " " " " " " " " 1652-1 " "	48.30
115-56	" " " " " " " " " " " " 1652-2 " "	48.30
115-57	" " " " " " " " " " " " 1652-3 " "	44.80
115-58	" " " " " " " " " " " " 1652-4 " "	44.80
115-61	Post with Style A Base and 3" Pipe with two 1651-1 Indicators	90.50
115-62	" " " " " " " " " " " " 1651-2 " "	90.50
115-63	" " " " " " " " " " " " 1651-3 " "	83.75
115-64	" " " " " " " " " " " " 1651-4 " "	83.75
115-65	" " " " " " " " " " " " 1652-1 " "	98.75
115-66	" " " " " " " " " " " " 1652-2 " "	98.75
115-67	" " " " " " " " " " " " 1652-3 " "	91.75
115-68	" " " " " " " " " " " " 1652-4 " "	91.75

Above Indicator Posts can be furnished equipped with any one of our numerous styles of Bases. For description of Indicators, Bases, etc., see separate illustrations elsewhere.

CABLE POLES WITH INDICATORS



Cable Pole with One Indicator

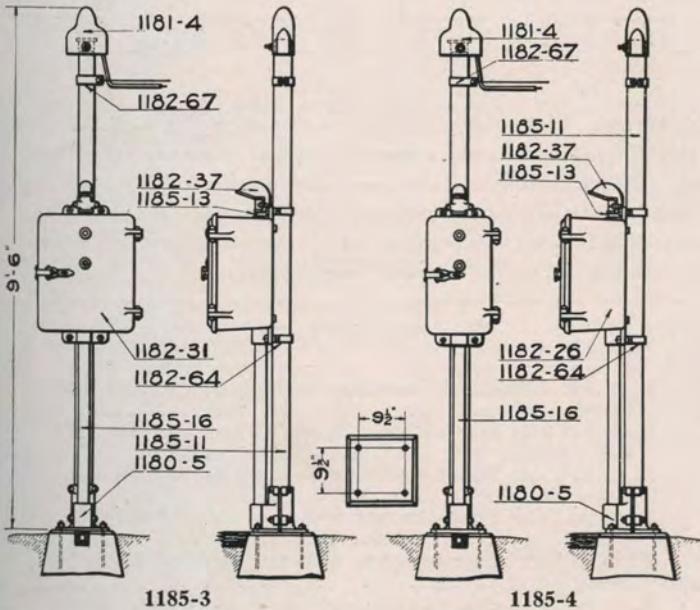
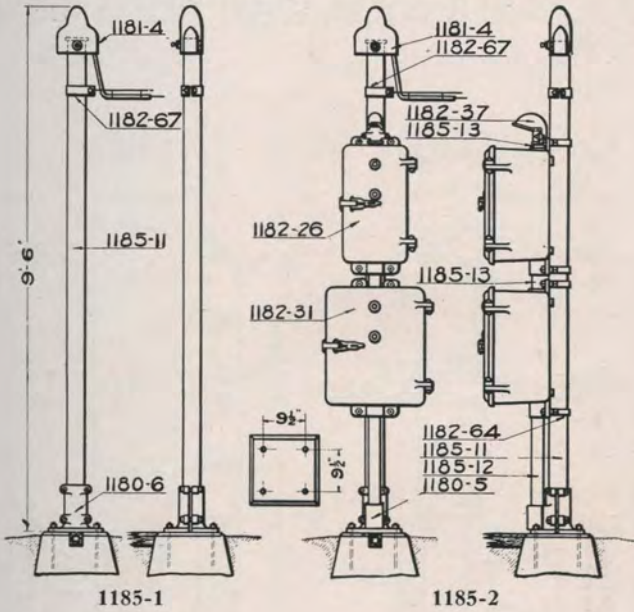


Cable Pole with Two Indicators

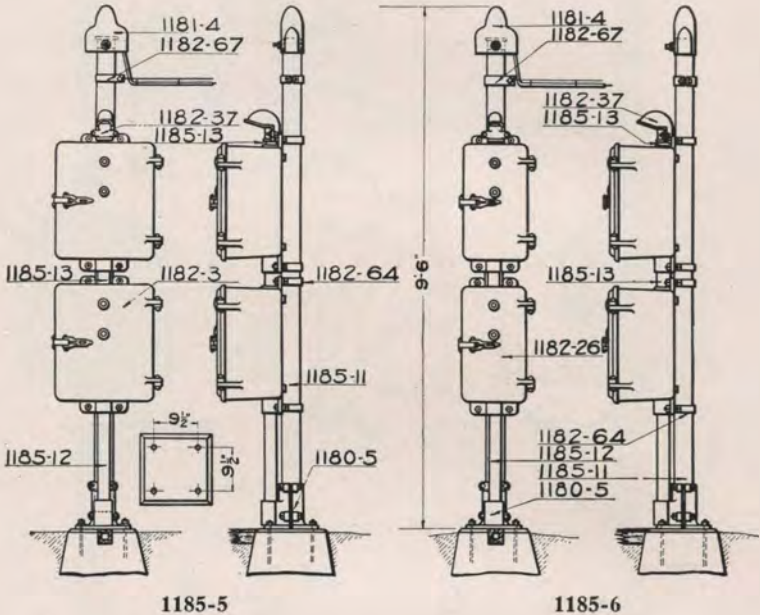
Trade No.	DESCRIPTION	List Price
115-1	Cable Pole No. 100 with one Indicator No. 1651-1.....	\$56.50
115-2	“ “ “ “ “ “ “ “ 1651-2.....	56.50
115-3	“ “ “ “ “ “ “ “ 1651-3.....	53.00
115-4	“ “ “ “ “ “ “ “ 1651-4.....	53.00
115-5	“ “ “ “ “ “ “ “ 1652-1.....	60.50
115-6	“ “ “ “ “ “ “ “ 1652-2.....	60.50
115-7	“ “ “ “ “ “ “ “ 1652-3.....	57.00
115-8	“ “ “ “ “ “ “ “ 1652-4.....	57.00
115-11	“ “ “ “ “ “ two Indicators “ 1651-1.....	98.00
115-12	“ “ “ “ “ “ “ “ “ 1651-2.....	98.00
115-13	“ “ “ “ “ “ “ “ “ 1651-3.....	91.00
115-14	“ “ “ “ “ “ “ “ “ 1651-4.....	91.00
115-15	“ “ “ “ “ “ “ “ “ 1652-1.....	106.00
115-16	“ “ “ “ “ “ “ “ “ 1652-2.....	106.00
115-17	“ “ “ “ “ “ “ “ “ 1652-3.....	99.00
115-18	“ “ “ “ “ “ “ “ “ 1652-4.....	99.00

For description of Cable Poles, Indicators, etc., see separate illustrations elsewhere. Above Combination Cable Poles and Indicators can also be furnished with any of our other styles of Cable Poles at difference in price.

R. S. A. CABLE POLES WITH RELAY BOXES



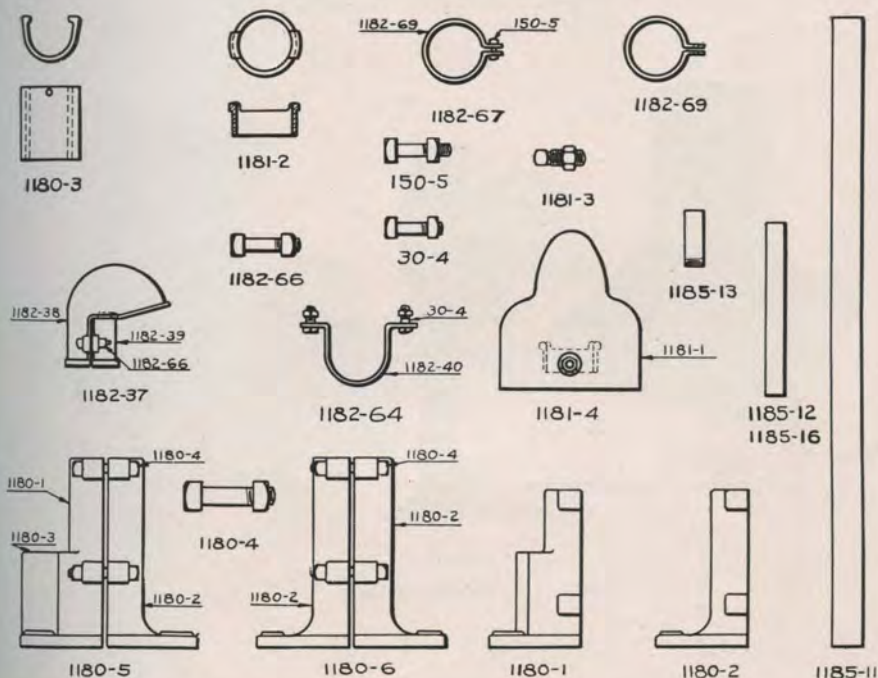
R. S. A. CABLE POLES WITH RELAY BOXES



The Cable Poles illustrated above are in accordance with R. S. A. Drawings No. 1180 to 1185. This Design permits any number of Relay Boxes up to four to be mounted on one Pole, allowing also any combination of the two sizes of R. S. A. Relay Boxes to be used. 3 1/2" (4" O. D.) Pipe is used on Cable Poles and 2 1/2" (2 7/8" O. D.) Pipe on Relay Boxes. The Fittings here listed are made to fit these pipe sizes. Prices for special combinations not shown will be furnished on application.

Trade No.	DESCRIPTION	List Price
1185-1	R. S. A. Cable Pole complete with Base, Pinnacle and Messenger Clamp.....	\$17.00
1185-2	R. S. A. Cable Pole with one Size "A" and one Size "B" Relay Box.....	95.00
1185-3	R. S. A. Cable Pole complete with one Size "B" R. S. A. Relay Box.....	65.75
1185-4	R. S. A. Cable Pole complete with one Size "A" R. S. A. Relay Box.....	52.00
1185-5	R. S. A. Cable Pole complete with two Size "B" R. S. A. Relay Boxes.....	108.75
1185-6	R. S. A. Cable Pole with two Size "A" R. S. A. Relay Boxes.....	81.25

R. S. A. CABLE POLE PARTS



Trade No.	DESCRIPTION	List Price
1180-5	Base complete for Cable Poles with Relay Box as shown . . .	\$6.25
1180-6	“ “ “ “ “ “ as shown	5.50
1180-1	Half Base for Wire Leadout as shown	3.00
1180-2	“ “ “ “ as shown	2.50
1180-3	Cap for Wire Leadout . . . . .	.50
1180-4	$\frac{5}{8}$ " x 4" Hex. Hd. Mach. Bolt and Nut . . . . .	.15
1185-11	$3\frac{1}{2}$ " Pipe Post, (4" O. D.) 8' 7 $\frac{1}{2}$ " long	8.00
1181-4	Pinnacle for $3\frac{1}{2}$ " Pipe complete with Bushing and Set Screw	3.00
1181-1	“ “ only	2.50
1181-2	Bushing only for $3\frac{1}{2}$ " Pipe . . . . .	.75
1181-3	$\frac{1}{2}$ " x $1\frac{1}{2}$ " Set Screw with Half Thick Nut . . . . .	.06
1182-67	Messenger Wire Clamp for $3\frac{1}{2}$ " Pipe, complete with Bolt . . . . .	.75
1182-69	“ “ “ “ only . . . . .	.70
150-5	$\frac{1}{2}$ " x 2" Sq. Hd. Mach. Bolt and Nut . . . . .	.08
1185-12	$2\frac{1}{2}$ " Pipe Post, 2 $\frac{7}{8}$ " O. D., 2' $\frac{1}{2}$ " long	1.20
1185-16	$2\frac{1}{2}$ " “ “ 2 $\frac{7}{8}$ " “ 3'	1.75
1185-13	$2\frac{1}{2}$ " Threaded Pipe Nipple, 2 $\frac{7}{8}$ " O. D., 7 $\frac{1}{4}$ " long . . . . .	.50
1182-37	Hood for above complete with Bolts	2.50
1182-38	“ Back Half	1.75
1182-39	“ Front Half . . . . .	.75
1182-66	$\frac{1}{2}$ " x $1\frac{3}{4}$ " Sq. Hd. Mach. Bolt and Nut . . . . .	.06
1182-64	Clamp for fastening Relay Box to Post, complete with two Bolts . . . . .	.80
1182-40	“ “ only . . . . .	.65
30-4	$\frac{3}{4}$ " x 2" Sq. Hd. Mach. Bolt and Nut . . . . .	.08

FOUNDATION BASES



Style A

Base for Concrete Foundations



Style B

Underground Base



Style C

Base for Concrete Foundations

Above Bases are especially designed for use with Cable Posts, Relay Box Posts and Highway Crossing Signals. They are made of best gray iron and have self-centering pipe supports and round edges where wires enter.

Trade No.	DESCRIPTION	List Price
130	Style A Base as shown for 3½" O. D. Pipe, 11" square with 8" center bolt holes.	\$5.25
129	Style A Base as shown for 2⅞" O. D. Pipe, 11" square with 8" center bolt holes.	5.00
131	Style A Base as shown for 4½" O. D. Pipe, 11" square with 8" center bolt holes.	5.50
132	Style C Base as shown for four Side Bolts for 3½" O. D. Pipe, 8" square, 6" center bolt holes.	5.75
140	Style C Base as shown for four Side Bolts for 2⅞" O. D. Pipe, 6" square, 4½" center bolt holes.	5.50
133	Style C Base as shown for four Side Bolts for 4½" O. D. Pipe, 10¼" square, 8" center bolt holes.	6.00
136-1	Style B Base as shown for 2½" Pipe, 2⅞" O. D.	6.00
136	" " " " " " 3" " 3½" "	6.00
137	" " " " " " 4" " 4½" "	6.50
137-1	" " " " " " 5" " 5½" "	6.85
136-2	" " " " " " 6" " 6⅝" "	8.75

PINNACLES, CABLE OUTLETS, VENTILATORS



Pinnacles

- 900 for 3" Pipe
- 901 " 4" "
- 902 " 6" "
- 1050 " 5" "
- 1051 " 5" "



Cable Pinnacles

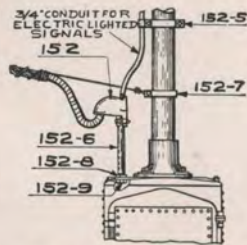
- 150 for 3" Pipe
- 151 " 4" "



**Cable Outlet For
Signal Cases, etc.**



**Relay Box and Signal
Case Ventilator,
No. 189**



**Illustrating method of
Cable Outlets as used on
Bottom Post Signals**

Trade No.	DESCRIPTION	List Price
900	Pinnacle complete with Set Screw for 3" (3½" O. D.) Pipe . .	\$2.25
901	" " " " " " 4" (4½" O. D.) " . .	2.40
902	" " " " " " 6" (6½" O. D.) " " . .	3.40
1050	R. S. A. Pinnacle complete with Set Screw for 5" (5⅝" O. D.) Pipe	2.70
1051	R. S. A. Pinnacle complete with Set Screw for 5" (5⅝" O. D.) Pipe	2.70
150	Cable Pinnacle complete for 3" (3½" O. D.) Pipe	3.00
151	" " " " 4" (4½" O. D.) "	3.00
150-2	" " Cap with Set Screw for No. 150 and 151	2.50
152	" Outlet complete, upper Plug and Bolts	1.25
152-1	Cap for above	1.00
152-2	Bottom Half for No. 152 . . . . .	.08
152-3	¾" Plug for No. 152-1 . . . . .	.08
152-4	Hexagon Bolt and Nut for No. 152, each	1.10
152-5	Clamp complete with two bolts for holding ¾" Conduit (for electric light wires) . . . . .	.50
152-6	One foot, threaded 1½" Pipe for Cable Outlet . . . . .	.80
152-7	Clamp complete with Bolt for Guy Wire . . . . .	.....
152-8	1½" Lock Nut for Top of Signal Case to hold No. 152-6 . . . . .	.....
152-9	1½" Bushing for end of 152-6 in Signal Case . . . . .	.....
189	Ventilator (Dust and Waterproof) for Signal Cases, Relay Boxes, etc., complete with Brass inner Screen and three Bolts	1.20

1914

CATALOGUE AND PRICE LIST

SECTION E

HIGHWAY CROSSING ALARMS

- Highway Crossing Alarms
- Mechanically Operated Crossing Bells
- Mechanically Operated Tower Bells
- Crossing Signs
- Illuminated Signs

HIGHWAY CROSSING ALARMS

Style No. 2000



No. 2000

This Signal is furnished complete as shown and total height is 12 feet. It is equipped with Style E Crossing Bell, No. 434 Sign, Style A Relay Box and Style A Base. The lower pipe is 4½" outside diameter and 3 feet long, the upper pipe 3½" outside diameter, 6 feet long.

Signal may be equipped with Style B or C Base without change in list price. The Relay Box is sufficiently large to accommodate all necessary Relays (of any manufacture) together with Lightning Arresters, Terminals, etc.

Signal may also be equipped with Illuminated Sign or our Illuminating Outfit, also any other style of Sign shown in catalogue.

Trade No.	DESCRIPTION	List Price
2000	Crossing Signal complete as shown with Style E Bell.....	\$116.00
2000-1	Same as above with Style F Bell.....	110.00
2000-2	“ “ “ “ “ G “.....	164.00
2000-3	“ “ “ “ “ H “.....	144.00
2000-4	“ “ “ “ “ K “.....	180.00
2000-5	“ “ “ “ “ T “.....	130.00
2000-6	“ “ “ “ No. 1680-1 Electric Flag.....	298.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current. Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2001

Highway Crossing Alarm No. 2001 is furnished complete as shown consisting of Style F Bell, Style A Relay Box, Style A Base, No. 430 Crossing Signs and Standard No. 900 Pinnacle.

This Signal may also be equipped with same pattern Crossing Sign having 9" letters (No. 430-9) and with Illuminated Sign or our Standard Sign Illuminating Outfit. Total height of Signal, 12 feet.

Where desired, Signal will be furnished with Style B or C Base without change in price.



No. 2001

Trade No.	DESCRIPTION	List Price
2001	Crossing Signal complete as shown with Style F Bell	\$91.00
2001-1	Same as above with Style E Bell	87.00
2001-2	“ “ “ “ “ G “	146.00
2001-3	“ “ “ “ “ H “	126.00
2001-4	“ “ “ “ “ K “	161.00
2001-5	“ “ “ “ “ T “	111.00
2001-6	“ “ “ “ No. 1680-1 Electric Flag	299.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2002



No. 2002

This type of Signal is equipped with Style C. Base and Pole 3½" outside diameter, 12 feet long, to which is fastened with two U Bolts our No. 165-11 Relay Box, intended to hold Style A or similar Interlocking Relay, also Style E Bell and No. 434 Crossing Sign. Signal is used at locations where a substantial but inexpensive Crossing Signal is desired without using a Concrete Foundation. Signal may also be equipped with any of our other styles of Relay Boxes, Illuminated Sign or Illuminating Outfit. Style A or B Base is furnished when specified without change in price.

Unless otherwise specified, Signal will be furnished as shown and listed.

Trade No.	DESCRIPTION	List Price
2002	Crossing Signal complete as shown with Style E Bell.	\$85. 00
2002-1	Same as above with Style F Bell.	89. 00
2002-2	" " " " " G "	144. 00
2002-3	" " " " " H "	124. 00
2002-4	" " " " " K "	159. 00
2002-5	" " " " " T "	109. 00
	This style Signal may also be equipped with Styles A, B, C, D, or E Relay Boxes at difference in price.	

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current. Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2004



No. 2004

The illustration shows one of our most substantial Crossing Signals. The Combination Relay and Battery Case at Base is similar to an Automatic Signal Case and is large enough to hold all necessary Batteries, Relays, Lightning Arresters, Terminals, etc., for any location, thus making an ideal "Standard" Crossing Signal suitable for any location regardless of local conditions on a railroad. For detail description of Relay Box No. 350, see elsewhere in catalogue. On top of the case is mounted a 4½" outside diameter pole 9 feet long which supports the Bell and Sign. Total height is 17 feet. The Pole is equipped with Adjustable Pole Steps thus providing easy access to Bell. The illustration shows Signal equipped with our large size Locomotive Type Crossing Bell but Signal is also furnished with any of our other Bells as listed. Any style Sign having 6" letters is furnished without change in price.

Trade No.	DESCRIPTION	List Price
2004	Crossing Signal complete as shown with Style G Bell	\$216.40
2004-1	Same as above but with Style F Bell	161.40
2004-2	" " " " " " " E "	175.40
2004-3	" " " " " " " H "	196.40
2004-4	" " " " " " " K "	231.40
2004-5	" " " " " " " T "	181.40

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2005

This type of Crossing Signal is equipped with Sign No. 436 which is securely fastened to the top pipe which is 3½" outside diameter and 6 feet long. Style A Relay Box is supported on 4½" outside diameter pipe 3 feet long securely held in Style A Base Casting. The Relay Box is sufficiently large to hold all necessary Relays (of any manufacture), Lightning Arresters, Terminals, etc. Total height of Signal is 12 feet. Signals may be equipped with any of our other styles of Signs having 6" letters without change in price.

Orders should state Voltage on which Signal will be used so properly wound Bell may be furnished.



No. 2005

Trade No.	DESCRIPTION	List Price
2005	Crossing Signal complete as shown with Style E Bell.....	\$106.00
2005-1	Same as above but with Style F Bell	110.00
2005-2	“ “ “ “ “ “ G “	164.00
2005-3	“ “ “ “ “ “ H “	144.00
2005-4	“ “ “ “ “ “ K “	180.00
2005-5	“ “ “ “ “ “ T “	130.00
2005-6	“ “ “ “ “ “ No. 1680-1 Electric Flag	298.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2007

This type of Signal is furnished with our Standard Illuminated Sign and No. 432 Highway Crossing Sign. When specified, any other Sign having same list price will be furnished without change in price. Total height of Signal is 12 feet, the upper pipe is 3½" outside diameter and lower pipe 4½" outside diameter. Style A Relay Box, which is large enough to hold all necessary Relays, Lightning Arresters, etc., is furnished with this Signal. In ordering, specify Voltage on which Signal is to operate so proper Lamps and Bell may be furnished.



No. 2007

Trade No.	DESCRIPTION	List Price
2007	Crossing Signal complete as shown with Style E Bell	\$130.00
2007-1	Same as above but with Style F Bell	134.00
2007-2	“ “ “ “ “ “ G “	188.00
2007-3	“ “ “ “ “ “ H “	168.00
2007-4	“ “ “ “ “ “ K “	204.00
2007-5	“ “ “ “ “ “ T “	154.00
	When Illuminated Sign is not required, deduct	24.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2008



No. 2008

This type of Signal makes a most effective Crossing Alarm. The Electric Lamps in the Illuminating Outfit light up the Sign clearly and distinctly. Signal is furnished regularly as shown consisting of Style G large size Locomotive Type Bell, Sign No. 434, 4½" outside diameter Pole 12 feet long with Style A Base Casting. Style A Relay Box with hollow supporting Bracket is securely held to pole with two U Bolts. When specified, Signal is also supplied with Style B or C Base without change in price. Any other style Sign may be attached to this Pole without change in price, except where Signs having 9" raised letters are specified. In ordering, state Voltage on which Signal is to operate.

Trade No.	DESCRIPTION	List Price
2008	Signal complete as shown with Style G Bell.....	\$196. 50
2008-1	Same as above but with Style F Bell.....	141. 50
2008-2	" " " " " " E " 	137. 50
2008-3	" " " " " " H " 	176. 50
2008-4	" " " " " " K " 	211. 50
2008-5	" " " " " " T " 	161. 50
REDUCTIONS		
	For same as above without Illuminating Outfit, deduct.....	22. 00
	" " " " with Style 165-12 Relay Box " 	27. 00
	" " " " " " B " " " 	8. 30
	" " " " " " C " " " 	10. 15
	" " " " " " D " " " 	13. 40
	" " " " " " E " " " 	15. 40

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current. Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2009

The type of Crossing Alarm here shown is equipped with our No. 350 Combination Battery and Relay Case in the top of which is mounted a 4½" outside diameter Pole supporting the Crossing Sign and Bell. Locomotive Type Bell shown is our Style G, large size. The Pole is provided with two Double Pole Steps, for convenient access to Bell by inspectors. Total height of Signal is 15 feet. The Combination Relay and Battery Box is wood lined and provided with shelves to hold any required number of Batteries and Relays for any location regardless of number of tracks, etc., thus making this an ideal Signal for use as a Standard and thus provide uniform Crossing Signals on entire railroad. Signal is provided with any of our Standard Crossing Signs with 6" letters without change in price. For detail description of 350 Relay Box, see elsewhere in catalogue.



No. 2009

Trade No.	DESCRIPTION	List Price
2009	Crossing Signal complete as shown with Style G Bell.	\$214.50
2009-1	Same as above but with Style F Bell.	159.50
2009-2	“ “ “ “ “ “ E “	155.50
2009-3	“ “ “ “ “ “ H “	194.50
2009-4	“ “ “ “ “ “ K “	229.50
2009-5	“ “ “ “ “ “ T “	179.50
2009-6	“ “ “ “ “ “ No. 1680-1 Electric Flag.	347.50

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2010



No. 2010

On this Signal the Battery Chute at its base serves as the Foundation. Signal is furnished regularly with 5 foot Single or Double Battery Chutes for four or eight cells of Batteries respectively.

Signal is furnished complete as shown and may also be furnished with any other Standard Sign without change in price, except in cases where Signs with 9" raised letters are specified. The Signal consists of Single or Double Battery Chute as specified, Style A Relay Box, Style H Bell, Sign and Pinnacle. Pole is 3½" outside diameter and total height is 12 feet.

Signals may also be equipped with 6 foot, 7 foot or 9 foot Battery Chutes at a corresponding increase in price. Orders should state Voltage on which Bell is to operate.

Trade No.	DESCRIPTION	List Price
2010	Crossing Signal complete as shown with Style H Bell and 5 foot Single Battery Chute with 4-Cell Elevator.....	\$165.60
2010-1	Same as above but with Style F Bell.....	130.60
2010-2	“ “ “ “ “ “ “ G “	185.60
2010-3	“ “ “ “ “ “ “ E “	126.60
2010-5	“ “ “ “ “ “ “ T “	150.60
2010-13	Crossing Signal complete as shown with style H Bell and 5 foot Double Battery Chute with Two 4-Cell Elevators. (capacity Eight Cells).....	176.40
2010-10	Same as above but with Style E Bell.....	137.40
2010-11	“ “ “ “ “ “ “ F “	141.40
2010-12	“ “ “ “ “ “ “ G “	196.40
2010-15	“ “ “ “ “ “ “ T “	161.40

HIGHWAY CROSSING ALARMS

Style No. 2011

This type of Signal consists of our large size Locomotive Type Crossing Bell, Style G, No. 428 Crossing Signs, Style A Relay Box, all of which is mounted on 3½" and 4½" outside diameter pipe which is fastened securely to Battery Chutes which serves double purpose of housing the Bell Batteries and as a substantial foundation for the Signal. Total height of Signal is 12 feet. Any of our Standard Crossing Signs may be substituted for the Sign shown without change in price, except where signs having 9" raised letters are specified.

The Battery Chute regularly furnished with Signals is 5 feet long, but 6 foot, 7 foot or 9 foot chutes may be specified at a corresponding advance in price.

Orders should state Voltage on which Bell is to operate. List prices are for Bells up to 10 Volts Direct Current.



No. 2011

Trade No.	DESCRIPTION	List Price
2011	Signal complete as shown with Style G Bell and Single 5 foot Battery Chute with 4-Cell Elevator.....	\$183.00
2011-1	Same as above but with Style F Bell.....	128.00
2011-2	“ “ “ “ “ “ E “.....	124.00
2011-3	“ “ “ “ “ “ H “.....	163.00
2011-5	“ “ “ “ “ “ T “.....	148.00
2011-12	Signal complete as shown with Style G Bell and Double 5 foot Battery Chute with Two 4-Cell Elevators (capacity Eight Batteries).....	193.80
2011-10	Same as above but with Style E Bell.....	134.80
2011-11	“ “ “ “ “ “ F “.....	138.80
2011-13	“ “ “ “ “ “ H “.....	173.80
2011-15	“ “ “ “ “ “ T “.....	158.80

HIGHWAY CROSSING ALARMS

Style No. 2012



No. 2012

We illustrate herewith the Standard Crossing Alarm on many large railroads. The design shown is the simplest form and consists of Style E Bell and No. 165-10 Relay Box fastened to a wooden pole 8" x 8" x 16 feet with lag screws. The wires are carried on back of Pole in Trunking and Capping. The Relay Box is intended to hold our Style A or similar Relay. Any of our other Relay Boxes can be furnished for these outfits at a correspondingly higher list price. This outfit has the advantage that Railroad Companies' Standard Wooden Crossing Sign can easily be attached to the wooden post.

Trade No.	DESCRIPTION	List Price
2012	Crossing Signal complete as shown with Style F Bell	\$72.00
2012-1	Same as above but with Style E Bell	68.00
2012-2	" " " " " " " G "	127.00
2012-3	" " " " " " " H "	107.00
2012-4	" " " " " " " K "	142.00
2012-5	" " " " " " " T "	92.00
	For Standard Crossing Signs having 6" raised letters ready to attach to above Signals, add to list price	24.00
	For Wood Pole, if not wanted, deduct from list price	24.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660 Volts.

HIGHWAY CROSSING ALARMS

Style No. 2013



No. 2013

This type of Signal is furnished without Relay Box and is intended for use at locations where Bell is operated by an attendant at a nearby tower, gatehouse, etc.

It is also used (especially when equipped with our Time Bell) on both steam and electric railroads where Track Instruments and line wire control are used (see Circuits elsewhere).

Signal is equipped with "Time" Bell, Standard Sign No. 434, Four Pin Iron Cross Arm complete with Insulators, Pinnacles, Style B Base and 3½" outside diameter pole 12 feet long. Style A or C Base or any Standard Crossing Sign with 6" letters is furnished without change in price. Orders should specify Voltage and type of Circuit to be used so that properly wired Bell may be furnished.

Trade No.	DESCRIPTION	List Price
2013	Crossing Signal complete as shown with Time Bell.....	\$103.50
2013-1	Same as above but with Style F Bell.....	83.50
2013-2	" " " " " " G ".....	138.50
2013-3	" " " " " " H ".....	118.50
2013-4	" " " " " " K ".....	153.50
2013-5	" " " " " " E ".....	79.50
	When Illuminating Outfit is required, add.....	24.00
	Where a Relay Box is required, add list price of same and necessary Fittings to attach to Pole to above prices.	

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current. Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style 2014



No. 2014

This type of Signal has the advantage that no foundation is required, the Battery Chute holding Signal firmly in place and at same time housing necessary Batteries to operate the Bell.

This Signal can be furnished in many different styles, viz., any Sign of same list price may be had without change in cost. Any style Relay Box can be fastened to Pole and Signal can be furnished with Single or Double Battery Chutes 5 feet, 6 feet, 7 feet or 9 feet long. When other lengths or sizes of Battery Chutes than listed below are specified, deduct or add difference in list price.

Signal as shown is complete with No. 438 Crossing Sign, Style F Bell, Style A Relay Box, Pole and Pinnacle. Pole is 12 feet long and 3½" outside diameter. Orders should state Voltage on which Bell is to operate.

Trade No.	DESCRIPTION	List Price
2014	Signal complete as shown with Style F Bell and 5 foot Single Battery Chute with 4-Cell Elevator	\$124.25
2014-1	Same as above with Style E Bell	120.25
2014-2	“ “ “ “ “ G “	179.25
2014-3	“ “ “ “ “ H “	159.25
2014-4	“ “ “ “ “ T “	144.25
2014-11	Signal complete as shown with Style F Bell and 5 foot Double Battery Chute with Two 4-Cell Elevators (total capacity, Eight Cells)	135.05
2014-10	Same as above with Style E Bell	131.05
2014-12	“ “ “ “ “ G “	190.05
2014-13	“ “ “ “ “ H “	170.05
2014-15	“ “ “ “ “ T “	155.05

HIGHWAY CROSSING ALARMS

Style No. 2015

The various types of Style No. 2015 Crossing Signals listed are equipped with our One Piece Base and Support for Relay Box. Signal as shown is complete with No. 428 Sign, Style H Bell, Illuminated "Danger" Sign and Style A Relay Box. This Signal is also furnished with other Standard Crossing Signs having 6" letters without change in price. Orders should state Voltage on which it is desired to operate Signal so that proper Lamps and Bell may be furnished for same.

For detail description of Illuminated Sign, see elsewhere in catalogue.



No. 2015

Trade No.	DESCRIPTION	List Price
2015	Crossing Signal complete as shown with Style H Bell.....	\$167.30
2015-1	Same as above equipped with Style F Bell.....	132.30
2015-2	“ “ “ “ “ “ G “	187.30
2015-3	“ “ “ “ “ “ E “	128.30
2015-4	“ “ “ “ “ “ K “	202.30
2015-5	“ “ “ “ “ “ T “	152.30

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current. Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2016



No. 2016

This type of Signal is intended for location where a concrete foundation is not required and is furnished complete as shown consisting of Bell, Sign, 3½" x 12 foot Pole, Style B Base and No. 165-11 Relay Box.

Any Standard Crossing Sign of same list price may be furnished without change in cost. The Relay Box on this Signal is intended for our Style A or similar Interlocking Relay. Signal may be equipped with Style A, B, C, D or E Relay Boxes at correspondingly higher price, also with our Illuminated Sign or Sign Illuminating Outfit.

Trade No.	DESCRIPTION	List Price
2016	Crossing Signal complete as shown with Style E Bell	\$83.92
2016-1	Same as above equipped with Style F Bell	87.92
2016-2	“ “ “ “ “ “ G “	142.92
2016-3	“ “ “ “ “ “ H “	122.92
2016-4	“ “ “ “ “ “ K “	157.92
2016-5	“ “ “ “ “ “ T “	107.92
2016-6	“ “ “ “ “ “ No. 1680-1 Electric Flag	275.92

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2017

Signal as shown is furnished complete with Style A Relay Box, Style A Base, No. 436 Crossing Sign and Style T Crossing Bell. A removable pinnacle is furnished which makes wiring easy and at the same time gives Signal a neat appearance.

Style B or C Base Castings can be furnished on this Signal without affecting list price.

Signal is also furnished without change in price with any of our other Signs having 6" raised letters.



No. 2017

Trade No.	DESCRIPTION	List Price
2017	Crossing Signal complete as shown with Time Bell.....	\$131.35
2017-1	Same as above equipped with Style F Bell.....	111.35
2017-2	“ “ “ “ “ “ G “	166.35
2017-3	“ “ “ “ “ “ H “	146.35
2017-4	“ “ “ “ “ “ K “	181.35
2017-5	“ “ “ “ “ “ E “	107.35

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

Style No. 2018



No. 2018

This Signal was especially designed for Electric Street Railway use, where an efficient and strong Signal is required at a low cost. Signal is equipped with 12 foot Steel Pole, Base, Standard "Danger" and Crossing Sign, Style E Bell and No. 166-3 Relay Box, as shown. Signal is well adapted for use on Trolley Roads. Almost any desired changes can be made such as a larger Relay Box, the elimination of one or both Signs, and Signal is also furnished with any of our Standard Crossing Bells as listed.

Trade No.	DESCRIPTION	List Price
2018	Crossing Alarm complete as shown with Style E Bell	\$114.00
2018-1	Same as above except equipped with Style F Bell	118.10
2018-2	" " " " " " " " " G "	175.00
2018-3	" " " " " " " " " H "	153.00
2018-4	" " " " " " " " " K "	188.00
2018-5	" " " " " " " " " T "	138.00
2018-6	" " " " " with No. 1680-1 Electric Flag	306.00

List price includes only Direct Current Bells for operation on 10 Volts or less. All Bells can be furnished to operate on up to 650 Volts Direct Current and Style K Bell can be furnished for Alternating Current for Voltages up to 660.

HIGHWAY CROSSING ALARMS

No. 2019

The Signal is equipped with our "Electric Flag," and is especially adapted for use at highways having automobile traffic or where trolley lines cross the right of way.

The Red Flag waves up and down, the red lenses in case flash at regular intervals and the locomotive type bell on top rings vigorously, thus making it practically impossible to cross the tracks without either seeing or hearing the warning regardless of surrounding noisy conditions such as noisy automobile engines, street cars, etc. A pair of small green lenses flash up and down the railroad, thus giving train crews a positive notice before reaching the crossing, that Signal is in operation.

Complete Signal consists of "Electric Flag," No. 434 Crossing Sign, Style A Relay Box on Hollow Bracket, 4" Steel Pole and Style C Base with Anchor Bolts. Height over all 15 feet. Any of our Standard Crossing Signs having same list price may be furnished in place of sign shown. Signal may also be equipped with Style A or B Base without change in price.

This Signal may be varied to suit nearly all conditions, and we will furnish plans of Signal, Circuits, etc., covering any track condition upon request.



Highway Crossing Alarm No. 2019

Trade No.	DESCRIPTION	List Price
2019	Highway Crossing Alarm, complete as shown for operating on 110 or 220 Volts Direct or Alternating Current.....	\$262.00
2019-1	Same as above except with Style B Relay Box.....	253.70
2019-2	“ “ “ “ “ “ C “ “	251.85
2019-3	“ “ “ “ “ “ D “ “	248.60
2019-4	“ “ “ “ “ “ E “ “	246.60
	When above are wanted for operating on 440 to 600 Volt Direct Current, add to list price.....	8.00
	When wanted for operating on 10 Volt Direct Current or 440 to 660 Volt Alternating Current, add to list price.....	10.00

Orders should specify Voltage at which Signal is to operate, also whether for Direct or Alternating Current and number of Cycles.

HIGHWAY CROSSING ALARM

No. 2020



This Signal is equipped with our "Electric Flag," and is especially adapted for use at highways having automobile traffic, or where trolley lines cross railroad. The Red Flag waves up and down, thus giving a positive stop signal, at the same time the red lenses mounted in case flash at regular intervals, and the locomotive bell on top rings vigorously. This combination compels attention, and it is impossible to cross the tracks without hearing or seeing the warning, night or day, regardless of other noises, such as automobile engines, etc.

A pair of green lenses flash at regular intervals up and down the tracks, thus giving engine men positive evidence of the operation of the Signal before train reaches the crossing.

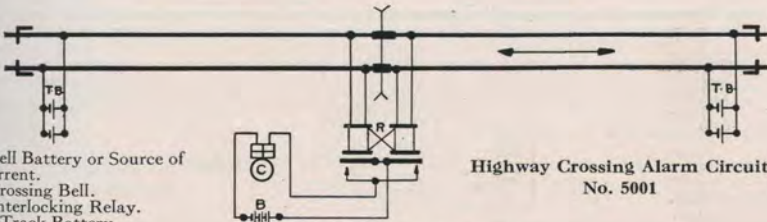
The Signal is 15 feet high, Pipe Post is 4" (4½" O. D.) Steel Pipe equipped with four Pressed Steel Pole Steps, the No. 350 Combination Battery and Relay Box is amply large to accommodate Batteries, Relays, Terminals, etc. No. 429 Highway Crossing Sign is of the Standard type. This Signal can be furnished in any number of variations and with any of our numerous crossing signs. We will furnish plans, Circuits, etc., upon request.

Highway Crossing Alarm No. 2020

Trade No.	DESCRIPTION	List Price
2020	Highway Crossing Alarm complete as shown with 110 or 220 Volt Direct Current or Alternating Current Motor	\$294.50
	When Sign is not wanted, deduct from list price	24.00
	When 10 Volt D. C. Motor is required, add to list price	10.00
	When Signal is to operate on 440 to 650 Volt Direct Current, add to list price	8.00
	When Signal is to operate on 440 to 660 Volt Alternating Current, add to list price	10.00

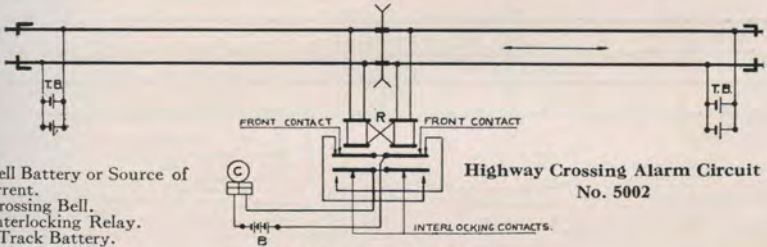
Orders should specify Voltage at which Signal is to operate, also whether for Direct or Alternating Current and number of Cycles.

HIGHWAY CROSSING ALARM CIRCUITS



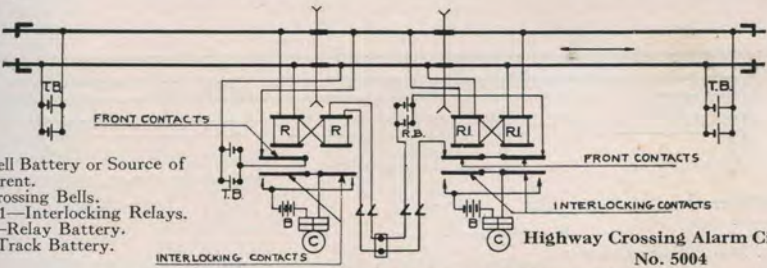
Single Track with Track Circuit

Operation: Bell starts ringing as engine reaches outer end of track circuit and rings until last car leaves crossing.



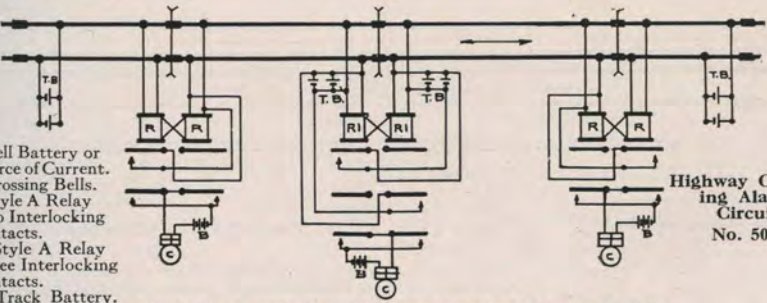
Single Track with Track Circuit

Operation: Bell starts ringing as engine reaches outer end of track circuit and rings until engine reaches crossing.



Single Track with Track Circuits and Two Crossing Bells

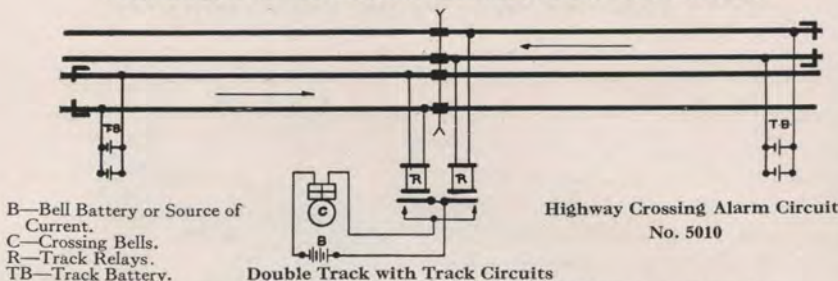
Operation: Both bells start ringing as engine reaches outer end of track circuit and each bell is silenced as last car passes over crossing.



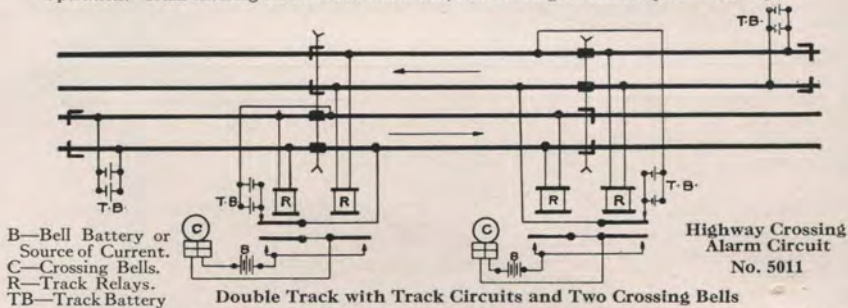
Single Track with Track Circuits and Three Crossing Bells

Operation: All bells start ringing as engine reaches outer end of track circuit and each bell is silenced as last car passes over crossing.

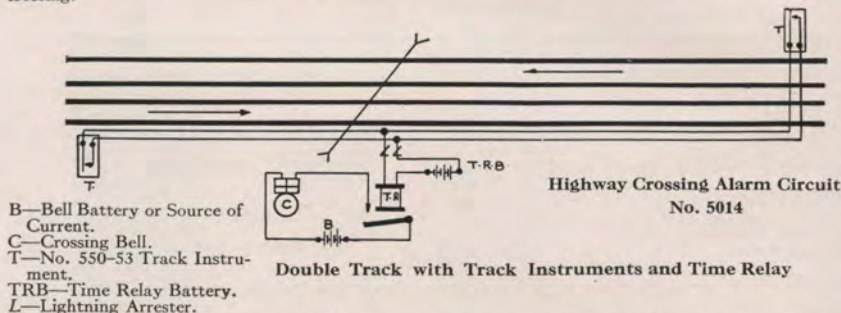
HIGHWAY CROSSING ALARM CIRCUITS



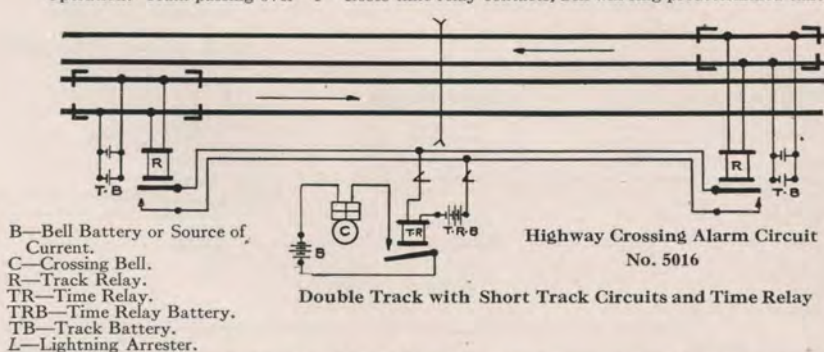
Operation: Train entering track circuit starts bell, bell will ring till last car passes crossing.



Operation: Train entering track circuit will start both bells, each bell will stop as last car leaves crossing.

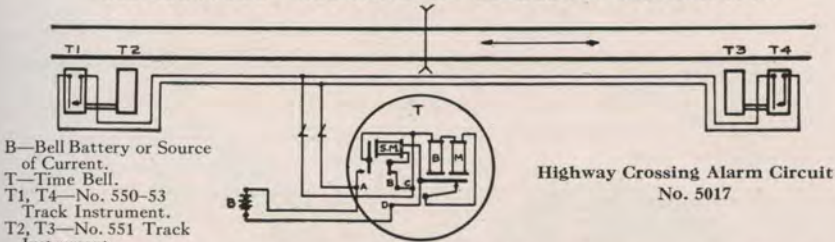


Operation: Train passing over "T" closes time relay contacts, bell will ring predetermined time.



Operation: Train passing short track circuit closes time relay contact, bell will ring predetermined time.

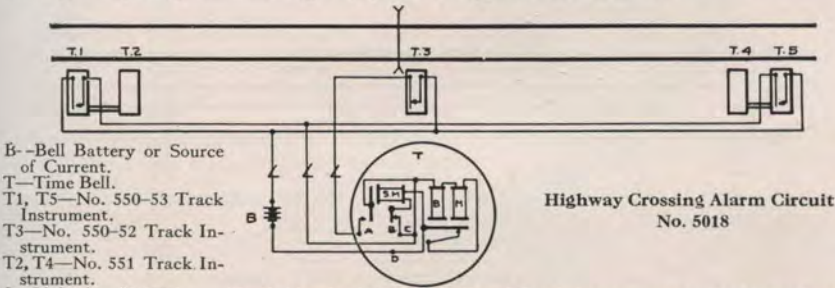
HIGHWAY CROSSING ALARM CIRCUITS



B—Bell Battery or Source of Current.
 T—Time Bell.
 T1, T4—No. 550-53 Track Instrument.
 T2, T3—No. 551 Track Instrument.
 L—Lightning Arrester.

Single Track with Time Bell and Track Instruments. Line Wire Control

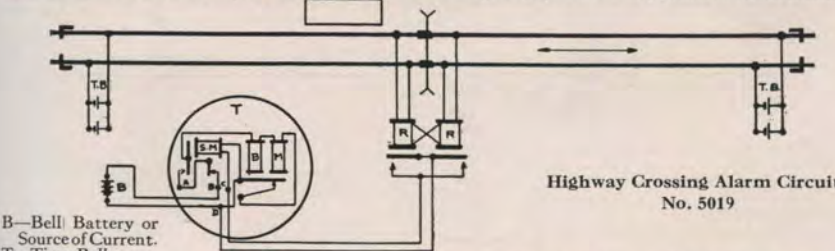
Operation: Left to right, train passing T1 will start bell ringing, and bell will ring predetermined time and stop, train passing T3 will not ring bell, operation in opposite direction similar.



B—Bell Battery or Source of Current.
 T—Time Bell.
 T1, T5—No. 550-53 Track Instrument.
 T3—No. 550-52 Track Instrument.
 T2, T4—No. 551 Track Instrument.
 L—Lightning Arrester.

Single Track with Time Bell and Track Instruments. Line Wire Control

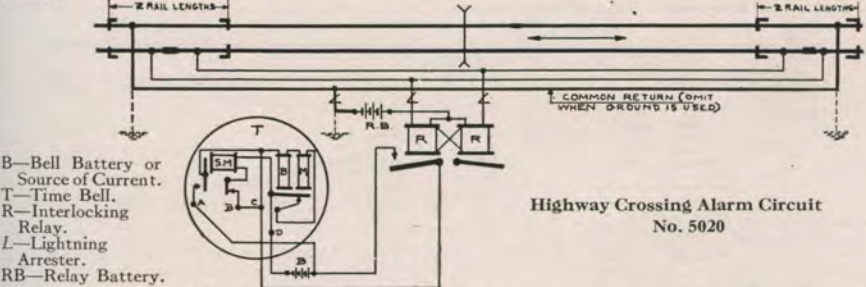
Operation: Left to right, train passing T1 will start bell ringing, bell will ring predetermined time or until train passes T3, and stop, train passing T4 will not ring bell, operation in opposite direction similar.



B—Bell Battery or Source of Current.
 T—Time Bell.
 R—Interlocking Relay.
 TB—Track Battery.

Single Track with Time Bell and Track Circuit. Track Circuit Control

Operation: Train entering track circuit will cause bell to ring predetermined time or until train reaches crossing.

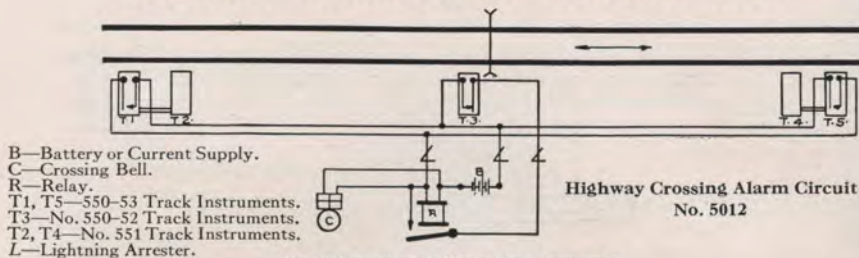


B—Bell Battery or Source of Current.
 T—Time Bell.
 R—Interlocking Relay.
 L—Lightning Arrester.
 RB—Relay Battery.

Single Track with Time Bell and Short Track Circuits. Line Wire Control

Operation: Left to right, train passing over short track circuit causes bell to ring a predetermined time and stop, leaving over opposite short track circuit will not ring bell.

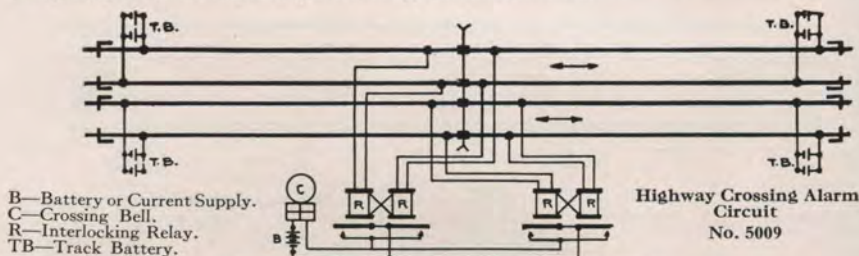
HIGHWAY CROSSING ALARM CIRCUITS



B—Battery or Current Supply.
C—Crossing Bell.
R—Relay.
T1, T5—550-53 Track Instruments.
T3—No. 550-52 Track Instruments.
T2, T4—No. 551 Track Instruments.
L—Lightning Arrester.

Single Track with Track Instruments

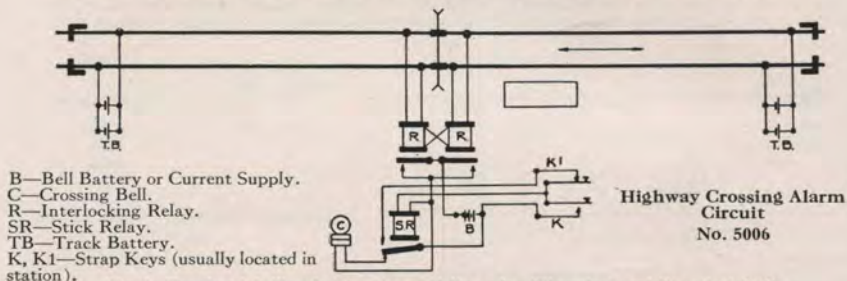
Operation: Left to right, train passing T1 will start bell, bell will ring until train passes T3 and stop, train passing T4 will not ring bell, operation in opposite direction similar.



B—Battery or Current Supply.
C—Crossing Bell.
R—Interlocking Relay.
TB—Track Battery.

Two Adjacent Single Tracks with Track Circuits

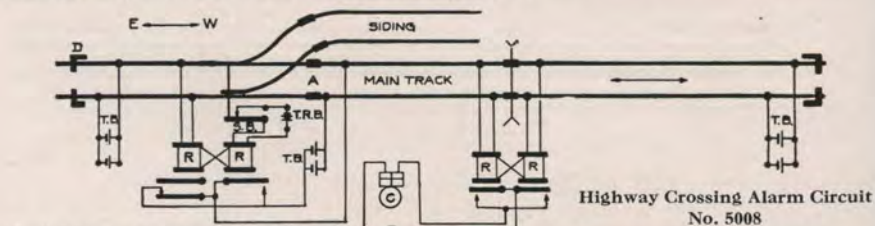
Operation: Train entering track circuit will start bell, bell will ring until last car leaves crossing.



B—Bell Battery or Current Supply.
C—Crossing Bell.
R—Interlocking Relay.
SR—Stick Relay.
TB—Track Battery.
K, K1—Strap Keys (usually located in station).

Single Track with Track Circuits and Keys for Silencing and Starting Bells

Operation: Train entering track circuit starts bell, bell rings until last car passes crossing or until Key K is depressed, bell may again be started by depressing Key K1.



B—Bell Battery or Current Supply.
C—Crossing Bell.
R—Interlocking Relay.
SB—Switch Box.
TB—Track Battery.
TRB—Track Relay Battery.

Single Track Guarding Against False Alarm with Track Circuits

Operation: Train going east from siding to main line will not start bell, should train come out of siding and start west, bell will ring when passing "A" and ring until last car leaves crossing, west bound main line trains start bell at "D".

MECHANICAL CROSSING BELL

Style "E"



Complete Signal
No. 884-1



Crossing Bell
No. 884-3

These Signals are similar to our Style C and D except they are equipped with Style 884-3 Bells. The Bells have mechanisms completely protected from the weather and Gong has a shield over top to prevent snow and sleet from deadening the sound. The Gong is made of high carbon pressed steel and is 12" in diameter giving a clear and distinct tone. The operating rod has a large eye on its lower end serving as a handle, this eye fits over a special locking device bolted to the pole, permitting the use of a padlock. This prevents boys and mischievous persons from ringing the Gong while watchman is absent.

These Signals are furnished with or without foundation base as listed.

Trade No.	DESCRIPTION	List Price
884-1	Style E Mechanical Crossing Signal with Sign and Foundation Casting, height 12 feet, complete as shown	\$41.85
884-2	Same as above but with Pipe Post 2 feet longer for setting into Concrete Foundation.	36.05
884-3	Style E Mechanical Crossing Bell to fit over 3" (3½" O. D.) Pipe complete with Operating Rod (no Pole or Signs)	7.00

When Signs shown above are not wanted, deduct \$24.00 from list price. When other Signs than those shown are wanted, add or deduct difference in list price of Signs.

MECHANICAL CROSSING SIGNALS

Style "C" 15"



No. 882-1

Style "D" 20"



No. 883-1

These Mechanically Operated Crossing Signals are used at the curb line of highway crossings, thus compelling watchmen to give the public warning of approaching trains from a point where the watchman has a clear view of the crossing.

The Signals are 12 feet high and are furnished with or without Standard Crossing Signs as shown. Any Standard Sign can be used. The Operating Rod has a large eye on its lower end which serves as a handle to operate the Gong and also to lock the rod to the special locking device furnished on the pole, to prevent mischievous persons or boys operating the Gong in watchman's absence.

MECHANICAL CROSSING SIGNALS

Style "C" 15"
 Style "D" 20"



The Bells are furnished in two sizes, Style C—15" diameter and Style D—20" diameter. The Gongs are made of a special bell alloy and have a loud, clear, penetrating sound that can be heard clearly above noise of passing trains. The Main Casting supporting the Gong is of heavy cast iron and entirely encloses the lower portion of Gong, and has a socket to fit over 3" (3½" O. D.) Pipe Poles.

Sectional View of Style C and D Bells

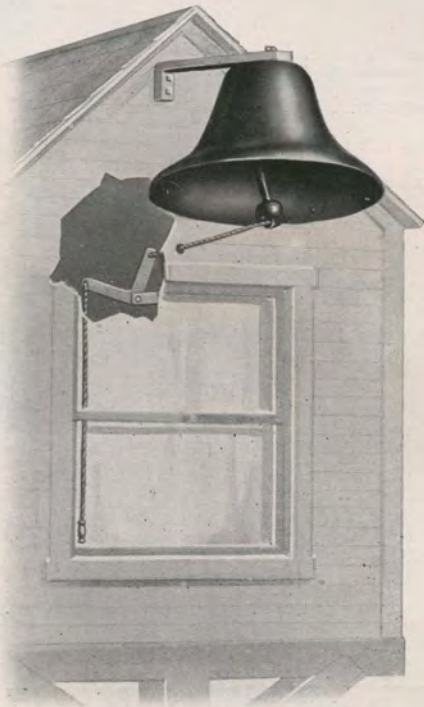
Trade No.	DESCRIPTION	List Price
882-1	Style E Mechanically Operated Crossing Signal complete with Signs and Foundation Base, height 12 feet as shown	\$42.75
882-2	Style E Mechanically Operated Crossing Signal same as above but without Base and with Pole 2 feet longer to set directly into a Concrete Foundation	36.95
883-1	Style D Mechanically Operated Crossing Signal complete with Signs and Foundation Base, height 12 feet as shown	45.75
883-2	Style D Mechanically Operated Crossing Signal same as above, but without Base and with Pole 2 feet longer to set directly into a Concrete Foundation	39.75
882-3	Style C 15" Mechanical Crossing Bell Only Complete with Operating Rod with Socket to fit over 3" (3½" O. D.) Pipe Poles	6.90
883-3	Style D 20" Mechanical Crossing Bell Only complete with Operating Rod with Socket to fit over 3" (3½" O. D.) Pipe Poles	9.90

When Signs shown above are not wanted, deduct \$24.00 from list price. When other Signs than those shown are wanted, add or deduct difference in list price of Signs.

MECHANICAL TOWER BELLS

Style "A" 15"

Style "B" 20"



No. 881-2 and 880-2

Application No. 2

Showing Application of Mechanical Tower Bells

These Warning Bells are used at Watchmen's Shanties, Gate Houses and Towers. The Gongs are made of a special alloy and have a loud, clear, penetrating sound that can be plainly heard above the noise of passing trains. Bracket is rolled steel, all other parts heavy cast iron. All parts are simple and strong, designed for hard continuous use. Furnished in two sizes, viz.: Style A with 15" Gong and Style B with 20" Gong. Furnished complete with all Fittings as shown.

MECHANICAL TOWER BELLS

Style "A" 15"

Style "B" 20"



No. 881-3 and 880-3
Application No. 3

No. 881-1 and 880-1
Application No. 1

Showing Applications of Mechanical Tower Bells

Trade No.	DESCRIPTION	List Price
880-1	Style A 15" Mechanical Tower Bell complete with all Fittings as shown for Application No. 1	\$4.50
881-1	Style B 20" Mechanical Tower Bell complete with all Fittings as shown for Application No. 1	6.50
880-2	Style A 15" Mechanical Tower Bell complete with all Fittings as shown for Application No. 2	5.50
881-2	Style B 20" Mechanical Tower Bell complete with all Fittings as shown for Application No. 2	7.50
880-3	Style A 15" Mechanical Tower Bell complete with all Fittings as shown for Application No. 3	6.00
881-3	Style B 20" Mechanical Tower Bell complete with all Fittings as shown for Application No. 3	8.00

MECHANICAL CROSSING BELLS

Style "F"



Perspective View



Sectional View



Application No. 1



Application No. 2



Application No. 3

These Bells are used at Flagmen's and Gatenen's Shanties to warn the public of approaching trains. The Gongs are 12" diameter made of pressed steel and have a clear and penetrating sound. The bell clapper is mounted separately to give a sharp blow on inside of Gong. The mechanism is entirely enclosed from the weather so snow and sleet cannot interfere with its proper working. Furnished complete for three methods of application as shown.

Trade No.	DESCRIPTION	List Price
885-1	Style F Mechanical Crossing Bell complete for operation by direct straight pull, per Application No. 1.....	\$5.68
885-2	Style F Mechanical Crossing Bell for Operation with downward pull and crank, per Application No. 2.....	7.54
885-3	Style F Mechanical Crossing Bell for operation with downward pull and pulley, per Application No. 3.....	6.44

IRON CROSSING SIGNS



Crossing Signs Nos. 428, 428-9, 429 and 429-9



Crossing Signs Nos. 430, 430-9, 431 and 431-9

The Crossing Signs illustrated are the most conventional Standard Crossing Signs, and are made of extra heavy castings and with heavy raised 6" or 9" letters painted white, body of Sign is painted black. Signs 428 and 429 are 5 feet long and 8" high with 6" letters, and 7-foot long, 11" high with 9" letters. Signs 430 and 431 are 6' 3" long with 6" letters and 8 feet long with 9" letters. Signs are made in two pieces and furnished complete with Filler Blocks and Bolts for attaching to 3" (3½" O. D.) or 4" (4½" O. D.) Steel Poles. Signs read same on both sides.

Trade No.	DESCRIPTION	List Price
428	Double Crossing Sign with 6" Letters, complete ready to attach to 3" Steel Poles, each	\$24.00
428-9	Same as above but with 9" Letters . . . . .	. . . . .
429	Double Crossing Sign with 6" Letters, complete ready to attach to 4" Steel Poles, each	24.00
429-9	Same as above but with 9" Letters . . . . .	. . . . .
430	Double Crossing Sign with 6" Letters, complete with Bolts ready to attach to 3" Steel Poles, each	24.00
430-9	Same as above but with 9" Letters . . . . .	. . . . .
431	Double Crossing Sign with 6" Letters, complete with Bolts ready to attach to 4" Steel Poles, each	24.00
431-9	Same as above but with 9" Letters . . . . .	. . . . .

IRON CROSSING SIGNS



Crossing Signs Nos. 436 and 437

The above Signs are one half of a five-foot circle and five feet wide and have heavy 6" raised block letters. Made to fit 3" (3½" O. D.) and 4" (4½" O. D.) Steel Poles. Signs read the same on both sides. Raised letters are painted white and body of sign black, thus making them very attractive and easy to maintain as no skill is required when painting is necessary. Signs are cast extra heavy to prevent damage by bullet shots, etc.

Trade No.	DESCRIPTION	List Price
436	Half Round Sign complete with Bolts ready to attach to 3" Steel Pole, each.....	\$25.00
437	Half Round Sign complete with Bolts ready to attach to 4" Steel Pole, each.....	25.00

IRON CROSSING SIGNS



Crossing Signs Nos. 434 and 435

The Signs illustrated above are cast in two pieces and arranged to attach to 3" (3½" O. D.) and 4" (4½" O. D.) Steel Poles. Outside diameter of circle is 44" and letters are heavy 6" raised block letters. Body of Sign is painted black and the raised letters are painted white, making signs very attractive and extremely easy to maintain as no skill is required when repainting is necessary. Signs read alike from both sides and are made extra heavy, and sufficiently strong to prevent breakage by bullet shots, etc.

Trade No.	DESCRIPTION	List Price
434	Round Crossing Sign complete with Bolts ready to attach to 3" Steel Poles, each	\$24.00
435	Round Crossing Sign complete with Bolts ready to attach to 4" Steel Poles, each	24.00

IRON CROSSING SIGNS



Crossing Signs Nos. 432 and 433

The Crossing Sign illustrated above makes a very attractive, distinctive and clear reading Highway Crossing Sign. It is extra long, to be sure to attract attention. Length is 6' 8", letters are 6" cast upon an 8" background.

Letters are heavy raised block letters, easily readable, and are painted white, body of Sign is painted black and is cast extra heavy, making it practically indestructible and bullet proof. Furnished to fit 3" (3½" O. D.) and 4" (4½" O. D.) Steel Poles.

Trade No.	DESCRIPTION	List Price
432	Straight Crossing Sign complete ready to attach to 3" Steel Poles.....	\$24.00
433	Straight Crossing Sign complete ready to attach to 4" Steel Poles.....	24.00



Crossing Signs Nos. 448, 448-9, 449 and 449-9

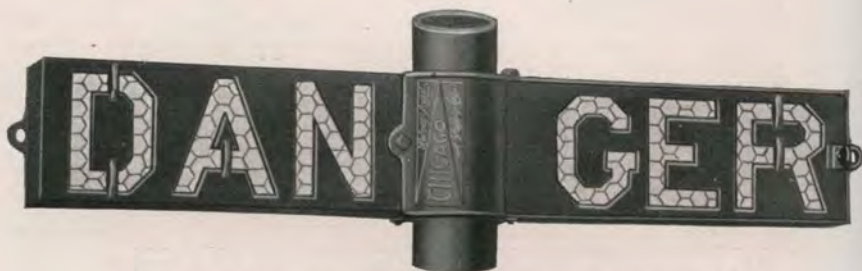
The above Sign is especially placed upon the market for use in the several States in which a separate warning sign reading "Danger" must be used at all highway crossings. It is furnished with 6" and 9" letters and Sign with 6" letters is 4 feet long and 8" high; Sign with 9" letters is 6 feet long and 11" high.

The body of Sign is painted white and letters are painted red thus making a very distinctive warning sign and complying with the laws of States requiring this added protection.

Signs are furnished ready to attach to 3" (3½" O. D.) and 4" (4½" O. D.) Steel Poles as shown.

Trade No.	DESCRIPTION	List Price
448	"Danger" Sign with 6" letters complete ready to attach to 3" Steel Poles.....	\$20.00
448-9	"Danger" Sign with 9" letters complete ready to attach to 3" Steel Poles.....	.....
449	"Danger" Sign with 6" letters complete ready to attach to 4" Steel Poles.....	20.00
449-9	"Danger" Sign with 9" letters complete ready to attach to 4" Steel Poles.....	.....

IRON CROSSING SIGNS



Electrically Illuminated Signs Nos. 440, 441, 442 and 443

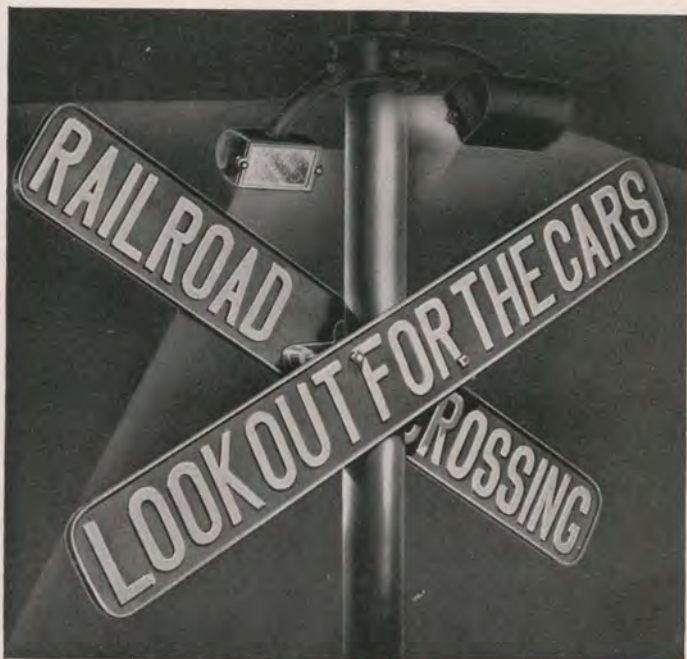
The Electrically Illuminated Signs are cast extra heavy and are provided with ruby wire glass $\frac{3}{4}$ " thick making them practically indestructible. The interior is fitted with electric lights and sockets as specified. Signs are double, reading "Danger" in 6" block letters from both sides.

Made for 3" ($3\frac{1}{2}$ " O. D.) and 4" ($4\frac{1}{2}$ " O. D.) Steel Poles. Each side is cast in two pieces giving easy access to lamps and wires. The door is held solidly into place with a cap screw and a lock lug is also provided so that Signs may be locked with padlocks.

The arrangement is such that lamps and sockets are absolutely protected from the weather. The lamps usually have current supplied from same source that operates the Crossing Bell. Contact for lamp circuit is made through an extra contact on Bell armature, thus flashing the lights on and off and making a very conspicuous sign at night that may be seen from a great distance.

Trade No.	DESCRIPTION	List Price
440	Illuminated "Danger" Sign with six Sockets (no lamps), wired complete for electric railway service ready to attach to 3" Poles, each	\$24.00
441	Same as above, but for attaching to 4" Steel Poles, each	24.00
442	Illuminated "Danger" Sign with two Sockets, and two 6-Volt Lamps, wired complete for Crossing Signals on steam railroads , ready to attach to 3" Poles, each	24.00
443	Same as above, but for attaching to 4" Steel Poles, each	24.00

CROSSING SIGN ILLUMINATING OUTFIT



Crossing Sign Illuminating Outfits Nos. 444, 445, 446 and 447

The Outfits shown above are used with Highway Crossing Signals with Illuminated Crossing Signs. The lamps are contained in the end of the hollow arms and are entirely enclosed, being protected with a heavy plate glass on the Sign side.

Current to lamps is usually provided from same source that rings the Crossing Bell and is controlled through an extra contact on Bell producing a flashing effect by turning current on and off with each stroke of the Bell, thus making the Crossing Sign very conspicuous and especially effective on automobile roads. The Outfit is weatherproof and strong enough to prevent injury by malicious persons. Lamps cast a clear white light upon Signs making them very conspicuous at night.

The Reflector Castings clamp to Poles and can be applied to any existing Crossing Signals by drilling a hole for wires through side of Pole. Furnished as listed ready to attach, or in connection with any Crossing Signals sold by us.

Trade No.	DESCRIPTION	List Price
444	Illuminating Outfit complete, consisting of two Reflectors each equipped with Standard Edison Base Socket (no lamps) wired ready to install on 3" Steel Pole (for use on high Voltages)	\$22.00
445	Same as above to attach to 4" Steel Pole	22.00
446	Illuminating Outfit complete, consisting of two Reflectors each equipped with Candelabra Base Socket and 6-Volt Battery Lamps, wired ready to attach to Crossing Signals, having 3" Steel Poles (for use on Bell Batteries)	24.00
447	Same as above but for 4" Steel Poles	24.00
444-1	Reflector Casting Only for No. 444 or 446, each	
445-1	Reflector Casting Only for No. 445 or 447	
444-2	Frame for Glass, each	
444-3	Plate Glass, each	
442-1	6-Volt Candelabra Base Lamp Only for 446 or 447, each	

1914

CATALOGUE AND PRICE LIST

SECTION F

ELECTRIC BELLS

Annunciator Bells
Indicator Bells
Electric Flag
Time Bell
Highway Crossing Bells
Locomotive Type Bells
Motor Type Bells

STYLE "E" CROSSING BELL



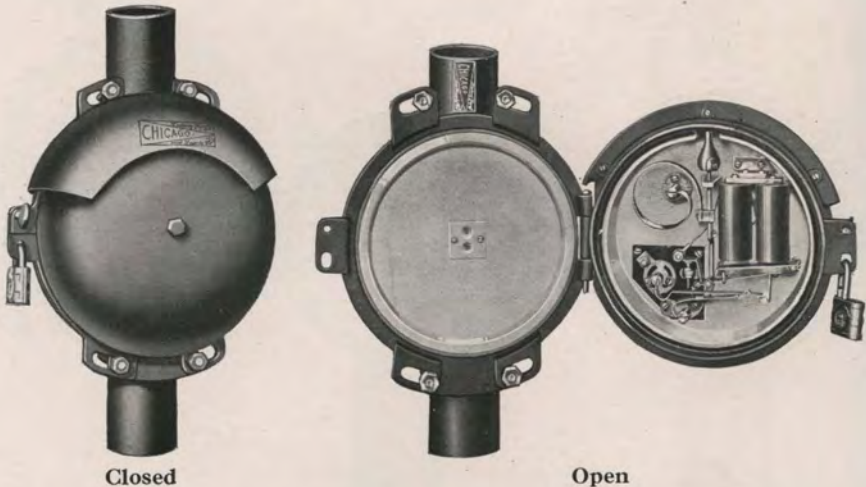
STYLE "E" CROSSING BELLS HAVE FOLLOWING ADVANTAGES:

The mechanism is gravity operated and not dependent on springs. Case is very heavy and strong and is well gasketed making same absolutely water, dust and bug proof.

The Gong is 12" diameter and has a loud, clear and distinct tone.

Bells are furnished regularly at 10 Ohms resistance, but may be furnished any resistance up to 1,000 Ohms. Can be furnished to operate on any Voltage from 2 Volts to 110 Volts Direct Current and are guaranteed to operate on a minimum amount of current.

STYLE "E" CROSSING BELL



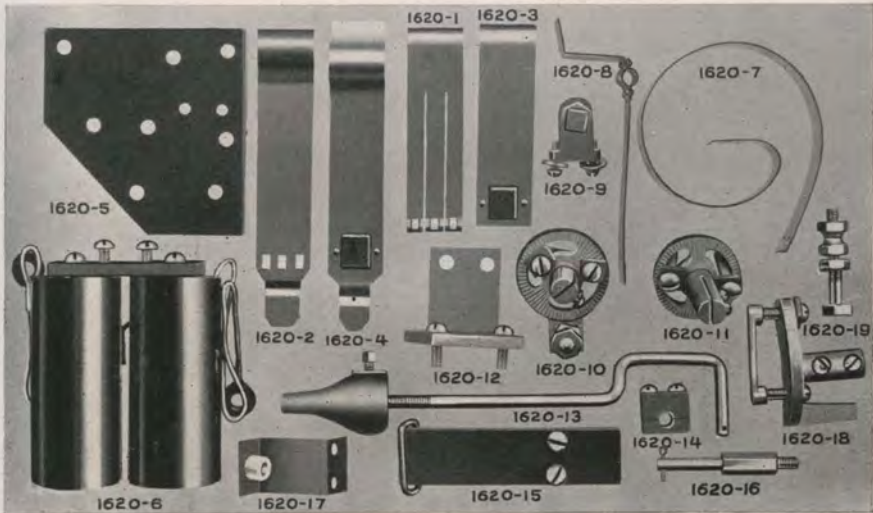
The Case on either style may be opened for inspection and adjustment without removing Gong or disconnecting the wires.

Bells are furnished with Sockets for top of Poles or Lugs to fasten to side of Steel Poles with U Bolts or Wood Poles with Lag Screws as listed.

Contact Springs are heavy Phosphor Bronze with three fingered Platinum Contacts or large Graphite Contacts when specified. Contacts are self-cleaning and require no adjustments.

All parts are strong and simple, jig drilled and machined to insure durability and interchangeability and are held securely in place with cotters and lock washers, thus eliminating failures.

STYLE "E" CROSSING BELL



Repair Parts of Style "E" Bells

(Order repairs by number shown)

Trade No.	DESCRIPTION	List Price
1620	Style E Bell for Wood Post complete with Four Lag Screws, each	\$36.00
1621	Style E Bell for 3" (3½" O. D.) Steel Post, complete with Two U Bolts, each	36.00
1622	Style E Bell for 4" (4½" O. D.) Steel Post, complete with Two U Bolts, each	36.00
1623	Style E Bell for 5" (5½" O. D.) Steel Post, complete with Two U Bolts, each	36.00
1624	Style E Bell with Socket for Top of 3" (3½" O. D.) Post, each	36.00
1625	" " " " " " " 4" (4½" O. D.) " " "	36.00
1620-1	Back Contact Spring, Platinum Contacts, each	2.50
1620-2	Front " " " " " " " " " " " " " " " "	2.50
1620-3	Back " " " Graphite " " " " " " " " " "	2.25
1620-4	Front " " " " " " " " " " " " " " " "	2.25
1620-5	Enameled Slate Base	3.00
1620-6	Magnets complete as shown. Specify Resistance	.....

If other repair parts than those listed are required, order by number shown. Bells will be furnished with Platinum Contacts unless Graphite Contacts are specified. Bells will be furnished standard resistance, 10 Ohms, unless otherwise specified. An extra charge will be made for winding bells higher than 50 Ohms.

ENCLOSED CROSSING BELL

Style "F"



Closed



Open

This Bell is equipped with a heavy iron case and is practically indestructible.

Case is hinged on extreme bottom allowing entire Bell to be inspected easily and quickly without removing any parts.

The works are mounted upon a heavy porcelain base affording highest insulation. The Gong is 12" in diameter and has a clear, loud and distinct tone.

The Magnets are large, enclosed in waterproof covers wound with high grade enameled wire and tested with 3,000 Volts, Alternating Current, before shipment.

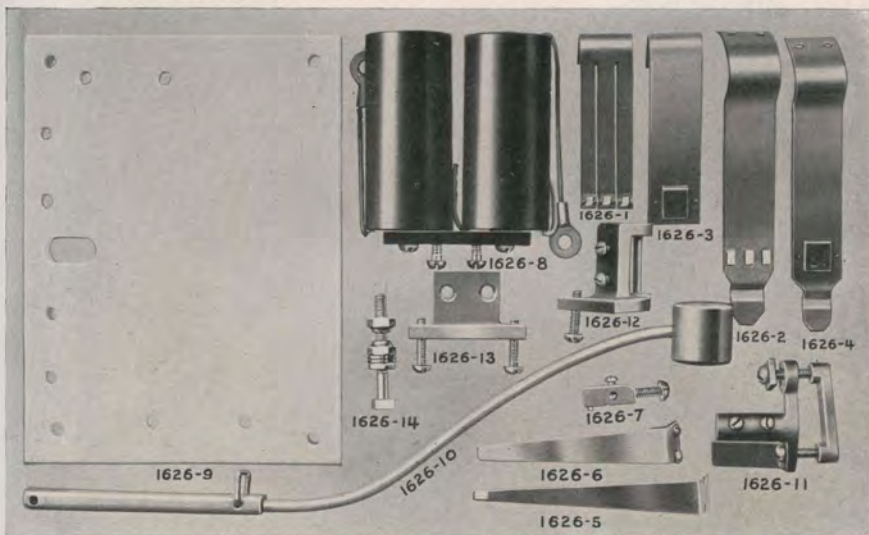
Contact Springs are three fingered platinum to platinum or graphite to graphite as specified.

All parts are simple and strong and held securely in place, guaranteed not to work out of adjustment under constant use.

Standard Resistance is 8 Ohms, but also furnished wound to any desired resistance and Voltage up to 600 Volts Direct Current.

ENCLOSED CROSSING BELL

Style "F"



Repair Parts for Style "F" Bells

Trade No.	DESCRIPTION	List Price
1626	Style F Crossing Bell complete with Four Lag Screws for Wood Posts.....	\$40.00
1627	Style F Crossing Bell complete with Two U Bolts for side of 3½" O. D. Steel Pole.....	40.00
1628	Style F Crossing Bell complete with Two U Bolts for side of 4½" O. D. Steel Pole.....	40.00
1626-1	Back Contact Spring, Platinum Contacts, each.....	2.50
1626-2	Front " " " " " ".....	2.50
1626-3	Back " " " Graphite " ".....	2.25
1626-4	Front " " " " " ".....	2.25
1626-5	" " " for Electric Light or Tell Tale Circuits, each.....	1.25
1626-6	Aluminum Spring Support for above with Screws.....	.60
1626-7	Contact Post, Platinum Pointed for 1626-5.....	.80
1626-8	Magnets complete as shown. Specify Resistance.....	.....
1626-9	Porcelain Base.....	2.00

If other repair parts than those listed are required, order by number as shown. Bells will be furnished with Platinum Contacts unless Graphite Contacts are specified. Bells will be furnished standard resistance, 8 Ohms, unless otherwise specified. An extra charge will be made for Bells wound above 50 Ohms.

LOCOMOTIVE TYPE CROSSING BELL

Style "G"



1630 For Top of 3" Pole
 1630-1 " " " 4" "



1630-2 With Lag Screws for Wood Poles
 1630-3 With Bracket and U Bolts for 3" Steel Pole
 1630-4 " " " " " 4" " "
 1630-5 " " " " " 5" " "
 1630-6 " " " " " 6" " "

Style "G" Bell is equipped with 18" Crucible Bell Steel Locomotive Type Gong and rings the same as a gong on a locomotive, thus making an ideal crossing alarm. The iron covered Solenoid Magnet which is form-wound is large, powerful and highly efficient and may be wound to operate on any Voltage from 2 Volts to 650 Volts Direct Current.

The operation of Bell is entirely gravity actuated and does not depend upon any spring or cam action, thus avoiding bell failures of every kind. The Contacts are large, heavy three fingered platinum contacts on phosphor bronze springs. The entire mechanism including the magnet is located in the dust and weather proof compartment of case provided with a large gasketed door and is easily accessible and may be inspected or removed from case without dismounting the Gong.

Contact Springs and Binding Posts are mounted upon a heavy slate base assuring perfect insulations. No current carrying part is "grounded", and Bell may be equipped with extra Contacts for the operation of illuminating devices, etc., operating from Bell Battery.

LOCOMOTIVE TYPE CROSSING BELL

Style "H"



1631 For Top of 3" Pole
 1631-1 " " " 4" "

1631-2 With Lag Screws for Wood Poles
 1631-3 With Bracket and U Bolts for 3" Poles
 1631-4 " " " " " 4" "
 1631-5 " " " " " 5" "
 1631-6 " " " " " 6" "

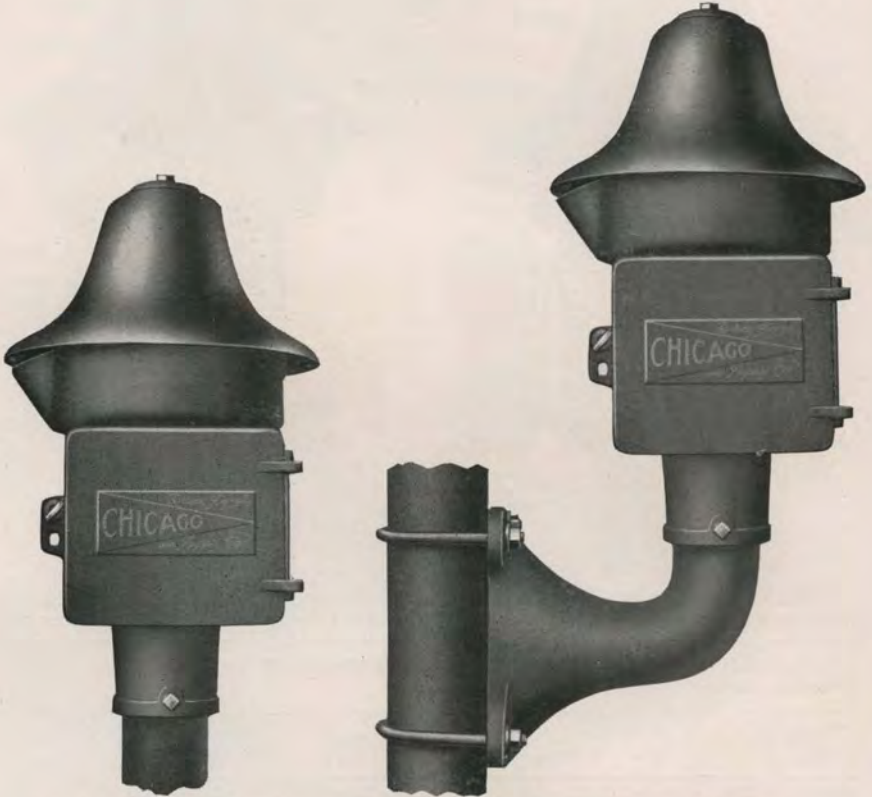
Style "H" Locomotive Type Bell is equipped with 14" Locomotive Type Gong. The works are contained in a dust and water proof compartment and are mounted upon a removable base, making inspections, repairs, or removal very easy. Contact Springs and Binding Posts are mounted on slate.

The Magnets which are form-wound, can be furnished of any resistance for operation on from 2 to 220 Volts Direct Current. The Contact Springs are heavy and equipped with three fingered Platinum Contacts. Extra Contacts may be provided for operating Lamps or Tell Tale Bells.

All bearings are steel and phosphor bronze and parts are jig drilled and machined perfectly to insure durability and interchangeability. Adjustments are simple and secured with double nuts or cotter pins to prevent coming loose in operation.

MOTOR TYPE CROSSING BELL

Style "K"



1632 For Top of 3" Pole
 1632-1 " " " 4" "

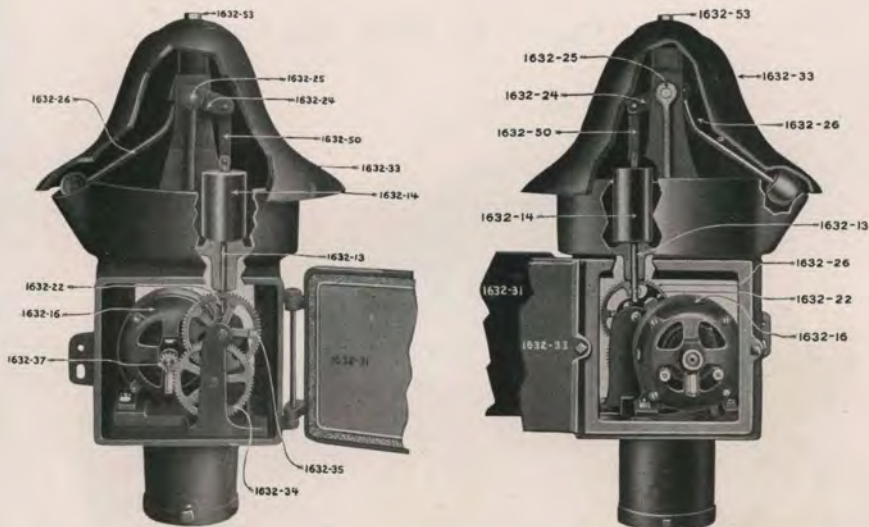
1632-2 With Lag Screws for Wood Poles
 1632-3 With Bracket and U Bolts for 3" Poles
 1632-4 " " " " " 4" "
 1632-5 " " " " " 5" "
 1632-6 " " " " " 6" "

This Bell is absolutely reliable and operates by motor. It is furnished to operate on Direct Current of any Voltage from 10 Volts to 650 Volts and on Alternating Current for 110, 220, 440 or 660 Volts, either 25 or 60 Cycle.

The mechanism is extremely simple and without any "make and break" contact springs. The motor is small and highly efficient. The entire mechanism is mounted upon a removable base and is contained in a dust and moisture proof compartment. The Gears and Pinion are bronze against steel and entire mechanism including case, are jig drilled and accurately machined to size, thus assuring smoothness in operation, durability and interchangeable parts.

MOTOR TYPE CROSSING BELL

Style "K"

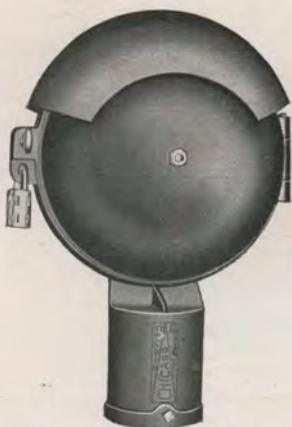


The Gong is 14" diameter at the mouth and made of special bell steel heavily copper plated to prevent rust. The mechanism delivers evenly timed heavy blows on inside of Gong, which may be heard distinctly above all other noises.

Trade No.	DESCRIPTION	List Price
1632	Motor Type Crossing Bell for D. C. or A. C. 110 or 220 Volts for Top of 3" Steel Pole	\$110.00
1632-1	Same as above for Top of 4" Steel Pole	110.00
1632-2	Motor Type Crossing Bell for D. C. or A. C. 110 or 220 Volts with Bracket and Lag Screws for Wood Poles	114.00
1632-3	Motor Type Crossing Bell for D. C. or A. C. 110 or 220 Volts with Bracket and U Bolts for 3" Steel Poles	115.00
1632-4	Same as above but for 4" Poles	115.00
1632-5	“ “ “ “ “ 5" “	115.00
1632-6	“ “ “ “ “ 6" “	115.00
	For Motor Type Bells with 10 Volt D. C. Motors, add to list price	10.00
	For Motor Type Bells arranged to operate on 450 to 600 Volts D. C., add to list price	8.00
	For Motor Type Bells to operate on 400 to 660 Volts A. C., add to list price	10.00
	For Bells equipped with Genuine Bell Metal Gong, add to list price	35.00
	For Bells equipped with Crucible Bell Steel Gong, add to list price	15.00

Information regarding Voltages A. C. or D. C. must accompany orders. Repair part orders should give part numbers as shown above.

STYLE "T" TIME BELL



1633 For Top of 3" Poles
 1633-1 " " " 4" "



1633-2 with Lag Screws for Wood Poles
 1633-3 " U Bolts for 3" Poles
 1633-4 " " " 4" "
 1633-5 " " " 5" "
 1633-6 " " " 6" "

Style "T" Crossing Bell is of same type as our Type "E" Bell, except that it is equipped with a time feature, which automatically silences bell at the end of a predetermined time. It is wired in two ways, viz.: for "Line Circuit Control" used with Track Instruments, Trolley Contactors, Short Insulated Rail Section, etc., or for "Track Circuit Control" for use with Standard Track Circuits and Track Relays. It is used extensively on Electric Street Railways and on Steam Railroads in Automatic Block Signal territory at locations where trains stand within the signal circuits.

The operation of Bell is very simple and can be easily maintained by anyone familiar with ordinary crossing bells. The time feature is adjustable to any required length of alarm. The works are mounted into a dust and weather proof case and all parts excepting the time feature are interchangeable with our Style "E" Crossing Bell.

CHICAGO ELECTRIC FLAG



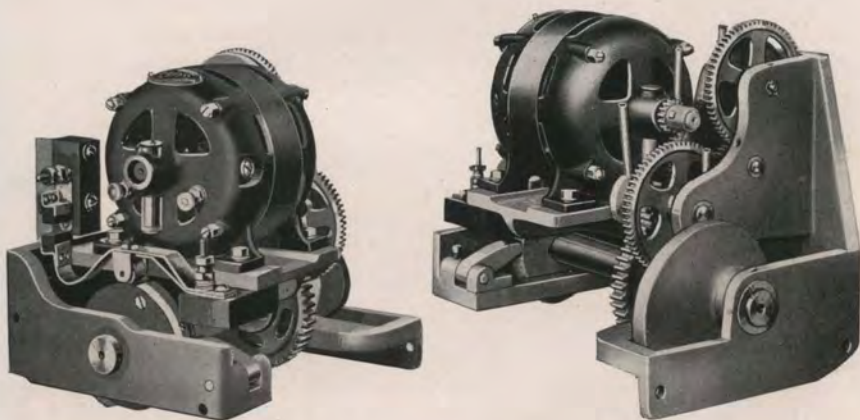
Chicago Electric Flag

The "Chicago" Electric Flag is without doubt the practical solution of the Highway Crossing Protection Problem, it combines in a reliable one piece apparatus:

- AN AUDIBLE LOCOMOTIVE TYPE CROSSING BELL,
- A "WAVING" FLAG DAY SIGNAL,
- A RED FLASHING NIGHT SIGNAL,
- A GREEN FLASHING SIGNAL FOR ENGINE MEN.

The "Chicago" Electric Flag can be mounted on top of 3" ($3\frac{1}{2}$ " O. D.) Poles or on top of 4" ($4\frac{1}{2}$ " O. D.) Poles. It can also be supported on our Cantilever Brackets extending either three feet or eight feet into the highway. This last method of supporting COMPELS attention of passing traffic, and makes it practically impossible for anyone to cross tracks either by day or night without HEARING or SEEING the warning.

CHICAGO ELECTRIC FLAG



Rear View

Front View

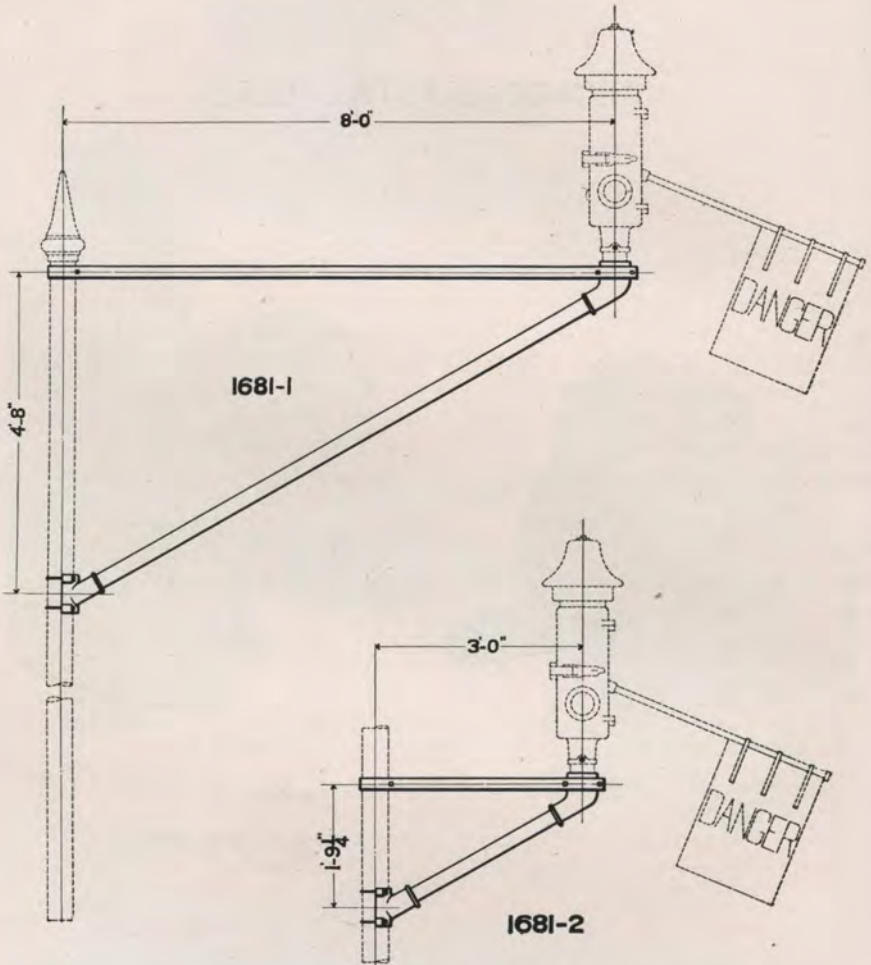
Works of "Chicago" Electric Flag

(Removable from Case as a Complete Unit on a Separate Base)

The Audible Locomotive Type Crossing Bell is operated by a set of Reduction Gears and a Cam. No contacts, trips or springs are used. Heavy evenly timed blows are struck on inside of Gong, which is 14" in diameter at the mouth, and made of special Bell Steel, heavily copper plated to prevent rusting. Special Gongs made of Genuine Bell Metal or Crucible Steel are furnished at a slight advance in price.

The "Waving Flag" Day Signal is a Flag 18" x 24" made of heavy sheet steel, enameled "RED" with the words "DANGER" or "STOP" painted white across both Faces in 6" Block Letters. The Flag moves Up and Down with a movement which leaves no doubt as to its intended meaning, viz.: "Danger". It moves through an arc of 45 deg., and operates without jerks or stops of any kind, movement being steady at all times. The operation of the Flag is also accomplished by a set of Reduction Gears and a Cam.

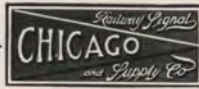
CHICAGO ELECTRIC FLAG



Brackets for Mounting Chicago Electric Flag

Flashing Night Signal—Two $5\frac{3}{8}$ " Red Lenses are mounted in the case, one on each side facing the highway. Each of these lenses has an electric lamp at its proper focal point, which is flashed at evenly timed intervals. Contacts make and break the lamp circuit with a quick snap action, and are provided with large Carbon Contact Blocks, which are easily and quickly removed, and are of such proportions so as to carry currents up to 10 Amperes at any Voltage up to 650 Volts.

Flashing Signal for Engine Men—Two Green Roundels, one on each side of case visible to approaching trains, flashing at regular intervals, give the train crew positive evidence that the signal is operating and also that Bell is ringing before train reaches the protected crossing, as all the mechanism is operated by the same Motor.



CHICAGO ELECTRIC FLAG

The Case is water, dust and bug proof, and has a large space with wood mounting boards for Resistance Units, Lightning Arresters, Terminals, etc. Motor is of standard design and has a high efficiency, entire mechanism is mounted on a separate base within the case, making it easy to remove for inspection or repairs. Gears and Pinions are Bronze against steel, minimizing the friction losses, entire mechanism is machined and jig drilled to insure smooth operation, durability and interchangeability. All bearings are provided with easily accessible oilers.

The Electric Flag can be furnished to operate on any voltage from 10 Volts to 650 Volts Direct Current, also on 110, 220 and 440 Volts Alternating Current of any Cycle, therefore it is well adapted for use on either Steam or Electric Railways, for either Power or Battery Current.

No lamps are included in prices given, but two lamp sockets are provided, mounted on mounting board at proper focal distance of lenses. Orders should specify voltage at which Electric Flag is to be operated, also number of cycles, when Alternating Current is used, and style of Lamps that will be used so proper sockets can be furnished.

Trade No.	DESCRIPTION	List Price
1680-1	Electric Flag with 110 or 220 Volt Alternating or Direct Current Motor, and Special Bell Steel Gong for mounting on top of 3" (3½" O. D.) Steel Poles	\$175.00
1680-2	Electric Flag with 110 or 220 Volt Alternating or Direct Current Motor and Special Bell Steel Gong for mounting on top of 4" (4½" O. D.) Steel Poles	175.00
	For Genuine Bell Metal Gong, add to list price	35.00
	For Crucible Steel Bell Gong, add to list price	15.00
	For Electric Flag equipped with 10 Volt Direct Current Motor, add to list price	10.00
	For Electric Flag equipped with Motor for Operating on 440 to 650 Volt Direct Current, add to list price	8.00
	For Electric Flag equipped with Motor for Operating on 440 to 660 Volt Alternating Current, add to list price	10.00
1681-1	Cantilever Bracket Only for Attaching to Signal Poles extending 8 feet into Highway (specify size of Pole for which Bracket is wanted)	25.00
1681-2	Cantilever Bracket Only for attaching to Signal Poles extending 3" into Highway (specify size of Pole for which Bracket is wanted)	20.00

1914

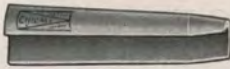
CATALOGUE AND PRICE LIST

SECTION G

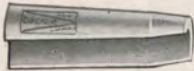
TRACK CIRCUIT AND
CONSTRUCTION MATERIAL

Cross Arms
Cross Arm Braces and Bolts
Cross Arm Pins
Pole Steps
Trunking and Capping
Trunking Stakes
Bond Wires
Bond Wire Protectors
Channel Pins
Channel Pin Tools
Track Drill
Lineman's Tools

CHANNEL PINS



R. S. A. 1086



No. 21



No. 22



No. 238 to 249

Trade No.	DESCRIPTION			List Price
	RY. SIGNAL CHANNEL PINS			
1086-1	Tinned Channel Pin for $\frac{9}{32}$ " hole and No. 8 B. W. G. Wire per R. S. A. Drawing and Specifications, per M.....			\$8.00
1086-2	Coppered Channel Pin for $\frac{9}{32}$ " hole and No. 8 B. W. G. Wire per R. S. A. Drawing and Specifications, per M.....			8.00
21-1	Tinned Channel Pin $1\frac{5}{8}$ " long for No. 8 B. W. G. Wire, per M.....			8.00
21-2	Coppered Channel Pin $1\frac{5}{8}$ " long for No. 8 B. W. G. Wire, per M.....			8.00
22-1	Tinned Channel Pin, $1\frac{1}{4}$ " long, straight tapering sides, for $\frac{9}{32}$ " hole and No. 8 B. W. G. Wire, per M.....			8.00
22-2	Coppered Channel Pin, $1\frac{1}{4}$ " long, straight tapering sides, for $\frac{9}{32}$ " hole and No. 8 B. W. G. Wire, per M.....			8.00
	LARGE SIZE CHANNEL PINS			
	Wire	Dia.	Dia. Hole	
249	6	5-16"	9-32"	10.00
238	4	3-8"	11-32"	10.00
239	0	19-32"	9-16"	16.00
240	0	21-32"	5-8"	16.00
241	0	25-32"	3-4"	18.00
242	00	19-32"	9-16"	16.00
243	00	21-32"	5-8"	16.00
244	00	3-4"	23-32"	18.00
245	00	25-32"	3-4"	18.00
246	000	21-32"	5-8"	16.00
247	0000	3-4"	23-32"	18.00
248	0000	25-32"	3-4"	18.00

CHANNEL PIN TOOLS



No. 80 (One Half Size)



No. 81 (One Half Size)



No. 82 (One Half Size)



No. 83 (One Half Size)

The Channel Pin Tools are made of best tool steel, properly hardened and finished. No. 80 and 81 are used by regular bonding and construction crews, No. 82 and 83 by inspectors and repair men.

Trade No.	DESCRIPTION	List Price
80	Standard Channel Pin Drift, 8" long.	\$2.00
81	“ “ “ Set, 8" “	1.50
82	Small “ “ Drift, 5" “	1.50
83	“ “ “ Set, 5" “	1.25



BOND WIRES

Trade No.	DESCRIPTION		Approx. Wt. per M	Approx. Wires per Cwt.	List Price
GALVANIZED IRON BOND WIRES					
84-38	No. 8 B. W. G. Iron Bond Wires	38'' long	238	420	.....
84-40	'' '' '' '' '' ''	40'' ''	250	400	.....
84-42	'' '' '' '' '' ''	42'' ''	262	381	.....
84-44	'' '' '' '' '' ''	44'' ''	275	364	.....
84-46	'' '' '' '' '' ''	46'' ''	288	347	.....
84-48	'' '' '' '' '' ''	48'' ''	300	333	.....
84-50	'' '' '' '' '' ''	50'' ''	312	320	.....
84-52	'' '' '' '' '' ''	52'' ''	325	307	.....
84-54	'' '' '' '' '' ''	54'' ''	338	296	.....
84-56	'' '' '' '' '' ''	56'' ''	350	285	.....
84-58	'' '' '' '' '' ''	58'' ''	362	275	.....
84-60	'' '' '' '' '' ''	60'' ''	375	268	.....
84-62	'' '' '' '' '' ''	62'' ''	388	258	.....
84-64	'' '' '' '' '' ''	64'' ''	400	250	.....
84-68	'' '' '' '' '' ''	68'' ''	425	235	.....
84-72	'' '' '' '' '' ''	72'' ''	450	222	.....
COPPER BOND WIRES					
85-38	No. 6 B. & S. Copper Bond Wire	38'' long	250	400	.....
85-40	'' '' '' '' '' ''	40'' ''	264	380	.....
85-42	'' '' '' '' '' ''	42'' ''	276	362	.....
85-44	'' '' '' '' '' ''	44'' ''	290	345	.....
85-46	'' '' '' '' '' ''	46'' ''	303	330	.....
85-48	'' '' '' '' '' ''	48'' ''	316	316	.....
85-50	'' '' '' '' '' ''	50'' ''	329	304	.....
85-52	'' '' '' '' '' ''	52'' ''	343	292	.....
85-54	'' '' '' '' '' ''	54'' ''	356	281	.....
85-56	'' '' '' '' '' ''	56'' ''	369	271	.....
85-58	'' '' '' '' '' ''	58'' ''	382	262	.....
85-60	'' '' '' '' '' ''	60'' ''	395	253	.....
85-62	'' '' '' '' '' ''	62'' ''	408	245	.....
85-64	'' '' '' '' '' ''	64'' ''	422	237	.....
85-68	'' '' '' '' '' ''	68'' ''	448	223	.....
85-72	'' '' '' '' '' ''	72'' ''	475	211	.....
COPPER CLAD BOND WIRES					
86-38	No. 8 B. W. G.—C. C. Bond Wire	38'' long	242	413	.....
86-40	'' '' '' '' '' ''	40'' ''	255	392	.....
86-42	'' '' '' '' '' ''	42'' ''	268	373	.....
86-44	'' '' '' '' '' ''	44'' ''	281	356	.....
86-46	'' '' '' '' '' ''	46'' ''	293	342	.....
86-48	'' '' '' '' '' ''	48'' ''	306	327	.....
86-50	'' '' '' '' '' ''	50'' ''	319	315	.....
86-52	'' '' '' '' '' ''	52'' ''	332	302	.....
86-54	'' '' '' '' '' ''	54'' ''	344	291	.....
86-56	'' '' '' '' '' ''	56'' ''	357	280	.....
86-58	'' '' '' '' '' ''	58'' ''	370	270	.....
86-60	'' '' '' '' '' ''	60'' ''	383	261	.....
86-62	'' '' '' '' '' ''	62'' ''	396	252	.....
86-64	'' '' '' '' '' ''	64'' ''	408	245	.....
86-68	'' '' '' '' '' ''	68'' ''	434	231	.....
86-72	'' '' '' '' '' ''	72'' ''	460	217	.....

BOND WIRE PROTECTORS



Style "A" (Full Size)



Style "B" (Full Size)



Style "A" Protectors Holding Bond Wires Below Bolts



Style "A" Protectors Holding Bond Wires Above Bolts

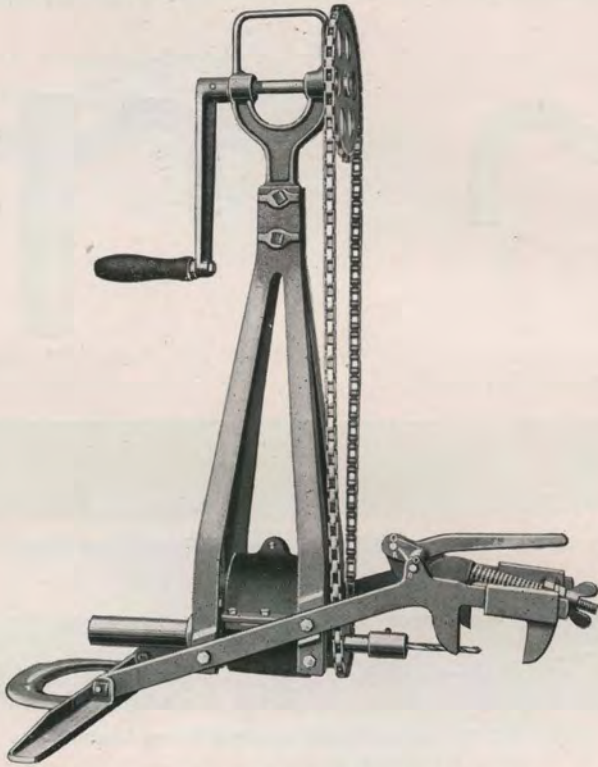


Style "B" Protectors Holding Bond Wires in Place

These Bond Wire Protectors are used to hold Bond Wires in place, thus preventing breakage and improving appearance of bonded joints. They eliminate all danger of wheel flanges cutting wires or dragging equipment tearing same. Style "A" is for holding wires below or above Bolts. Style "B" for holding wires above and below Bolts. Made for use with $\frac{3}{8}$ " holes and are furnished tinned, coppered or galvanized.

Trade No.	DESCRIPTION	List Price
24	Style A Bond Wire Protector, Tinned, per M.....	\$22.00
24-1	" " " " " " Coppered " ".....	24.00
24-2	" " " " " " Galvanized " ".....	23.00
23	" B " " " " Tinned " ".....	24.00
23-1	" " " " " " Coppered " ".....	26.00
23-2	" " " " " " Galvanized " ".....	25.00

"CHICAGO" BONDING DRILL



"Chicago" Bonding Drill—Weight 30 lbs., Height 26"

This Drill has the following advantages:—

"It is the easiest running drill on the market, and will do more work with less labor than other drills."

"It is instantly attached rigidly to head of any size rail and cannot wobble and break drills."

"It is instantly removed from rail, even though drill is in the rail, by pushing clamp lever, located directly over rail, backward."

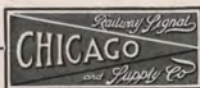
"It has a two speed uniform continuous Feed and Reverse, both speeds are controlled by a small automatically operated lever directly under operator's foot. The drill can be fed to or from the rail when in high speed with one turn of the handle."

"It is Single Chain Driven and is provided with a proper take up for chain wear without the use of idlers or cams."

"It is light but strong, made of malleable iron and rolled steel, the gears are of best machine steel."

"All parts are accurately machined and jig drilled, assuring interchangeability of parts."

"All Bearings are Steel in bronze with replaceable bronze Bearings. Thrust Bearing is an extra large Ball Bearing."



"CHICAGO" BONDING DRILL

"Gears and Feed Spindle are enclosed in an oil tight case, insuring easy operation and keeping sand and dirt out of operating parts."

"Foot Plate is self aligning to tie inequalities, and is instantly removable so drill can be comfortably carried by operators."

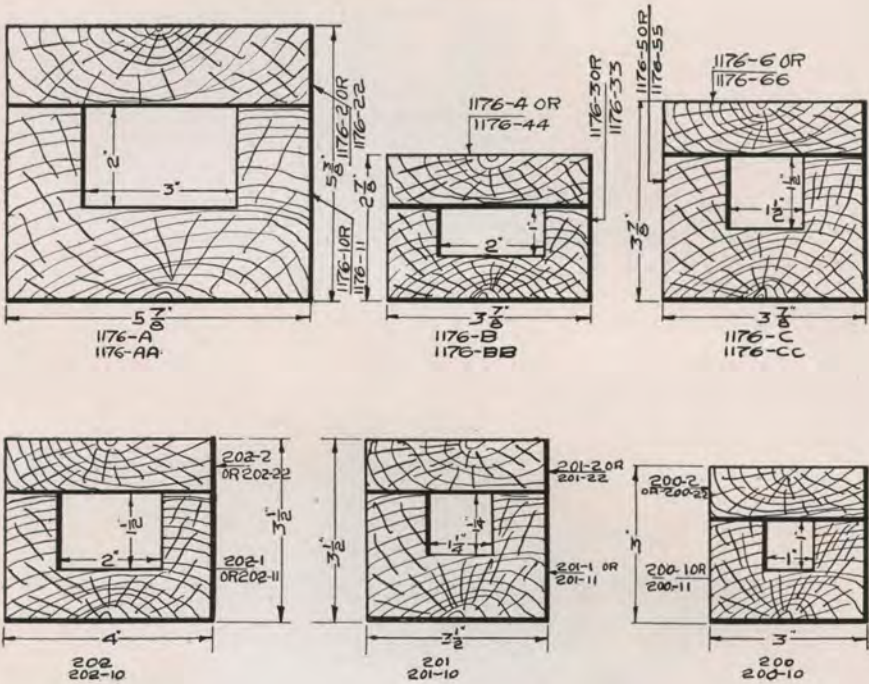
"It is furnished in three different feed speeds: "Slow" for very hard steel rails, "Medium" for standard work and "Fast" for drilling relatively soft rail."

"It is furnished with three styles of chucks, viz.: with set screw to hold $\frac{9}{32}$ " standard track drills, with adjustable drill chuck for up to $\frac{3}{8}$ " diameter round shank or slabbed drills and with special chuck to hold flat shank drills."

Trade No.	DESCRIPTION	List Price
500-1	Chicago Bonding Drill with Set Screw Chuck for $\frac{9}{32}$ " Round or Slabbed Shank Standard Track Drills as illustrated	\$50.00
500-2	Chicago Bonding Drill with Adjustable Drill Chuck to hold Round or Slabbed Shank Drills 0 to $\frac{3}{8}$ "	58.00
500-3	Chicago Bonding Drill with Special Chuck to hold Flat Drills	60.00
500-4	Standard $\frac{9}{32}$ " Round Shank, Slabbed Track Drills, per doz. . .	7.80
500-5	Standard "High Speed" Round Shank, Slabbed Track Drills for drilling hard rails, per doz.	9.10
500-6	Flat Shank "High Speed" Flat $\frac{9}{32}$ " Drills, per doz.	9.25

Orders must state whether "Slow", "Medium" or "Fast" Feed is required.

WIRE TRUNKING

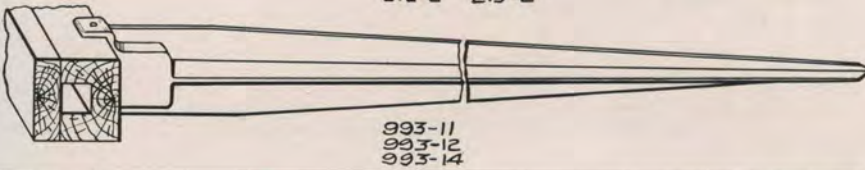
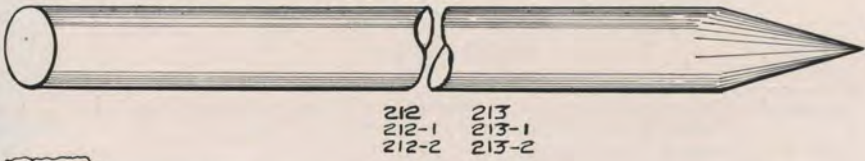
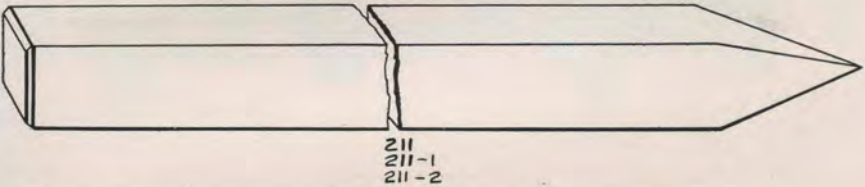
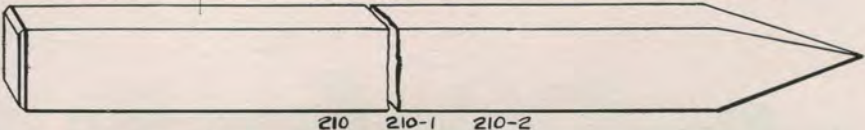
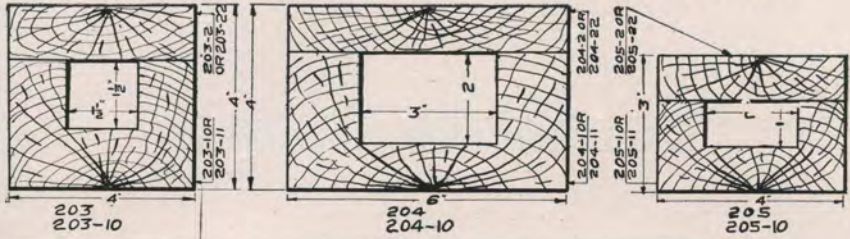


Trade No.	DESCRIPTION	List Price
1176-A	R. S. A. Trunking and Capping, Plain, per C lineal ft.	Prices Upon Application
1176-AA	" " " " " Painted " " " "	
1176-B	" " " " " Plain " " " "	
1176-BB	" " " " " Painted " " " "	
1176-C	" " " " " Plain " " " "	
1176-CC	" " " " " Painted " " " "	
202	Trunking and Capping, Plain, per C lineal ft.	
202-10	" " " " " Painted " " " "	
201	" " " " " Plain " " " "	
201-10	" " " " " Painted " " " "	
200	" " " " " Plain " " " "	
200-10	" " " " " Painted " " " "	
1176-2	R. S. A. Capping Only, Plain " " " "	
1176-22	" " " " " Painted " " " "	
1176-4	" " " " " Plain " " " "	
1176-44	" " " " " Painted " " " "	
1176-6	" " " " " Plain " " " "	
1176-66	" " " " " Painted " " " "	
202-2	Capping Only, Plain, per C lineal ft.	
202-22	" " " " " Painted " " " "	
201-2	" " " " " Plain " " " "	
201-22	" " " " " Painted " " " "	
200-2	" " " " " Plain " " " "	
200-22	" " " " " Painted " " " "	
203	Trunking and Capping, Plain, per C lineal ft.	
203-10	" " " " " Painted " " " "	
204	" " " " " Plain " " " "	
204-10	" " " " " Painted " " " "	
205	" " " " " Plain " " " "	
205-10	" " " " " Painted " " " "	

Orders or request for price should state whether Pine or Cypress Trunking is wanted.



WIRE TRUNKING AND TRUNKING STAKES



Trade No.	DESCRIPTION	List Price
203-2	Capping Only, Plain, per C lineal ft.	
203-22	“ “ Painted “ “ “ “	
204-2	“ “ Plain “ “ “ “	
204-22	“ “ Painted “ “ “ “	
205-2	“ “ Plain “ “ “ “	
205-22	“ “ Painted “ “ “ “	
210	Oak Trunking Stake, 3' x 4' x 3' long	
210-1	“ “ “ 3' x 4' x 3' 6" “	
210-2	“ “ “ 3' x 4' x 4' “	
211	“ “ “ 4' x 4' x 3' “	
211-1	“ “ “ 4' x 4' x 3' 6" “	
211-2	“ “ “ 4' x 4' x 4' “	
212	Cedar “ 4' dia. 3' “	
212-1	“ “ “ 4' “ 3' 6" “	
212-2	“ “ “ 4' “ 4' “	
213	“ “ “ 5' “ 3' “	
213-1	“ “ “ 5' “ 3' 6" “	
213-2	“ “ “ 5' “ 4' “	
993-11	Iron Trunking Stake, 3' 6" long for No. 200 Trunking	\$1.30
993-12	“ “ “ “ “ “ 201, 202, 203, 1176B and 1176C	
	Trunking	1.30
993-14	Iron Trunking Stake, 3' 6" long for No. 204 and 1176A Trunking	1.30

Orders or request for price should state whether Pine or Cypress Trunking is wanted.

SINGLE PIN IRON CROSS ARMS



No. 894-3



No. 895-3

Trade No.	DESCRIPTION	List Price
894-3	Single One Pin Iron Cross Arm for 1½" or 1¼" Wood Pin, complete with U Bolt for 3" (3½" O. D.) Pole, each.....	\$1.50
894-4	Same as above except for 4" (4½" O. D.) Pole.....	1.50
894-5	" " " " " 5" (5⅞" O. D.) "	1.85
894-6	" " " " " 6" (6⅝" O. D.) "	2.05
894-7	" " " " " 7" (7⅝" O. D.) "	2.25
894-8	" " " " " 8" (8⅝" O. D.) "	2.45
894-13	Single One Pin Iron Cross Arm for ⅝" Steel Pin, complete with U Bolt for 3" (3½" O. D.) Pole, each.....	1.50
894-14	Same as above except for 4" (4½" O. D.) Pole.....	1.50
894-15	" " " " " 5" (5⅞" O. D.) "	1.85
894-16	" " " " " 6" (6⅝" O. D.) "	2.05
894-17	" " " " " 7" (7⅝" O. D.) "	2.25
894-18	" " " " " 8" (8⅝" O. D.) "	2.45
895-3	Single Two Pin Iron Cross Arm for 1½" or 1¼" Wood Pin, complete with U Bolt for 3" (3½" O. D.) Pole.....	1.75
895-4	Same as above except for 4" (4½" O. D.) Pole.....	1.75
895-5	" " " " " 5" (5⅞" O. D.) "	2.10
895-6	" " " " " 6" (6⅝" O. D.) "	2.30
895-7	" " " " " 7" (7⅝" O. D.) "	2.50
895-8	" " " " " 8" (8⅝" O. D.) "	2.70
895-13	Single Two Pin Iron Cross Arm for ⅝" Steel Pin, complete with U Bolt for 3" (3½" O. D.) Pole, each.....	1.75
895-14	Same as above except for 4" (4½" O. D.) Pole.....	1.75
895-15	" " " " " 5" (5⅞" O. D.) "	2.10
895-16	" " " " " 6" (6⅝" O. D.) "	2.30
895-17	" " " " " 7" (7⅝" O. D.) "	2.50
895-18	" " " " " 8" (8⅝" O. D.) "	2.70

Above prices do not include pins or glass which should be ordered separately, giving trade numbers of pins and glass desired.

Orders for Cross Arms for Wood Pins must specify whether for 1½" or 1¼" Pins.

DOUBLE PIN IRON CROSS ARMS



No. 894-23



No. 895-23

Trade No.	DESCRIPTION	List Price
894-23	Double One Pin Cross Arm for 1½" or 1¼" Wood Pin, complete with Two Bolts for 3" (3½" O. D.) Pole, each.....	\$2.75
894-24	Same as above except for 4" (4½" O. D.) Pole.....	2.75
894-25	" " " " " 5" (5½" O. D.) "	3.10
894-26	" " " " " 6" (6½" O. D.) "	3.30
894-27	" " " " " 7" (7½" O. D.) "	3.50
894-28	" " " " " 8" (8½" O. D.) "	3.70
894-33	Double One Pin Cross Arm for 5/8" Steel Pin, complete with Two Bolts for 3" (3½" O. D.) Pole, each.....	2.75
894-34	Same as above except for 4" (4½" O. D.) Pole.....	2.75
894-35	" " " " " 5" (5½" O. D.) "	3.10
894-36	" " " " " 6" (6½" O. D.) "	3.30
894-37	" " " " " 7" (7½" O. D.) "	3.50
894-38	" " " " " 8" (8½" O. D.) "	3.70
895-23	Double Two Pin Cross Arm for 1½" or 1¼" Wood Pins, complete with Two Bolts for 3" (3½" O. D.) Pole, each.....	3.00
895-24	Same as above except for 4" (4½" O. D.) Pole.....	3.00
895-25	" " " " " 5" (5½" O. D.) "	3.35
895-26	" " " " " 6" (6½" O. D.) "	3.55
895-27	" " " " " 7" (7½" O. D.) "	3.75
895-28	" " " " " 8" (8½" O. D.) "	3.95
895-33	Double Two Pin Cross Arm for 5/8" Steel Pin, complete with Two Bolts for 3" (3½" O. D.) Pole, each.....	3.00
895-34	Same as above except for 4" (4½" O. D.) Pole.....	3.00
895-35	" " " " " 5" (5½" O. D.) "	3.35
895-36	" " " " " 6" (6½" O. D.) "	3.55
895-37	" " " " " 7" (7½" O. D.) "	3.75
895-38	" " " " " 8" (8½" O. D.) "	3.95

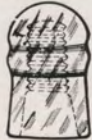
Above prices do not include pins or glass which should be ordered separately, giving trade numbers of pins and glass desired.

Orders for Cross Arms for Wood Pins must specify whether for 1½" or 1¼" Pins.

PINS, INSULATORS, CROSS ARMS AND ACCESSORIES



898-1



898-2



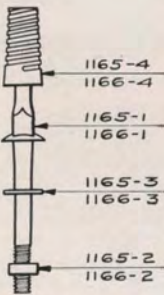
898-3



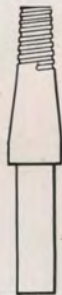
898-4



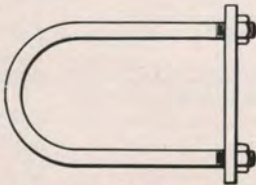
R.S.A. 1221



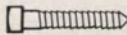
R.S.A. 1165
R.S.A. 1166



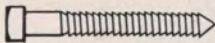
898-11
898-12
898-13



899-3 TO 8 INC



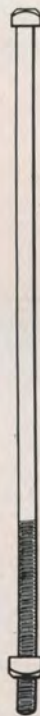
1219-3



1219-2



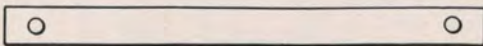
R.S.A.
1220-11
TO 18 INC



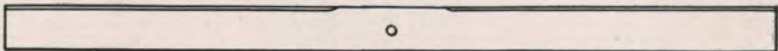
R.S.A.
1220-21
TO 28 INC



R.S.A.
1220-31
TO 38 INC



R.S.A. 1219-11
898-21 TO 26 INC



R.S.A. 1089-1 TO 4 INC

POLE STEPS



Style 897



Style 896



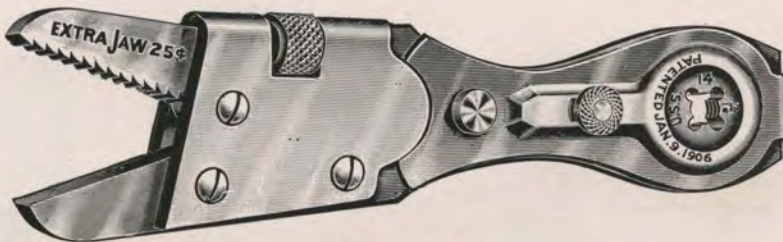
Style 893

Style 897 Pole Step is furnished complete, with U Bolt ready to attach to poles. It is easily and quickly attached and a perfectly safe Step. It is provided with a 1/2" offset on end preventing foot from slipping off.

Style 896 Step is made from forged steel and is furnished complete with Bolt ready to attach.

Trade No.	DESCRIPTION	List Price
897-3	Step complete with U Bolt for 3" (3 1/2" O. D.) Pipe, each . . .	\$0.85
897-4	" " " " " 4" (4 1/2" O. D.) " " . . .	.90
897-5	" " " " " 5" (5 1/8" O. D.) " " . . .	.95
897-6	" " " " " 6" (6 5/8" O. D.) " " . . .	1.00
897-7	" " " " " 7" (7 5/8" O. D.) " " . . .	1.05
897-8	" " " " " 8" (8 5/8" O. D.) " " . . .	1.10
896-3	Step complete with Bolt for 3" (3 1/2" O. D.) Pipe, each . . . . .	.40
896-4	" " " " " 4" (4 1/2" O. D.) " " . . . . .	.42
896-5	" " " " " 5" (5 1/8" O. D.) " " . . . . .	.45
896-6	" " " " " 6" (6 5/8" O. D.) " " . . . . .	.48
896-7	" " " " " 7" (7 5/8" O. D.) " " . . . . .	.51
896-8	" " " " " 8" (8 5/8" O. D.) " " . . . . .	.54
893-1	Standard Pole Step, 9/16" x 9" Plain, per C.	31.40
893-2	" " " " 1/8" x 9" Galvanized, per C.	38.50
893-3	" " " " 5/8" x 9" Plain, per C.	33.50
893-4	" " " " 5/8" x 9" Galvanized, per C.	42.40
893-5	" " " " 5/8" x 10" Plain, per C.	40.00
893-6	" " " " 5/8" x 10" Galvanized, per C.	49.00

WRENCHES



Elgin Wrench

This Wrench is 7" long, weighs about 10¼ oz. and is as strong as any 8" Wrench. It works equally as well on pipe, rod, hexagon or square nuts one inch or less outside diameter. Furnished plain or with a ratcheting attachment to insert in handle to hold thread cutting dies or taps up to ½". This tool is extremely handy for signal maintainers and supervisors in installing and adjusting signal and electric apparatus.

Trade No.	DESCRIPTION	List Price
5-1	Elgin Wrench Only.....	\$1.50
5-2	Extra Jaw for above.....	.38
5-3	Rethreading Attachment with One Die. Specify size.....	1.50
5-4	Extra Dies, 14-24, ¼", ⅜", ½", each.....	.75
5-5	“ “ ⅜", 7/16", ½" “.....	.75
5-6	Insert for holding Taps.....	.75
5-7	Taps for Insert, 14-24, ¼", ⅜", ½", each.....	.90
5-8	“ “ “ ⅜", 7/16" “.....	1.05

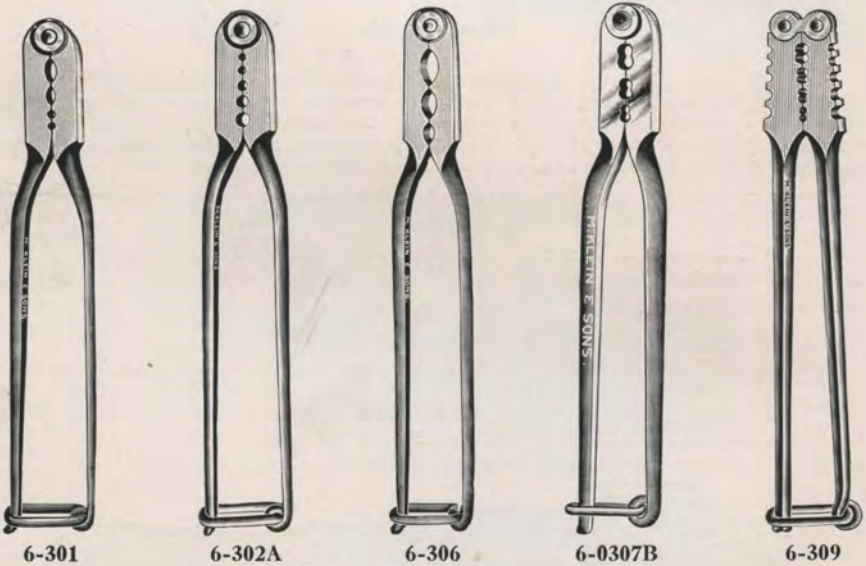


Star Pipe Wrench

The Star Pipe Wrench is extremely simple and strong, is sure to grip and has an easy let-go. There are but five parts and no springs, tooth parts are interchangeable at small cost if wear occurs. The lower steel tooth jaw is removable with a screw driver. There are no rivets in the wrench.

Trade No.	DESCRIPTION	List Price
5-10	10" Star Pipe Wrench takes Pipe 1¼" or smaller.....	\$2.25
5-14	14" “ “ “ “ “ 2" “ “.....	3.00
5-18	18" “ “ “ “ “ 3" “ “.....	4.00
5-24	24" “ “ “ “ “ 4" “ “.....	6.00

TOOLS



Splicing Clamps

The Clamps shown are made of very best steel and have spring tempered handles warranted not to bend out of shape after being closed on the wire.

Trade No.	DESCRIPTION	List Price
6-301	Splicing Clamp for Nos. 4, 6, 12 and 14 Iron Wire or Nos. 2, 4, 10 and 12 Copper Wire, length 10"	\$4.60
6-302A	Splicing Clamp for Nos. 6, 8, 10, 12 and 14 Iron Wire or Nos. 4, 6, 8, 10 and 12 Copper Wire, length 10½"	4.85
6-306	Splicing Clamp for No. 0, 2 and 4 Copper Wire, length 10¾"	4.85
6-0307B	" " " " 0, 2 " 4 B. & S. Gauge Sleeves.	10.60
6-309	Combination Wire and Sleeve Clamp, five holes for Nos. 6, 8, 10, 12 and 14 Iron Wire, 4, 6, 8, 10 and 12 Copper Wire and 8, 10, 12 and 14 Sleeves, B. & S. Gauge, length 10¾"	5.15

TOOLS



**Porter's Wire
Cutter**



**Diamond
Special**



**World
Special**



Vom Cleff



**Oblique
Cutting**

Trade No.	DESCRIPTION	List Price
6-637	Porter's Wire Cutters, $\frac{3}{8}$ " , 24".....	\$9.30
6-638	" " " $\frac{1}{2}$ " , 30".....	10.00
6-639	" " " $\frac{5}{8}$ " , 36".....	15.75
6-639A	Same as above but with Rubber Insulated Handles, cuts $\frac{3}{8}$ " but opens $\frac{3}{4}$ ".....	13.85
6-639B	Same as above but cuts $\frac{1}{2}$ " , opens $1\frac{1}{2}$ ".....	15.75
6-312	"Diamond Special" Side Cutting Pliers, 5".....	2.85
6-312A	" " " " " 6".....	3.58
6-312B	" " " " " 7".....	4.30
6-312C	" " " " " 8".....	5.15
6-312D	" " " " " 9".....	5.70
6-312E	" " " " " 10".....	7.85
6-1312	"World Special" Side Cutting Pliers, 5".....	2.85
6-1312A	" " " " " 6".....	3.58
6-1312B	" " " " " 7".....	4.30
6-1312C	" " " " " 8".....	5.15
6-1312D	" " " " " 9".....	5.70
6-1312E	" " " " " 10".....	7.85
6-316	Vom Cleff Side Cutting Pliers, 4" , each.....	1.70
6-316A	" " " " " 4 $\frac{1}{2}$ " ".....	1.85
6-316B	" " " " " 5" ".....	2.00
6-316C	" " " " " 6" ".....	2.30
6-316D	" " " " " 7" ".....	3.00
6-316E	" " " " " 8" ".....	4.00
6-3169	Oblique Cutting Pliers, 5" each.....	2.85
6-3170	" " " " 6" ".....	3.10

TOOLS



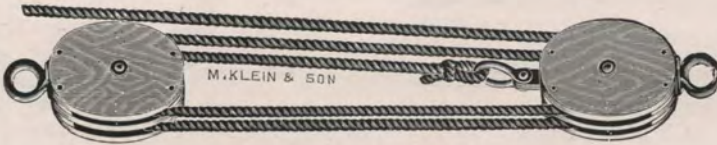
**Pouring
Ladle**



**Pioneer Hot Blast
Coil Gasoline
Furnace**



Melting Pot



Lineman's Wood Block

Trade No.	DESCRIPTION	List Price
6-555	Pouring Ladle, 2½" Bowl.....	\$0.86
6-556	“ “ 3” “.....	1.00
6-557	“ “ 4” “.....	1.42
6-558	“ “ 5” “.....	2.12
6-560	Melting Pot, 5" Cast Iron Pot.....	1.15
6-561	“ “ 6” “ “.....	1.72
6-562	“ “ 8” “ “.....	2.82
6-42	Pioneer Hot Blast Coil Furnace for Gasoline, Galvanized Iron Tank with Bulb.....	10.70
6-339A	Lineman's Wood Block with Eye at Ends for fastening Grips, 3" Blocks for 7/8" Rope, per pair.....	4.85
6-339	Same as above but with 4" Blocks for 1/2" Rope, per pair....	5.00
6-340	“ “ “ “ 5” “ “ 5/8” “ “.....	8.00

1 9 1 4

CATALOGUE AND PRICE LIST

SECTION H

Insulated Rail Joints

Fibre End Posts

Fibre Bushings, Washers and Plates

Switch Wedge Blocks

Hand Car and Velocipede Axle Insulator

INSULATED RAIL JOINTS

Style "A"



This Insulated Joint is furnished for any size rail and in any desired length. The Angle Bars are rolled steel and Fibre Insulations are of best gray railroad fibre furnished complete as shown. Prices are dependent upon size of rail and length of joint required.

Orders must be accompanied by blue print or other information giving size and drilling of rail, size of bolt holes and length of joint required.

Trade No.	DESCRIPTION	List Price
270	Style A Insulated Joint complete as shown, each.....	.....
270-1	Fibre Angle Bar, each.....	.....
270-2	" Bolt Bushing, each.....	.....
270-3	" Washer for Bolt Bushing, each.....	.....
270-4	Steel " " 270-3, each.....	.....
270-5	Standard Bolt and Nut for 270, each.....	.....
270-6	Fibre End Post, each.....	.....

Repair orders should specify size of rail, bolts, etc., for which repair parts are required.

INSULATED RAIL JOINTS

Style "B"



The Insulated Joint shown above is used on side tracks and on less important main lines. Furnished with four and six bolts and 48" long, unless otherwise specified.

The Wood Side Bars are made from selected oak and treated with waterproof compound.

Orders must be accompanied by blue print or other information giving size and drilling of rail, size of bolt holes and length of joint required.

Trade No.	DESCRIPTION	List Price
271	Style B Insulated Rail Joint with four bolts complete as shown, each	\$3.00
271-5	Style B Insulated Rail Joint with six bolts complete as shown, each	3.40
271-1	Steel Washer for Bolts, each	.....
271-2	9" Bolt and Nut, each	.....
271-3	Oak Splice Bar for outside of rail, each	.....
271-4	" " " " inside " " "	.....
271-6	Fibre End Posts, each	.....

Repair orders should specify size of rail, bolts, etc., for which repair parts are required.

INSULATED RAIL JOINTS

Style "C"



Our Style C Insulated Rail Joint is designed for heavy main line traffic and is warranted to hold up track and give a high insulation for track circuits. Joints are made from heavy rolled steel and equipped with best gray railroad fibre. Furnished complete as shown to fit any rail section. Prices are dependent upon size of rail and length of joint required.

Orders must be accompanied by blue print or other information giving size and drilling of rail, size of bolt holes and length of joint required.

Trade No.	DESCRIPTION	List Price
272	Style C Insulated Rail Joint complete as shown, each . . . . .	.....
272-1	Fibre Angle Bar, each . . . . .	.....
272-2	" Washers for Bolt Bushing, each . . . . .	.....
272-3	" Bolt Bushing, each . . . . .	.....
272-4	Steel Washer for 272-2, each . . . . .	.....
272-5	Standard Bolt and Nut for 272, each . . . . .	.....
272-6	Hook Bolt for Base Plate, each . . . . .	.....
272-7	Hexagon Nut for Hook Bolt, each . . . . .	.....
272-8	Steel Base Plate, drilled, each . . . . .	.....
272-9	Fibre " " " " . . . . .	.....
272-10	" End Posts, each . . . . .	.....

Repair orders should specify size of rail, bolts, etc., for which repair parts are required.

INSULATED RAIL JOINTS

Style "D"



Style D Insulated Rail Joint is especially designed for heavy main line traffic. The heavy rolled steel Angle Bars hold the hard Georgia Pine wood fillers under compression, thus assuring high insulation and at the same time making an extremely stiff and solid joint that will hold up track equal to non-insulated Joints. Another feature on this Joint is that both sides are alike and interchangeable thus requiring a minimum repair stock. Prices are dependent upon size of rail and length of joint required.

Orders must be accompanied by blue print or other information giving size and drilling of rail, size of bolt holes and length of joint required.

Trade No.	DESCRIPTION	List Price
273	Style D Insulated Joint complete as shown, each.....	.....
273-1	Hard Georgia Pine Wood Filler, each.....	.....
273-2	Steel Angle Bar, each.....	.....
273-3	Fibre Washer for Bolt Bushing, each.....	.....
273-4	" Bolt Bushing, each.....	.....
273-5	" Base Plate, each.....	.....
273-6	Steel Washer for 273-3, each.....	.....
273-7	Standard Bolt and Nut for 273.....	.....
273-8	Fibre End Posts, each.....	.....

Repair orders should specify size of rail, bolts, etc., for which repair parts are required.



HARD VULCANIZED FIBRE

In Red, Gray and Black Colors

The Fibre furnished by us is made in accordance with R. S. A. and A. S. C. E. Specifications furnished as follows: Tubing in random lengths two to three feet, rods about five feet long and sheets about 54 x 68 inches. List prices on this page take special discounts according to quantity ordered for one shipment. An extra charge is made when furnished cut to size or fabricated to any special shape. We are prepared to furnish, upon short notice, Washers, Discs, Ferrules, etc.

Standard Sheets		List Price Per Pound	Round Fibre Rods		List Price Per Foot
Thickness			Diameter		
.005"		\$0.62	$\frac{3}{8}$ "		\$0.19
.010"		.50	$\frac{7}{8}$ "		.19
.015"		.44	$\frac{1}{8}$ "		.19
.020"		.40	$\frac{1}{4}$ "		.19
.025"		.36	$\frac{5}{8}$ "		.20
.030"		.32	$\frac{3}{8}$ "		.21
.035"		.30	$\frac{1}{8}$ "		.27
.040"		.29	$\frac{1}{2}$ "		.35
.045"		.29	$\frac{9}{16}$ "		.44
.075"		.29	$\frac{5}{8}$ "		.50
.100"		.30	$\frac{11}{16}$ "		.62
$\frac{1}{8}$ "		.30	$\frac{3}{4}$ "		.81
$\frac{1}{16}$ "		.31	$\frac{13}{16}$ "		1.00
$\frac{3}{4}$ "		.31	$\frac{7}{8}$ "		1.25
$\frac{1}{8}$ "		.32	$\frac{15}{16}$ "		1.55
$\frac{3}{8}$ "		.32	1"		2.50
$\frac{1}{2}$ "		.35	$1\frac{1}{8}$ "		3.75
$\frac{5}{8}$ "		.39	$1\frac{1}{4}$ "		5.00
$\frac{3}{4}$ "		.43	$1\frac{3}{8}$ "		6.25
$\frac{7}{8}$ "		.49	$1\frac{1}{2}$ "		10.00
1"		.57	$1\frac{5}{8}$ "		12.50
$1\frac{1}{8}$ "		.75	$1\frac{3}{4}$ "		18.80
$1\frac{1}{4}$ "		.94	$1\frac{7}{8}$ "		31.00
$1\frac{3}{8}$ "		1.25	2"		43.00
$1\frac{1}{2}$ "		1.50			
$1\frac{5}{8}$ "		1.88			
$1\frac{3}{4}$ "		2.50			
$1\frac{7}{8}$ "		3.75			
2"		5.00			

Round Fibre Tubing

Thickness of Wall	List Price Per Ft.					
	$\frac{1}{16}$ "	$\frac{3}{32}$ "	$\frac{1}{8}$ "	$\frac{5}{32}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "
Inside Diameter						
$\frac{1}{8}$ "	\$0.25	\$0.37	\$0.50			
$\frac{1}{16}$ "	.25	.37	.50			
$\frac{1}{4}$ "	.12	.18	.22	\$0.27	\$0.32	
$\frac{1}{8}$ "	.12	.19	.24	.30	.35	
$\frac{3}{8}$ "	.14	.20	.26	.32	.39	
$\frac{7}{16}$ "	.14	.21	.27	.35	.41	
$\frac{1}{2}$ "	.15	.22	.30	.37	.45	\$0.60
$\frac{9}{16}$ "	.19	.25	.32	.40	.49	.65
$\frac{5}{8}$ "	.18	.26	.35	.44	.52	.70
$\frac{11}{16}$ "	.19	.27	.37	.46	.56	.75
$\frac{3}{4}$ "	.20	.30	.40	.50	.60	.80
$\frac{13}{16}$ "	.21	.32	.42	.52	.64	.85
$\frac{7}{8}$ "	.22	.34	.45	.56	.67	.90
$\frac{15}{16}$ "	.24	.36	.48	.59	.71	.95
1"	.25	.37	.50	.62	.75	1.00
$1\frac{1}{8}$ "	.27	.41	.55	.69	.82	1.02
$1\frac{1}{4}$ "	.30	.45	.60	.75	.90	1.24
$1\frac{3}{8}$ "	.32	.49	.65	.81	.97	1.30
$1\frac{1}{2}$ "	.35	.52	.70	.87	1.01	1.40
$1\frac{5}{8}$ "	.37	.56	.75	.94	1.12	1.50
$1\frac{3}{4}$ "	.40	.60	.80	1.00	1.24	1.60
$1\frac{7}{8}$ "	.42	.64	.85	1.01	1.25	1.70
2"	.45	.67	.90	1.12	1.35	1.80

AXLE INSULATOR



No. 250

This Insulator is used on hand cars, push cars and velocipedes having steel axles which would short circuit the track circuits in Automatic Signal Territory, Crossing Bell Circuits, etc.

It can be quickly and easily installed on axles varying from 1" to 2" diameter, by merely cutting axle in two with a hack saw. In ordering specify size of Axle.

When installed, axle has practically its original strength. Parts are strong, bolts well cotted and are not apt to work loose in service.

Trade No.	DESCRIPTION	List Price
250	Axle Insulator complete, as shown, each.....	\$6.00

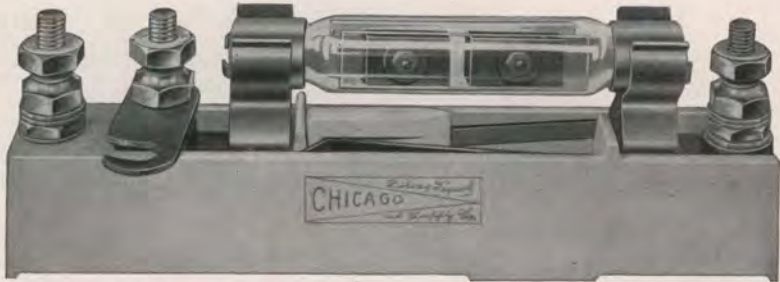
1914

CATALOGUE AND PRICE LIST

SECTION I

Lightning Arresters
Resistance Units
Terminals
Connectors
Ground Tubes and Rods
Tags
Wires
Socket Wrench
Locks
Steel Stencils
Solder

CHICAGO LIGHTNING ARRESTERS



Chicago "Vacuum" Lightning Arrester, Style "A"

Size, 6 $\frac{5}{8}$ " Long, 1" Wide, 2 $\frac{1}{2}$ " High

Style "A" and Style "B" Lightning Arresters are substantially constructed, and mounted on a heavy Porcelain Base. They are equipped with a "Static" Discharge Tube which will discharge "Static" continuously without danger of "Grounding" at a Voltage of approximately 450 Volts. The Horn Type Springs take care of any heavier Lightning Discharges and crosses with Power Circuits.

Standard R. S. A. Binding Posts are used, the upper and lower being the "Line" Posts and the middle one the "Ground" Post. A standard Connecting Clip is furnished to provide a common ground, where Arresters are banked side by side on one-inch centers, all parts of these Arresters are easily accessible and can be instantly removed for inspection.

A pair of Horn Type Springs, separated by a fireproof porous septum block so shaped that the air gap varies from $\frac{3}{8}$ " at the bottom to nearly 1" at the top, prevents any arc which may have been caused by lightning, from being sustained by the ordinary working currents. The Septum Block prevents any possibility of fusing the springs.

The Glass Vacuum Tube for Style "A" Arrester is heavy and of ample proportions to insure long life. It is provided with ferrule ends so it may be easily and quickly inserted or removed from the spring clips. The gap between the "Carborundum" Electrodes in Low Voltage Tube, although spaced far enough apart so that an arc cannot be sustained, is equivalent to a gap of .001" in open air. The gap in the High Voltage Tube is equivalent to a gap of .005" in open air. The Low Voltage type should not be used on Voltages above 110 Volts or on circuits having a current flow of more than one-half ampere, otherwise there is danger of sustaining an arc by the working current. The High Voltage type may be used on 110 and 220 Volt Power Circuits and on 500 Volt D. C. Street Railway Signal Circuits.

CHICAGO LIGHTNING ARRESTERS



Chicago "Non-Air" Gap Lightning Arrester, Style "B"
Size, 6 $\frac{5}{8}$ " Long, 1" Wide, 2 $\frac{1}{2}$ " High

The "Non-Air-Gap" Static Discharge Tube for Style "B" Arresters is made of fireproof fibre with ferrule ends. The Tube is filled with fine granular carborundum into which a number of prongs, which are part of the ferrule ends, protrude. The "Carborundum" granules in the air-tight tube offer practically no resistance to Lightning or Static Discharges, but to the ordinary working currents they offer a resistance of approximately 150,000 Ohms.

These Arresters are equally well adapted for use on D. C. or A. C. lines, and will discharge Lightning and Static continuously without interrupting the regular service, and are highly recommended where reliable high efficiency Arresters are required. They take the place of Terminals when used in Relay Boxes, Signal Cases, etc.

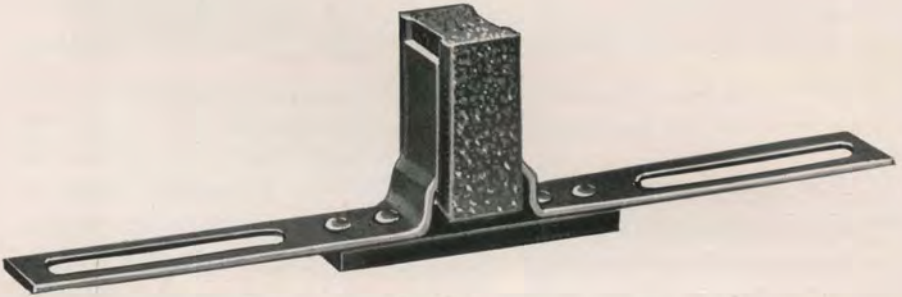
Trade No.	DESCRIPTION	List Price
225	Style A Lightning Arrester complete with Low Voltage Glass Vacuum Discharge Tube for use on lines of 110 Volts or less	\$4.00
225-16	Same as above except with High Voltage Glass Vacuum Discharge Tube for use on lines of 110 Volts or higher	4.00
226	Style B Lightning Arrester complete with Fireproof "Non-Air-Gap" Discharge Tube	2.50
225-1	Low Voltage Vacuum Discharge Tube	2.00
225-17	High " " " "	2.00
226-1	Fireproof Non-Air-Gap " " " "	.70
225-9	Septum Separator for Horn Springs	.20
225-10	Porcelain Base	.75

SPARK GAP LIGHTNING ARRESTERS



No. 227

Style "A" Spark Gap (Full Size)



No. 228

Style "B" Spark Gap (Full Size)

These Spark Gaps are used between Binding Posts of Magnet Terminals on track or line Relays and will positively prevent "Burn-outs" of Magnet Coils by Lightning or Static Discharges. They will fit Relays of any manufacture.

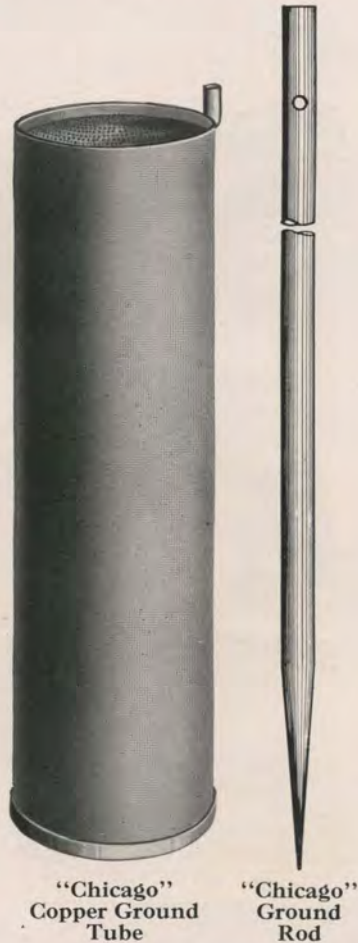
Style "A" is a plain metal to metal gap having an opening of $\frac{1}{32}$ " between points and Style "B" is equipped with a pair of clips between which a high resistance block of carborundum is held securely in place. This block does not allow current used on Relays to pass but offers practically no resistance to static lightning discharges.

Trade No.	DESCRIPTION	List Price
227	Style A Plain Spark Gap as shown, each	\$0.25
228	" B Carborundum Spark Gap as shown, each . . . . .	.60
228-4	Carborundum Block for Style B Spark Gap, each . . . . .	.25

CHICAGO GROUND TUBES AND RODS

"Chicago" Ground Tubes are made of perforated pure sheet copper 5" in diameter, one, two and three feet long. Tubes are provided on their upper end with a heavy copper wire lug for a No. 4 or lighter copper wire. They are filled with fine charcoal which absorbs moisture and keeps earth around the tube always in a moist condition, thus insuring a perfect and permanent ground. These Tubes are inserted into ground by using an ordinary post hole auger, making same the cheapest to install. No. 280-1 presents 227 square inches of surface, No. 280-2—415 square inches and No. 280-3—604 square inches from which it is self-evident that they provide an exceedingly good "Ground" at a low first cost.

GROUND RODS are furnished plain or galvanized, and are made of first class material, insuring sufficient stiffness to allow proper driving.



Trade No.	DESCRIPTION	List Price
280-1	Copper Ground Tube, one foot long complete with Charcoal	\$2.70
280-2	" " " two feet	4.50
280-3	" " " three " " " " "	6.30
281-1	Ground Rod "Plain" $\frac{3}{8}$ " x 6'	.36
281-2	" " " $\frac{1}{2}$ " x 6'	.50
281-3	" " " $\frac{1}{2}$ " x 7'	.60
281-4	" " " $\frac{5}{8}$ " x 8'	.85
281-11	" " "Galvanized" $\frac{3}{8}$ " x 6'	.50
281-22	" " " $\frac{1}{2}$ " x 6'	.60
281-33	" " " $\frac{1}{2}$ " x 7'	.75
281-44	" " " $\frac{5}{8}$ " x 8'	. . . . .

CONNECTORS



No. 230
1" Long



No. 231
1 1/4" Long



No. 232
1 1/2" Long



No. 233
1 3/4" Long



No. 234
1 1/4" Long



No. 235
2 1/4" Long



No. 236
1/2" Long



No. 237
For Battery Elevators

The Connectors shown above are used in Battery Chutes, Wells, and Battery Boxes, etc., where frequent connections have to be made. Connector No. 235 for Line Wire Taps.

Connector No. 237 is fastened to Vertical Strips of Battery Elevators. This Connector makes a permanent and neat job of Elevator wiring at least expense and at same time makes perfect connections and cannot "ground" battery wire.

Trade No.	DESCRIPTION	List Price
230	Double Brass Connector with Heavy Cast Brass Thumb Screws, each	\$0.13
231	Insulated Brass Connector for use in Iron Battery Chutes and other places where plain connector may "ground" complete with Two (2) Machine Screws, each . . . . .	.30
232	Double Brass Connector with Four (4) Machine Screws, each . . . . .	.18
233	Same as above but Insulated, each . . . . .	.40
234	Double Brass Connector with Four (4) Thumb Screws, each . . . . .	.25
235	Line Wire Connector, used to tap Line Wires for Lightning Arresters and Multiple Connections, complete as shown (in ordering specify size of line wire and size of tap wire), each . . . . .	.40
236	Single Brass Connector with heavy Thumb Screws, each . . . . .	.10
237	Brass Battery Elevator Connector for use on Battery Elevators, complete with Wood Screws, each . . . . .	.38

TAGS



No. 40



No. 44



No. 41



No. 42



No. 43

The Tags shown above are used to tag Wires, Relays, Binding Posts, etc., also for storeroom purposes and line wires of pole lines. They are made from materials that can be stamped easily and quickly with stencils for this purpose shown elsewhere in this catalogue. They can also be furnished stamped with any lettering, symbols or numbers upon receipt of specifications.

Trade No.	DESCRIPTION	List Price Per M.
40	Standard Fibre Tag, $\frac{7}{8}$ " x $1\frac{1}{2}$ " with $\frac{3}{8}$ " Hole.....	\$4. 20
40-1	" Brass " $\frac{7}{8}$ " x $1\frac{1}{2}$ " " $\frac{3}{8}$ " "	7. 80
40-2	" Aluminum Tag, $\frac{7}{8}$ " x $1\frac{1}{2}$ " with $\frac{3}{8}$ " Hole.....	8. 00
41	Standard Fibre Tag, $\frac{7}{8}$ " x $1\frac{1}{2}$ " with $\frac{1}{2}$ " Hole.....	4. 20
41-1	" Brass " $\frac{7}{8}$ " x $1\frac{1}{2}$ " " $\frac{1}{2}$ " "	7. 80
41-2	" Aluminum Tag, $\frac{7}{8}$ " x $1\frac{1}{2}$ " with $\frac{1}{2}$ " Hole.....	8. 00
42	Round Fibre Tag, Diameter $1\frac{1}{8}$ ", Hole $\frac{5}{32}$ ".....	3. 50
42-1	" Brass " $1\frac{1}{8}$ " " $\frac{5}{32}$ " "	5. 50
42-2	" Aluminum Tag, Diameter $1\frac{1}{8}$ ", Hole $\frac{5}{32}$ ".....	5. 60
43	Standard Fibre Tag, Diameter $1\frac{1}{2}$ ", Hole $\frac{1}{2}$ ".....	6. 00
43-1	" Brass " $1\frac{1}{2}$ " " $\frac{1}{2}$ " "	9. 50
43-2	" Aluminum Tag, Diameter $1\frac{1}{2}$ ", Hole $\frac{1}{2}$ ".....	10. 00
44	Special New York Central Fibre Tag, $1\frac{1}{2}$ " x $\frac{5}{8}$ ", Hole $\frac{1}{8}$ "...	3. 50
44-1	" " " " Brass " $1\frac{1}{2}$ " x $\frac{5}{8}$ " " $\frac{1}{8}$ "...	5. 10
44-2	" " " " Aluminum Tag, $1\frac{1}{2}$ " x $\frac{5}{8}$ ", Hole $\frac{1}{8}$ "	5. 50

STEEL LETTERS AND FIGURES



The Steel Letters and Figures listed are furnished Hand Cut in Gothic Style or Machine Made in Roman Style. Used for stamping Tags, Tools, Binding Posts, etc. Put up in compact dust proof wooden boxes.

Size	Letters—Set of 28		Figures—Set of 9		Single Letters or Figures	
	Hand Cut	Machine Made	Hand Cut	Machine Made	Hand Cut	Machine Made
$\frac{1}{8}$ "	\$15.00	\$4.50	\$5.00	\$1.50	\$0.70	\$0.25
$\frac{1}{16}$ "	9.00	3.35	3.00	1.10	.40	.20
$\frac{3}{16}$ "	9.00	3.35	3.00	1.10	.40	.20
$\frac{1}{8}$ "	9.00	3.35	3.00	1.10	.40	.20
$\frac{5}{16}$ "	10.50	4.25	3.50	1.40	.50	.20
$\frac{3}{8}$ "	12.00	4.70	4.00	1.55	.60	.30
$\frac{1}{4}$ "	14.00	5.60	4.70	1.85	.70	.35
$\frac{3}{8}$ "	20.00	9.55	7.35	3.10	.90	.50
$\frac{1}{2}$ "	28.00	16.85	9.45	5.60	1.30	.75

Sizes not listed above, take next larger size price.



CHICAGO PORTABLE VOLT-AMMETER, DIRECT CURRENT



Leather Carrying Case
One Third Actual Size



Chicago Volt-Ammeter
One Third Actual Size

This instrument meets the demand for an accurate, durable, compact and inexpensive direct current testing outfit. The case of the instrument is 6" long, 3 1/4" wide, 2" high and of pure cast aluminum and all other materials used are highest grades obtainable. Tungsten steel, 3/8" x 1", is used for the magnets in the d'Arsonval movements, to obtain permanency and accuracy of readings. The workmanship is expert and experienced, and instrument is strictly high class.

There are two individual dead-beat movements, each with a separate scale, embodied within the one case, one for Volt readings, and the other for Ampere, Milliampere, Volt and Millivolt readings, making it possible to make simultaneous tests of current and e. m. f. This double movement simultaneous reading feature is found only in the Chicago Portable Volt-Ammeter, and eliminates the inconvenient feature found in Volt-Ammeters, having but one movement for both current and e. m. f. Instrument can be left in circuit any length of time without injury to the movements. Instruments are hand calibrated, directly and individually compared with recognized standards. The scales are hand drawn with divisions well spaced and the edgewise indicator permits accuracy in observations. Readings are warranted accurate within one-half of one per cent.

We list only a few of the combinations of readings possible to obtain in this instrument. All Voltmeter movements have a resistance of approximately 70 Ohms to the Volt. Special resistances furnished where specified. As there are two individual movements contained within the instrument, each having its own scale, practically any desired combination can be furnished upon application.

Our hand-sewed solid leather carrying cases with the shoulder strap are convenient and help protect instruments where they are used for rough outdoor work.

Trade No.	DESCRIPTION	List Price
TWO READING		
18-1	0 to 1.5 Volts and 0 to 150 Milliampers.....	\$33.00
18-2	0 to 3 Volts and 0 to 300 Milliampers.....	33.00
18-3	0 to 3 Volts and 0 to 5 Amperes.....	33.00
18-4	0 to 15 Volts and 0 to 20 Amperes.....	33.00
18-5	0 to 150 Volts and 0 to 75 Amperes.....	33.00
THREE READING		
18-6	0 to 1.5 and 0 to 15 Volts and 0 to 150 Milliampers.....	35.00
18-7	0 to 3 and 0 to 30 Volts and 0 to 300 Milliampers.....	35.00
18-8	0 to 15 and 0 to 150 Volts and 0 to 15 Amperes.....	35.00
18-9	0 to 30 and 0 to 150 Volts and 0 to 25 Amperes.....	35.00
FOUR READING		
18-11	0 to 1.5 and 0 to 15 Volts and 0 to 150 M. A. and 0 to 1.5 Amperes.....	39.00
18-12	0 to 15 and 0 to 150 Volts and 0 to 300 M. A. and 0 to 3 Amperes.....	39.00
18-13	0 to 15 and 0 to 150 Volts and 0 to 15 A. and 0 to 75 Amperes.....	39.00
18-20	Leather Carrying Case.....	6.00

SOLDERING SALTS, SOLDER, SOLDERING COMPOUND, TAPE, ETC.

Trade No.	DESCRIPTION	List Price
285-1	Non-corrosive Soldering Salts, ½ lb. bottle	\$0.70
285-2	Non-corrosive Soldering Salts, 1 lb. bottle	1.00
285-3	Non-corrosive Soldering Salts, 5 lb. bottle	3.50
	Special discount for quantities.	
SOLDERING PASTE		
286-1	Non-corrosive Soldering Paste, 2½ oz. box	.40
286-2	Non-corrosive Soldering Paste, ½ lb. box	.60
286-3	Non-corrosive Soldering Paste, 1 lb. box	1.00
	Special discount for quantities.	
SOLDERANDFLUX		
	This is a combined solder and non-corrosive fluid made into paste form and put up in collapsible tubes. No solder or flux is required as Solderandflux combines both and is warranted to make a non-corrosive union.	
287-1	Solderandflux, small size tube, each	.60
287-2	“ medium “ “ “	1.20
287-3	“ large “ “ “	2.50
SOLDER		
288	Bar Solder, strictly half and half, per lb.	Lowest Market Prices
288-1	Plain Wire Solder, per lb.	
288-2	Resin Core Wire Solder, ½ lb. box, per lb.	
288-3	Resin Core Wire Solder, 1 lb. spool, per lb.	
288-4	Resin Core Wire Solder, 2 lb. spool, per lb.	
288-5	Resin Core Wire Solder, 5 lb. spool, per lb.	
TAPE		
289	Chicago Friction Tape, ¾", per lb. . .	1.30
289-1	“ Rubber “ ¾" “ “ . . .	1.75
	Our Tapes are guaranteed high class and are packed one-half lb. per tin box.	



No. 285



No. 286



No. 287



No. 288



No. 288-1



No. 289

1914

CATALOGUE AND PRICE LIST

SECTION J

BATTERIES AND ACCESSORIES

ROUND BATTERY ZINCS



Standard R. S. A. Zinc



No. 51
Special 4 lb. Round Zinc

R. S. A. Battery Zinc is furnished strictly in accordance with R. S. A. Specifications and Drawing 1087, weight 4 lbs., for 6" x 8" Jars.

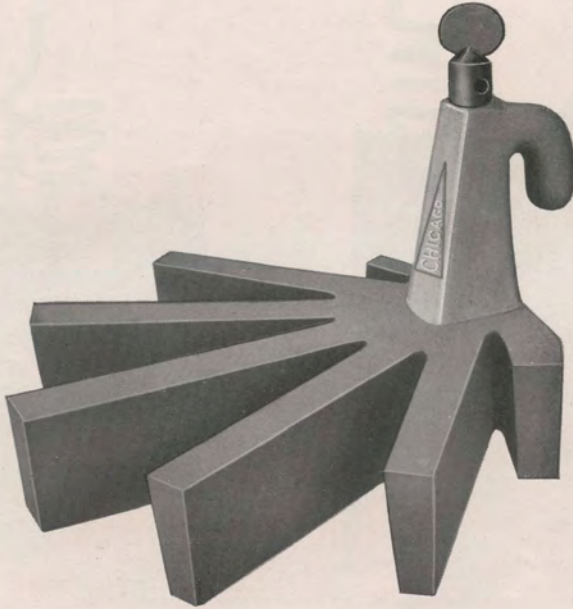
Zinc No. 51 is furnished plain or amalgamated as specified and in 3 or 4 lb. weights. Intended for use in 6" x 8" Jars and with Battery Connectors. With this type of battery zinc practically the entire zinc is available for current consumption as the heavy binding post lug is omitted and same amount of zinc added in the casting.

Prices of Battery Zincs necessarily vary with spelter market. Lowest market prices will be quoted upon request.

Trade No.	DESCRIPTION	List Price
1087	Standard R. S. A. Battery Zinc, each.....	.....
51	Special 4-lb. Round " " " " .....	.....
51-1	" 3-lb. " " " " .....	.....
51-2	Round, Gamewell Type, Battery Zinc, weight 3 lbs., each....	.....
51-3	" " " " " " " " 4 lbs., " .....	.....
51-4	" Fire Alarm " " " " 4 lbs., " .....	.....

In ordering other than Zincs No. 1087 specify whether "plain" or "amalgamated" is wanted.

CROWFOOT BATTERY ZINCS



Standard Crowfoot Zinc No. 52

Our Crowfoot Battery Zincs are cast from pure spelter and are guaranteed 99% pure zinc. Furnished plain or amalgamated. Zincs are guaranteed full size and weight. Made for 6" x 8" and 5" x 7" Battery Jars. Price of Battery Zincs necessarily varies with spelter market. Lowest net prices will be quoted upon request.

Trade No.	DESCRIPTION	List Price
52	Standard Western Union 3¼ lb. Crowfoot Zinc, for 6" x 8" Jar, each.....	.....
53	Standard 3 lb. Crowfoot Zinc, for 6" x 8" Jar, each.....	.....
54	“ 2¾ lb. “ “ 6" x 8" “ “ .....	.....
55	“ 1¾ lb. “ “ 5" x 7" “ “ .....	.....

In ordering Crowfoot Battery Zincs specify whether “plain” or “amalgamated” is wanted.

GLASS BATTERY JARS



Battery Jars are furnished machine made for ordinary use, of annealed lead glass where a more durable jar is required, and of heat-resisting glass for use with soda solutions. The latter is warranted to withstand the intense heat of this solution when being set up, without cracking.

Trade No.	DESCRIPTION	List Price
299	Glass Battery Jar, machine made, 6" x 8", each	\$0.45
299-1	" " " Lead Annealed Glass, 6" x 8", each	1.10
299-2	" " " Heat Resisting, 6" x 8", each	2.00
299-3	Battery Jar for R. S. A. Signal Cells, Round Heat-Resisting Glass, 6" x 10½" inside	2.16
299-4	Battery Jar for R. S. A. Signal Cells, Rectangular, Heat-Resisting Glass, 10½" high inside	2.78
299-5	Battery Jar for R. S. A. Signal Cells, Barrel Shape, Heat-Resisting Glass, 10½" high inside	2.32
	Prices for any size Porcelain Jars upon application.	

CAUSTIC SODA BATTERIES



Edison BSCO Battery



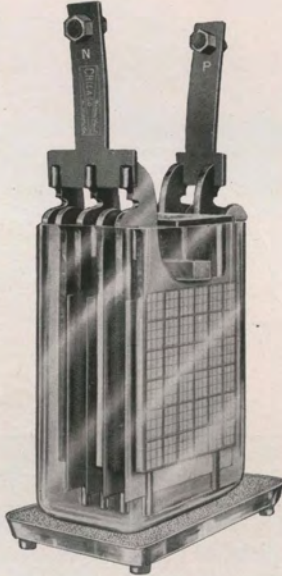
Gordon Primary Battery

Trade No.	Description	Size Over All	Jar	Inside Dimension of Jar Only	List Price
EDISON—BSCO CELLS AND RENEWALS					
4-452	450 Amp. Hr. Cell Complete	5 $\frac{3}{8}$ x6 $\frac{3}{8}$ x12 $\frac{3}{4}$	Rectangular H. R. Glass	5x6x10 $\frac{1}{2}$	\$7.15
4-450	Renewal for above	"	"	"	3.55
4-455	450 Amp. Hr. Cell	7 $\frac{1}{2}$ x11 $\frac{1}{2}$	Round H. R. Glass	6 $\frac{3}{4}$ x9 $\frac{1}{2}$	6.82
4-450	Renewal for above	"	"	"	3.55
4-401	400 Amp. Hr. Cell	6 $\frac{3}{4}$ x12 $\frac{1}{2}$	Porcelain	6x10 $\frac{1}{2}$	6.20
4-401A	"	6 $\frac{3}{4}$ x12 $\frac{1}{2}$	Round H. R. Glass	6x10 $\frac{1}{2}$	6.50
4-400	Renewal for above	"	"	"	3.25
4-403	400 Amp. Hr. Cell	7 $\frac{1}{2}$ x11	Porcelain	6 $\frac{5}{8}$ x8 $\frac{3}{4}$	5.55
4-400	Renewal for above	"	"	"	3.25
4-404	400 Amp. Hr. Cell	7x11 $\frac{1}{2}$	Barrel Shape H. R. Glass	10 $\frac{1}{2}$ " High	6.35
4-400	Renewal for above	"	"	"	3.25
1053-A	R. S. A. Cell	12 $\frac{1}{8}$ x6 $\frac{1}{2}$	Round Porcelain	6x10 $\frac{1}{2}$	6.20
1053-B	" " " Cell	" " "	H. R. Glass	6x10 $\frac{1}{2}$	6.50
1053-C	" " " Cell	" " "	Barrel Shape H. R. Glass	10 $\frac{1}{2}$ " High	3.25
1053-D	Renewal for above	"	"	"	4.95
4-305A	300 Amp. Hr. Cell	6 $\frac{3}{4}$ x10 $\frac{1}{4}$	Porcelain	6x8	5.42
4-305B	" " " "	6 $\frac{3}{4}$ x10 $\frac{1}{4}$	H. R. Glass	6x8	2.78
4-300	Renewal for above	"	"	"	5.12
4-309	300 Amp. Hr. Cell	5 $\frac{3}{4}$ x12 $\frac{3}{4}$	Porcelain	5 $\frac{1}{4}$ x10 $\frac{1}{2}$	2.78
4-300	Renewal for above	"	"	"	2.78
4-208	200 Amp. Hr. Cell	6x9	Porcelain	5x7	3.40
4-200	Renewal for above	"	"	"	2.32
GORDON BATTERIES AND RENEWALS					
1053-E	R. S. A. Cell Complete	12 $\frac{1}{8}$ x6 $\frac{1}{2}$	H. R. Glass	6x10 $\frac{1}{2}$	6.50
1053-F	" " " " "	" " "	Porcelain	6x10 $\frac{1}{2}$	6.20
1053-G	" " " " "	" " "	Barrel Shape H. R. Glass	10 $\frac{1}{2}$ " High	3.10
1053-H	Renewals for above	"	"	"	5.00
4-3	300 Amp. Hr. Cell Complete	6 $\frac{1}{2}$ x9 $\frac{3}{4}$	Porcelain	6x8	2.56
4-3A	Renewal for above	"	"	"	5.42
4-AA	350 Amp. Hr. Cell	6 $\frac{3}{4}$ x11 $\frac{3}{4}$	Porcelain	6x10 $\frac{1}{2}$	2.70
4-AAA	Renewal for above	"	"	"	7.35
4-B	600 Amp. Hr. Cell	7 $\frac{3}{4}$ x14 $\frac{1}{2}$	Porcelain	7 $\frac{1}{2}$ x13 $\frac{1}{2}$	4.65
4-BB	Renewal for above	"	"	"	8.90
4-C	1000 Amp. Hr. Cell	8 $\frac{1}{2}$ x15 $\frac{3}{4}$	Porcelain	8 $\frac{1}{2}$ x14 $\frac{1}{2}$	6.95
4-CC	Renewal for above	"	"	"	3.85
4-H	150 Amp. Hr. Cell	5 $\frac{3}{4}$ x8	Porcelain	5x7	1.95
4-HH	Renewal for above	"	"	"	3.10
4-6	100 Amp. Hr. Cell	5x7 $\frac{1}{2}$	Porcelain	4 $\frac{1}{2}$ x6	1.55
4-66	Renewal for above	"	"	"	

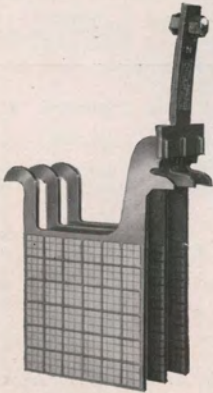
We are prepared to furnish any type Caustic Soda Battery not specified above. List prices include Standard Caustic Soda; Cells and Renewals can be furnished with special Low Temperature Electrolyte at an advance in price.

CHICAGO STORAGE BATTERIES

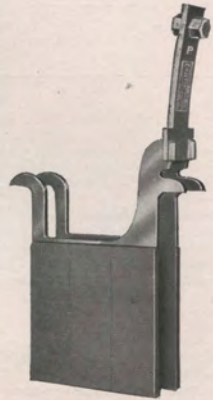
R. S. A. Design



R. S. A. Storage Battery



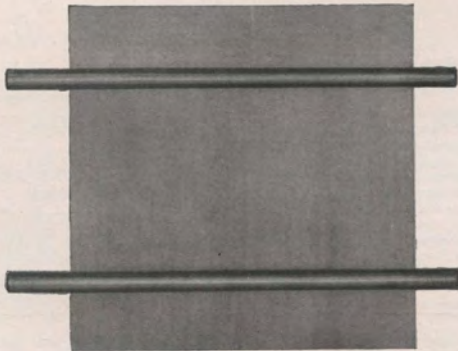
3-Plate Negative Group



2-Plate Positive Group



Ribbed Glass Cover



Wood Separator



Glass
Separator
Retainer



CHICAGO STORAGE BATTERIES

R. S. A. Design

These Batteries are manufactured exclusively for us by one of the oldest storage battery manufacturers in the United States, and are sold exclusively by us for railroad service. Batteries are made and warranted strictly in accordance with R. S. A. Specifications in all details.

The Plates are made of pure rolled slab lead, grooved with upward projecting ribs 1-20" thick to hold the active material, thus allowing large surface exposed without sacrificing strength of plates. The active material is formed electro-chemically from the plate itself and is in direct union with it. The formation of peroxide of lead in the positive, and reduced or spongy lead in negative plates is by a special process making them very porous so as to utilize with practically no loss the reaction of the electrolyte. This construction allows charging of cells with minimum E. M. F. and discharging them at maximum E. M. F. and high discharge rate. Notwithstanding the large size of our plates only 3 A. H. per pound of element is sought.

From above, it will be evident that these Batteries are especially designed for long life with constant and severe service. The voltage of cells of all capacities is slightly above 2 volts on open circuit and during the normal discharge at 8 hour rate falls to 1.7 volts. Each cell shipped consists of one Positive and one Negative Group of Elements, Separators, Glass Jar, Glass Sand Tray, Glass Separator Retainer and required Electrolyte. Electrolyte is shipped in carboys for which an extra charge is made. Credit in full will be allowed for carboys when returned in good condition, charges prepaid to Chicago, Illinois.

Trade No.	DESCRIPTION					List Price	
	Capacity A. H.	Size of Jar	Height	Size of Sand Tray	Height		Size of Cell Cover
58-40	40	7 $\frac{7}{8}$ x4 $\frac{3}{4}$ "	11"	9 $\frac{1}{2}$ x6 $\frac{1}{2}$ "	2"	3 $\frac{7}{8}$ x6"	\$15.60
58-80	80	9 $\frac{1}{8}$ x5 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	10 $\frac{3}{4}$ x7 $\frac{3}{4}$ "	2"	6 $\frac{1}{8}$ x6 $\frac{3}{4}$ "	24.16
58-120	120	9 $\frac{1}{8}$ x6 $\frac{3}{4}$ "	13 $\frac{3}{4}$ "	10 $\frac{3}{4}$ x8 $\frac{1}{2}$ "	2"	6 $\frac{1}{8}$ x8"	31.80
58-200	200	9 $\frac{1}{8}$ x9 $\frac{3}{8}$ "	12 $\frac{3}{4}$ "	10 $\frac{3}{4}$ x12"	2"	6 $\frac{1}{8}$ x10 $\frac{3}{4}$ "	50.12
58-320	320	12 $\frac{5}{8}$ x9"	17"	15x12"	2 $\frac{1}{2}$ "	8 $\frac{1}{8}$ x10 $\frac{3}{4}$ "	75.92
58-400	400	12 $\frac{5}{8}$ x10 $\frac{5}{8}$ "	17"	15x12 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	8 $\frac{1}{8}$ x11 $\frac{3}{4}$ "	94.88

CHICAGO PORTABLE STORAGE BATTERIES



R. S. A. Design "A"

These Portable Storage Batteries are especially manufactured for us and sold exclusively by us to Steam and Electric Railways for railway signal purposes. The general construction is the same as in our Stationary Signal Batteries except that they are mounted in a substantial hardwood case, provided with convenient carrying handle and heavy wing nut terminals, all made in accordance with R. S. A. Drawing and Specifications for Design "A" Portable Storage Batteries. All connections are burned securely and cannot work loose. The entire elements are sealed into case with sealing compound, nothing being exposed except the special hard rubber vent caps. Unless otherwise ordered portable batteries will be shipped filled with electrolyte and charged ready for service.

We recommend that short distance shipments be made by express to insure safe delivery, as we cannot be responsible for freight shipments of filled and charged batteries. Where final destination from Chicago is too far for economical express shipments, electrolyte should be ordered shipped separately and batteries charged at destination. An extra charge will be made for carboys, which charge, however, will be credited in full upon the return of carboys in good condition, charges prepaid.



CHICAGO PORTABLE STORAGE BATTERIES

R. S. A. Design "A"

Trade No.	DESCRIPTION							List Price	
	No. of Cells	No. of Plates	Amp. Hr. Capacity	Charging Rate	Outside Dimensions of Case				Approx Wt.
					Length	Width	Height		
59-42	2	5	40	4	5 $\frac{7}{8}$ "	1 $\frac{1}{8}$ "	9 $\frac{1}{8}$ "	20	\$38.72
59-43	3	5	40	4	8"	1 $\frac{1}{8}$ "	11 $\frac{1}{2}$ "	30	55.64
59-44	4	5	40	4	10"	1 $\frac{1}{8}$ "	13 $\frac{1}{4}$ "	40	72.60
59-45	5	5	40	4	12 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	15 $\frac{3}{4}$ "	50	89.52
59-46	6	5	40	4	14 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	17 $\frac{3}{8}$ "	60	106.48
59-62	2	7	60	6	7 $\frac{3}{8}$ "	2 $\frac{3}{8}$ "	10 $\frac{5}{8}$ "	28	49.36
59-63	3	7	60	6	10 $\frac{1}{4}$ "	2 $\frac{3}{8}$ "	13 $\frac{1}{2}$ "	42	73.04
59-64	4	7	60	6	13"	2 $\frac{3}{8}$ "	16 $\frac{1}{4}$ "	56	96.32
59-65	5	7	60	6	15 $\frac{7}{8}$ "	2 $\frac{3}{8}$ "	19 $\frac{7}{8}$ "	70	119.76
59-66	6	7	60	6	18 $\frac{5}{8}$ "	2 $\frac{3}{8}$ "	21 $\frac{7}{8}$ "	84	143.24
59-82	2	9	80	8	8 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "	12"	36	61.20
59-83	3	9	80	8	12 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	15 $\frac{1}{2}$ "	54	90.00
59-84	4	9	80	8	15 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "	19 $\frac{1}{4}$ "	72	118.80
59-85	5	9	80	8	19 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	22 $\frac{1}{2}$ "	90	147.60
59-86	6	9	80	8	22 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "	26"	108	176.40
59-102	2	11	100	10	10 $\frac{3}{4}$ "	4 $\frac{1}{4}$ "	14"	44	73.08
59-103	3	11	100	10	15 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	18 $\frac{1}{2}$ "	66	107.16
59-104	4	11	100	10	19 $\frac{3}{4}$ "	4 $\frac{1}{4}$ "	23"	88	141.32
59-105	5	11	100	10	24 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	27 $\frac{1}{2}$ "	110	175.44
59-106	6	11	100	10	28 $\frac{3}{4}$ "	4 $\frac{1}{4}$ "	32"	132	209.56

For length over handles and terminals add 3 inches.

For width with handle folded down add 1 $\frac{1}{2}$ inches.

BATTERY ACCESSORIES



Storometer No. 298 and 298-1

This instrument has scale from 1150 to 1325 specific gravity for use with storage batteries and scale Baume 15° to 35° for gravity batteries.

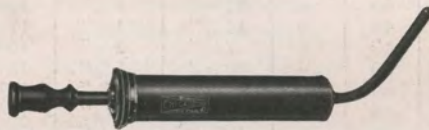
Trade No.	DESCRIPTION	List Price
298	Storometer for Storage Batteries, length 15", weight 12 oz., each	.....
298-1	" " Gravity " " 11" " 8 oz., "	.....



Hydrometers No. 298-2 and 298-3

These Hydrometers are furnished with scales for storage battery solutions or gravity batteries.

Trade No.	DESCRIPTION	List Price
298-2	Hydrometer, for Gravity Batteries, scale Baume 15° to 35°, length 4½", each.....	.....
298-3	Hydrometer, for Storage Batteries, scale 1150 to 1325 specific gravity, length 4½", each.....	.....



Battery Syringe No. 298-4

This Battery Syringe is made from best Hard Rubber and is equipped with interchangeable nozzles.

Used for changing solution in batteries without disturbing operation of cells.

Trade No.	DESCRIPTION	List Price
298-4	Hard Rubber Battery Syringe, capacity 12 oz., each.....	.....
298-5	Extra Nozzles for above, each.....	.....

BATTERY ACCESSORIES



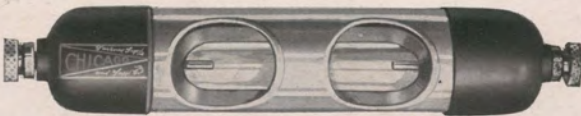
Battery Brush No. 298-6

Trade No.	DESCRIPTION	List Price
298-6	Straight Battery Brush, 4 Rows of Bristles, each . . . . .	.....



Battery Knife No. 298-7

Trade No.	DESCRIPTION	List Price
298-7	Battery Knife for Cleaning Batteries, each . . . . .	.....



Polarity Indicator No. 298-8 and 298-9

These Indicators are used to determine direction of flow of current. The liquid adjacent to Negative Pole turns red when Indicator is placed in circuit. Also used to detect grounds, crosses, etc.

Trade No.	DESCRIPTION	List Price
298-8	Polarity Indicator for Battery Work under 50 Volts, each . . . . .	.....
298-9	“ “ “ Voltages of 50 to 600, each . . . . .	.....

1914
CATALOGUE AND PRICE LIST

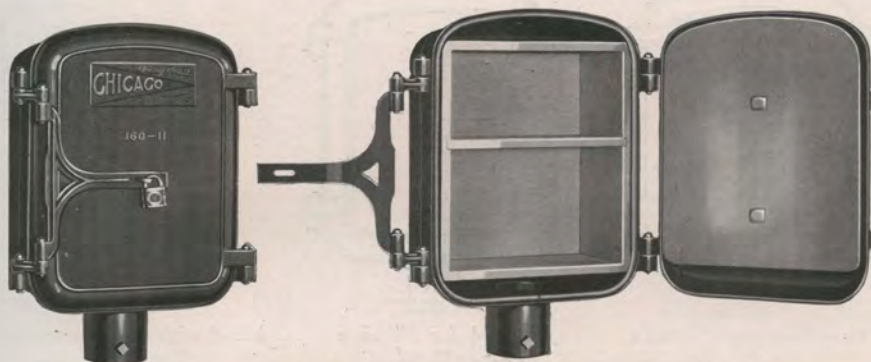
SECTION K

RELAY BOXES AND ACCESSORIES

Relay Boxes and Posts
Relay Box Posts for Battery Chutes
Brackets and Ventilators for Relay Boxes
Cable Pole Insulating Bushing
Etc., Etc., Etc.

LARGE DOUBLE RELAY BOX

Style "A"



**Large Double Relay Box, Style A, for four Relays or two Interlocking Relays,
with Terminals and Lightning Arresters**

This Relay Box is furnished in any of the modifications shown on diagrams on following page.

The Filler Blocks and U Bolts furnished with Boxes No. 160-50, 51, 52 and 53 provide large wire openings, at the same time concealing and protecting wires where they enter box.

The Brackets provided with Boxes No. 160-55, 56, 57, 58, 59 and 60 are cast hollow allowing easy installation and entering of wires in bottom of boxes. The box is made especially strong, door is provided with substantial gasket, making box absolutely water, dust and bug proof.

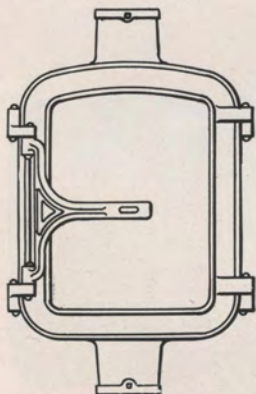
The iron outer door has a spring-backed wood frost door that closes tightly against wood lining. The wood lining is very substantial and well painted and has an air space between it and iron box. The Center Shelf is removable so box may be used with wall type relays of any pattern.

Each of the Relay Compartments are $10\frac{1}{2}$ " high, 16" wide and $8\frac{1}{4}$ " deep, allowing ample room for relays, lightning arresters and terminals.

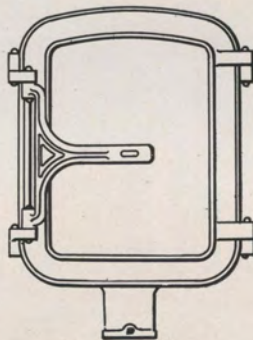
Boxes are furnished as listed and shown or with any of our fittings to mount them on battery chutes, stub poles, signal poles, etc.

LARGE DOUBLE RELAY BOXES

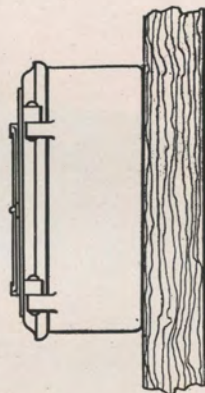
Style "A"



160-1 Top and Bottom
for 4" Pipe



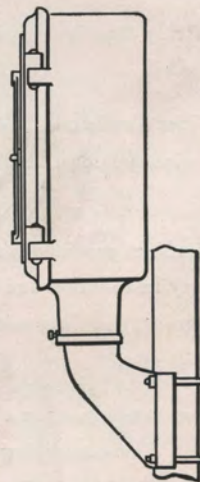
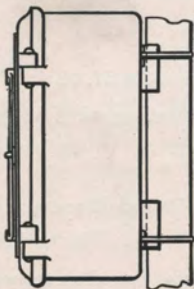
160-4 for 3" Pipe
160-5 " 4" "



160-6 with Lag Screws for
Wood Poles

160-2 Top and Bottom
for 3" Pipe

160-3 Top for 3" Pipe
Bottom 4" Pipe



**Complete with U Bolts
and Filler Blocks**

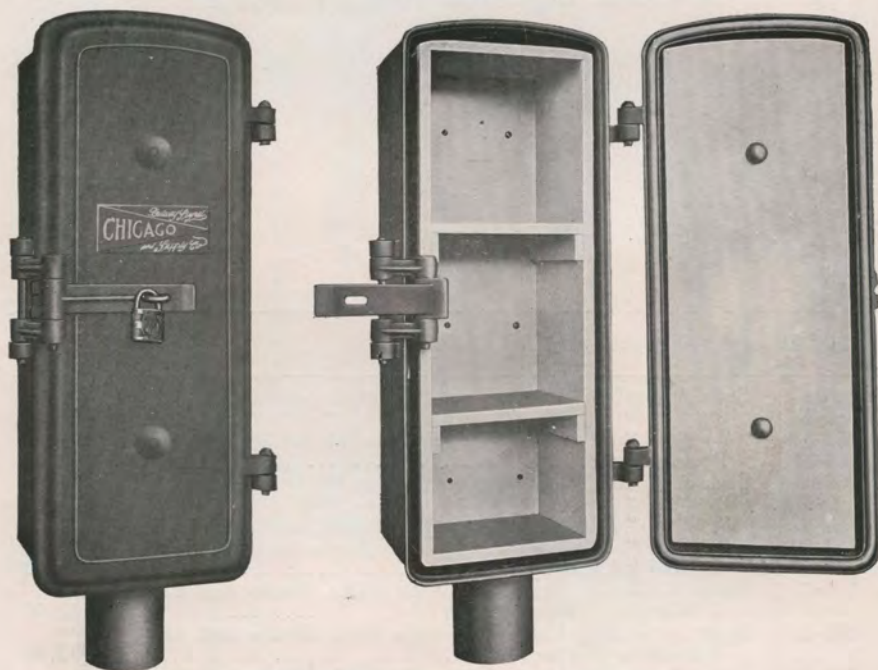
- 160-50 for 3" Pole
- 160-51 " 4" "
- 160-52 " 5" "
- 160-53 " 6" "

**Complete with Hollow
Bracket and U Bolts**

- 160-54 for 3" Pole
- 160-55 " 3" "
- 160-56 " 4" "
- 160-57 " 5" "
- 160-58 " 6" "
- 160-59 " 8" "
- 160-60 " 10" "

DOUBLE RELAY BOXES

Style "B"



Double Relay Box—Style B

For two Relays and Lightning Arresters, Terminals, etc.

The Style B Relay Box is designed to hold any two Relays and is furnished with sockets for 3" (3½" O. D.) or 4" (4½" O. D.) Pipe, also plain bottom but drilled for U Bolts or lag screws for fastening to face of poles. The Filler Blocks provided for fastening boxes to face of steel poles have large wire openings, concealing and protecting wires where they enter box. The Box is extra heavy and door has double toggle joint locking device which holds same tightly against the gasket, making box absolutely water, dust and bug proof.

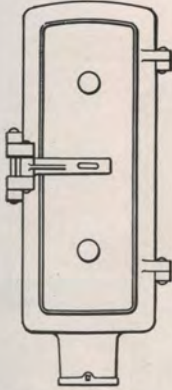
The Box is wood lined throughout and iron door is provided with a spring-backed wood frost board which closes tightly against wood lining. All iron parts are well painted and wood lining is painted white on all sides.

The wood lining is provided with two removable shelves making box adaptable for Wall Type Relays. A separate compartment is provided for mounting terminals and lightning arresters to provide for wiring in a neat and workmanlike manner. Each Relay Compartment is 10" high, 9½" wide and 7½" deep. The Lightning Arrester compartment is 7" high, 9½" wide and 7½" deep.

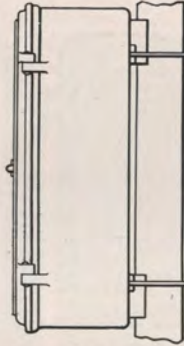
Boxes are furnished in all styles as shown and listed or with any of our fittings to mount on stub poles, battery chutes or signal poles.

DOUBLE RELAY BOX

Style "B"

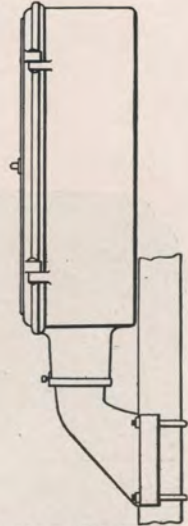


168-1 for 3" Pipe
168-2 " 4" "



Complete with Filler Blocks
and U Bolts

- 168-3 for 3" Pipe
168-4 " 4" "
168-5 " 5" "
168-6 " 6" "
168-7 " Wood Poles



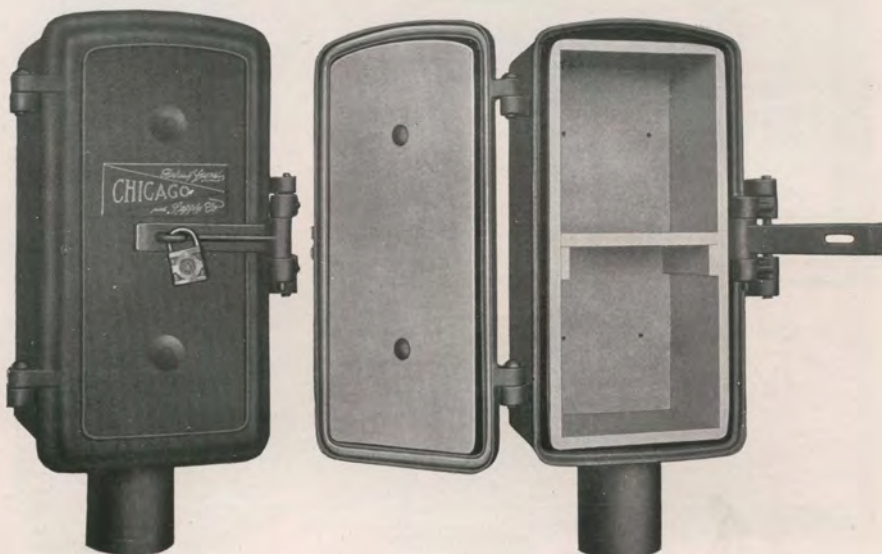
Complete with Hollow
Bracket and U Bolts

- 168-14 for 3" Pipe
168-15 " 3" "
168-16 " 4" "
168-17 " 5" "
168-18 " 6" "
168-19 " 8" "
168-20 " 10" "

Trade No.	DESCRIPTION	List Price
168-1	Style B Relay Box with Socket for 3" (3 1/2" O. D.) Pipe.....	\$23.35
168-2	" " " " " 4" (4 1/2" O. D.) ".....	23.35
168-3	" " " " " Filler Blocks and U Bolts for 3" (3 1/2" O. D.) Pipe.....	24.25
168-4	Same as above but for 4" (4 1/2" O. D.) Pipe.....	24.25
168-5	" " " " " 5" (5 1/2" O. D.) ".....	24.25
168-6	" " " " " 6" (6 1/2" O. D.) ".....	24.25
168-7	Style B Relay Box with Lag Screws for Wood Poles.....	22.35
168-14	" " " " " 168-1 with Bracket and U Bolts for 3" (3 1/2" O. D.) Pipe.....	27.80
168-15	Style B Relay Box 168-2 with Bracket and U Bolts for 3" (3 1/2" O. D.) Pipe.....	27.80
168-16	Style B Relay Box 168-2 with Bracket and U Bolts for 4" (4 1/2" O. D.) Pipe.....	27.80
168-17	Style B Relay Box 168-2 with Bracket and U Bolts for 5" (5 1/2" O. D.) Pipe.....	27.80
168-18	Style B Relay Box 168-2 with Bracket and U Bolts for 6" (6 1/2" O. D.) Pipe.....	27.80
168-19	Style B Relay Box 168-2 with Bracket and U Bolts for 8" (8 1/2" O. D.) Pipe.....	28.25
168-20	Style B Relay Box 168-2 with Bracket and U Bolts for 10" (10 1/4" O. D.) Pipe.....	28.60
160-23	Filler Block for 168-3, 4, 5 and 6 (specify size), each.....	.50
160-22	U Bolt with Nuts for 168-3, each.....	.45
160-28	" " " " " 168-4, ".....	.45
160-29	" " " " " 168-5, ".....	.45
160-31	" " " " " 168-6, ".....	.45
361	Bracket and U Bolts for Box 168-1, for 3" Pipe.....	4.45
365	" " " " " 168-2, " 3" ".....	4.45
362	" " " " " " 4" ".....	4.45
363	" " " " " " 5" ".....	4.45
364	" " " " " " 6" ".....	4.45
369	" " " " " " 8" ".....	4.90
370	" " " " " " 10" ".....	5.25
	For No. 189 Ventilators on any of above Relay Boxes add to list price for each Ventilator.....	1.20

DOUBLE RELAY BOXES

Style " C "



Double Relay Box—Style C

For two Relays and Lightning Arresters, Terminals, etc.

Style C Relay Box is designed to hold two Relays together with necessary lightning arresters and terminals and is furnished with Sockets for 3" ($3\frac{1}{2}$ " O. D.) or 4" ($4\frac{1}{2}$ " O. D.) Pipe, also with plain bottom and back drilled for U Bolts and Filler Blocks. The Filler Blocks provided for fastening boxes to face of poles have large wire openings concealing and protecting wires where they enter box.

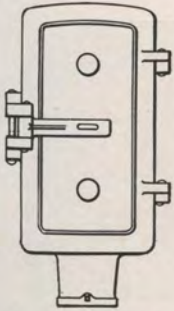
The Iron Box is very heavy and strong and is provided with toggle joint locking device which holds door closed tightly against the gasket. A spring-backed frost door which closes tightly against inner lining is mounted on iron outer door making box absolutely water, dust and bug proof.

The wood lining has a removable shelf to adapt it for Wall Type Relays. Iron parts are painted black and entire wood lining is painted white. Each Relay Compartment is 10" high, $9\frac{1}{2}$ " wide, and $7\frac{1}{2}$ " deep.

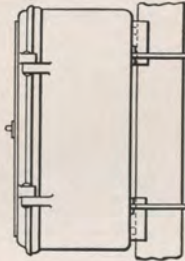
Boxes are furnished in any of the styles listed on opposite page or with any of our fittings to mount them on stub poles, battery chutes, or signal poles.

DOUBLE RELAY BOXES

Style "C"

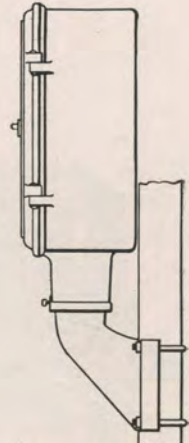


167-1 for 3" Pipe
167-2 " 4" "



Complete with Filler Blocks
and U Bolts

- 167-3 for 3" Pipe
- 167-4 " 4" "
- 167-5 " 5" "
- 167-6 " 6" "
- 167-7 " Wood Poles



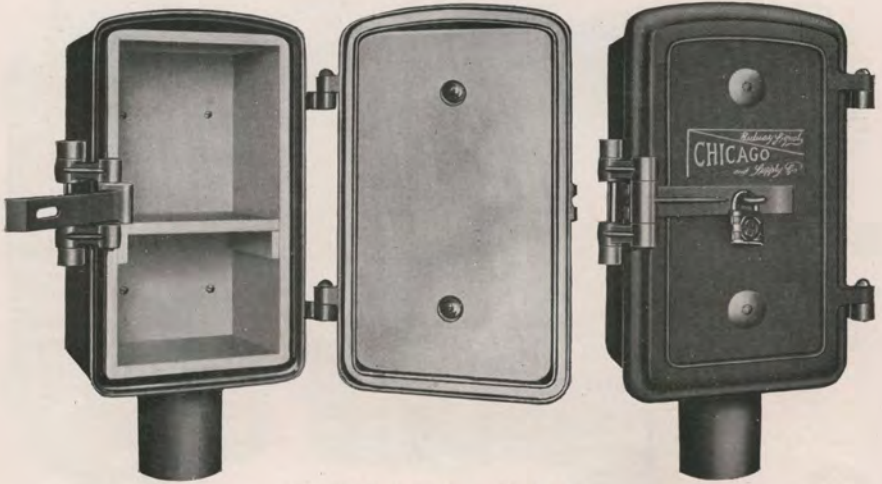
Complete with Hollow
Bracket and U Bolts

- 167-14 for 3" Pipe
- 167-15 " 3" "
- 167-16 " 4" "
- 167-17 " 5" "
- 167-18 " 6" "
- 167-19 " 8" "
- 167-20 " 10" "

Trade No.	DESCRIPTION	List Price
167-1	Style C Relay Box with Socket for 3" (3 1/2" O. D.) Pipe.....	\$21.50
167-2	" " " " " 4" (4 1/2" O. D.) ".....	21.50
167-3	" " " " " Filler Blocks and U Bolts for 3" (3 1/2" O. D.) Pipe.....	22.40
167-4	" " " " " " " " " 4" (4 1/2" O. D.) ".....	22.40
167-5	" " " " " " " " " 5" (5 3/8" O. D.) ".....	22.40
167-6	" " " " " " " " " 6" (6 5/8" O. D.) ".....	22.40
167-7	Style C Relay Box with Lag Screws for Wood Poles.....	20.50
167-14	Style C Relay Box 167-1 with Bracket and U Bolts for 3" (3 1/2" O. D.) Pipe.....	25.95
167-15	Style C Relay Box 167-2 with Bracket and U Bolts for 3" (3 1/2" O. D.) Pipe.....	25.95
167-16	Style C Relay Box 167-2 with Bracket and U Bolts for 4" (4 1/2" O. D.) Pipe.....	25.95
167-17	Style C Relay Box 167-2 with Bracket and U Bolts for 5" (5 1/8" O. D.) Pipe.....	25.95
167-18	Style C Relay Box 167-2 with Bracket and U Bolts for 6" (6 5/8" O. D.) Pipe.....	25.95
167-19	Style C Relay Box 167-2 with Bracket and U Bolts for 8" (8 5/8" O. D.) Pipe.....	26.40
167-20	Style C Relay Box 167-2 with Bracket and U Bolts for 10" (10 1/4" O. D.) Pipe.....	26.75
160-23	Filler Block for 167-3, 4, 5 and 6 (specify size each),.....	.50
160-22	U Bolt with Nuts for 167-3, each.....	.45
160-28	" " " " " 167-4, ".....	.45
160-29	" " " " " 167-5, ".....	.45
160-31	" " " " " 167-6, ".....	.45
361	Bracket and U Bolts for 167-1 for 3" Pipe.....	4.45
365	" " " " " 167-2 " 3" ".....	4.45
362	" " " " " " 4" ".....	4.45
363	" " " " " " 5" ".....	4.45
364	" " " " " " 6" ".....	4.45
369	" " " " " " 8" ".....	4.90
370	" " " " " " 10" ".....	5.25
	For No. 189 Ventilator on any of above Relay Boxes, add to list price for each Ventilator.....	1.20

SINGLE RELAY BOX

Style "D"



Single Relay Box—Style D

For one Relay, Lightning Arresters and Terminals

Style D Relay Box is designed to hold One Track or Line Relay in upper compartment and Terminals and Lightning Arresters in lower compartment. Box is furnished with sockets for 3" ($3\frac{1}{2}$ " O. D.) or 4" ($4\frac{1}{2}$ " O. D.) Pipe, also with plain bottom but with back drilled for U Bolts to fasten to face of Poles. The Filler Blocks provided for fastening to steel poles have large wire openings which conceal and protect wires where they enter box.

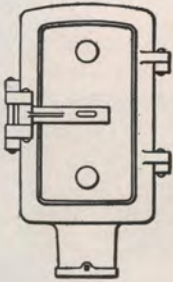
Box is provided with a wood lining in two compartments, providing for wiring and connections in a workmanlike manner. The Relay Compartment is 10" high, $9\frac{1}{2}$ " wide and $7\frac{1}{2}$ " deep. The Lightning Arrester compartment is 7" high, $9\frac{1}{2}$ " wide and $7\frac{1}{2}$ " deep.

The Iron Box is heavy, strong and well painted, and has toggle joint locking device which holds door closed tightly against the gasket, thus making box absolutely water, dust and bug proof. The frost door is spring backed and fits tightly against the inner wood lining.

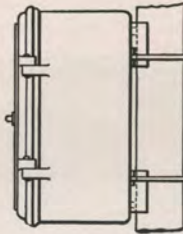
Boxes are furnished as listed or with any of our fittings to attach to battery chutes, stub poles, signal masts, etc.

SINGLE RELAY BOXES

Style "D"

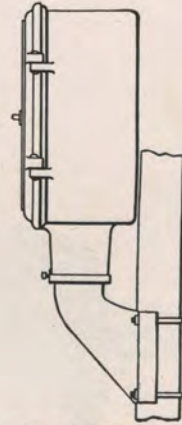


166-1 for 3" Pipe
166-2 " 4" "



Complete with Filler Blocks
and U Bolts

- 166-3 for 3" Pipe
- 166-4 " 4" "
- 166-5 " 5" "
- 166-6 " 6" "
- 166-7 " Wood poles



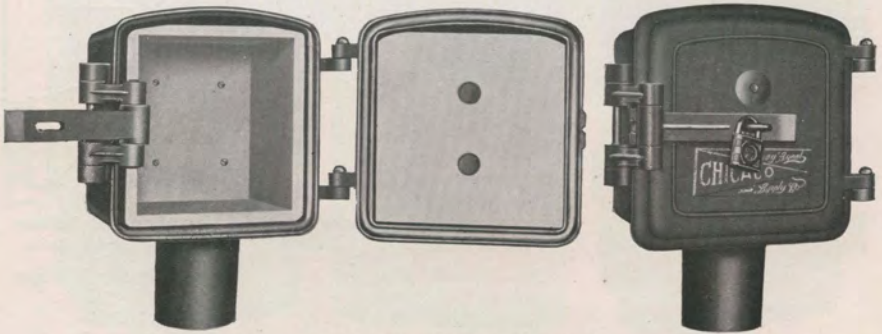
Complete with Hollow
Bracket and U Bolts

- 166-25 for 3" Pipe
- 166-26 " 3" "
- 166-27 " 4" "
- 166-28 " 5" "
- 166-29 " 6" "
- 166-32 " 8" "
- 166-33 " 10" "

Trade No.	DESCRIPTION	List Price
166-1	Style D Relay Box with Socket for 3" (3½" O. D.) Pipe.....	\$18.25
166-2	" " " " " 4" (4½" O. D.) ".....	18.25
166-3	" " " " " Filler Blocks and U Bolts for 3" (3½" O. D.) Pipe.....	19.15
166-4	" " " " " " " " " 4" (4½" O. D.) ".....	19.15
166-5	" " " " " " " " " 5" (5½" O. D.) ".....	18.15
166-6	" " " " " " " " " 6" (6½" O. D.) ".....	18.15
166-7	Style D Relay Box with Lag Screws for Wood Poles.....	17.25
166-25	Style D Relay Box 166-1 with Bracket and U Bolts for 3" (3½" O. D.) Pipe.....	22.70
166-26	Style D Relay Box 166-2 with Bracket and U Bolts for 3" (3½" O. D.) Pipe.....	22.70
166-27	Style D Relay Box 166-2 with Bracket and U Bolts for 4" (4½" O. D.) Pipe.....	22.70
166-28	Style D Relay Box 166-2 with Bracket and U Bolts for 5" (5½" O. D.) Pipe.....	22.70
166-29	Style D Relay Box 166-2 with Bracket and U Bolts for 6" (6½" O. D.) Pipe.....	22.70
166-32	Style D Relay Box 166-2 with Bracket and U Bolts for 8" (8½" O. D.) Pipe.....	23.15
166-33	Style D Relay Box 166-2 with Bracket and U Bolts for 10" (10½" O. D.) Pipe.....	23.50
160-23	Filler Block for 166-3, 4, 5 and 6, each.....	.50
160-22	U Bolt with Nut for 166-3, each.....	.45
160-28	" " " " 166-4, ".....	.45
160-29	" " " " 166-5, ".....	.45
160-31	" " " " 166-6, ".....	.45
361	Bracket and U Bolts for 166-1 for 3" Pipe.....	4.45
365	" " " " 166-2 " 3" ".....	4.45
362	" " " " " 4" ".....	4.45
363	" " " " " 5" ".....	4.45
364	" " " " " 6" ".....	4.45
369	" " " " " 8" ".....	4.90
370	" " " " " 10" ".....	5.25
	For No. 189 Ventilator on any of above Relay Boxes, add to list price for each Ventilator.....	1.20

SINGLE RELAY BOXES

Style "E"



Single Relay Boxes—Style E

For one Relay, Lightning Arresters and Terminals

Style E Relay Box is designed on the same high grade principles as our other Relay Boxes and is identical with same except that it is smaller and is intended to hold one track or line relay with lightning arresters and terminals.

The Box is furnished with Sockets for 3" ($3\frac{1}{2}$ " O. D.), or 4" ($4\frac{1}{2}$ " O. D.) pipe, also with plain bottom but drilled for U Bolts or Lag Screws to fasten to face of poles as listed on opposite page. The Filler Blocks provided for fastening boxes to face of steel poles have large wire openings which conceal and protect wires where they enter box.

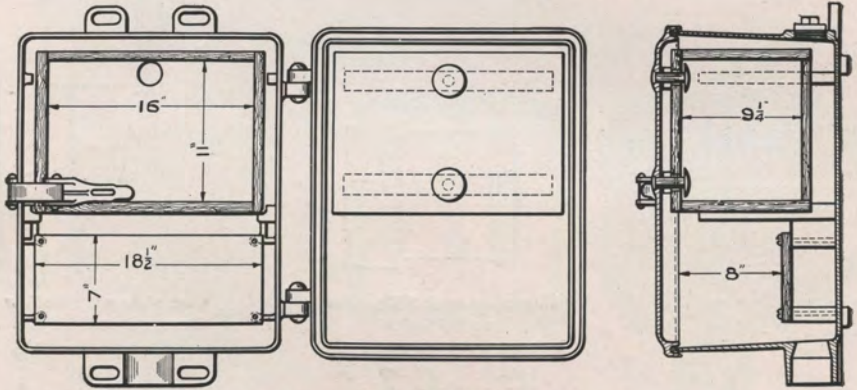
The Box is thoroughly wood lined and provided with a spring-backed frost door which closes tightly against the inner wood lining. The inside dimensions of wood lining are: height 10", width $9\frac{1}{2}$ ", depth $7\frac{1}{2}$ ".

The iron door is provided with a heavy toggle locking device which holds door closed tightly against the gasket making box absolutely dust, water and bug proof.

The Iron Box is well painted inside and outside and the wood lining is painted white thus making a neat and light interior.

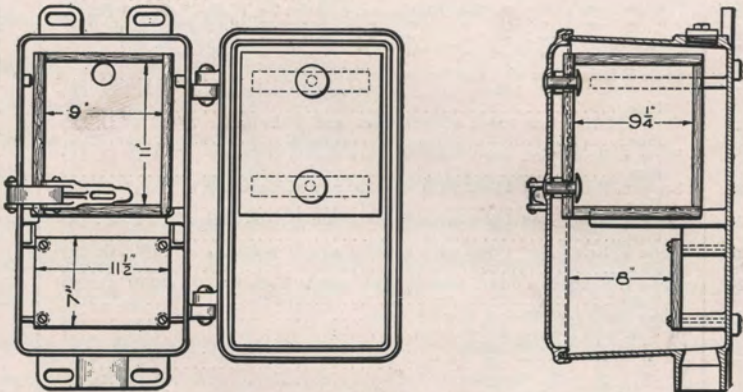
The Box is furnished in any of the styles listed or with any of our fittings to attach them to battery chutes, stub poles, signal masts, etc.

R. S. A. RELAY BOXES



R. S. A. (Size "B") Relay Box

1182-30	for 3"	(3 1/2" O. D.)	Pipe
1182-31	" 3 1/2"	(4" " ")	"
1182-32	" 4"	(4 1/2" " ")	"
1182-33	" 5"	(5 1/8" " ")	"
1182-34	" 6"	(6 5/8" " ")	"



R. S. A. (Size "A") Relay Box

1182-25	for 3"	(3 1/2" O. D.)	Pipe
1182-26	" 3 1/2"	(4" " ")	"
1182-27	" 4"	(4 1/2" " ")	"
1182-28	" 5"	(5 1/8" " ")	"
1182-29	" 6"	(6 5/8" " ")	"



R. S. A. RELAY BOXES

Relay Boxes illustrated are made in accordance with R. S. A. Drawings 1182, but are also furnished with Half Round Projections, cast on rear of Box, so that the Box can be attached to the side of 3", 3½", 4", 5" and 6" Poles. This design permits two Relay Boxes to be mounted back to back on one pole.

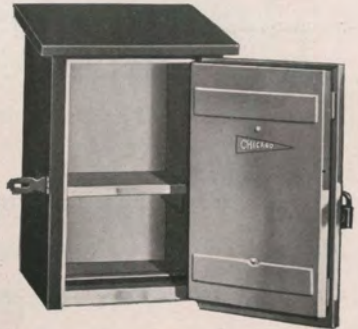
The Box and Mounting Board are made of sound, well seasoned lumber, and well painted. The frost door fits tight against the face of the inner box, it is spring backed and attached to the outer iron door, making the box absolutely water, dust and bug proof. A Pipe Plug is provided for sealing the top Wire Lead Hole, all iron parts are well painted and wood lining is painted white on all sides before mounting in iron box.

Trade No.	DESCRIPTION	List Price
1182-30	Style K Relay Box, R. S. A. (Size "B") complete as shown with U Bolts for 3" (3½" O. D.) Pipe.....	\$41.50
1182-31	Style K Relay Box, R. S. A. (Size "B") complete as shown with Clamps and Bolts for 3½" (4" O. D.) Pipe.....	41.50
1182-32	Style K Relay Box, R. S. A. (Size "B") complete as shown with U Bolts for 4" (4½" O. D.) Pipe.....	41.50
1182-33	Style K Relay Box, R. S. A. (Size "B") complete as shown with U Bolts for 5" (5¾" O. D.) Pipe.....	41.50
1182-34	Style K Relay Box (Size "B") complete as shown with U Bolts for 6" (6⅝" O. D.) Pipe.....	41.50
1182-25	Style K Relay Box R. S. A. (Size "A") complete as shown with U Bolts for 3" (3½" O. D.) Pipe.....	27.75
1182-26	Style K Relay Box R. S. A. (Size "A") complete as shown with Clamps and Bolts for 3½" (4" O. D.) Pipe.....	27.75
1182-27	Style K Relay Box R. S. A. (Size "A") complete as shown with U Bolts for 4" (4½" O. D.) Pipe.....	27.75
1182-28	Style K Relay Box, R. S. A. (Size "A") complete as shown with U Bolts for 5" (5¾" O. D.) Pipe.....	27.75
1182-29	Style K Relay Box R. S. A. (Size "A") complete as shown with U Bolts for 6" (6⅝" O. D.) Pipe.....	27.75

WOOD RELAY BOXES



Style H Relay Box for one Interlocking Relay or two Single Relays with Lightning Arresters and Terminals



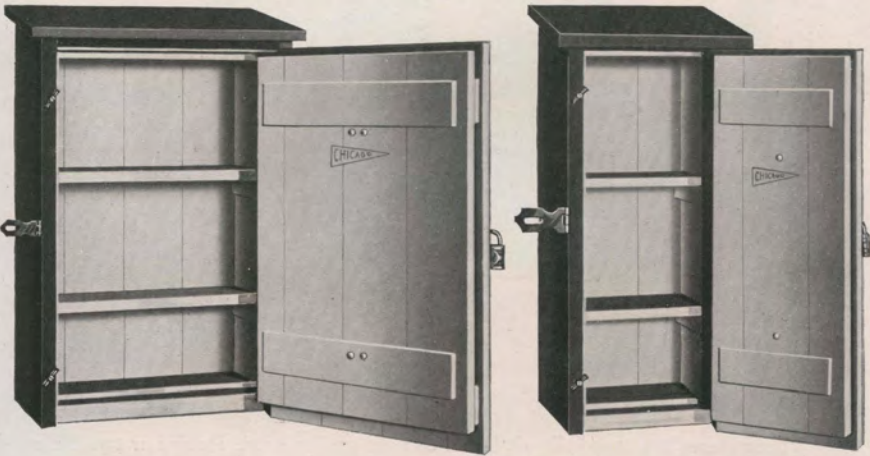
Style J Relay Box for one Relay with Lightning Arresters and Terminals

These Relay Boxes are made from 1/4" tongued and grooved lumber throughout and have spring backed inner door closing tightly on felt gasket. All joints are well leaded and boxes guaranteed water and dust proof. Exterior is painted black and interior white.

Trade No.	DESCRIPTION	List Price
347	Style H Wood Relay Box as shown.....	\$9.50
347-1	Style H Wood Relay Box equipped with two No. 189 Ventilators.....	11.90
348	Style J Wood Relay Box as shown.....	7.50
348-2	Style J Wood Relay Box equipped with two No. 189 Ventilators.....	9.90

We are prepared to furnish any style wood relay and battery box made to Railroad Co.'s drawings at lowest prices and upon short notice.

WOOD RELAY BOXES



Style F Relay Box for two Interlocking Relays of four Single Relays with Lightning Arresters and Terminals

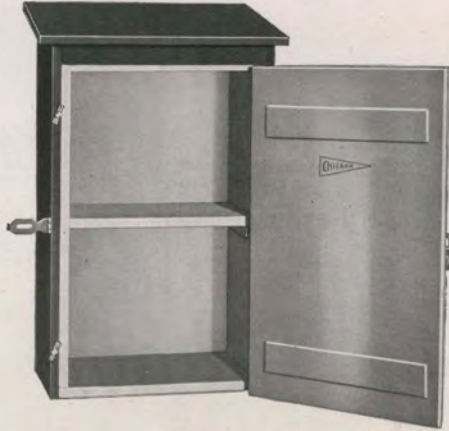
Style G Relay Box for two Relays with Lightning Arresters and Terminals

These Relay Boxes are similar to our Iron Relay Boxes and have a spring-backed inner frost door closing tightly on a felt gasket. Boxes are absolutely water and dust proof. They are made from 1¼" tongued and grooved lumber throughout, all joints are well leaded. Outside painted black, inside white.

Trade No.	DESCRIPTION	List Price
345	Style F Relay Box as shown	\$20.00
345-1	Style F Relay Box equipped with two No. 189 Ventilators . . .	22.40
346	Style G Relay Box as shown	18.00
346-1	Style G Relay Box with two No. 189 Ventilators	20.40

We are prepared to furnish any style wood Relay and Battery Boxes made to Railroad Company's drawings, at lowest prices and upon short notice.

WOOD RELAY AND BATTERY BOXES



No. 340
 No. 341
 No. 342

These Boxes are especially designed to hold two or more Relays or two Relays in upper compartment and Batteries in lower compartment as used in connection with line wire operated Crossing Signals, Annunciators, Indicators, etc. The Shelves are removable so boxes may be used with Wall Type Relays. The shelf supports are held with screws so shelf may be placed at any height in Box. Unless otherwise specified, Boxes will be shipped with shelves located as listed.

Boxes are made of well seasoned tongued and grooved lumber throughout and assembled with leaded joints to make same water and dust proof. Painted white inside and black outside.

Trade No.	DESCRIPTION	List Price
340	Wood Relay Box as shown, inside dimensions, Lower Compartment, 16½" wide, 9¼" deep, 15" high, Upper Compartment 16½" wide, 9¼" deep, 11¼" high.....	\$11.00
341	Wood Relay Box as shown, inside dimensions, Lower Compartment, 16½" wide, 9¼" deep, 12½" high, Upper Compartment, 16½" wide, 9¼" deep, 14½" high.....	12.00
342	Wood Relay Box as shown 10¾" deep with two compartments, each 13¾" high.....	12.00

We are prepared to furnish any style Wood Relay and Battery Boxes made to Railroad Company's drawings at lowest prices and upon short notice.

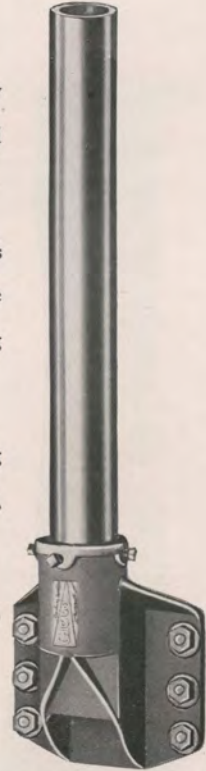
BATTERY CHUTE SOCKETS FOR PIPE SUPPORTS

This style Socket and Pipe is furnished to support Relay Boxes, Cable Poles and Highway Crossing Signals on standard Battery Chutes. They fit any single or double Battery Chute.

Sockets are provided with six Bolt Holes having 9" centers and are furnished with six bolts and any length pipe desired. Pipe is held firmly in place with set screws and provision for calking is made.

Two Bolts are required for short pipes, but for Crossing Signal Poles and Posts supporting large and heavy Relay Boxes, we recommend that six bolts be used.

Furnished for 2½" pipe (2⅞" O. D.), for 3" (3½" O. D.) and 4" (4½" O. D.) and without steel pipe unless specified.



**Battery Chute
Pipe Socket for
No. 134**

Trade No.	DESCRIPTION	List Price
134	Pipe Socket for 3" (3½" O. D.) Pipe for attaching to Battery Chute, complete with six bolts, (no pipe).....	\$3.00
134-1	Pipe Socket for 2½" (2⅞" O. D.) Pipe for attaching to Battery Chute, complete with two bolts, (no pipe).....	2.75
135	Pipe Socket for 4" (4½" O. D.) Pipe for attaching to Battery Chute, complete with six bolts, (no pipe).....	3.00

If pipe is wanted length must be specified. List Price does not include pipe or calking it into sockets.

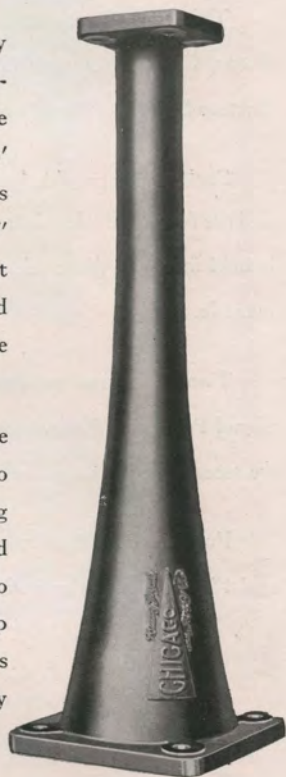
RELAY BOX AND INDICATOR POSTS



No. 138
 No. 138-1
 No. 138-2

These Posts are for Relay Boxes and Indicators and recommended as being superior to pipe with cast iron bases. They are 3' high and have 11" square bases with four bolt holes having 8" centers. They present a neat appearance, are very strong, and being cast in one piece, eliminate all possibility of loose joints.

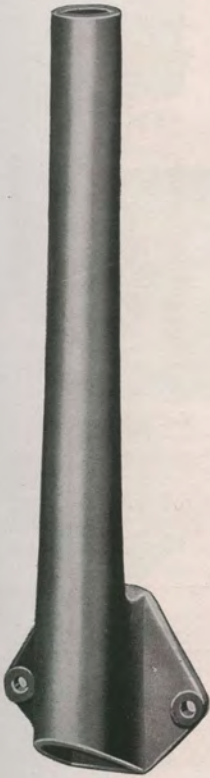
They are cast with large opening in bottom for wires to enter, thus preventing cutting of rubber insulation. Furnished with round top corresponding to pipe sizes and 6" square flat top with four bolt holes, 4" centers as shown for flat bottom relay boxes.



No. 138-3

Trade No.	DESCRIPTION	List Price
138	Relay Box Post as shown with Top 4½" O. D.....	\$6.80
138-1	Relay Box Post as shown with Top 3½" O. D.....	6.80
138-2	Indicator Post as shown with Top 2⅞" O. D.....	6.70
138-3	Relay Box Post with Flat Flange Top as shown.....	7.00

RELAY BOX AND INDICATOR POSTS FOR BATTERY CHUTES



No. 139
No. 139-1
No. 139-2

These Posts are used to support Relay Boxes and Indicators directly on Battery Chutes, the latter serving as a foundation. They are cast hollow for wires, and have 9" center bolt holes to fit standard battery chutes.

They are furnished with upper ends $4\frac{1}{2}$ " O. D., $3\frac{1}{2}$ " O. D. and $2\frac{7}{8}$ " O. D., also with flat flange 6" square with four bolt holes, 4" centers for Wood and Iron Relay Boxes with flat bottoms.



No. 139-3

Trade No.	DESCRIPTION	List Price
139	Battery Chute Post for Relay Box with Top $4\frac{1}{2}$ " O. D....	\$5.70
139-1	“ “ “ “ “ “ $3\frac{1}{2}$ " O. D....	5.60
139-2	“ “ “ “ “ “ Indicators with Top $2\frac{7}{8}$ " O. D....	5.50
139-3	Battery Chute Post for Relay Boxes with Flat Flange Top...	5.90

BRACKETS FOR INDICATORS, RELAY BOXES, ETC.



No. 360



No. 361



No. 362



No. 363



No. 364



No. 365



No. 369



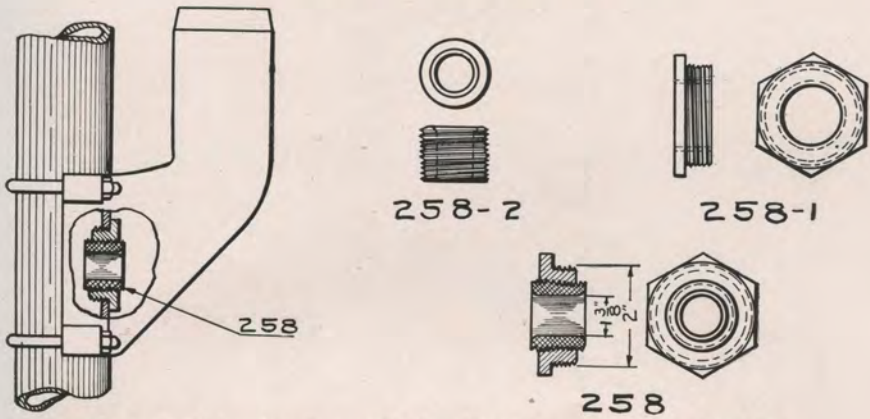
No. 370

Above Hollow Brackets are used to attach to Signal Poles, Cable Poles, Crossing Bell Poles, etc., to support Relay Boxes, Indicators, Crossing Bells, etc., that have Pipe Sockets on bottom. They are heavy Hollow Castings giving ample room for wires and large wire holes in poles to which they are attached. Brackets are so proportioned that two brackets may be used opposite each other by using four 1/2" machine bolts as illustrated elsewhere in this catalogue.

Trade No.	DESCRIPTION	List Price
360	Hollow Bracket with 2 1/8" O. D. Pipe Socket, complete with U Bolt to attach to 3" Poles for Indicators, etc.....	\$4.00
371	Same as above but to attach to 3 1/2" Poles.....	4.20
372	Same as above but to attach to 4" Poles.....	4.40
361	Hollow Bracket with 3" Pipe Socket, complete with two U Bolts to attach to 3" Pipe for Relay Boxes, etc.....	4.45
362	Hollow Bracket with 4" Pipe Socket, complete with two U Bolts to attach to 4" Pipe for Relay Boxes, etc.....	4.45
363	Hollow Bracket with 4" Pipe Socket, complete with two U Bolts to attach to 5" Pipe for Relay Boxes, etc.....	4.45
364	Hollow Bracket with 4" Pipe Socket, complete with two U Bolts to attach to 6" Pipe for Relay Boxes, etc.....	4.45
365	Hollow Bracket with 4" Pipe Socket, complete with two U Bolts to attach to 3" Pipe for Relay Boxes, etc.....	4.45
369	Hollow Bracket with 4" Pipe Socket, complete with two U Bolts to attach to 8" Pipe for Relay Boxes, etc.....	4.90
370	Hollow Bracket with 4" Pipe Socket complete, with two U Bolts to attach to 10" Pipe for Relay Boxes, etc.....	5.25

Brackets are also furnished with large hand holes with covers for same to facilitate wiring at an advance of 75 cents to list price.

BRACKETS, LEAD WIRE BUSHINGS AND VENTILATOR FOR RELAY BOXES, CROSSING BELLS, CABLE POLES, ETC.



Method of Application and Details of Insulated Pole Bushing for Cable, Signal Poles, Etc.



- 1630-75 for 3" Pipe
- 1630-76 " 4" "
- 1630-77 " 5" "
- 1630-78 " 6" "



No. 189

Ventilator No. 189 is used for Ventilating Iron and Wood Relay Boxes and Signal Cases. Same is dust and bug proof and is provided with a protected brass screen.

Style 1630 Bracket is used to support Crossing Bells and Relay Boxes having 3" Pipe Socket on bottom. It is extra strong and is especially intended for supporting Crossing Bells on poles adjacent to Highway Crossings, thus saving expense of a separate pole.

Trade No.	DESCRIPTION	List Price
1630-75	Hollow Bracket with 3" Pipe Socket, complete with two U Bolts to attach to 3" Pipe.....	\$4.80
1630-76	Same as above but to attach to 4" Pipe.....	4.80
1630-77	" " " " " " " " 5" ".....	4.80
1630-78	" " " " " " " " 6" ".....	4.80
189	Ventilator complete with Brass Screen and three Flat Head Bolts, each.....	1.20
258	Bushing complete for Lead Wire.....	.50
258-1	Reducing Bushing 1 1/2".....	.10
258-2	Insulating Bushing.....	.40

1914

CATALOGUE AND PRICE LIST

SECTION L

BATTERY RECEPTACLES

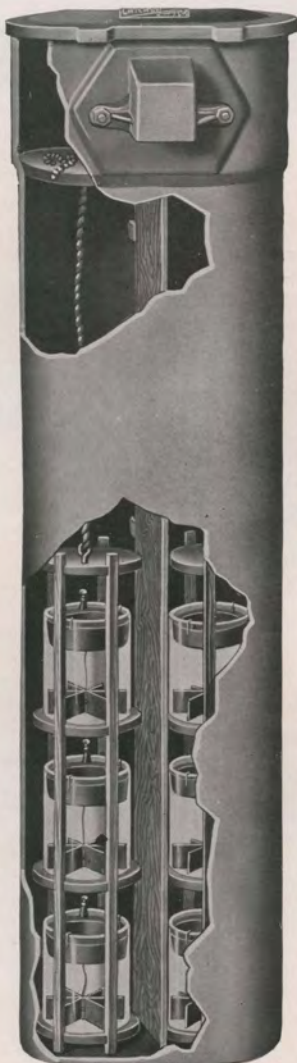
Battery Chutes

Battery Boxes

R. S. A. SINGLE AND DOUBLE CAST IRON BATTERY CHUTES



R. S. A. Single
Battery Chute



R. S. A. Double
Battery Chute



Horizontal Trunking
Cap No. 37

These Battery Chutes are made in accordance with R. S. A. Drawings. They are cast in one piece without joints and plugs in bottom, making them absolutely waterproof. They are arranged so that masts for Highway Crossing Alarms may be bolted on in place of Trunking Caps.

Three Cell Elevators and Frost Boards are in accordance with R. S. A. Drawings, but Chutes can be equipped with two or four cell Elevators when required.

R. S. A. Trunking Cap is furnished unless otherwise specified. Horizontal Trunking Cap No. 37 has 4" x 4" inlet for surface trunking and will be furnished only when specified.

Chutes can be furnished 5, 6, 7, 8 and 9 feet long with 2, 3 or 4 cell Elevators.



R. S. A. SINGLE CAST IRON BATTERY CHUTES

Trade No.	DESCRIPTION	List Price
1230-25	R. S. A. Single Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap and Bolts.....	\$20.40
1230-1	Same as above except 6' long.....	21.90
1230-5	“ “ “ “ 7' “	23.40
1230-9	“ “ “ “ 8' “	24.90
1230-13	“ “ “ “ 9' “	27.40
1230-26	R. S. A. Single Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts and 2-Cell Elevator.....	22.00
1230-17	Same as above except 6' long.....	23.50
1230-19	“ “ “ “ 7' “	25.00
1230-21	“ “ “ “ 8' “	26.50
1230-23	“ “ “ “ 9' “	29.00
1230-27	R. S. A. Single Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts and R. S. A. 3-Cell Elevator.....	22.40
1230-2	Same as above except 6' long.....	23.90
1230-6	“ “ “ “ 7' “	25.40
1230-10	“ “ “ “ 8' “	26.90
1230-14	“ “ “ “ 9' “	29.40
1230-28	R. S. A. Single Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts and 4-Cell Elevator.....	22.80
1230-18	Same as above except 6' long.....	24.30
1230-20	“ “ “ “ 7' “	25.80
1230-22	“ “ “ “ 8' “	27.30
1230-24	“ “ “ “ 9' “	29.80
1228-7	R. S. A. Single Cast Iron Battery Chute Body 5' long.....	.....
1228-1	Same as above except 6' long.....	.....
1228-4	“ “ “ “ 7' “ .....	.....
1228-5	“ “ “ “ 8' “ .....	.....
1228-6	“ “ “ “ 9' “ .....	.....
1228-2	Cover for R. S. A. Single Cast Iron Battery Chute.....	.....
1228-3	R. S. A. Trunking Cap.....	.60
37	Trunking Cap with Horizontal Outlet.....	1.20
1230-29	3/4" x 2" Bolt and Nut for fastening Trunking Cap.....	.08
1227-8	R. S. A. 3-Cell Elevator with Frost Board.....	2.00
1227-17	Same as above except for two Cells.....	1.60
1227-18	“ “ “ “ four “	2.40

R. S. A. Trunking Cap is furnished unless otherwise specified. When Trunking Cap No. 37 is specified, add 60 cents to list price of complete Chute.

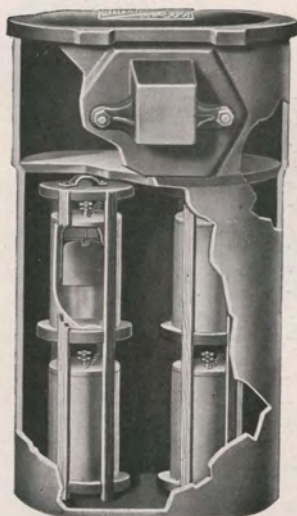


R. S. A. DOUBLE CAST IRON BATTERY CHUTE

Trade No.	DESCRIPTION	List Price
1230-38	R. S. A. Double Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap and Bolts.....	\$28.80
1230-3	Same as above except 6' long.....	32.80
1230-7	“ “ “ “ 7' “	36.80
1230-11	“ “ “ “ 8' “	40.80
1230-15	“ “ “ “ 9' “	44.80
1230-39	R. S. A. Double Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts, two 2-Cell Elevators and Division Board.....	32.00
1230-30	Same as above except 6' long.....	36.00
1230-32	“ “ “ “ 7' “	40.00
1230-34	“ “ “ “ 8' “	44.00
1230-36	“ “ “ “ 9' “	48.00
1230-40	R. S. A. Double Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts, two R. S. A. 3-Cell Elevators and Division Board.....	32.80
1230-4	Same as above except 6' long.....	36.80
1230-8	“ “ “ “ 7' “	40.80
1230-12	“ “ “ “ 8' “	44.80
1230-16	“ “ “ “ 9' “	48.80
1230-41	R. S. A. Double Cast Iron Battery Chute 5' long with Cover, R. S. A. Trunking Cap, Bolts, two 4-Cell Elevators and Division Board.....	33.60
1230-31	Same as above except 6' long.....	37.60
1230-33	“ “ “ “ 7' “	41.60
1230-35	“ “ “ “ 8' “	45.60
1230-37	“ “ “ “ 9' “	49.60
1229-10	R. S. A. Double Cast Iron Battery Chute Body 5' long.....	.....
1229-1	Same as above except 6' long.....	.....
1229-4	“ “ “ “ 7' “ .....	.....
1229-6	“ “ “ “ 8' “ .....	.....
1229-8	“ “ “ “ 9' “ .....	.....
1229-2	Cover for R. S. A. Double Battery Chute.....	.....
1228-3	R. S. A. Trunking Cap.....	.60
37	Trunking Cap with Horizontal Outlet.....	1.20
1230-29	3/4" x 2" Bolt and Nut for fastening Trunking Cap.....	.08
1227-10	R. S. A. Three-Cell Elevator with Frost Board.....	2.00
1227-19	Same as above except for two Cells.....	1.60
1227-20	“ “ “ “ “ four “	2.40
1229-11	R. S. A. Hardwood Division Board for 5' Chute.....	.....
1229-3	Same as above except for 6' Chute.....	.....
1229-5	“ “ “ “ 7' “ .....	.....
1229-7	“ “ “ “ 8' “ .....	.....
1229-9	“ “ “ “ 9' “ .....	.....

R. S. A. Trunking Cap No. 1228-3 is furnished unless otherwise specified. When Trunking Cap No. 37 is specified, add 60 cents to list price of Battery Chutes.

SHORT BATTERY CHUTE



Short Chute
Style No. 36

This Chute is designed to hold R. S. A. Potash Batteries, or other Caustic Soda, Track Batteries, and for Storage Batteries. It is furnished with special large Elevators to hold either two or four cells, and is provided with Frost Board and Trunking Caps.

The Cover and upper end of body are identical with Double Battery Chute Style No. 1229. All parts are well painted and Chute guaranteed waterproof and durable.

Trade No.	DESCRIPTION	List Price
36-1	Short Double Battery Chute 27" long, to hold two Cells Caustic Potash or one Cell Storage Battery, complete as shown, each.....	\$18.00
36-2	Chute Body only for above, each.....	
1228-2	Cover only.....	
1228-3	Trunking Cap only.....	
1230-29	$\frac{3}{4}$ " x 2" Bolt and Nut for above, each.....	.08
36-10	Short Double Battery Chute, 42" long to hold four Cells Caustic Potash Batteries or two Cells Storage Batteries, complete as shown.....	28.00
36-11	Body only for above.....	

IRON COVERED WOOD BATTERY BOX

Style Nos. 329 and 330



Battery Box No. 329

These Battery Boxes are made of first class tongued and grooved lumber. Top is covered with heavy galvanized iron and boxes are watertight and well painted inside and outside. They are provided with specially heavy hinges and hasps which are bolted so that boxes cannot be opened without removing the lock.

These boxes are furnished in two standard sizes, for batteries of Crossing Signals and Automatic Block Signals as listed.

Trade No.	DESCRIPTION	List Price
329	Standard Small Size Wood Battery Box 12" x 30" x 18" deep as shown.....	\$15.00
330	Standard Large Size Wood Battery Box 18" x 45" x 18" deep	18.00

CAST IRON BATTERY BOXES

Style Nos. 320 and 321



Battery Box No. 321

These Battery Boxes are cast in one piece without joints or plugs and are guaranteed waterproof. They are provided with heavy hinged tops and standard trunking caps. The covers are provided with Lock Lugs same as on Battery Chutes. This Box is furnished completely wood lined, with Frost Board, as shown or plain, provided with wood floor for batteries to stand upon. Interior dimensions of wood linings are 28" x 14" x 15½" deep. A dead air space surrounds entire wood lining, thus assuring even temperature for batteries.

Plain boxes with wood floors have interior dimensions of 30½" x 16½" x 17" deep. All parts of boxes are well painted inside and outside and are practically indestructible, being made of very heavy cast iron.

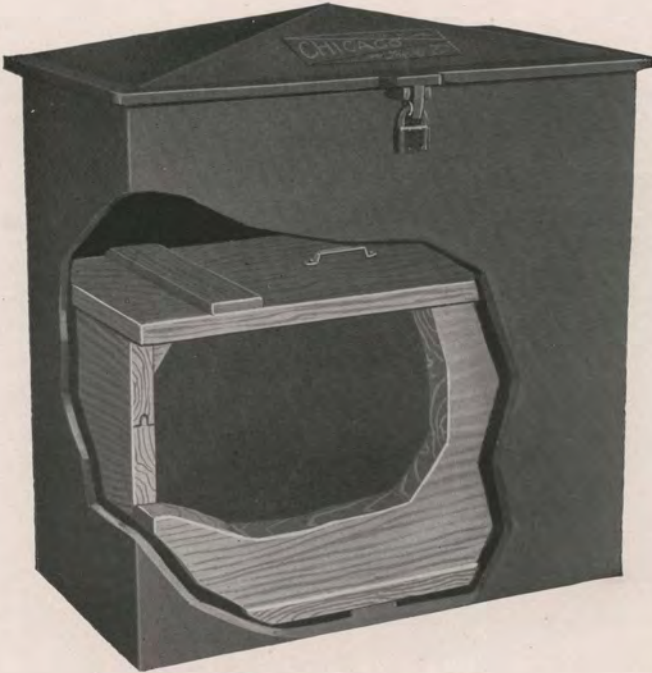
They are used for local batteries of Highway Crossing Alarms, for Track Batteries, in the warmer climates, and many other uses which readily suggest themselves.

Trade No.	DESCRIPTION	List Price
321	Cast Iron Battery Box Wood Lined throughout, complete as described and shown.....	\$35.00
320	Cast Iron Battery Box plain, with Wood Floor, complete as described and shown.....	28.00

We are prepared to furnish upon short notice, special designs of Cast Iron Battery Boxes and Battery Wells of any capacity, either one piece castings or sectional "Knocked Down."

CAST IRON BATTERY BOXES

Style Nos. 322 and 323



Battery Box No. 323

These Boxes are used to hold batteries for Electric Signals and Crossing Alarms, and are in every respect similar to Boxes Nos. 320 and 321. Covers, linings, trunking caps, etc., are interchangeable with them. The depth of deep boxes is 30" and inside measurements of wood lining of Box No. 323 is 26" x 14" x 15½" deep, leaving a large dead air space surrounding lining which serves to keep batteries at a uniform temperature. Plain boxes with wood floors have interior dimensions of 30½" x 16½" x 30" deep.

Boxes are cast in one piece and all parts well painted inside and outside and are guaranteed waterproof.

Trade No.	DESCRIPTION	List Price
323	Cast Iron Battery Box with Wood Lining and Frost Board complete as described and shown.....	\$50.00
322	Cast Iron Box plain, with Wood Floor, complete as described	42.50

We are prepared to furnish upon short notice special designs of Cast Iron Battery Boxes and Battery Wells of any capacity, either one piece castings or sectional "Knocked Down."

CAST IRON BATTERY BOXES

Style Nos. 324 and 325



Battery Box No. 325

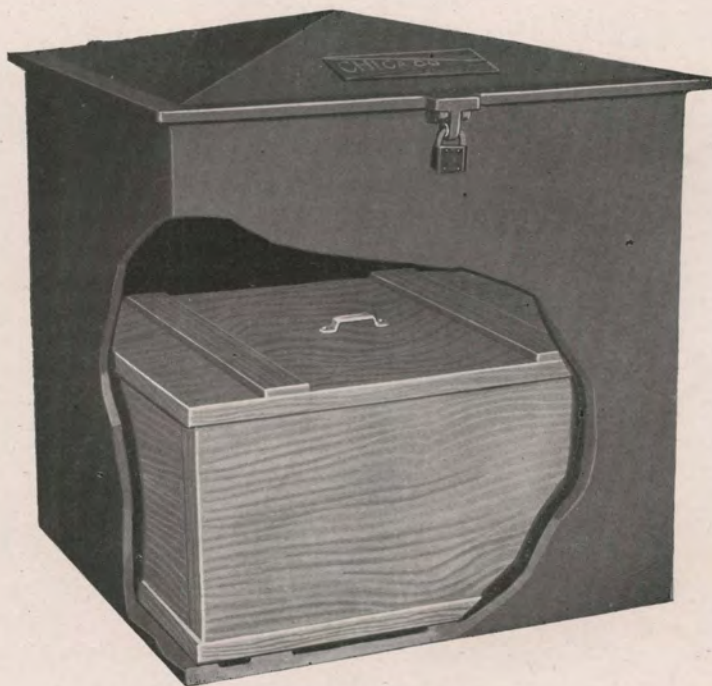
These Battery Boxes are larger than Style Nos. 320 and 321 and are used to hold Caustic Potash and Storage Batteries of Electric Semaphore Signals, Crossing Bells, etc. Boxes are cast in one piece and covers are hinged with heavy lugs and are provided with Standard Trunking Cap and Lock Lugs. Furnished plain with wood floor or completely wood lined with Frost Board as shown. Wood lined boxes have a dead air space all around thus assuring even temperature for batteries. Inside dimensions of plain boxes are 31" x 31" x 17" deep and wood lining in boxes No. 325 has inside dimensions 28" x 28" x 17".

Trade No.	DESCRIPTION	List Price
325	Cast Iron Battery Box complete with Wood Lining and Frost Board as described and shown.....	\$49.00
324	Cast Iron Battery Box, Plain with Wood Floor, complete as described.....	39.00

We are prepared to furnish upon short notice special designs of Cast Iron Battery Boxes and Battery Wells of any capacity, either one-piece castings or sectional "Knocked Down."

CAST IRON BATTERY BOXES

Style Nos. 326 and 327



Battery Box No. 327

These Boxes are heavy one piece castings and are provided with heavy covers, hinges and Trunking Caps. Boxes No. 327 are wood lined, inside dimensions of wood lining is 28" x 28" x 17" deep. Wood lining is surrounded by dead air space which serves to keep batteries at an even temperature.

Battery Box No. 326 is not wood lined but has wood floor for batteries to stand upon. Inside dimensions are 30½" x 30½" x 30" deep.

All iron and wood parts are well painted inside and outside.

Trade No.	DESCRIPTION	List Price
327	Cast Iron Battery Box complete with Wood Lining and Frost Board as described and shown	\$63.00
326	Cast Iron Battery Box, Plain with Wood Floor as described . .	52.00

We are prepared to furnish upon short notice special designs of Cast Iron Battery Boxes and Battery Wells of any capacity, either one-piece castings or sectional "Knocked Down."

1 9 1 4

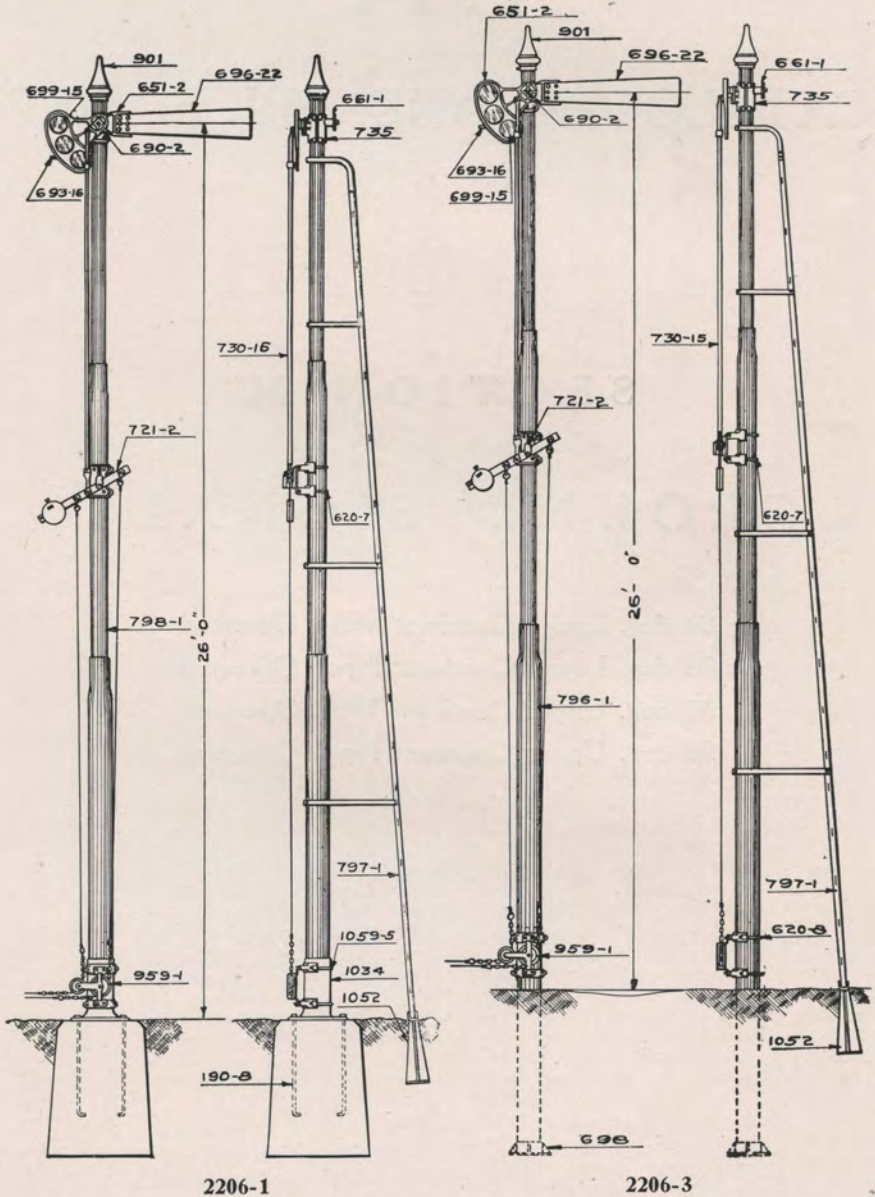
CATALOGUE AND PRICE LIST

SECTION M

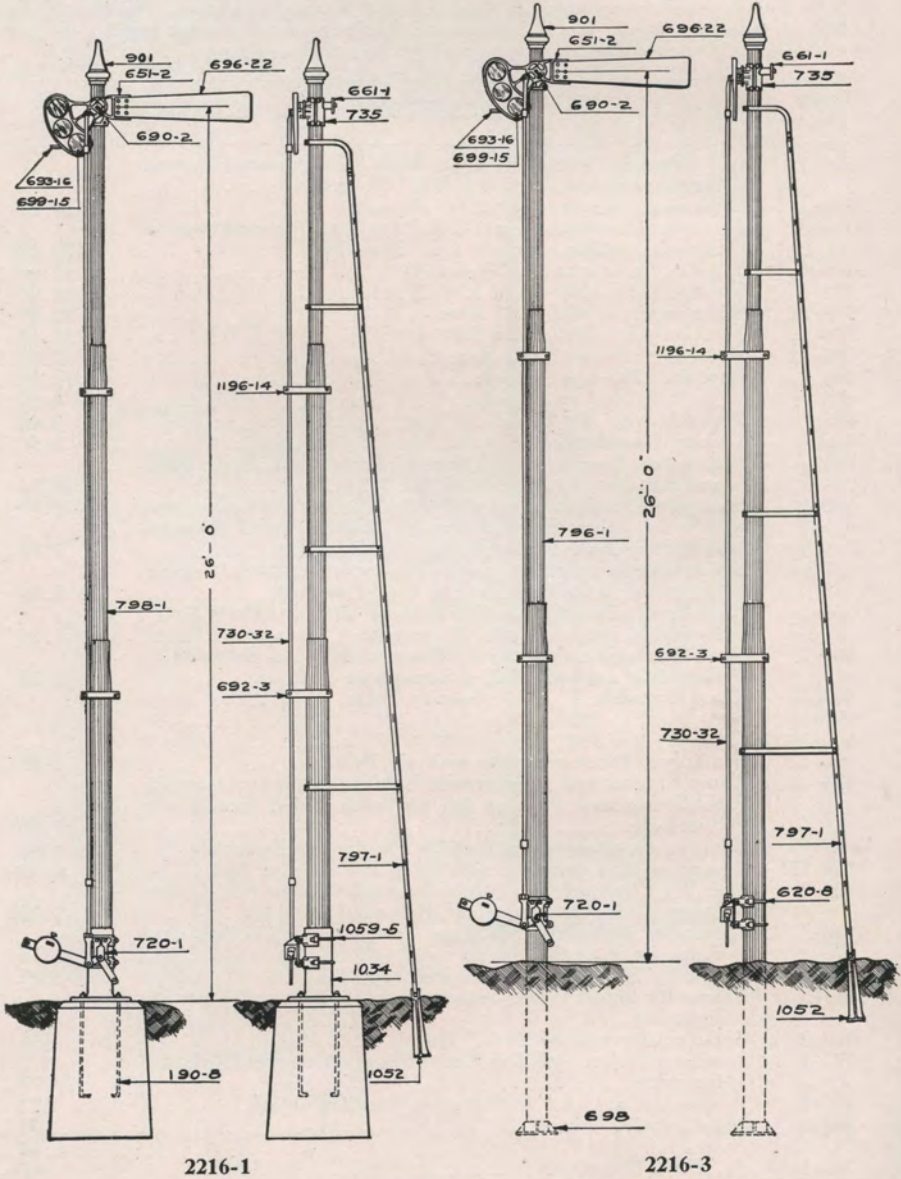
GROUND SIGNALS

- 60 deg. Lower Quadrant Wire Operated
- 60 deg. Lower Quadrant Pipe Operated
- 90 deg. Upper Quadrant Wire Operated
- 90 deg. Upper Quadrant Pipe Operated

LOW ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL



LOW ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL



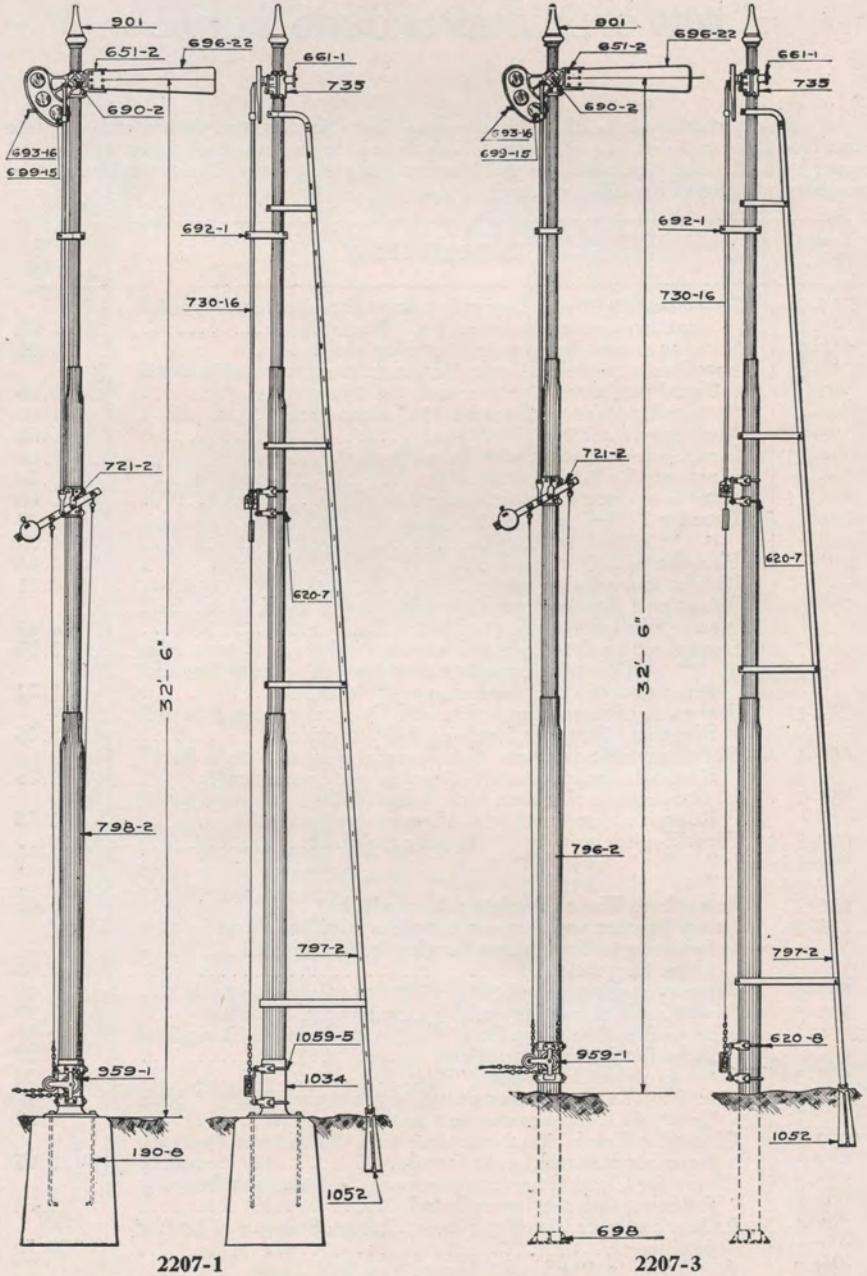


LOW ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also number and color of Roundels required.

Trade No.	DESCRIPTION	List Price
2216-1	Low One Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal complete as shown, 6½" Roundels.....	\$135.00
2216-2	Same as above except with 8¾" Roundels.....	136.00
2216-3	Low One Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal complete as shown with 6½" Roundels.....	120.60
2216-4	Same as above excepting with 8¾" Roundels.....	121.60
798-1	Mast only for 2216-1 or 2216-2.....	46.80
798-11	Same as above except with Base No. 1034.....	72.00
796-1	Mast only for 2216-3 or 2216-4.....	53.10
796-11	Same as above except with Base No. 698.....	57.60
1034	Base for 2216-1 or 2216-2.....	19.80
698	“ “ 2216-3 or 2216-4.....	4.50
901	Pinnacle with Set Screw.....	2.40
1052	Ladder Foundation Only.....	3.51
735	Semaphore Bearing complete with Front Half, Back Half and Bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins.....	2.70
651-2	“ Spectacle complete with Operating Stud Roundel Rings and Bolts for fastening 6½" Roundels.....	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels, (used with 651-2 Semaphore Spectacles).....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels, (used with 652-2 Semaphore Spectacles).....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	“ “ 6½" “ “ “ “.....	.....
699-19	“ “ 8¾" “ “ “ “.....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket and Support complete with Bolts and Bolt for fastening to Semaphore Bearing for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above excepting for 652-2 Semaphore Spectacle....	3.60
730-32	Operating Rod complete with Screw Jaw and Eye Rod.....	7.20
1196-14	Pipe Guide, One Way, for 5" Pipe, complete with Clamp and Bolts for fastening to Mast.....	1.49
692-3	Same as above except for 6" Pipe.....	1.53
720-1	One Way Balance Lever Stand, complete with Pin, Cotter Lever, 40 lb. Counterweight and Bolts.....	9.62
1059-5	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Balance Lever Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Balance Lever Stand.....	2.34
797-1	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.....	20.70
190-8	Anchor Bolts, 1" x 3' with Square Nut, 2½" Hook.....	.72

HIGH ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL



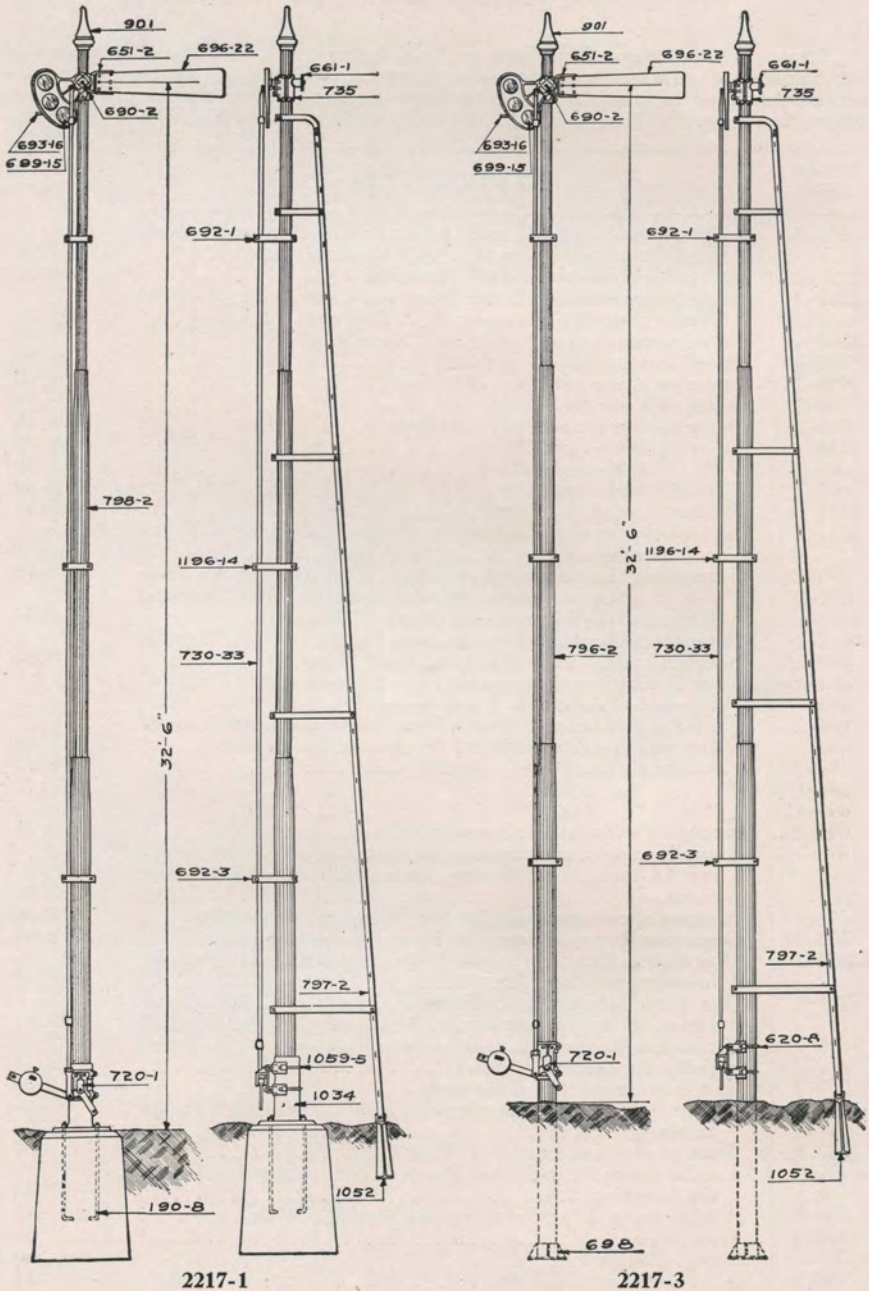


HIGH ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes or Split Links are not included in list prices but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blades at the same list prices. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2207-1	High One Arm 60 deg. Lower Quadrant Wire Operated Ground Signal complete as shown, 6½" Roundels.....	\$161.25
2207-2	Same as above except 8¾" Roundels.....	162.25
2207-3	High One Arm 60 deg. Lower Quadrant Wire Operated Ground Signal complete as shown, 6½" Roundels.....	146.84
2207-4	Same as above except with 8¾" Roundels.....	147.84
798-2	Mast Only for 2207-1 and 2207-2.....	64.80
798-22	Same as above with No. 1034 Base.....	90.00
796-2	Mast only for 2207-3 and 2207-4.....	71.10
796-22	Same as above except with 698 Base.....	75.60
1034	Base for 2207-1 or 2207-2.....	19.80
698	“ “ 2207-3 or 2207-4.....	4.50
901	Pinnacle with Set Screw.....	2.40
1052	Ladder Foundation Only.....	3.51
735	Semaphore Bearing complete with Front Half, Back Half, and bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins.....	2.70
651-2	“ “ Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening for 6½" Roundels.....	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels (used with 651-2 Semaphore Spectacle).....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels (used with 652-2 Semaphore Spectacle).....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-19	“ “ 8¾" “ “ “ “.....	.....
699-15	“ “ 6½" “ “ “ “.....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket and Support with Bolts; also Bolts for fastening to Semaphore Bearing, for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above excepting for 652-2 Semaphore Spectacle....	3.60
730-16	Operating Rod complete with Screw Jaw and Eye Rod.....	4.95
692-1	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.49
721-2	One Way Balance Lever Stand complete with Pin, Cotter Lever, 10 lb. Counterweight, Bolts and Shackles.....	5.92
620-7	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand.....	2.34
959-1	One Way Signal Wheel complete.....	2.05
1059-5	Clamp for Signal Wheel complete with U Bolt and Bolts for fastening.....	2.95
620-8	Same as above except for 6" Pipe.....	2.34
797-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.....	27.00
190-8	Anchor Bolts, 1" x 3' with Square Nut, 2½" Hook.....	.72
703-1	Wire Eye.....	.04
703-11	Split Links, per C.....	3.60
703-16	¼" Proof Chain, per ft.....	.14

HIGH ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL



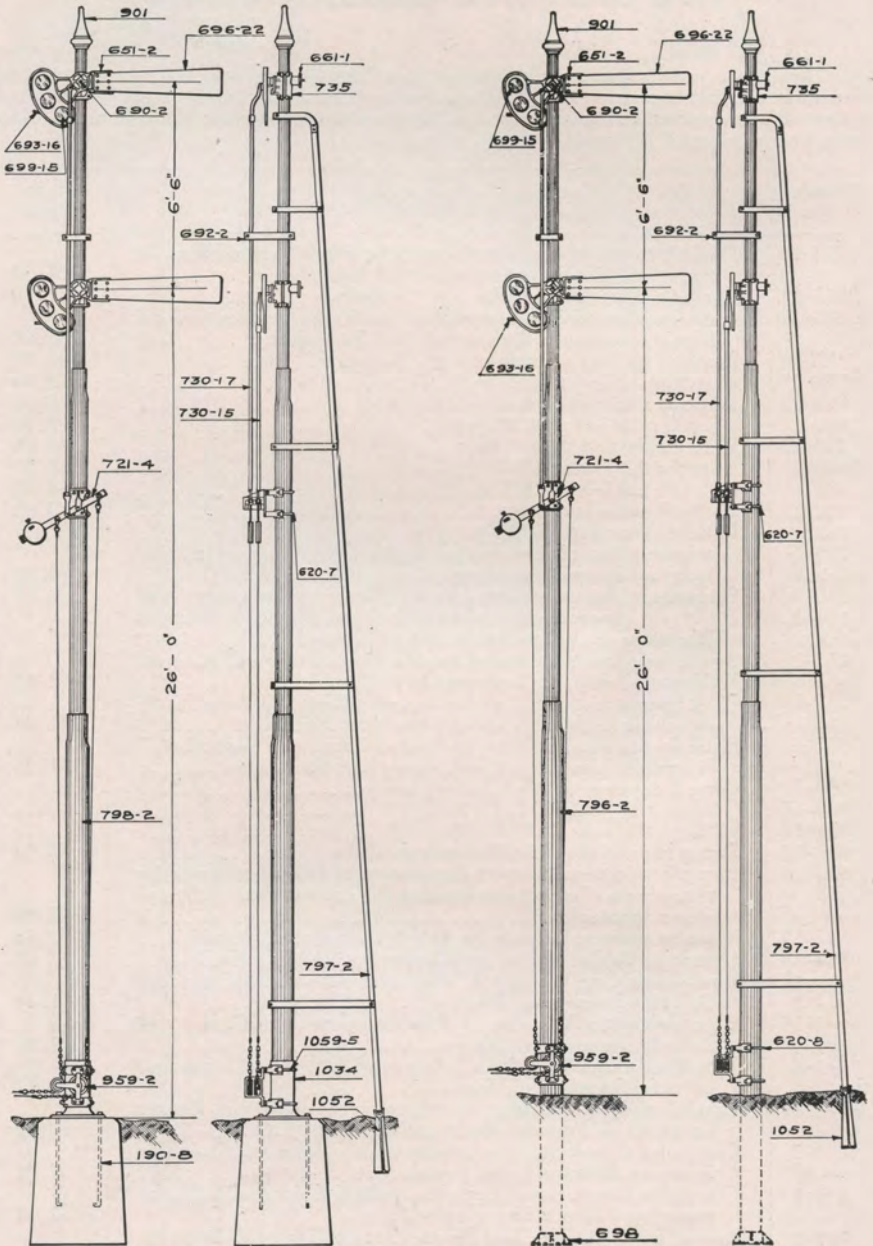


HIGH ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade required at the same prices. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2217-1	High One Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal complete as shown with 6½" Roundels.....	\$161.20
2217-2	Same as above except with 8¾" Roundels.....	162.20
2217-3	High One Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal complete as shown with 6½" Roundels.....	146.80
2217-4	Same as above except with 8¾" Roundels.....	147.80
798-2	Mast for 2217-1 and 2217-2.....	64.80
798-22	Same as above except with 1034 Base.....	90.00
796-2	Mast for 2217-3 and 2217-4.....	71.10
796-22	Same as above with 698 Base.....	75.60
1034	Base for 2217-1 or 2217-2.....	19.80
698	“ “ 2217-3 or 2217-4.....	4.50
901	Pinnacle with Set Screw.....	2.40
1052	Ladder Foundation Only.....	3.51
735	Semaphore Bearing complete with Back Half, Front Half and Bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins.....	2.70
651-2	“ Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 6½" Roundels.....	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels (used with 651-2 Semaphore Spectacle).....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels, (used with 652-2 Semaphore Spectacles).....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	“ “ 6½" “ “ “.....	.....
699-19	“ “ 8¾" “ “ “.....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket and Support complete with Bolts and Bolts for fastening to Semaphore Bearing for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above excepting for 652-2 Semaphore Spectacle.....	3.60
730-33	Operating Rod complete with Screw Jaw and Eye Rod.....	7.65
1196-14	Pipe Guide One Way for 5" Pipe complete with Clamp and Bolts for fastening to Mast.....	1.49
692-1	Pipe Guide One Way for 4" Pipe complete with Clamp and Bolts for fastening to Mast.....	1.49
692-3	Pipe Guide One Way for 6" Pipe complete with Clamp and Bolts for fastening to Mast.....	1.53
720-1	One Way Balance Lever Stand, complete with Pin, Cotter Lever, 40 lb. Counterweight and Bolts.....	9.62
1059-5	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Balance Lever Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Balance Lever Stand.....	2.34
797-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.....	27.00
190-8	Anchor Bolts, 1" x 3' with Square Nut, 2½" Hook.....	.72

LOW TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL



2208-1 and 2208-5

2208-3 and 2208-7



LOW TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes or Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 30 deg. position. When Arms are limited in travel, orders should specify if they are to be limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices on Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should state Blade required, also color and number of Roundels.

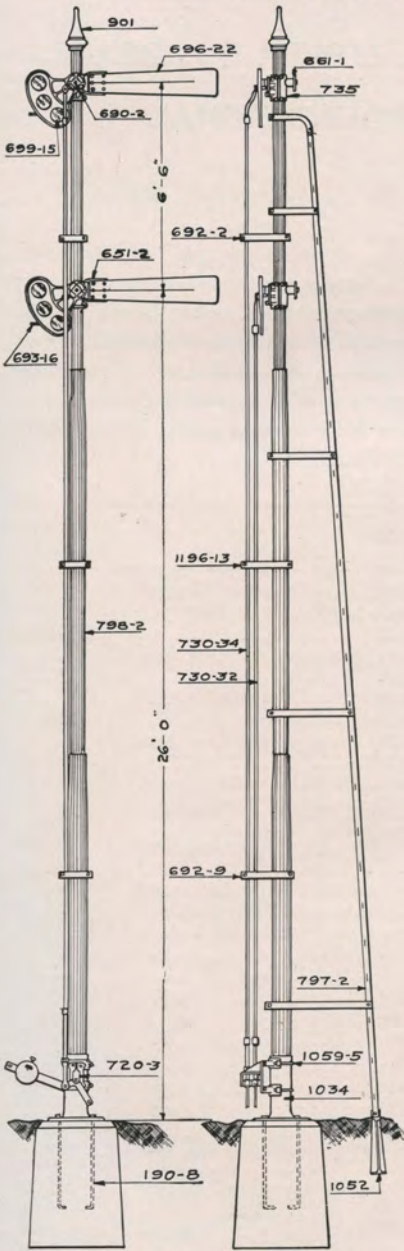
Trade No.	DESCRIPTION	List Price
2208-1	Low Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels	\$184.50
2208-5	Same as above except with One Arm Operative and One Arm Fixed	178.20
2208-2	Low Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, 8¾" Roundels	186.50
2208-6	Same as above except with One Arm Operative and One Arm Fixed	180.20
2208-3	Low Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels	170.10
2208-7	Same as above except with One Arm Operative and One Arm Fixed	163.80
2208-4	Low Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, 8¾" Roundels	172.10
2208-8	Same as above except One Arm Operative and One Arm Fixed	165.80
798-2	Mast Only for 2208-1, 2208-2, 2208-5 and 2208-6	64.80
798-22	Same as above with No. 1034 Base	90.00
796-2	Mast Only for 2208-3, 2208-4, 2208-7 and 2208-8	71.10
796-22	Same as above except with No. 698 Base	75.60
1034	Base for 2208-1, 2208-2, 2208-5 and 2208-6	19.80
698	" Casting for 2208-3, 2208-4, 2208-7 and 2208-8	4.50
901	Pinnacle with Set Screw	2.40
1052	Ladder Foundation Only	3.51
735	Semaphore Bearing complete with Front Half, Back Half, and Bolts for fastening to Mast	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins	2.70
651-2	" Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 6½" Roundels	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 8¾" Roundels	8.46



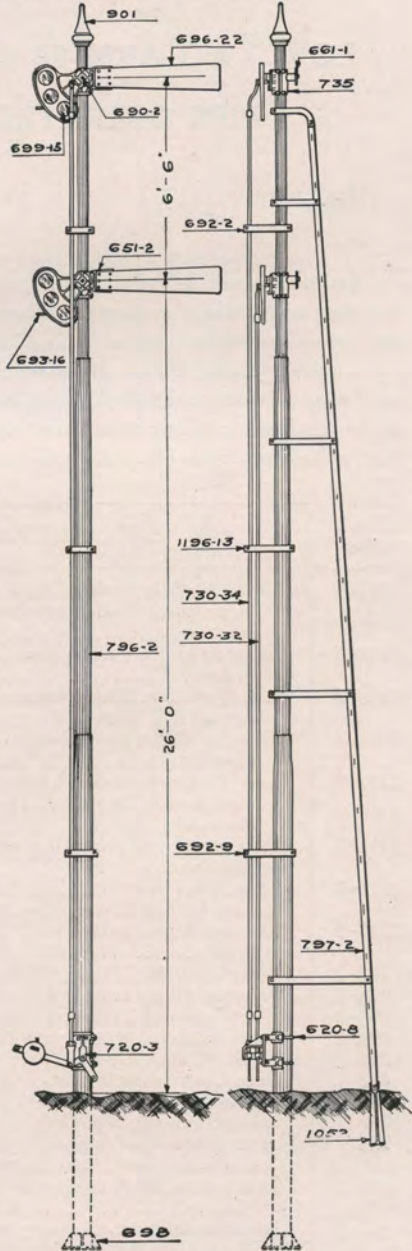
LOW TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
661-1	Back Spectacle complete with Roundel Rings and Bolts for 3" Roundels (used with 651-2 Semaphore Spectacle)	\$1. 26
661-2	Back Spectacle complete with Roundel Rings and Bolts for 3" Roundels (used with 652-2 Semaphore Spectacle)	1. 26
699-5	Glass Roundels, 3" dia. Specify Color . . . . .	. . . . .
699-15	" " 6½" " " " " . . . . .	. . . . .
699-19	" " 8¾" " " " " . . . . .	. . . . .
696-22	Semaphore Blade complete with six Bolts	2. 46
693-16	Lamp Bracket and Support with Bolts, and Bolts for fastening to Semaphore Bearing for use with 651-2 Semaphore Spectacle.	3. 60
693-17	Same as above excepting for 652-2 Semaphore Spectacle	3. 60
730-15	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	4. 50
730-17	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	5. 40
692-2	Pipe Guide One Way for 4" Pipe complete with Clamp and Bolts for fastening to Mast	1. 49
721-4	Two Way Balance Lever Stand complete with Pin, Cotter, Balance Levers, 10 lb. Counterweight, Bolts and Shackles	10. 63
620-7	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand	2. 34
959-2	Two Way Signal Wheel complete	3. 62
1059-5	Clamp for Signal Wheel complete with U Bolt and Bolts for fastening	2. 95
620-8	Same as above except for 6" Pipe	2. 34
797-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening	27. 00
190-8	Anchor Bolts, 1" x 3' with Square Nut, 2½" Hook . . . . .	. 72
703-1	Wire Eyes . . . . .	. 04
703-11	Split Links, per C.	3. 60
703-16	¼" Proof Chain, per ft. . . . .	. 14

LOW TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL



2218-1 and 2218-5



2218-3 and 2218-7



LOW TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in 0 deg. or in the 30 deg. position. When Arms are limited in travel, orders should specify if they are to be limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices on Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same prices. Orders should specify Blade required, also color and number of Roundels.

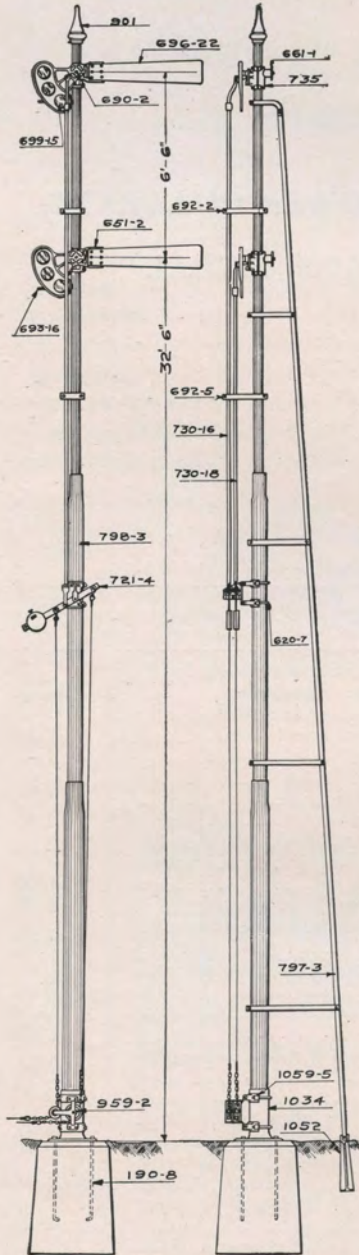
Trade No.	DESCRIPTION	List Price
2218-1	Low Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels.	\$184.50
2218-5	Same as above except with One Arm Operative and One Arm Fixed.	178.20
2218-2	Low Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal, 8¾" Roundels, with Two Arms Operative.	186.50
2218-6	Same as above except with One Arm Operative and One Arm Fixed.	180.20
2218-3	Low Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels.	170.10
2218-7	Same as above excepting with One Arm Operative and One Arm Fixed.	163.80
2218-4	Low Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, 8¾" Roundels.	172.10
2218-8	Same as above except with One Arm Operative and One Arm Fixed.	165.80
798-2	Mast Only for 2218-1, 2218-2, 2218-5 and 2218-6.	64.80
798-22	Same as above except with Base 1034.	90.00
796-2	Mast Only for 2218-3, 2218-4, 2218-7 and 2218-8.	71.10
796-22	Same as above except with 698 Base.	75.60
1034	R. S. A. Base Only.	19.80
698	Base Casting for 6" Pipe.	4.50
901	Pinnacle with Set Screw.	2.40
1052	Ladder Foundation Only.	3.51
735	Semaphore Bearing complete with Front Half, Back Half and Bolts for fastening to Mast.	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins.	2.70
651-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening for 6½" Roundels.	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening for 8¾" Roundels.	8.46



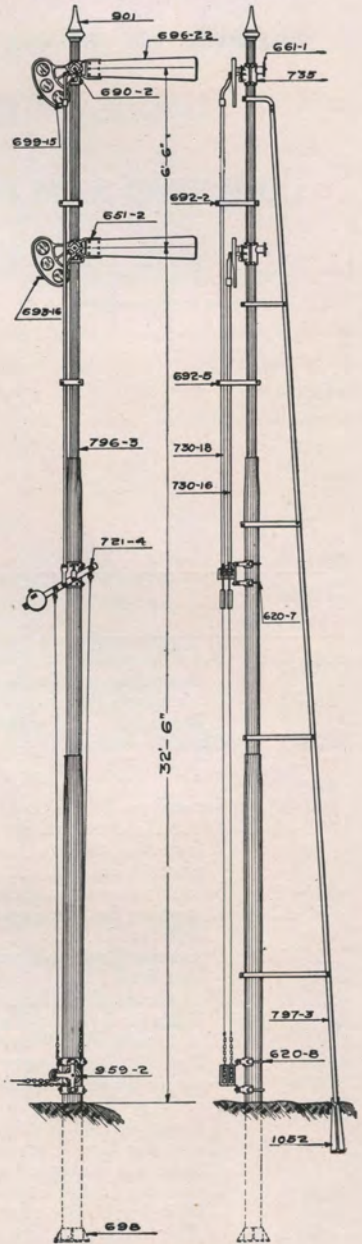
LOW TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
661-1	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels, used with 651-2 Semaphore Spectacles	\$1.26
661-2	Back Spectacle complete with Roundel Rings and Bolts for 3" Roundels, used with 652-2 Semaphore Spectacles	1.26
699-5	Glass Roundels, 3" dia. Specify Color . . . . .	. . . . .
699-15	" " 6½" " " " " . . . . .	. . . . .
699-19	" " 8¾" " " " " . . . . .	. . . . .
696-22	Semaphore Blade complete with six Bolts	2.46
693-16	Lamp Bracket and Support complete with Bolts and Bolt for fastening to Semaphore Bearing for use with 651-2 Semaphore Spectacle	3.60
693-17	Same as above excepting for 652-2 Semaphore Spectacle	3.60
730-32	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	7.20
730-34	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	8.10
692-2	Pipe Guide, One Way, for 4" Pipe complete with Clamp and Bolts for fastening to Mast	1.49
1196-13	Pipe Guide, Two Way, for 5" Pipe complete with Clamp and Bolts for fastening to Mast	1.76
692-9	Same as above except for 6" Pipe	1.80
720-3	Two Way Balance Lever Stand complete with Pin, Cotter, Lever, 40 lb. Counterweight, Bolts and Separators	18.26
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Balance Lever Stand	2.95
620-8	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Balance Lever Stand	2.34
797-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening	27.00
190-8	Anchor Bolts, 1" x 3' with Square Nut, 2½" Hook . . . . .	.72

HIGH TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL



2209-1 and 2209-5



2209-3 and 2209-7

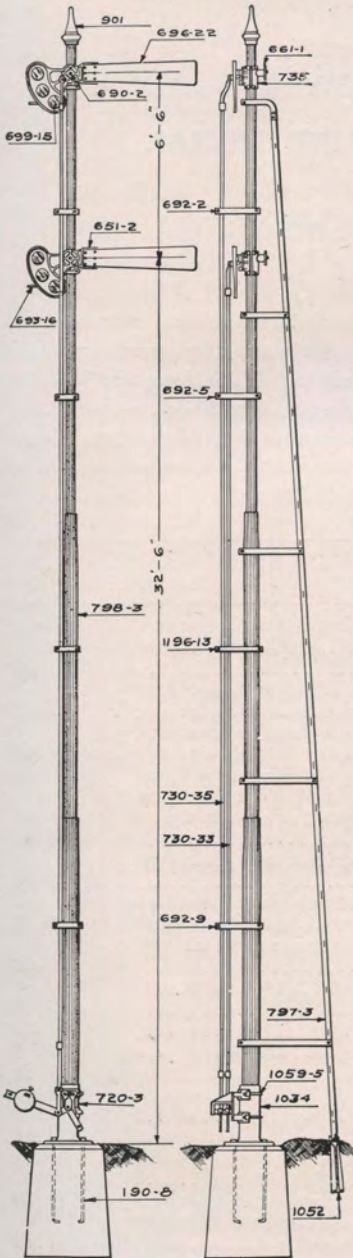


HIGH TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL

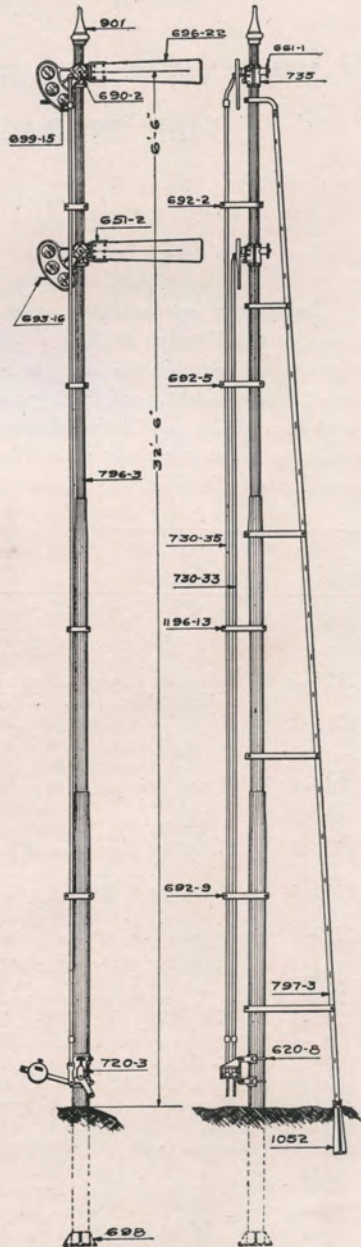
Lamps, Chain, Wire, Wire Eyes or Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 30 deg. position. When Arms are limited in travel, orders should specify if they are to be limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices on Limited Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should state Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2209-1	High Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels	\$211.50
2209-5	Same as above except with One Arm Operative and One Arm Fixed	205.20
2209-2	High Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, 8¾" Roundels.	213.50
2209-6	Same as above except with One Arm Fixed and One Arm Operative.	207.20
2209-3	High Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels.	244.60
2209-7	Same as above except with One Arm Fixed and One Arm Operative.	238.30
2209-4	High Two Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Two Arms Operative, 8¾" Roundels	246.60
2209-8	Same as above except with One Arm Operative and One Arm Fixed.	240.30
798-3	Mast Only for 2209-1, 2209-2, 2209-5 and 2209-6	82.80
798-33	Same as above with 1034 Base	108.00
796-3	Mast only for 2209-3, 2209-4, 2209-7 and 2209-8.	136.80
796-33	Same as above with 698 Base Casting.	141.30
1034	R. S. A. Base for 2209-1, 2209-2, 2209-5 and 2209-6.	19.80
698	Base Casting for 6" Pipe, 2209-3, 2209-4, 2209-7 and 2209-8	4.50
901	Pinnacle with Set Screw	2.40
1052	Ladder Foundation Only	3.51
735	Semaphore Bearing complete with Front Half, Back Half and Bolts for fastening to Mast	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins.	2.70
651-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 6½" Roundels.	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 8¾" Roundels.	8.46

HIGH TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL



2219-1 and 2219-5



2219-3 and 2219-7

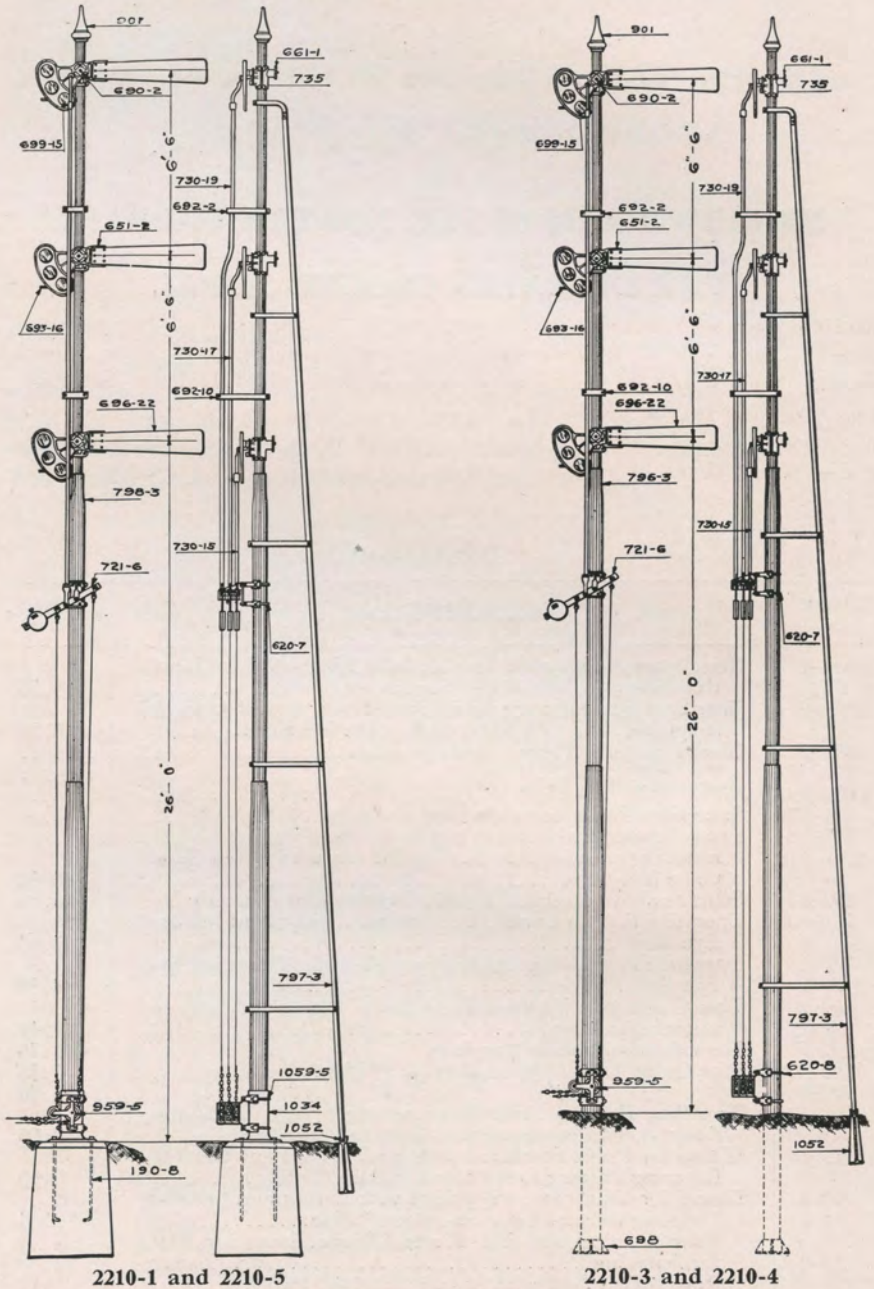


HIGH TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 30 deg. position. When Arms are limited in travel, orders should specify if they are to be limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices on Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at the same prices. Orders should specify Blade required, also number and color of Roundels.

Trade No.	DESCRIPTION	List Price
2219-1	High Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels.	\$211.70
2219-5	Same as above except with One Arm Fixed and One Arm Operative.	205.40
2219-2	High Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, 8¾" Roundels	213.70
2219-6	Same as above except One Arm Operative and One Arm Fixed	207.40
2219-3	High Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown, 6½" Roundels.	244.80
2219-7	Same as above except One Arm Operative and One Arm Fixed.	238.50
2219-4	High Two Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Two Arms Operative, 8¾" Roundels.	246.80
2219-8	Same as above except with One Arm Operative and One Arm Fixed	240.20
798-3	Mast Only for 2219-1, 2219-2, 2219-5 and 2219-6.	82.80
798-33	" same as above with 1034 Base.	108.00
796-3	" Only for 2219-3, 2219-4, 2219-7 and 2219-8	136.80
796-33	Same as above with 698 Base.	141.30
1034	R. S. A. Base Only	19.80
698	Base Casting for 6" Pipe.	4.50
901	Pinnacle with Set Screw	2.40
1052	Ladder Foundation Only.	3.51
735	Semaphore Bearing complete with Front Half, Back Half and Bolts for fastening to Mast.	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins	2.70
651-2	" Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 6½" Roundels	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening 8¾" Roundels.	8.46

THREE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL



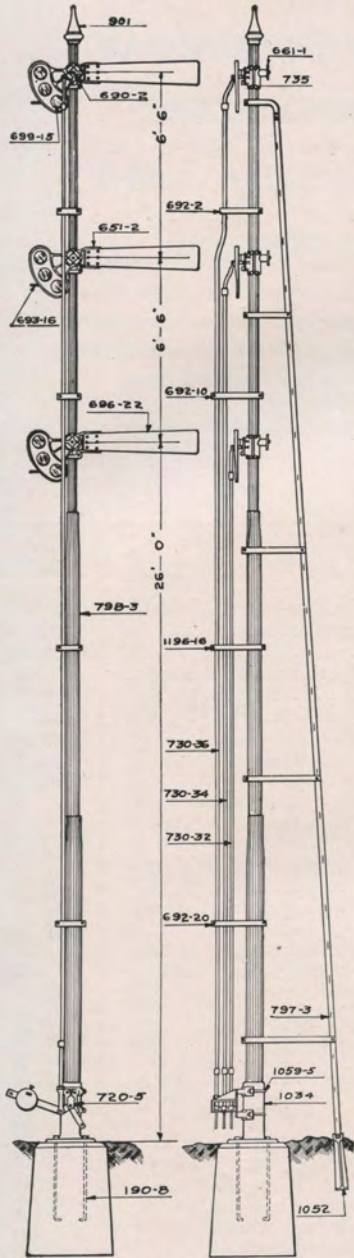


THREE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED GROUND SIGNAL

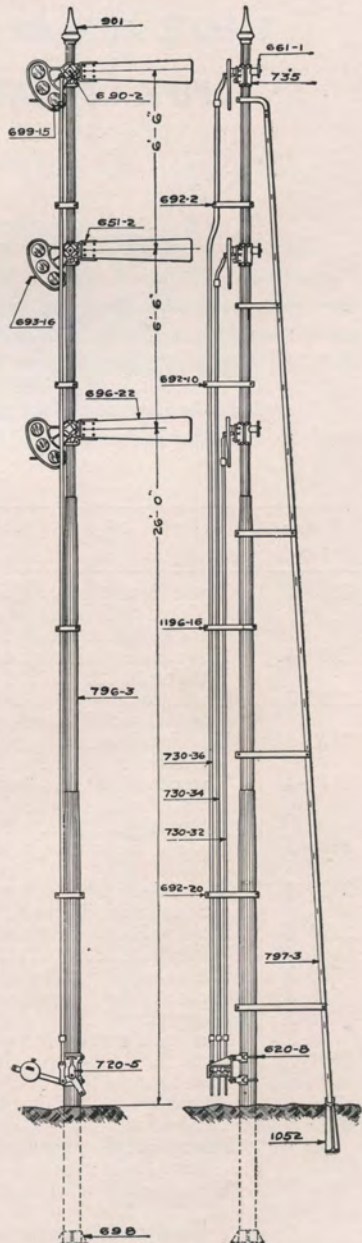
Lamps, Chain, Wire, Wire Eyes or Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 30 deg. position. When Arms are limited in travel, orders should specify if they are to be limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices on Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should state Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2210-1	Three Arm 60 Deg. Lower Quadrant Wire Operated Ground Signal with Three Arms Operative, complete as shown, 6½" Roundels	\$243.00
2210-5	Same as above excepting with Two Arms Operative and One Arm Fixed	236.70
2210-2	Three Arm 60 Deg. Lower Quadrant Wire Operated Ground Signal with Three Arms Operative, 8¾" Roundels	246.00
2210-6	Same as above excepting with Two Arms Operative and One Arm Fixed	239.70
2210-3	Three Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Three Arms Operative, complete as shown, 6½" Roundels	277.20
2210-7	Same as above excepting with Two Arms Operative and One Arm Fixed	270.90
2210-4	Three Arm 60 deg. Lower Quadrant Wire Operated Ground Signal with Three Arms Operative and 8¾" Roundels	280.20
2210-8	Same as above excepting with Two Arms Operative and One Arm Fixed	273.90
798-3	Mast Only for 2210-1, 2210-2, 2210-5 and 2210-6	82.80
798-33	Same as above with 1034 Base	108.00
796-3	Mast Only for 2210-3, 2210-4, 2210-7 and 2210-8	136.80
796-33	Same as above with 698 Base	141.30
1034	R. S. A. Base for 2210-1, 2210-2, 2210-5 and 2210-6	19.80
698	Base Casting for 6" Pipe for 2210-3, 2210-4, 2210-7 and 2210-8	4.50
901	Pinnacle with Set Screw	2.40
1052	Ladder Foundation Only	3.51
735	Semaphore Bearing complete with Front Half, Back Half and Bolts for fastening to Mast	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins	2.70
651-2	" " Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 6½" Roundels	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 8¾" Roundels	8.46

THREE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL



2220-1 and 2220-5



2220-3 and 2220-7



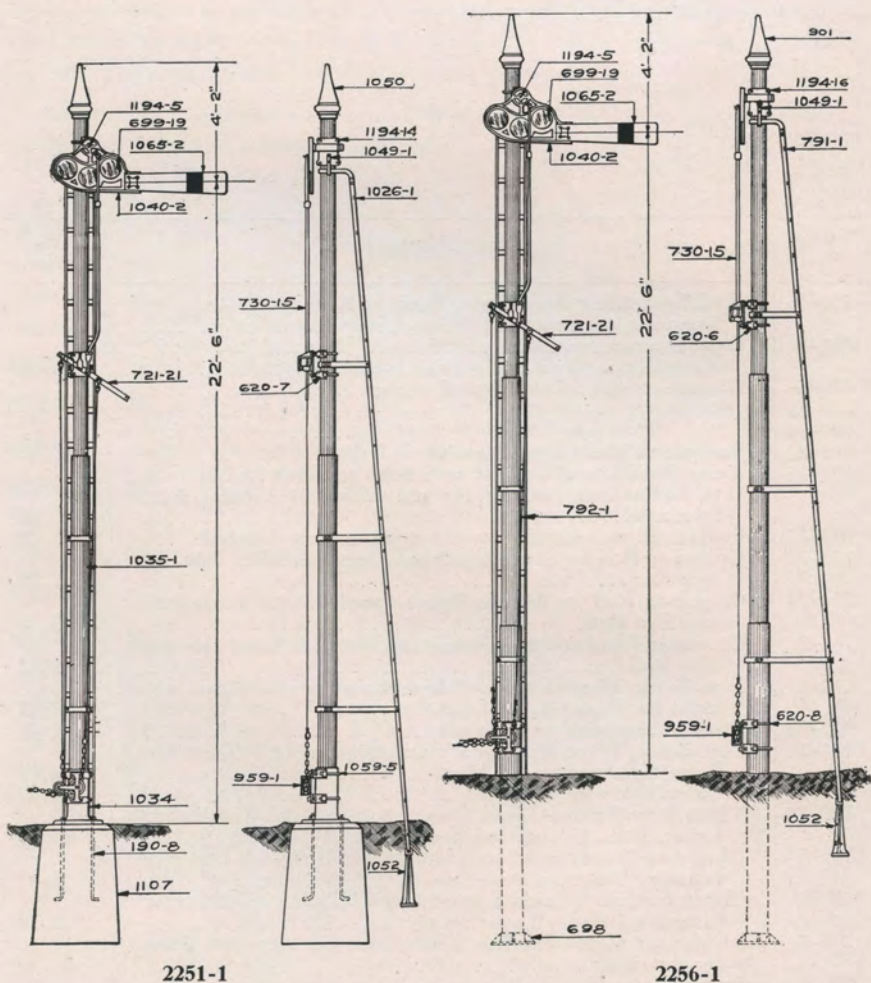
THREE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 30 deg. position. When Arms are limited in travel from 0 deg. to 30 deg. or from 30 deg. to 60 deg., orders should specify which they shall be. Prices on Limited Travel Arms are same as for Operative Arms.

Signals can be furnished with any style Wood Semaphore. Orders should state Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2220-1	Three Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Three Arms Operative, complete as shown, 6½" Roundels	\$243.00
2220-5	Same as above except with Two Arms Operative and One Arm Fixed	236.70
2220-2	Three Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Three Arms Operative, 8¾" Roundels	246.00
2220-6	Same as above except with Two Arms Operative and One Arm Fixed	239.70
2220-3	Three Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Three Arms Operative, complete as shown, 6½" Roundels	277.20
2220-7	Same as above except with Two Arms Operative and One Arm Fixed	270.90
2220-4	Three Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal with Three Arms Operative, 8¾" Roundels	280.20
2220-8	Same as above except with Two Arms Operative and One Arm Fixed	273.90
798-3	Mast Only for 2220-1, 2220-2, 2220-5 and 2220-6	82.80
798-33	Same as above except with Base No. 1034	108.00
796-3	Mast only for 2220-4, 2220-3, 2220-7 and 2220-8	136.80
796-33	Same as above except with Base 698	141.30
1034	R. S. A. Base Only	19.80
698	Base Casting for 6" Pipe	4.50
901	Pinnacle with Set Screw	2.40
1052	Ladder Foundation Only	3.51
735	Semaphore Bearing complete with Back Half, Front Half and Bolts for fastening to Mast	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter Pins	2.70
651-2	" Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 6½" Roundels	7.74
652-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for fastening, 8¾" Roundels	8.46

LOW ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL



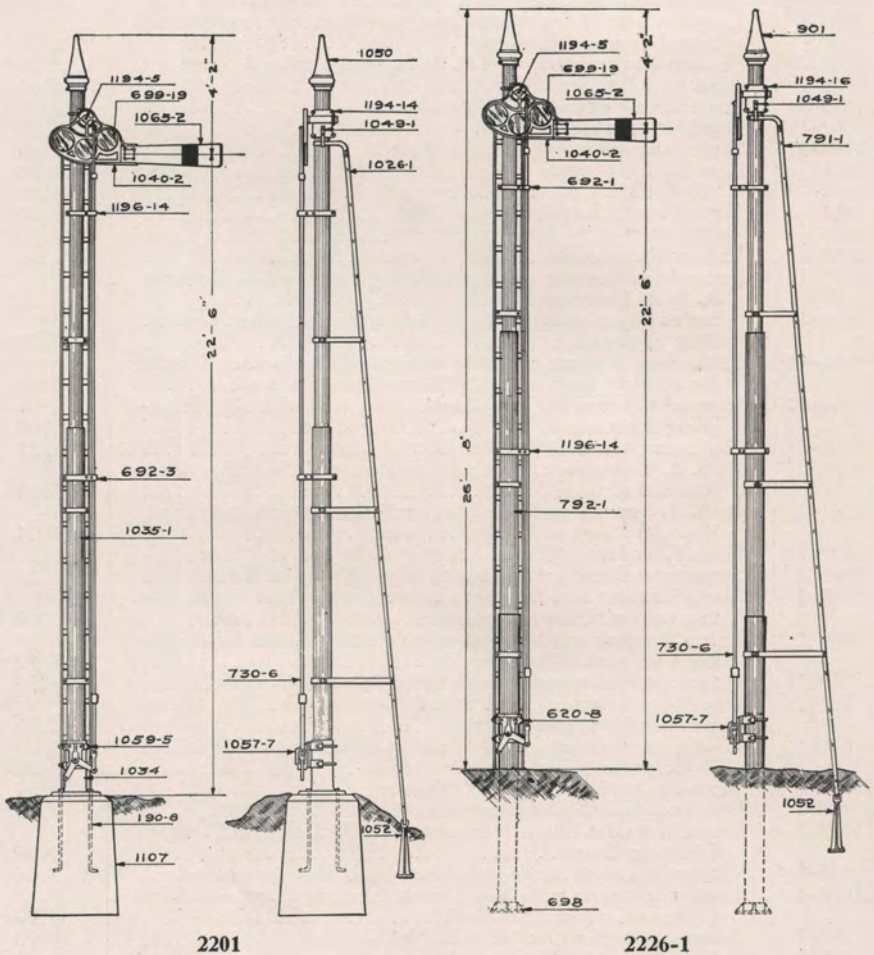


LOW ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

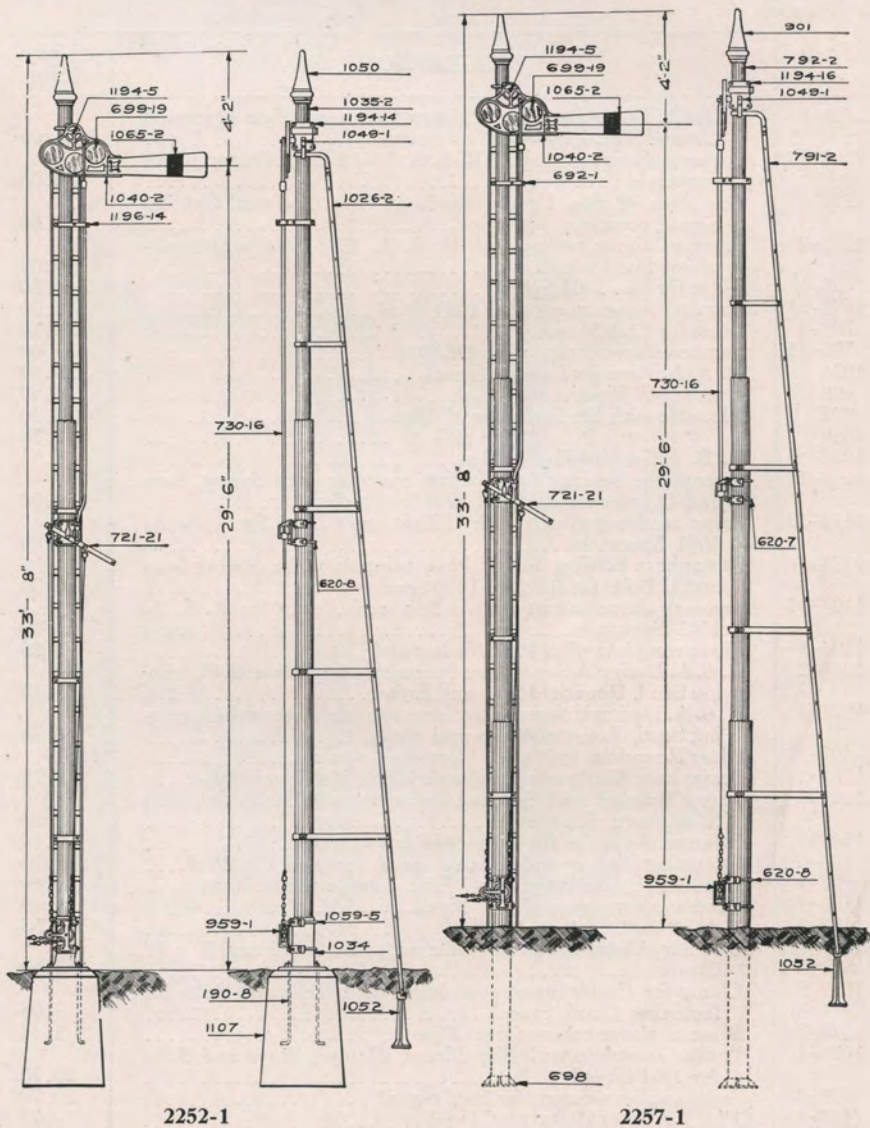
Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any desired style Wood Semaphore Blade at same price. Orders should specify Blade desired, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2251-1	Low One Arm 90 deg. Upper Quadrant Wire Operated Ground Signal, complete as shown	\$144.00
2251-2	Same as above except with R. S. A. 1041 Design B Spectacle	144.00
2256-1	Low One Arm 90 deg. Upper Quadrant Wire Operated Ground Signal, complete as shown	129.60
2256-2	Same as above except with R. S. A. 1041 Design B Spectacle	129.60
1035-1	Mast for 2251 Signal	46.80
1035-11	Same as above except with 1034 Base	72.00
792-1	Mast for 2256 Signal	53.10
792-11	Same as above except with 698 Base	57.60
1034	Base for 2251 Signal	19.80
698	“ “ 2256 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ “ 5" “	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt, used with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color . . . . .	. . . . .
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1049-1	Lamp Bracket and Support complete with Bolts for fastening, used with 1040 Spectacle	3.60
1049-2	Lamp Bracket and Support complete with Bolts for fastening, used with 1041 Spectacle	4.50
730-15	Operating Rod complete with Screw Jaw and Eye Rod	4.50
721-21	One Way Balance Lever Stand complete with Pin, Cotter Balance Lever and Shackles	4.90
620-6	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand for 4" Pipe	2.34
620-7	Same as above except for 5" Pipe	2.34
959-1	One Way Signal Wheel complete	2.05
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe	2.34
1026-1	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for 2251 Signal	20.70
791-1	Same as above but for No. 2256 Signal	20.70
190-8	Anchor Bolt, 1" x 3' with 2 $\frac{1}{2}$ " Hook . . . . .	.72

R. S. A. ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL



HIGH ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL



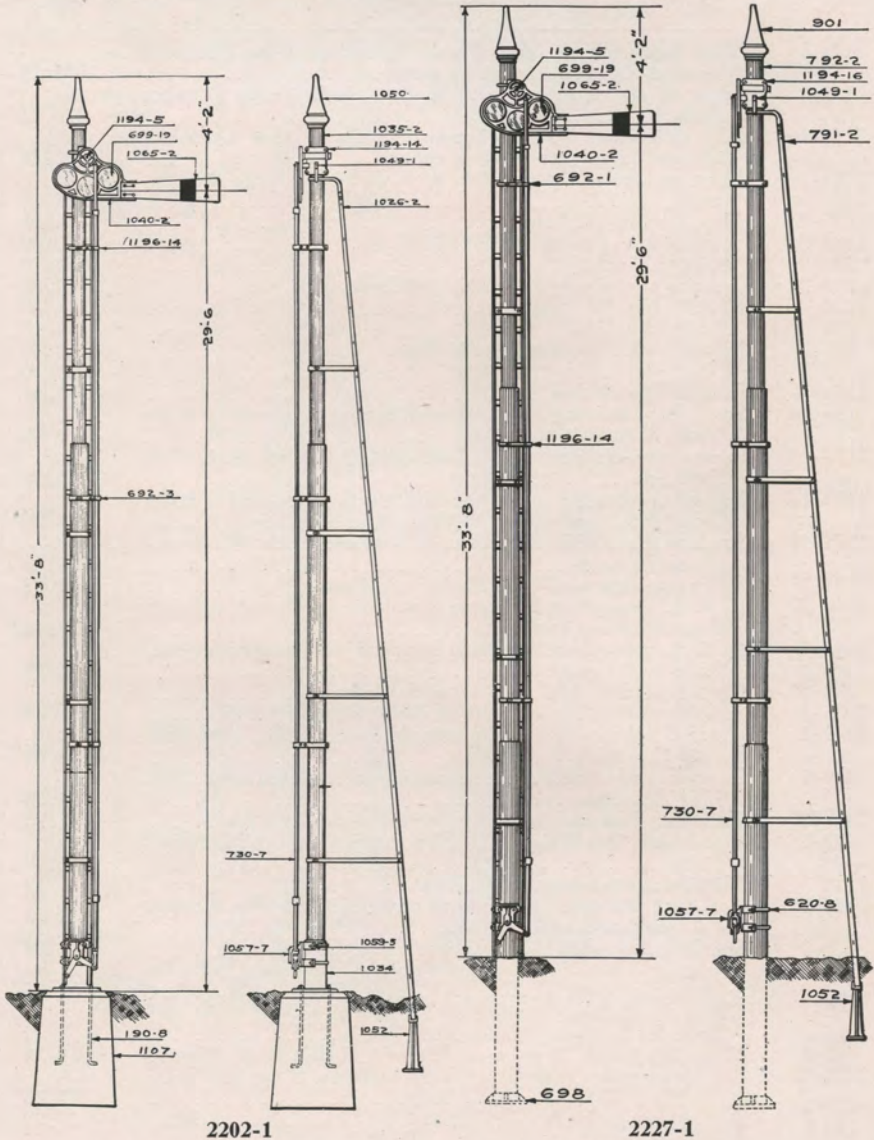


HIGH ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade desired also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2252-1	High One Arm 90 deg. Upper Quadrant Wire Operated Ground Signal, complete as shown.....	\$170.25
2252-2	Same as above except with R. S. A. 1041 Design B Spectacle.....	170.25
2257-1	High One Arm 90 deg. Upper Quadrant Wire Operated Ground Signal, complete as shown.....	155.85
2257-2	Same as above except with R. S. A. 1041 Design B Spectacle.....	155.85
1035-2	Mast for No. 2252 Signal.....	64.80
1035-22	Same as above except with 1034 Base.....	90.00
792-2	Mast for No. 2257 Signal.....	71.10
792-22	Same as above except with No. 698 Base.....	75.60
1034	Base for No. 2252 Signal.....	19.80
698	“ “ “ 2257 “.....	4.50
901	Pinnacle with Set Screw for 4" Pipe.....	2.40
1050	“ “ “ “ 5" “.....	2.70
1052	Ladder Foundation.....	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle.....	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle.....	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle.....	9.00
1194-17	Same as above with Clamp and U Bolt, used with 1041 Semaphore Spectacle.....	10.00
1194-5	Shaft complete with Pin, Washer and Cotter.....	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts.....	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts.....	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color.....	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts.....	3.60
1049-1	Lamp Bracket and Support complete with Bolts, used with 1040 Spectacle.....	4.50
1049-2	Lamp Bracket and Support complete with Bolts, used with 1041 Spectacle.....	4.95
730-16	Operating Rod complete with Screw Jaw and Eye Rod.....	1.49
692-1	Pipe Guide, One Way, for 4" Pipe complete with Clamp and Bolts.....	1.49
1196-14	Same as above except for 5" Pipe.....	4.90
721-21	One Way Balance Lever Stand complete with Pin, Cotter, Balance Lever and Shackles.....	2.05
959-1	One Way Signal Wheel complete.....	2.95
1059-5	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand.....	2.34
620-7	Clamp for Balance Lever Stand complete with U Bolts and Bolts for fastening Stand.....	2.34
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe...	27.00
1026-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for No. 2252 Signal.....	27.00
791-2	Same as above for No. 2257 Signal.....	.72
190-8	Anchor Bolts, 1" x3' with 2 $\frac{1}{2}$ " Hook.....	

HIGH ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL



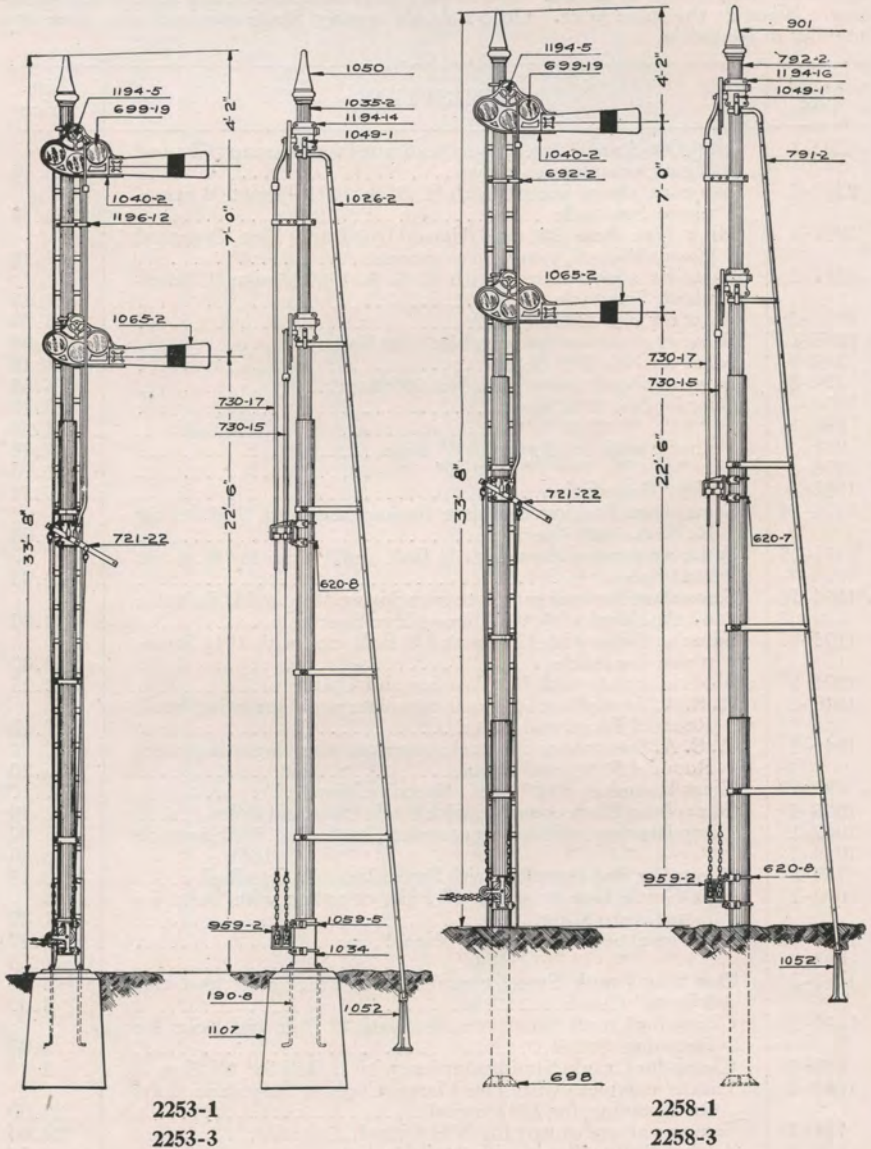


HIGH ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals may be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2202-1	High One Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal, complete as shown.....	\$166.50
2202-2	Same as above except with R. S. A. 1041 Design B Semaphore Spectacle.....	166.50
2227-1	High One Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal, complete as shown.....	152.10
2227-2	Same as above except with R. S. A. 1040 Design B Semaphore Spectacle.....	152.10
1035-2	Mast for No. 2202 Signal.....	65.70
1035-22	Same as above except with No. 1034 Base.....	90.00
792-2	Mast for No. 2227 Signal.....	71.10
792-22	Same as above except with No. 698 Base.....	75.60
1034	Base for No. 2202 Signal.....	19.80
698	“ “ “ 2227 “.....	4.50
901	Pinnacle with Set Screw for 4" Pipe.....	2.40
1050	“ “ “ 5" “.....	2.70
1052	Ladder Foundation.....	3.51
1194-14	Semaphore Bearing complete Spring Stop and U Bolts for R. S. A. 1040 Spectacle.....	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle.....	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe used with 1040 Semaphore Spectacle.....	9.00
1194-17	Same as above with Clamp and U Bolt used with 1041 Semaphore Spectacle.....	10.00
1194-5	Shaft complete with Pin, Washer and Cotter.....	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts.....	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts.....	16.20
699-19	Glass Roundels, 8 3/8" dia. Specify Color.....	.....
1065-2	Semaphore Blade complete with Blade Plate and Bolts.....	2.70
1049-1	Lamp Bracket and Support complete, used with 1040 Spectacle.....	3.60
1049-2	“ “ “ “ “ 1041 “.....	4.50
730-7	Operating Rod complete with Screw Jaw and Eye Rod.....	8.10
692-1	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.49
1196-14	Same as above except for 5" Pipe.....	1.49
692-3	“ “ “ “ “ 6" “.....	1.53
1057-7	One Way Crank Stand complete with Pin, Cotter and One 9" x 9" Crank.....	3.60
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe... ..	2.34
1026-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for 2202 Signal.....	27.00
791-2	Same as above except for 2227 Signal.....	27.00
190-8	Anchor Bolts, 1" x 3' with 2 1/2" Hook.....	.72

LOW TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL





LOW TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited from 0 deg. to 45 deg. or whether they are to be limited from 45 deg. to 90 deg. Prices on Limited Travel Arms are same as on Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade desired, also color and number of Roundels.

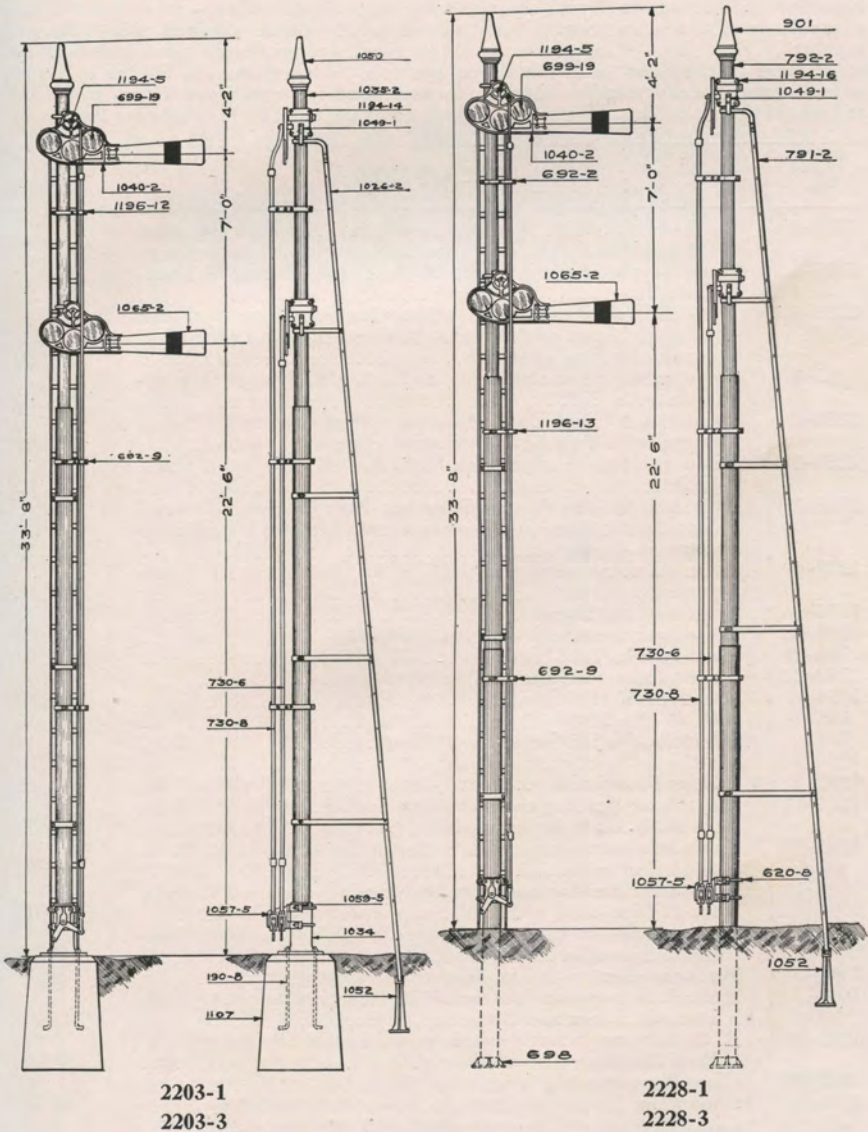
Trade No.	DESCRIPTION	List Price
2253-1	Low Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown	\$202.50
2253-2	Same as above except with R. S. A. 1041 Design B Spectacle	202.50
2253-3	Low Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	193.50
2253-4	Same as above except with R. S. A. 1041 Design B Spectacle	193.50
2258-1	Low Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown	188.10
2258-2	Same as above excepting with R. S. A. 1041 Design B Spectacle	188.10
2258-3	Low Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal, One Arm Operative and One Arm Fixed, complete as shown	179.10
2258-4	Same as above except with R. S. A. 1041 Design B Spectacle	179.10
1035-2	Mast for No. 2253 Signal	64.80
1035-22	Same as above except with No. 1034 Base	90.00
792-2	Mast for No. 2258 Signal	71.10
792-22	Same as above except with No. 698 Base	75.60
1034	Base for No. 2253 Signal	19.80
698	“ “ “ “ “ 2258 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ “ “ 5" “	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt used with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	3.60
1049-1	Lamp Bracket and Support complete with Bolts for fastening, used with 1040 Spectacle	4.50
1049-2	Lamp Bracket and Support complete with Bolts for fastening, used with 1041 Spectacle	4.50



LOW TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
730-15	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	\$4.50
730-17	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	5.40
692-2	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.49
1196-12	Same as above except for 5" Pipe.....	1.49
721-22	Two Way Balance Lever Stand, complete with Pin, Cotter, Separators, Balance Lever and Shackles.....	9.61
620-7	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand.....	2.34
959-2	Two Way Signal Wheel complete.....	3.62
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe....	2.34
1026-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for No. 2253 Signal.....	27.00
791-2	Same as above " " 2258 ".....	27.00
190-8	Anchor Bolt, 1" x 3' with Square Nut, 2½" Hook.....	.72

R. S. A. TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL





R. S. A. TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals may be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited in travel from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices on Limited Arms are same as on Operative Arms.

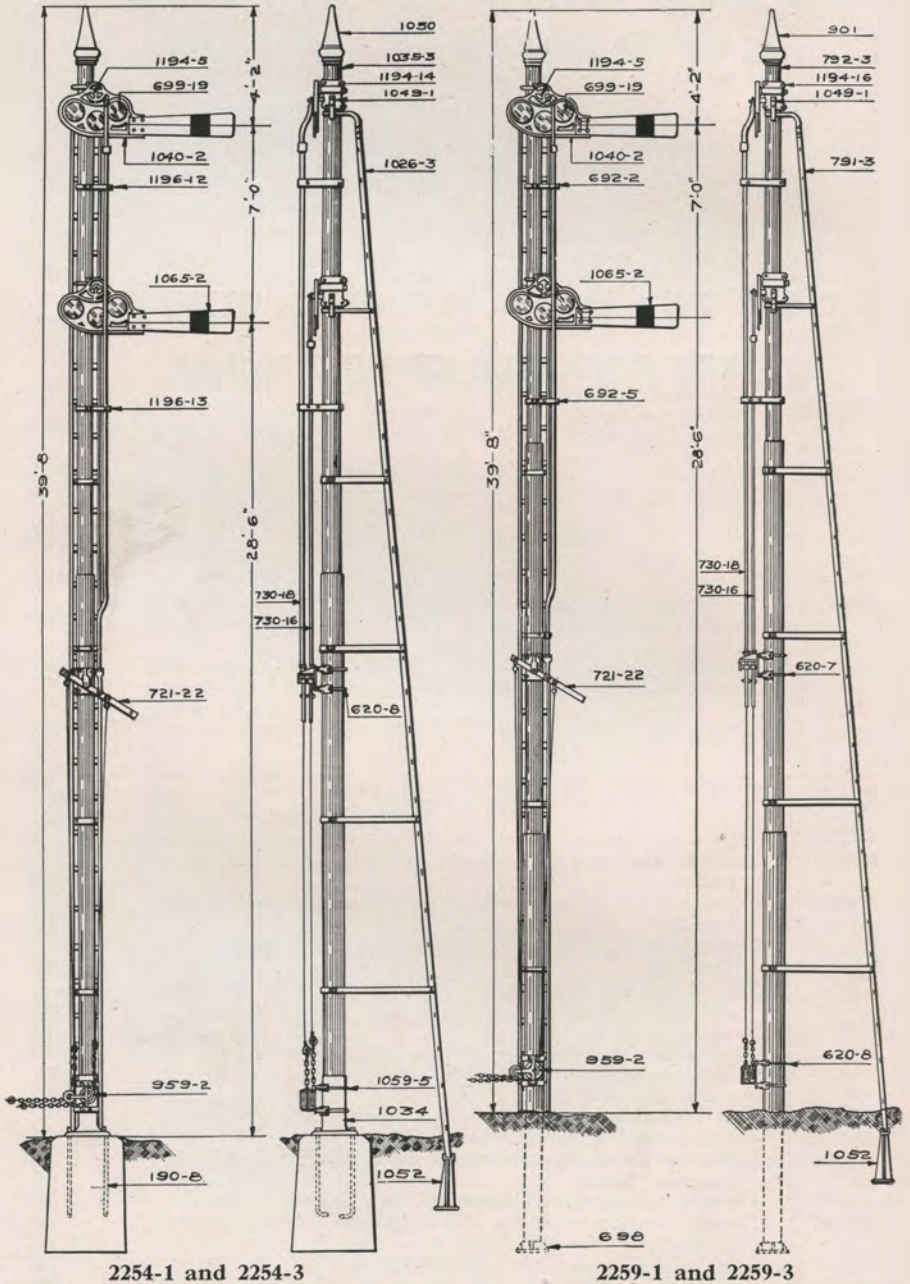
Trade No.	DESCRIPTION	List Price
2203-1	R. S. A. Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown	\$202.50
2203-2	Same as above except with R. S. A. 1041 Design B Spectacle	202.50
2203-3	R. S. A. Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	193.50
2203-4	Same as above except with R. S. A. 1041 Design B Spectacle	193.50
2228-1	Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown	188.10
2228-2	Same as above except with R. S. A. 1041 Design B Spectacle	188.10
2228-3	Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	179.10
2228-4	Same as above except with R. S. A. 1041 Design B Spectacle	179.10
1035-2	Mast for 2203 Signal	65.70
1035-22	Same as above except with No. 1034 Base	90.00
792-2	Mast for No. 2228 Signal	71.10
792-22	Same as above except with No. 698 Base	75.60
1034	Base for No. 2203 Signal	19.80
698	" " " 2228 "	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	" " " " 5" "	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	.....
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1049-1	Lamp Bracket and Support, used with 1040 Spectacle	3.60



R. S. A. TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
1049-2	Lamp Bracket and Support complete, used with 1041 Spectacle	\$4.50
730-6	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	7.10
730-8	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	8.10
692-2	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast	1.49
1196-12	Same as above for 5" Pipe	1.49
1196-13	Pipe Guide, Two Way, for 5" Pipe, complete with Bolts for fastening to Mast	1.76
692-9	Same as above except for 6" Pipe	1.80
1057-5	Two Way Crank Stand complete with Pin, Cotter, Separator and Two 9" x 9" Cranks	5.40
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.95
620-8	Clamp for Crank Stand complete with U Bolts for 6" Pipe ..	2.34
1026-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for 2203 Signal	27.00
791-2	Same as above except for No. 2228 Signal	27.00
190-8	Anchor Bolt, 1" x 3' with 2½" Hook .....	.72

HIGH TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL





HIGH TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices on Limited Travel Arms are same as on Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade desired, also color and number of Roundels.

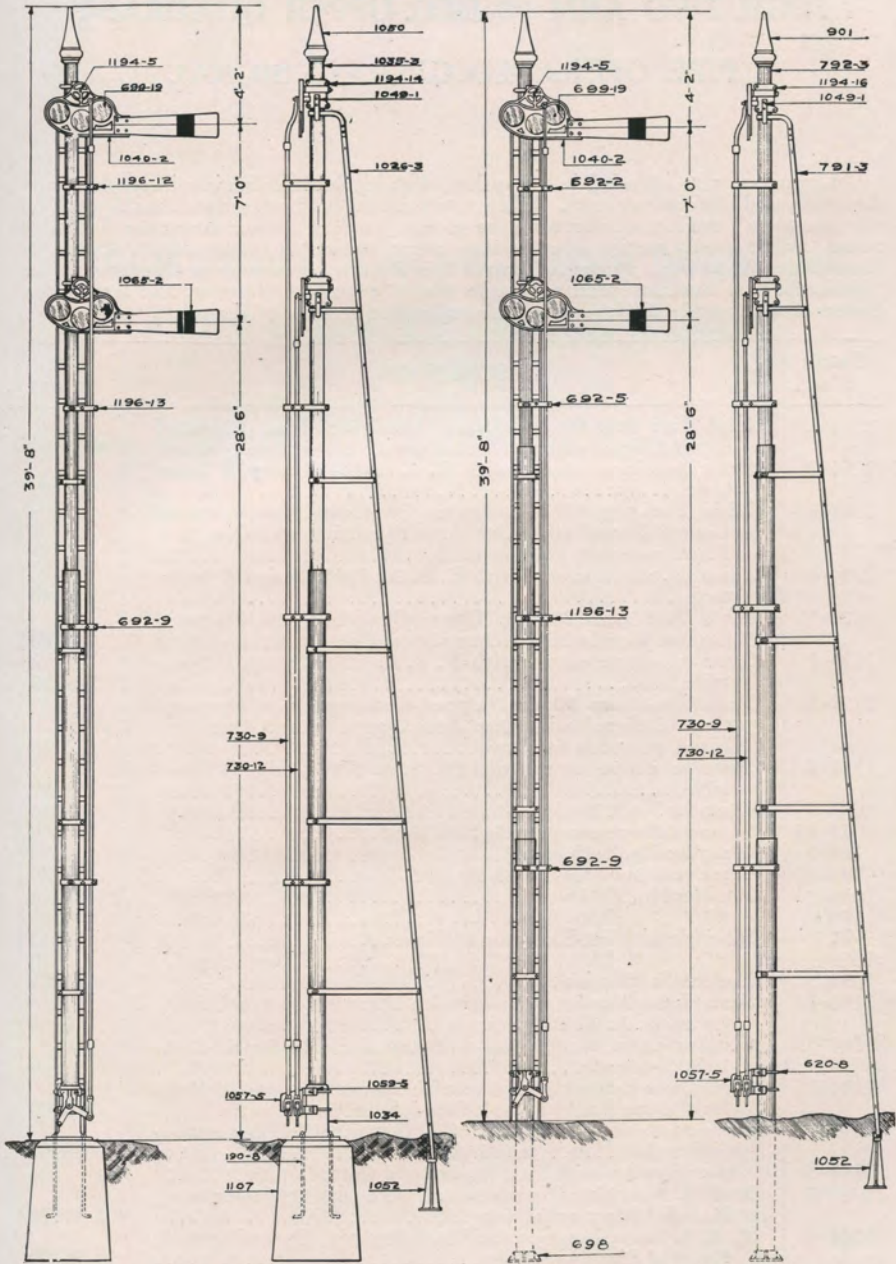
Trade No.	DESCRIPTION	List Price
2254-1	High Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown	\$229.50
2254-2	Same as above except R. S. A. 1041 Design B Spectacle	229.50
2254-3	High Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	220.50
2254-4	Same as above except with R. S. A. 1041 Design B Spectacle	220.50
2259-1	High Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Two Arms Operative, complete as shown	268.00
2259-2	Same as above except with R. S. A. 1041 Design B Spectacle	268.00
2259-3	High Two Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	259.00
2259-4	Same as above except with R. S. A. 1041 Design B Spectacle	259.00
1035-3	Mast for No. 2254 Signal	82.80
1035-33	Same as above except with No. 1034 Base	108.00
792-3	Mast for No. 2259 Signal	136.80
792-33	Same as above except with No. 698 Base	141.30
1034	Base for No. 2254 Signal	19.80
698	“ “ “ “ 2259 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ “ 5" “	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt, used with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20



HIGH TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

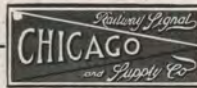
Trade No.	DESCRIPTION	List Price
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color.....	.....
1065-2	Semaphore Blade complete with Blade Plate and Bolts	\$2.70
1049-1	Lamp Bracket and Support complete with Bolts, used with 1040 Spectacle.....	3.60
1049-2	Lamp Bracket and Support complete with Bolt, used with 1041 Spectacle.....	4.50
730-16	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	4.95
730-18	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	5.85
692-2	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.49
1196-12	Same as above except for 5" Pipe.....	1.49
692-5	Pipe Guide, Two Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.76
1196-13	Same as above except for 5" Pipe.....	1.76
721-22	Two Way Balance Lever Stand complete with Pin, Cotter Separators, Balance Lever and Shackles.....	9.61
620-7	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand.....	2.34
959-2	Two Way Signal Wheel complete.....	3.62
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe...	2.34
1026-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for No. 2254 Signal.....	33.30
791-3	Same as above except for No. 2259 Signal.....	33.30
190-8	Anchor Bolt, 1" x 3' with Square Nut, 2 $\frac{1}{2}$ " Hook.....	.72

HIGH TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL



2204-1 and 2204-3

2229-1 and 2229-3

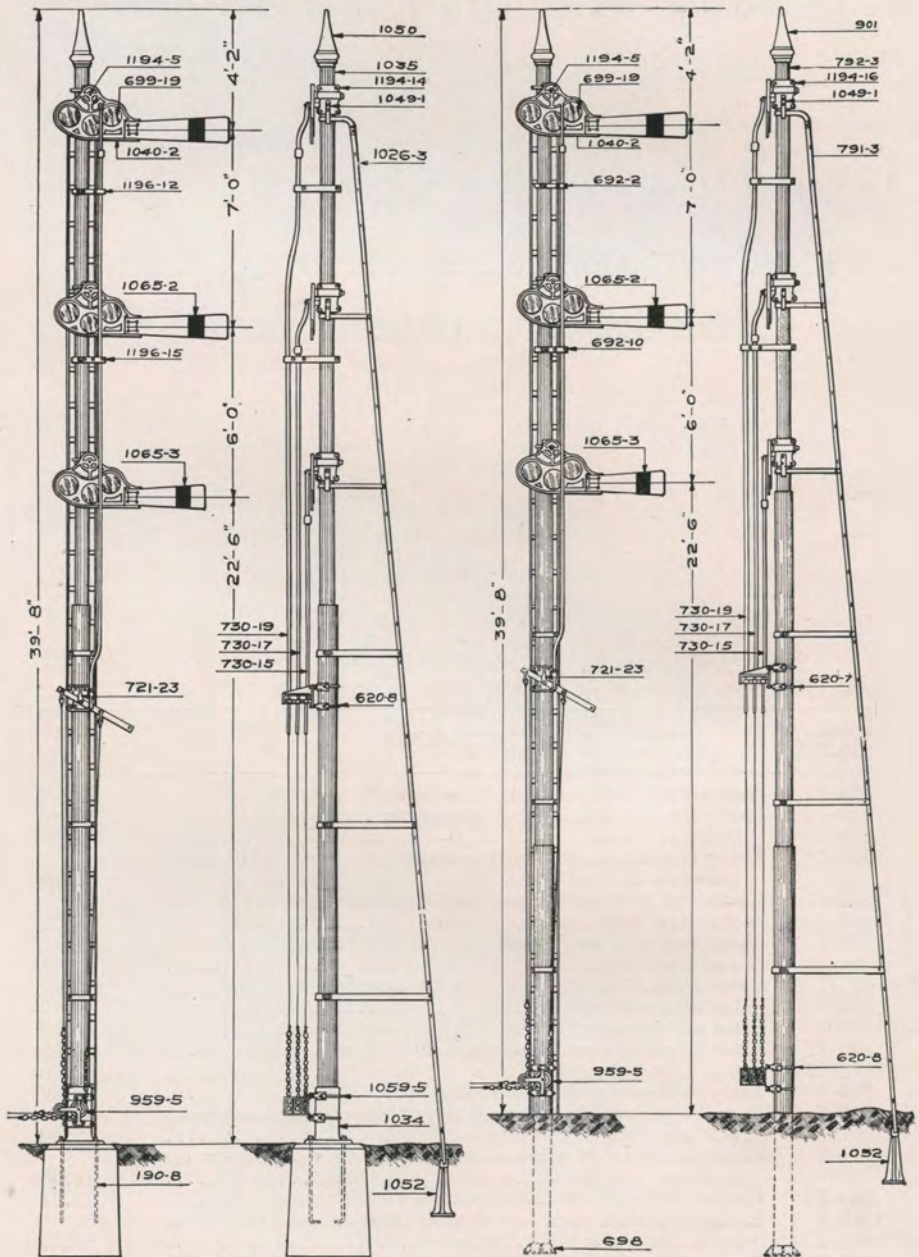


HIGH TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices on Limited Travel Arms are same as on Operative Arms. Signals may be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2204-1	High Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with two Arms Operative, complete as shown	\$229.50
2204-2	Same as above except with R. S. A. 1041 Design B Spectacle	229.50
2204-3	High Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	220.50
2204-4	Same as above except with R. S. A. 1040 Design B Spectacle	220.50
2229-1	High Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Two Arms Operative, complete as shown	262.80
2229-2	Same as above except with R. S. A. 1040 Design B Spectacle	262.80
2229-3	High Two Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with One Arm Operative and One Arm Fixed, complete as shown	253.80
2229-4	Same as above except with R. S. A. 1040 Design B Spectacle	253.80
1035-3	Mast for No. 2204 Signal	73.70
1035-33	Same as above except with 1034 Base	108.00
792-3	Mast for No. 2229 Signal	136.80
792-33	Same as above except with No. 698 Base	141.30
1034	Base for No. 2204 Signal	19.80
698	“ “ “ 2229 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ “ 5" Pipe	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 3/8" dia. Specify Color	.....

THREE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL



2255-1 and 2255-3

2260-1 and 2260-3



THREE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices on Limited Travel Arms are same as on Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade desired, also color and number of Roundels.

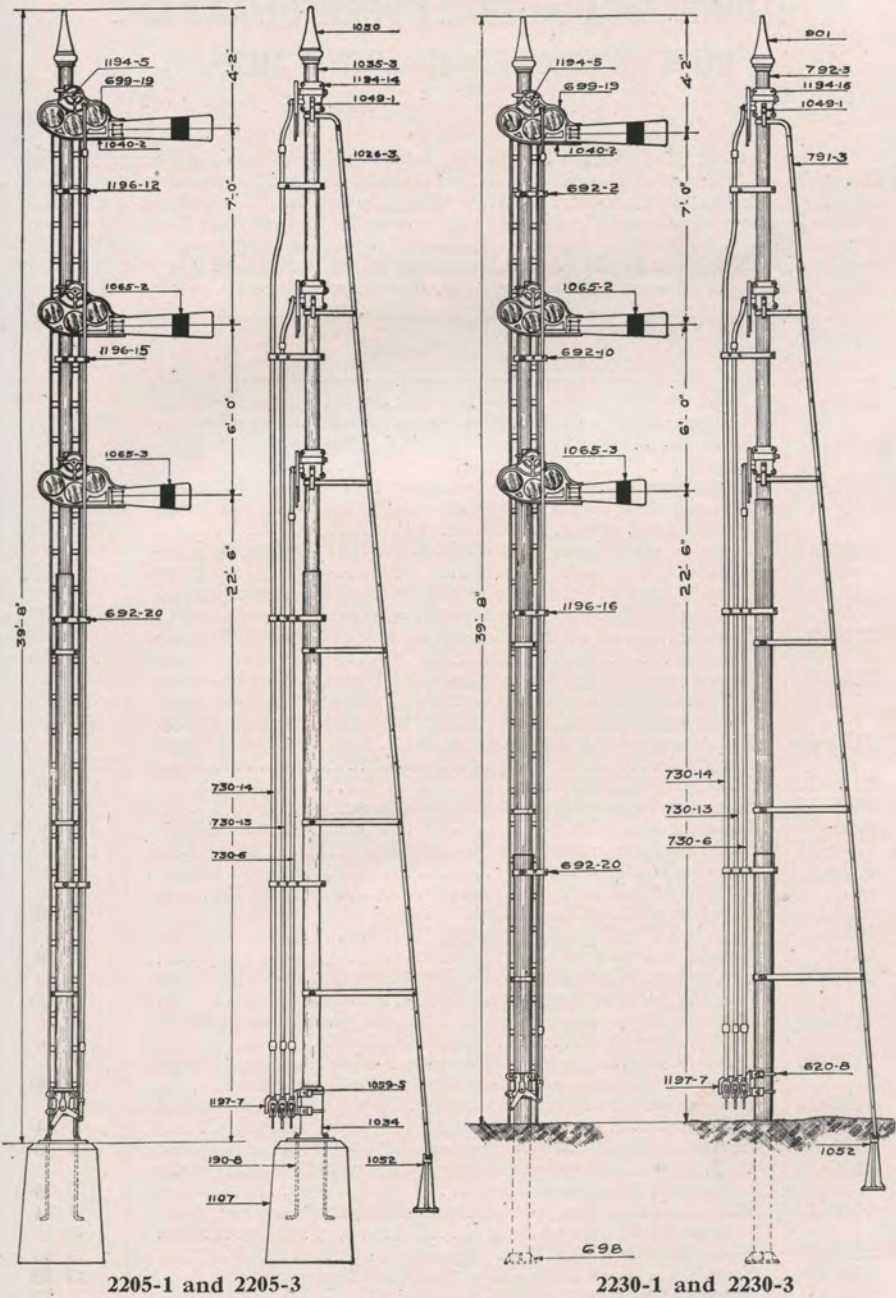
Trade No.	DESCRIPTION	List Price
2255-1	Three Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Three Arms Operative, complete as shown . . .	\$270.00
2255-2	Same as above except with R. S. A. 1041 Design B Spectacle	270.00
2255-3	Three Arm 90 deg. Upper Quadrant Wire Operated Signal with Two Arms Operative and One Arm Fixed, complete as shown	261.00
2255-4	Same as above except with R. S. A. 1041 Design B Spectacle	261.00
2260-1	Three Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with Three Arms Operative, complete as shown . . .	304.20
2260-2	Same as above except with R. S. A. 1041 Design B Spectacle	304.20
2260-3	Three Arm 90 deg. Upper Quadrant Wire Operated Ground Signal with two Arms Operative and One Arm Fixed, complete as shown	295.20
2260-4	Same as above except with R. S. A. 1041 Design B Spectacle	295.20
1035-3	Mast for 2255 Signal	82.80
1035-33	Same as above except with No. 1034 Base	108.00
792-3	Mast for No. 2260 Signal	136.80
792-33	Same as above except with No. 698 Base	141.30
1034	Base for No. 2255 Signal	19.80
698	“ “ “ 2260 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ “ 5" “	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt, used with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color . . . . .	. . . . .
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1065-3	Same as above except 2' 6" long	2.70
1049-1	Lamp Bracket and Support complete with Bolts, used with 1040 Spectacle	3.60



THREE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
1049-2	Lamp Bracket and Support complete with Bolt for fastening, used with 1041 Spectacle.	\$ 4.50
730-15	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.	4.50
730-17	Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.	5.40
730-19	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.	6.30
692-2	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.	1.49
1196-12	Same as above except for 5" Pipe.	1.49
692-10	Pipe Guide, Two Way, for 4" Pipe, complete with Bolts for fastening to Mast.	1.76
1196-15	Same as above except for 5" Pipe.	1.76
721-23	Three Way Balance Lever Stand complete with Pin, Cotter Separators, Balance Lever and Shackles.	13.69
620-7	Clamp for Balance Lever Stand complete with U Bolt and Bolts for fastening Stand.	2.34
959-5	Three Way Signal Wheel complete.	5.36
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe. . .	2.34
1026-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for No. 2255 Signal.	33.30
791-3	Same as above except for No. 2260 Signal.	33.30
190-8	Anchor Bolt, 1" x 3' with Square Nut, 2½" Hook. . . . .	.72

R. S. A. THREE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL





THREE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Arms are to be fixed, orders should specify if they are to be fixed in the 0 deg. or in the 45 deg. position. When Arms are limited in travel, orders should specify whether they are to be limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices on Limited Travel Arms are same as on Operative Arms. Signals may be furnished with any Style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels.

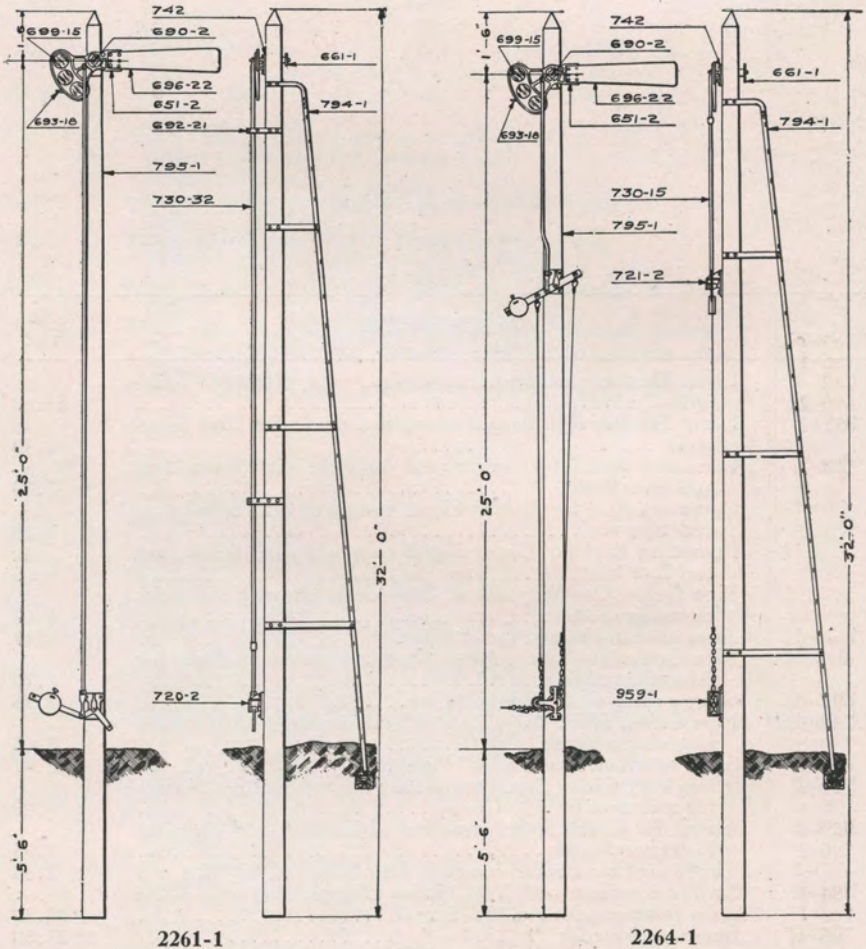
Trade No.	DESCRIPTION	List Price
2205-1	Three Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Three Arms Operative, complete as shown	\$270.00
2205-2	Same as above except with R. S. A. 1041 Design B Spectacle	270.00
2205-3	Three Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Two Arms Operative and One Arm Fixed, complete as shown	261.00
2205-4	Same as above except with R. S. A. 1041 Design B Spectacle	261.00
2230-1	Three Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Three Arms Operative, complete as shown	236.70
2230-2	Same as above except with R. S. A. 1041 Design B Spectacle	236.70
2230-3	Three Arm 90 deg. Upper Quadrant Pipe Operated Ground Signal with Two Arms Operative and One Arm Fixed, complete as shown	227.70
2230-4	Same as above except with R. S. A. 1041 Design B Spectacle	227.70
1035-3	Mast for No. 2205 Signal	83.70
1035-33	Same as above except with No. 1034 Base	108.00
792-3	Mast for No. 2230 Signal	136.80
792-33	Same as above except with No. 698 Base	141.30
1034	Base for No. 2205 Signal	19.80
698	“ “ “ 2230 “	4.50
901	Pinnacle with Set Screw for 4" Pipe	2.40
1050	“ “ “ 5" “	2.70
1052	Ladder Foundation	3.51
1194-14	Semaphore Bearing complete Spring Stop and U Bolts for R. S. A. 1040 Spectacle	9.00
1194-15	Same as above except with U Bolt and Clamp for R. S. A. 1041 Spectacle	10.00
1194-16	Semaphore Bearing complete with Spring Stop and U Bolts for 4" Pipe, used with 1040 Semaphore Spectacle	9.00
1194-17	Same as above with Clamp and U Bolt with 1041 Semaphore Spectacle	10.00
1194-5	Shaft complete with Pin, Washer and Cotter	2.25
1040-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	17.10
1041-2	R. S. A. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color . . . . .	. . . . .
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1065-3	Same as above except for Lower Signal	2.70



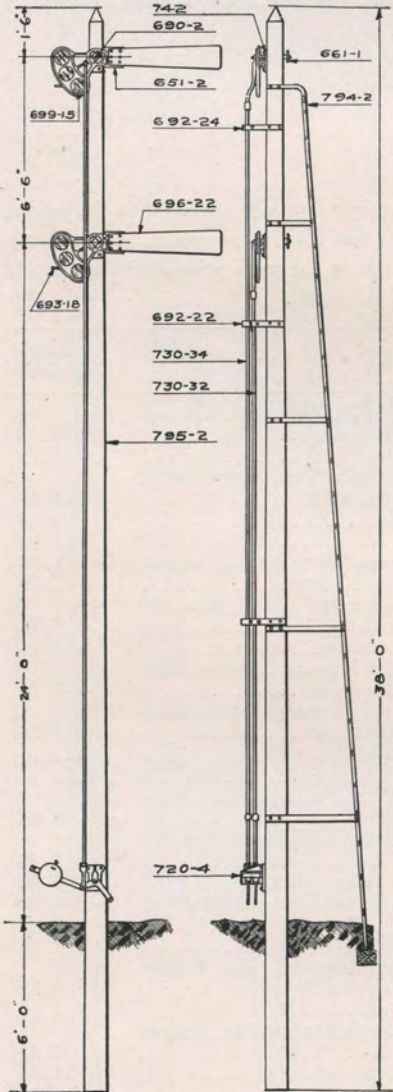
R. S. A. THREE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED GROUND SIGNAL

Trade No.	DESCRIPTION	List Price
1049-1	Lamp Bracket and Support complete, used with 1040 Spectacle.....	\$3.60
1049-2	Lamp Bracket and Support complete, used with 1041 Spectacle.....	4.50
730-6	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	7.10
730-13	Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.....	8.20
730-14	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	9.45
692-2	Pipe Guide, One Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.49
1196-12	Same as above except for 5" Pipe.....	1.49
692-10	Pipe Guide, Two Way, for 4" Pipe, complete with Bolts for fastening to Mast.....	1.76
1196-15	Same as above except for 5" Pipe.....	1.76
1196-16	Pipe Guide, Three Way, for 5" Pipe, complete with Bolts for fastening to Mast.....	2.03
692-20	Same as above except for 6" Pipe.....	2.07
1197-7	Three Way Crank Stand complete with Pin, Cotter, Separator and three 9" x 9" Cranks.....	7.20
1059-5	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
620-8	Clamp for Crank Stand complete with U Bolt for 6" Pipe....	2.34
1026-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening, for No. 2205 Signal.....	33.30
791-3	Same as above, for " 2230 ".....	33.30
190-8	Anchor Bolts, 1" x 3' with 2½" Hook.....	.72

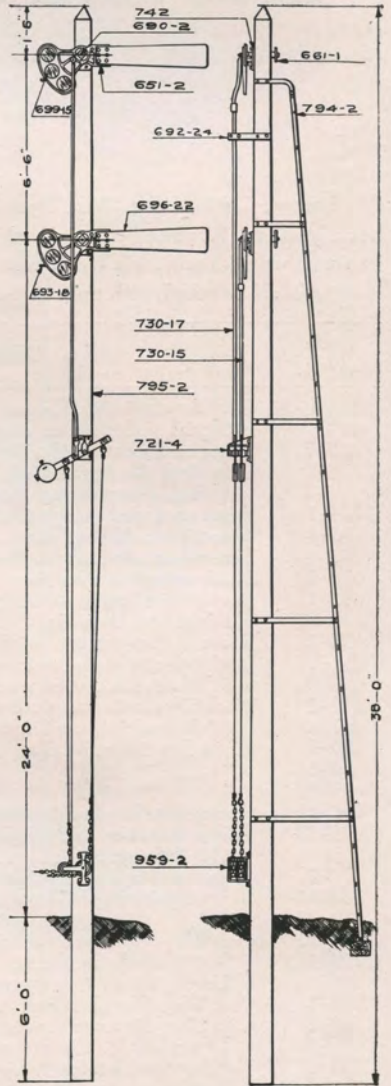
ONE ARM 60 DEG. LOWER QUADRANT (WOOD POST) GROUND SIGNALS PIPE AND WIRE OPERATED



TWO ARM 60 DEG. LOWER QUADRANT (WOOD POST) GROUND SIGNALS PIPE OR WIRE OPERATED

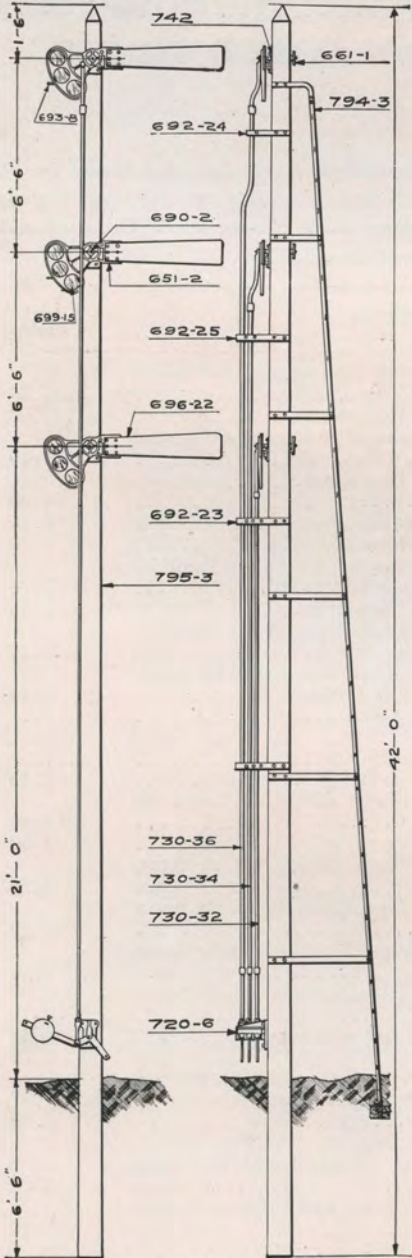


2262-1

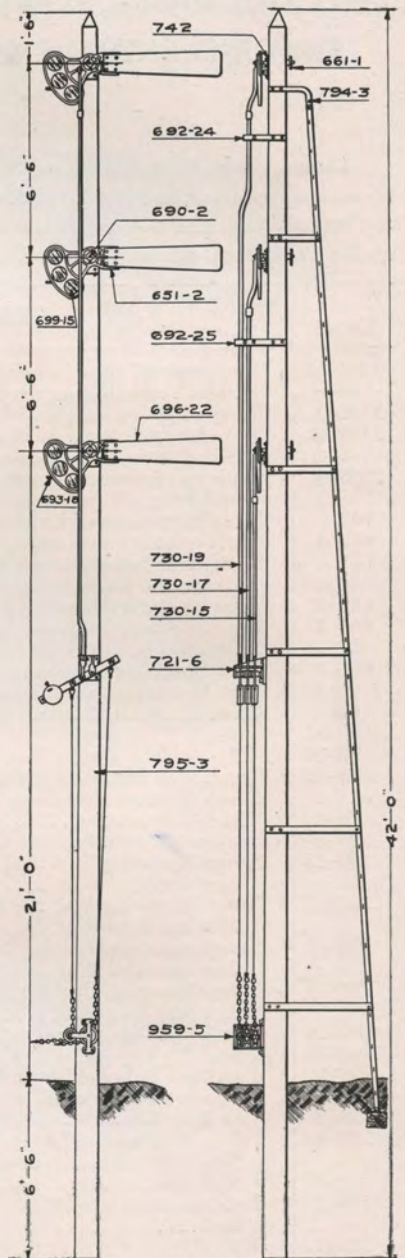


2265-1

THREE ARM 60 DEG. LOWER QUADRANT (WOOD POST) GROUND SIGNALS PIPE AND WIRE OPERATED



2263-1



2266-1



THREE ARM 60 DEG. LOWER QUADRANT (WOOD POST) GROUND SIGNALS PIPE AND WIRE OPERATED

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any desired style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2263-1	Three Arm 60 deg. Lower Quadrant Pipe Operated Ground Signal, complete as shown, 6½" Roundels.....	\$155.70
2263-2	Same as above except with 8¾" Roundels.....	158.70
2266-1	Three Arm 60 deg. Lower Quadrant Wire Operated Ground Signal, complete as shown, 6½" Roundels.....	144.75
2266-2	Same as above except with 8¾" Roundels.....	147.75
795-3	Wood Post, 42 feet long.....	54.72
742	Semaphore Bearing for Wood Post complete with Lag Screws	1.76
690-2	Shaft complete with Nuts, Washers and Cotter.....	2.70
651-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for 6½" Roundels.....	7.74
652-2	Same as above excepting for 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 651-2 Spectacle.....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 652-2 Spectacle.....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	" " 6½" " " " ".....	.....
699-19	" " 8¾" " " " ".....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-18	Lamp Bracket and Support complete with Lag Screw for 651-1 Spectacle.....	3.60
693-19	Same as above except for 652-1 Spectacle.....	3.60
730-15	Short Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	4.50
730-17	Short Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.....	5.40
730-19	Short Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	6.30
730-32	Long Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	7.20
730-34	Long Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.....	8.10
730-36	Long Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	9.45
692-24	One Way Pipe Guide complete with Lag Screws.....	1.45
692-25	Two " " " " " " " ".....	1.98
692-23	Three " " " " " " " ".....	1.98
720-6	Three Way Balance Lever Stand, complete with Pin, Cotter Separators, Lever, Counterweight, Bolts.....	17.36
959-5	Three Way Signal Wheel complete.....	5.36
721-6	" " Balance Lever Stand complete with Pin, Cotter Separators, Lever, Counterweight and Bolts and Shackles	14.71
794-3	Ladder complete with Top Pieces, Stays and Bolts for fastening.....	20.88
703-1	Wire Eyes.....	.04
703-11	Split Links, per C.....	3.60
703-16	¼" Proof Chain, per ft.....	.14

1914

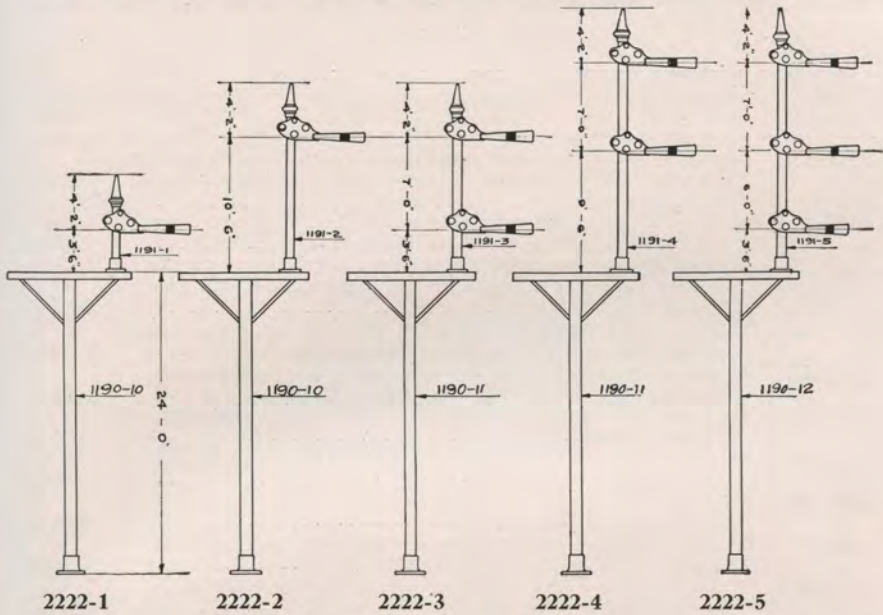
CATALOGUE AND PRICE LIST

SECTION N

BRIDGE AND BRACKET SIGNALS

- 60 deg. Lower Quadrant Wire Operated
- 60 deg. Lower Quadrant Pipe Operated
- 90 deg. Upper Quadrant Wire Operated
- 90 deg. Upper Quadrant Pipe Operated

R. S. A. PIPE OPERATED BRACKET POST SIGNALS



Prices will be furnished upon request for any combination of Signals not given in the following list.

Trade No.	DESCRIPTION	List Price
2222-1	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm Bracket Signal	\$463.50
2222-2	Same as above except with One No. 1191-2 High One Arm Bracket Signal	481.50
2222-3	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm Bracket Signal	531.00
2222-4	Same as above excepting with One No. 1191-4 High Two Arm Bracket Signal	549.00
2222-5	Bracket Post for Two Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal	598.50
2222-6	Bracket Post for Two Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signals	562.50
2222-7	Same as above excepting with Two No. 1191-2 High One Arm Bracket Signals	598.50
2222-8	Bracket Post for Two Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals	697.50
2222-9	Same as above excepting with Two No. 1191-4 High Two Arm Bracket Signals	733.50
2222-10	Bracket Post for Two Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals	832.50
2222-11	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signals	630.00
2222-12	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal	666.00



R. S. A. PIPE OPERATED BRACKET POST SIGNALS

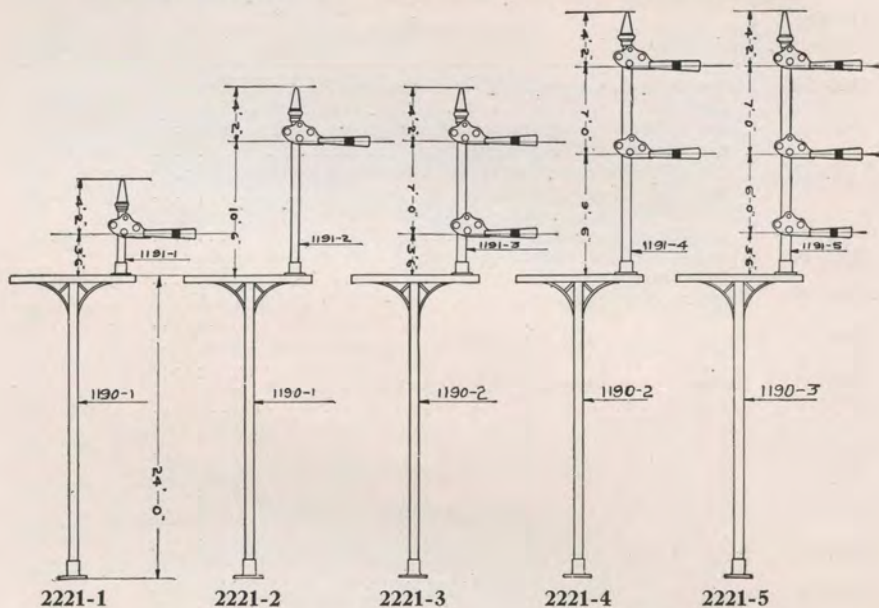
Trade No.	DESCRIPTION	List Price
2222-13	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal.....	\$697.50
2222-14	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal.....	715.50
2222-15	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal.....	765.00
2222-16	Same as above except with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal.....	783.00
2222-17	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm Bracket Signal.....	508.50
2222-18	Same as above except with One No. 1191-2 High One Arm Bracket Signal.....	526.50
2222-19	Bracket Post for Three Signals and Connections complete with One No. 1191-3 Low Two Arm Bracket Signal.....	576.00
2222-20	Same as above except with One No. 1191-4 High Two Arm Bracket Signal.....	594.00
2222-21	Bracket Post for Three Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal.....	643.50
2222-22	Bracket Post for Three Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signal.....	607.50
2222-23	Same as above except with Two No. 1191-2 High One Arm Signals.....	643.50
2222-24	Bracket Post for Three Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals.....	742.50
2222-25	Same as above except with Two No. 1191-4 High Two Arm Bracket Signals.....	778.50
2222-26	Bracket Post for Three Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals.....	877.50
2222-27	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signal.....	675.00
2222-28	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal.....	711.00
2222-29	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal.....	742.50
2222-30	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal.....	760.50
2222-31	Bracket Post for Three Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal.....	810.00
2222-32	Same as above excepting with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal.....	828.00
1190-10	Bracket Post for Two Signals complete with Connections for One One Arm Signal.....	391.50
1190-11	Same as above excepting with Connections for One Two Arm Signal.....	405.00
1190-12	Same as above excepting with Connections for One Three Arm Signal.....	418.50
1190-13	Same as above excepting with Connections for Two One Arm Signals.....	418.50
1190-14	Same as above excepting with Connections for Two Two Arm Signals.....	445.50



R. S. A. PIPE OPERATED BRACKET POST SIGNALS

Trade No.	DESCRIPTION	List Price
1190-15	Same as above excepting with Connections for Two Three Arm Signals	\$472.50
1190-16	Same as above excepting with Connections for One One Arm Signal and One Two Arm Signal	432.00
1190-17	Same as above excepting with Connections for One One Arm and One Three Arm Signal	445.50
1190-18	Same as above excepting with Connections for One Two Arm and One Three Arm Signal	459.00
1190-19	Bracket Post for Three Signals and Connections complete for One One Arm Signal	436.50
1190-20	Same as above except with Connections for One Two Arm Signal	450.00
1190-21	Same as above except with Connections for One Three Arm Signal	463.50
1190-22	Same as above except with Connections for Two One Arm Signals	463.50
1190-23	Same as above except with Connections for Two Two Arm Signals	490.50
1190-24	Same as above except with Connections for Two Three Arm Signals	517.50
1190-25	Same as above except with Connections for One One Arm and One Two Arm Signal	477.00
1190-26	Same as above except with Connections for One One Arm and One Three Arm Signal	490.50
1190-27	Same as above except with Connections for One Two Arm and One Three Arm Signal	504.00
1191-1	R. S. A. Low One Arm Bracket Signal, 90 deg. Upper Quadrant	72.00
1191-2	R. S. A. High One Arm Bracket Signal, 90 deg. Upper Quadrant	90.00
1191-3	R. S. A. Low Two Arm Bracket Signal, 90 deg. Upper Quadrant	126.00
1191-4	R. S. A. High Two Arm Bracket Signal, 90 deg. Upper Quadrant	144.00
1191-5	R. S. A. Three Arm Bracket Signal, 90 deg. Upper Quadrant	180.00
2236-1	Low One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	81.00
2236-2	Low One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	82.00
2237-1	High One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	100.00
2237-2	High One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	101.00
2238-1	Low Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	126.00
2238-2	Low Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	128.00
2239-1	High Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	144.00
2239-2	High Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	146.00
2240-1	Three Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	180.00
2240-2	Three Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	183.00
2232	Dummy Mast complete with Base, Pinnacle, Spectacle and Lamp Bracket for Vertical Light	37.80
2232-1	Same as above except for Staggered Light	37.80

BRACKET POST SIGNALS—PIPE OPERATED



Prices will be furnished upon request for any combination of Signals not shown in the following list.

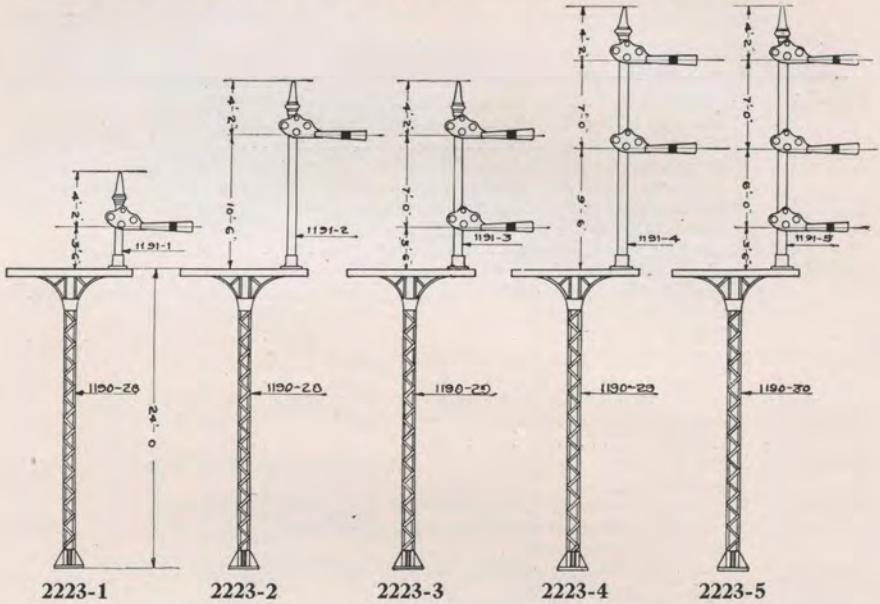
Trade No.	DESCRIPTION	List Price
2221-1	Bracket Post for Two Signals and Connections complete with No. 1191-1 Low One Arm Bracket Signal . . . . .	.....
2221-2	Same as above except with One No. 1191-2 High One Arm Bracket Signal . . . . .	.....
2221-3	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm Bracket Signal . . . . .	.....
2221-4	Same as above excepting with One No. 1191-4 High Two Arm Bracket Signal . . . . .	.....
2221-5	Bracket Post for Two Signals and Connections complete with One No. 1191-5 Three Arm Signal . . . . .	.....
2221-6	Bracket Post for Two Signals and Connections complete with Two No. 1191-1 Low One Arm Signals . . . . .	.....
2221-7	Same as above excepting with Two No. 1191-2 High One Arm Signals . . . . .	.....
2221-8	Bracket Post for Two Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals . . . . .	.....
2221-9	Same as above except with Two No. 1191-4 High Two Arm Bracket Signals . . . . .	.....
2221-10	Bracket Post for Two Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals . . . . .	.....
2221-11	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signals . . . . .	.....
2221-12	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal . . . . .	.....



BRACKET POST SIGNALS—PIPE OPERATED

Trade No.	DESCRIPTION	List Price
2221-13	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signals.....	
2221-14	Same as above excepting with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signals.....	
2221-15	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signals.....	
2221-16	Same as above excepting with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal.....	
1190-1	Bracket Post complete with Connections for One One Arm Signal.....	
1190-2	Same as above except with Connections for One Two Arm Signal.....	
1190-3	Same as above with Connections for One Three Arm Signal.....	
1190-4	Same as above except with Connections for Two One Arm Signals.....	
1190-5	Same as above except with Connections for Two Two Arm Signals.....	
1190-6	Same as above with Connections for Two Three Arm Signals.....	
1190-7	Same as above except with Connections for One One Arm and One Two Arm Signal.....	
1190-8	Same as above except with Connections for One One Arm and One Three Arm Signal.....	
1190-9	Same as above except with Connections for One Two Arm and One Three Arm Signal.....	
1191-1	R. S. A. Low One Arm Bracket Signal, 90 deg. Upper Quadrant.....	\$72.00
1191-2	R. S. A. High One Arm Bracket Signal, 90 deg. Upper Quadrant.....	90.00
1191-3	R. S. A. Low Two Arm Bracket Signal, 90 deg. Upper Quadrant.....	126.00
1191-4	R. S. A. High Two Arm Bracket Signal, 90 deg. Upper Quadrant.....	144.00
1191-5	R. S. A. Three Arm Bracket Signal, 90 deg. Upper Quadrant.....	180.00
2236-1	Low One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant.....	81.00
2236-2	Low One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant.....	82.00
2237-1	High One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant.....	100.00
2237-2	High One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant.....	101.00
2238-1	Low Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant.....	126.00
2238-2	Low Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant.....	128.00
2239-1	High Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant.....	144.00
2239-2	High Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant.....	146.00
2240-1	Three Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant.....	180.00
2240-2	Three Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant.....	183.00
2232	Dummy Mast complete with Base, Pinnacle, Spectacle and Lamp Bracket for Vertical Light.....	37.80
2232-1	Same as above except for Staggered Light.....	37.80

PIPE OPERATED COLUMN BRACKET SIGNALS



Prices will be furnished upon request for any combination of Signals not given in the following list.

Trade No.	DESCRIPTION	List Price
2223-1	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm Bracket Signal. . . . .	.....
2223-2	Same as above except with One No. 1191-2 High One Arm Bracket Signal. . . . .	.....
2223-3	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm Bracket Signal. . . . .	.....
2223-4	Same as above excepting with One No. 1191-4 High Two Arm Bracket Signal. . . . .	.....
2223-5	Bracket Post for Two Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal. . . . .	.....
2223-6	Bracket Post for Two Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signals. . . . .	.....
2223-7	Same as above excepting with Two No. 1191-2 High One Arm Bracket Signals. . . . .	.....
2223-8	Bracket Post for Two Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals. . . . .	.....
2223-9	Same as above excepting with Two No. 1191-4 High Two Arm Bracket Signals. . . . .	.....
2223-10	Bracket Post for Two Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals. . . . .	.....
2223-11	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signals. . . . .	.....
2223-12	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal. . . . .	.....



PIPE OPERATED COLUMN BRACKET SIGNALS

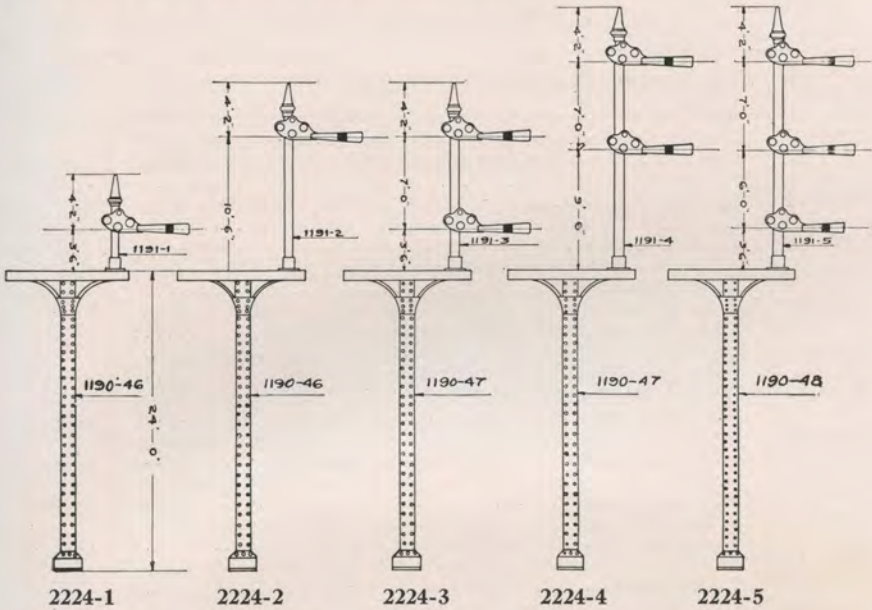
Trade No.	DESCRIPTION	List Price
2223-13	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-14	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-15	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-16	Same as above except with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-17	Bracket Post for Three Signals and Connections complete for One No. 1191-1 Low One Arm Bracket Signal . . . . .	.....
2223-18	Same as above except with One No. 1191-2 High One Arm Bracket Signal . . . . .	.....
2223-19	Bracket Post for Three Signals and Connections complete for One No. 1191-3 Low Two Arm Bracket Signal . . . . .	.....
2223-20	Same as above except with One No. 1191-4 High Two Arm Bracket Signal . . . . .	.....
2223-21	Bracket Post for Three Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-22	Bracket Post for Three Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signals . . . . .	.....
2223-23	Same as above except with Two No. 1191-2 High One Arm Signals . . . . .	.....
2223-24	Bracket Post for Three Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals . . . . .	.....
2223-25	Same as above except with Two No. 1191-4 High Two Arm Bracket Signals . . . . .	.....
2223-26	Bracket Post for Three Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals . . . . .	.....
2223-27	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signal . . . . .	.....
2223-28	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal . . . . .	.....
2223-29	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-30	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-31	Bracket Post for Three Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
2223-32	Same as above excepting with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal . . . . .	.....
1190-28	Bracket Post for Two Signals complete with Connections for One One Arm Signal . . . . .	.....
1190-29	Same as above excepting with Connections for One Two Arm Signal . . . . .	.....
1190-30	Same as above excepting with Connections for One Three Arm Signal . . . . .	.....
1190-31	Same as above excepting with Connections for Two One Arm Signals . . . . .	.....
1190-32	Same as above excepting with Connections for Two Two Arm Signals . . . . .	.....



PIPE OPERATED COLUMN BRACKET SIGNALS

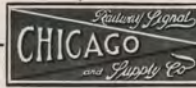
Trade No.	DESCRIPTION	List Price
1190-33	Same as above excepting with Connections for Two Three Arm Signals	
1190-34	Same as above excepting with Connections for One One Arm Signal and One Two Arm Signal	
1190-35	Same as above excepting with Connections for One One Arm and One Three Arm Signal	
1190-36	Same as above excepting with Connections for One Two Arm and One Three Arm Signal	
1190-37	Bracket Post for Three Signals and Connections complete for One One Arm Signal	
1190-38	Same as above except with Connections for One Two Arm Signal	
1190-39	Same as above except with Connections for One Three Arm Signal	
1190-40	Same as above except with Connections for Two One Arm Signals	
1190-41	Same as above except with Connections for Two Two Arm Signals	
1190-42	Same as above except with Connections for Two Three Arm Signals	
1190-43	Same as above except with Connections for One One Arm and One Two Arm Signal	
1190-44	Same as above except with Connections for One One Arm and One Three Arm Signal	
1190-45	Same as above except with Connections for One Two Arm and One Three Arm Signal	
1191-1	R. S. A. Low One Arm Bracket Signal, 90 deg. Upper Quadrant	\$72.00
1191-2	R. S. A. High One Arm Bracket Signal, 90 deg. Upper Quadrant	90.00
1191-3	R. S. A. Low Two Arm Bracket Signal, 90 deg. Upper Quadrant	126.00
1191-4	R. S. A. High Two Arm Bracket Signal, 90 deg. Upper Quadrant	144.00
1191-5	R. S. A. Three Arm Bracket Signal, 90 deg. Upper Quadrant	180.00
2236-1	Low One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	81.00
2236-2	Low One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	82.00
2237-1	High One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	100.00
2237-2	High One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	101.00
2238-1	Low Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	126.00
2238-2	Low Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	128.00
2239-1	High Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	144.00
2239-2	High Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	146.00
2240-1	Three Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	180.00
2240-2	Three Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	183.00
2232	Dummy Mast complete with Base, Pinnacle, Spectacle and Lamp Bracket for Vertical Light	37.80
2232-1	Same as above except for Staggered Light	37.80

R. S. A. PIPE OPERATED COLUMN BRACKET SIGNALS



Prices will be furnished upon request for any combination of Signals not given in the following list.

Trade No.	DESCRIPTION	List Price
2224-1	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm Bracket Signal. . . . .	.....
2224-2	Same as above except with One No. 1191-2 High One Arm Bracket Signal. . . . .	.....
2224-3	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm Bracket Signal. . . . .	.....
2224-4	Same as above excepting with One No. 1191-4 High Two Arm Bracket Signal. . . . .	.....
2224-5	Bracket Post for Two Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal. . . . .	.....
2224-6	Bracket Post for Two Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signals. . . . .	.....
2224-7	Same as above excepting with Two No. 1191-2 High One Arm Bracket Signals. . . . .	.....
2224-8	Bracket Post for Two Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals. . . . .	.....
2224-9	Same as above excepting with Two No. 1191-4 High Two Arm Bracket Signals. . . . .	.....
2224-10	Bracket Post for Two Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals. . . . .	.....
2224-11	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-3 Low Two Arm Bracket Signals. . . . .	.....
2224-12	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signals. . . . .	.....



R. S. A. PIPE OPERATED COLUMN BRACKET SIGNALS

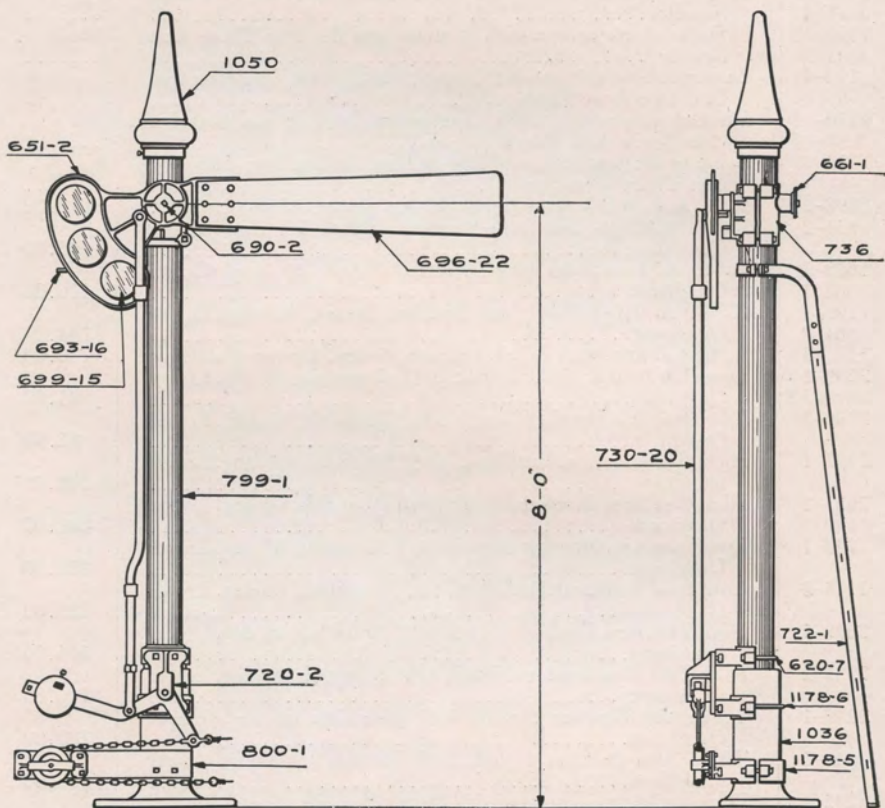
Trade No.	DESCRIPTION	List Price
2224-13	Bracket Post for Two Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-14	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-15	Bracket Post for Two Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-16	Same as above except with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-17	Bracket Post for Three Signals and Connections complete for One No. 1191-1 Low One Arm Bracket Signal. ....	.....
2224-18	Same as above except with One No. 1191-2 High One Arm Bracket Signal. ....	.....
2224-19	Bracket Post for Three Signals and Connections complete for One No. 1191-3 Low Two Arm Bracket Signal. ....	.....
2224-20	Same as above except with One No. 1191-4 High Two Arm Bracket Signal. ....	.....
2224-21	Bracket Post for Three Signals and Connections complete with One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-22	Bracket Post for Three Signals and Connections complete with Two No. 1191-1 Low One Arm Bracket Signals. ....	.....
2224-23	Same as above except with Two No. 1191-2 High One Arm Signals. ....	.....
2224-24	Bracket Post for Three Signals and Connections complete with Two No. 1191-3 Low Two Arm Bracket Signals. ....	.....
2224-25	Same as above except with Two No. 1191-4 High Two Arm Bracket Signals. ....	.....
2224-26	Bracket Post for Three Signals and Connections complete with Two No. 1191-5 Three Arm Bracket Signals. ....	.....
2224-27	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-2 Low Two Arm Bracket Signal. ....	.....
2224-28	Same as above except with One No. 1191-2 High One Arm and One No. 1191-4 High Two Arm Bracket Signal. ....	.....
2224-29	Bracket Post for Three Signals and Connections complete with One No. 1191-1 Low One Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-30	Same as above except with One No. 1191-2 High One Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-31	Bracket Post for Three Signals and Connections complete with One No. 1191-3 Low Two Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
2224-32	Same as above excepting with One No. 1191-4 High Two Arm and One No. 1191-5 Three Arm Bracket Signal. ....	.....
1190-46	Bracket Post for Two Signals complete with Connections for One One Arm Signal. ....	.....
1190-47	Same as above excepting with Connections for One Two Arm Signal. ....	.....
1190-48	Same as above excepting with Connections for One Three Arm Signal. ....	.....
1190-49	Same as above excepting with Connections for Two One Arm Signals. ....	.....
1190-50	Same as above excepting with Connections for Two Two Arm Signals. ....	.....



R. S. A. PIPE OPERATED COLUMN BRACKET SIGNALS

Trade No.	DESCRIPTION	List Price
1190-51	Same as above excepting with Connections for Two Three Arm Signals . . . . .	.....
1190-52	Same as above excepting with Connections for One One Arm Signal and One Two Arm Signal . . . . .	.....
1190-53	Same as above excepting with Connections for One One Arm and One Three Arm Signal . . . . .	.....
1190-54	Same as above excepting with Connections for One Two Arm and One Three Arm Signal . . . . .	.....
1190-55	Bracket Post for Three Signals and Connections complete for One One Arm Signal . . . . .	.....
1190-56	Same as above except with Connections for One Two Arm Signal . . . . .	.....
1190-57	Same as above except with Connections for One Three Arm Signal . . . . .	.....
1190-58	Same as above except with Connections for Two One Arm Signals . . . . .	.....
1190-59	Same as above except with Connections for Two Two Arm Signals . . . . .	.....
1190-60	Same as above except with Connections for Two Three Arm Signals . . . . .	.....
1190-61	Same as above except with Connections for One One Arm and One Two Arm Signal . . . . .	.....
1190-62	Same as above except with Connections for One One Arm and One Three Arm Signal . . . . .	.....
1190-63	Same as above except with Connections for One Two Arm and One Three Arm Signal . . . . .	.....
1191-1	R. S. A. Low One Arm Signal, 90 deg. Upper Quadrant	\$72.00
1191-2	R. S. A. High One Arm Bracket Signal, 90 deg. Upper Quadrant	90.00
1191-3	R. S. A. Low Two Arm Bracket Signal, 90 deg. Upper Quadrant	126.00
1191-4	R. S. A. High Two Arm Bracket Signal, 90 deg. Upper Quadrant	144.00
1191-5	R. S. A. Three Arm Bracket Signal, 90 deg. Upper Quadrant	180.00
2236-1	Low One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	81.00
2236-2	Low One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	82.00
2237-1	High One Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	100.00
2237-2	High One Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	101.00
2238-1	Low Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	126.00
2238-2	Low Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	128.00
2239-1	High Two Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	144.00
2239-2	High Two Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	146.00
2240-1	Three Arm Bracket Signal, 6½" Roundels, 60 deg. Lower Quadrant	180.00
2240-2	Three Arm Bracket Signal, 8¾" Roundels, 60 deg. Lower Quadrant	183.00
2232	Dummy Mast complete with Base, Pinnacle, Spectacle and Lamp Bracket for Vertical Light	37.80
2232-1	Same as above except for Staggered Light	37.80

LOW ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2241-1

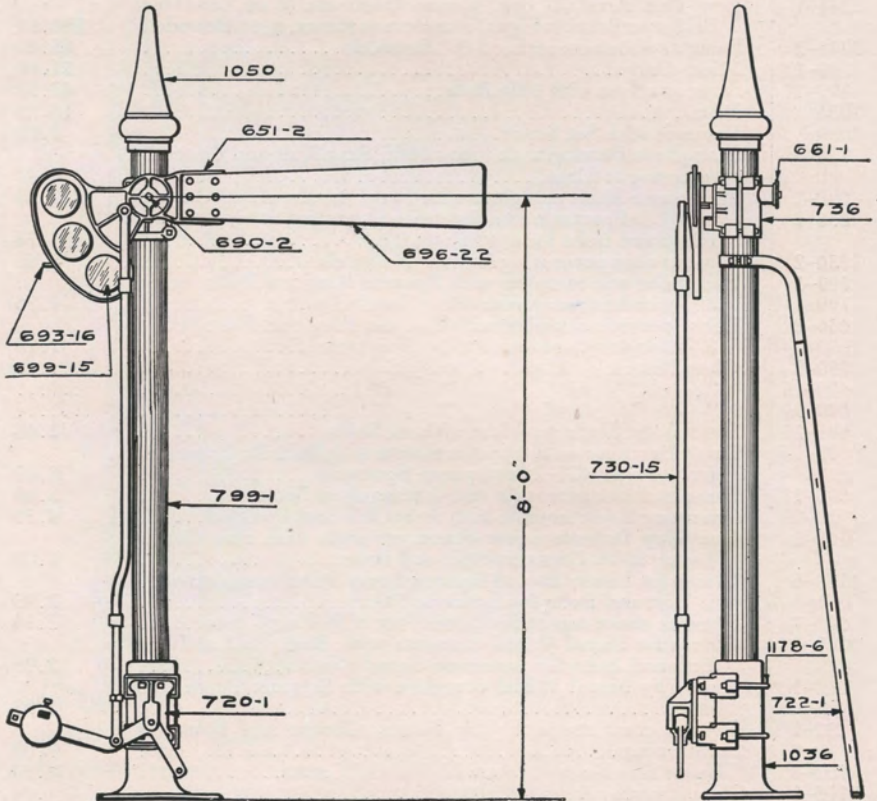


LOW ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2241-1	Low One Arm 60 deg. Lower Quadrant Wire Operated Bridge or Bracket Signal complete as shown, 6½" Roundels	\$84.60
2241-2	Same as above excepting 8¾" Roundels.....	85.60
799-1	Mast Only.....	21.60
799-11	Same as above with 1036 Base.....	43.20
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
736	Semaphore Bearing with Front Half, Rear Half and Bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotters	2.70
651-2	" Spectacle complete with Operating Stud, Roundel Rings and Bolts for 6½" Roundels.....	7.74
652-2	Same as above excepting for 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 651-2 Spectacle.....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 652-2 Spectacle.....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	" " 6½" " " " ".....	.....
699-19	" " 8¾" " " " ".....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket and Support complete with Bolts for fastening, for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above except for 652-2 Semaphore Spectacle.....	3.60
730-20	Operating Rod complete with Screw Jaw and Eye Rod.....	4.50
720-2	One Way Balance Lever Stand complete with Pin, Cotter Lever, 10 lb. Counterweight and Bolts.....	6.65
1178-6	Clamp for Lower Part of Balance Lever Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
620-7	Same as above except for Upper Part of Balance Lever.....	2.34
1178-5	Clamp for Signal Wheel complete with Back Half and One Bolt and Bolts for fastening Signal Wheel.....	2.95
800-1	One Way Signal Wheel complete with Support Brace and Bolts.....	3.93
722-1	Ladder complete with Top Pieces, Clamps and Bolts for fastening.....	9.00
703-46	Double Shackle complete with Pin and Cotter.....	.20
703-1	Wire Eyes.....	.04
703-11	Split Link, per C.....	3.60
703-16	¼" Proof Chain, per ft.....	.14

LOW ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



2236-1

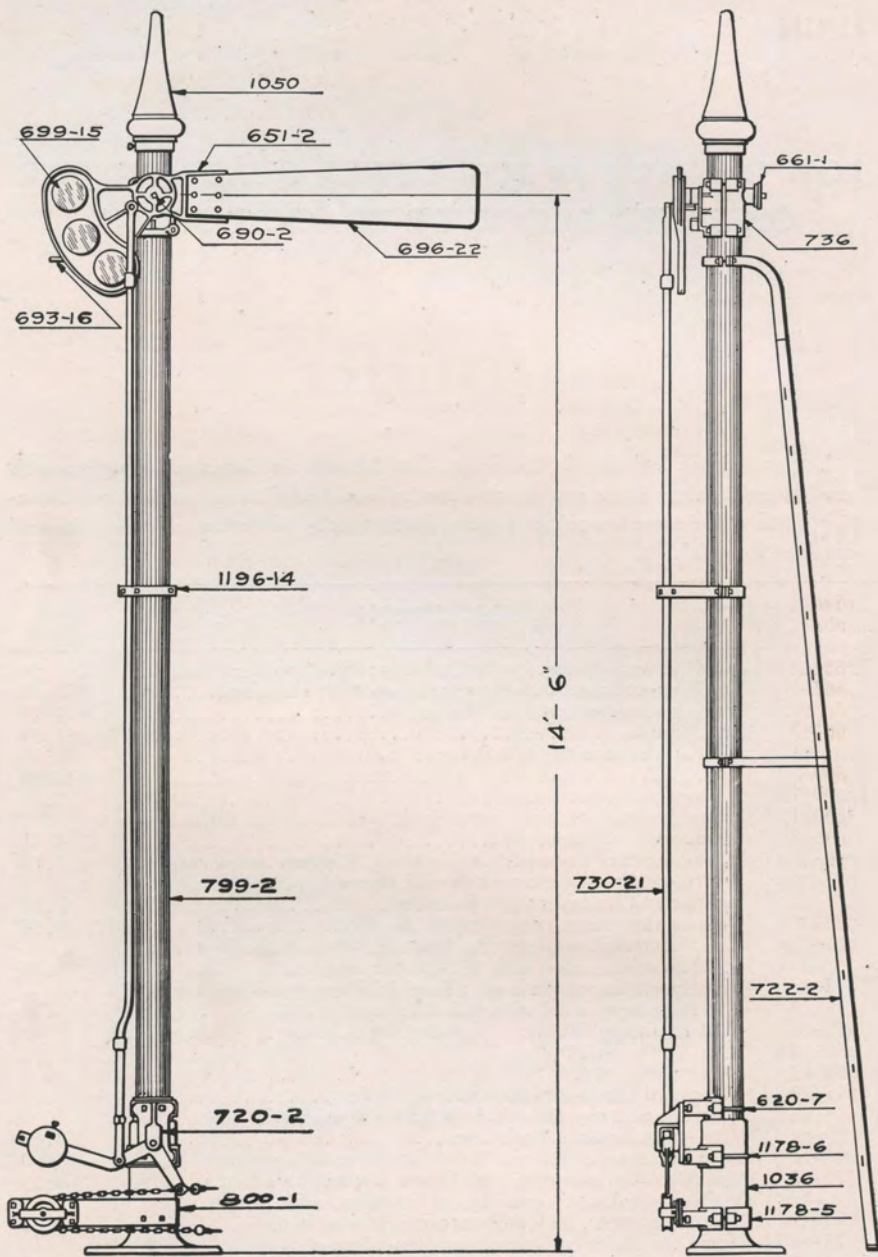


LOW ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

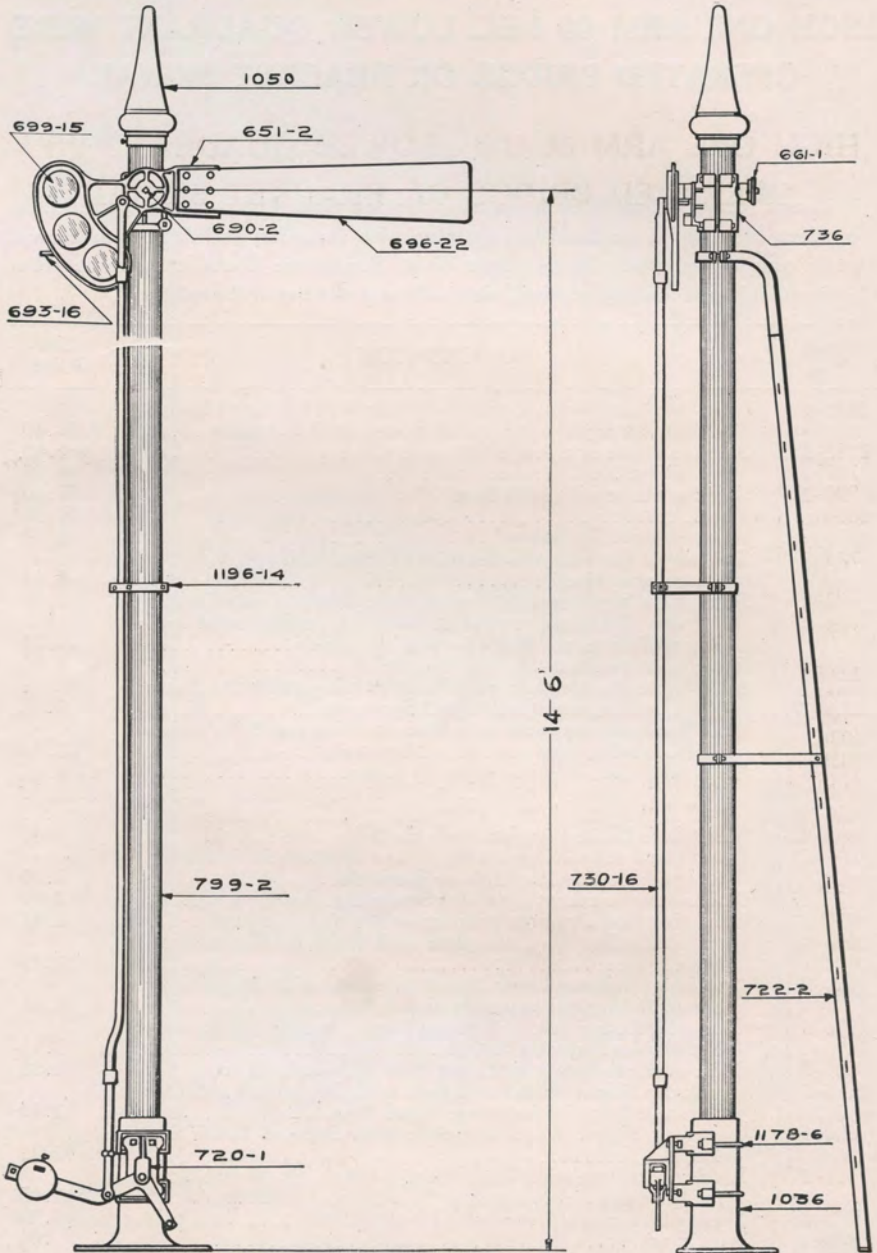
Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at the same list price. Orders should specify Blade desired, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2236-1	Low One Arm 60 deg. Lower Quadrant Pipe Operated Bridge or Bracket Signal complete as shown, 6½" Roundels.....	\$81.00
2236-2	Same as above except 8¾" Roundels.....	82.00
799-1	Mast Only.....	21.60
799-11	Same as above with 1036 Base.....	43.20
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
736	Semaphore Bearing with Front Half, Rear Half and Bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotters.....	2.70
651-2	" Spectacle complete with Operating Stud, Roundel Rings and Bolts for 6½" Roundels.....	7.74
652-2	Same as above excepting for 8¾" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 651-2 Spectacle.....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts (takes 3" Roundels), used with 652-2 Spectacle.....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	" " 6½" " " " ".....	.....
699-19	" " 8¾" " " " ".....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket complete with Bolts for fastening, for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above except for 652-2 Semaphore Spectacle.....	3.60
730-15	Operating Rod complete with Screw Jaw and Eye Rod.....	4.50
720-1	One Way Balance Lever Stand complete with Pin, Cotter Balance Lever, 40 lb. Counterweight and Bolts.....	9.62
1178-6	Clamp for Balance Lever Stand complete with U Bolts and Bolts for fastening Stand.....	2.95
722-1	Ladder complete with Clamps and Top Pieces.....	9.00

HIGH ONE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

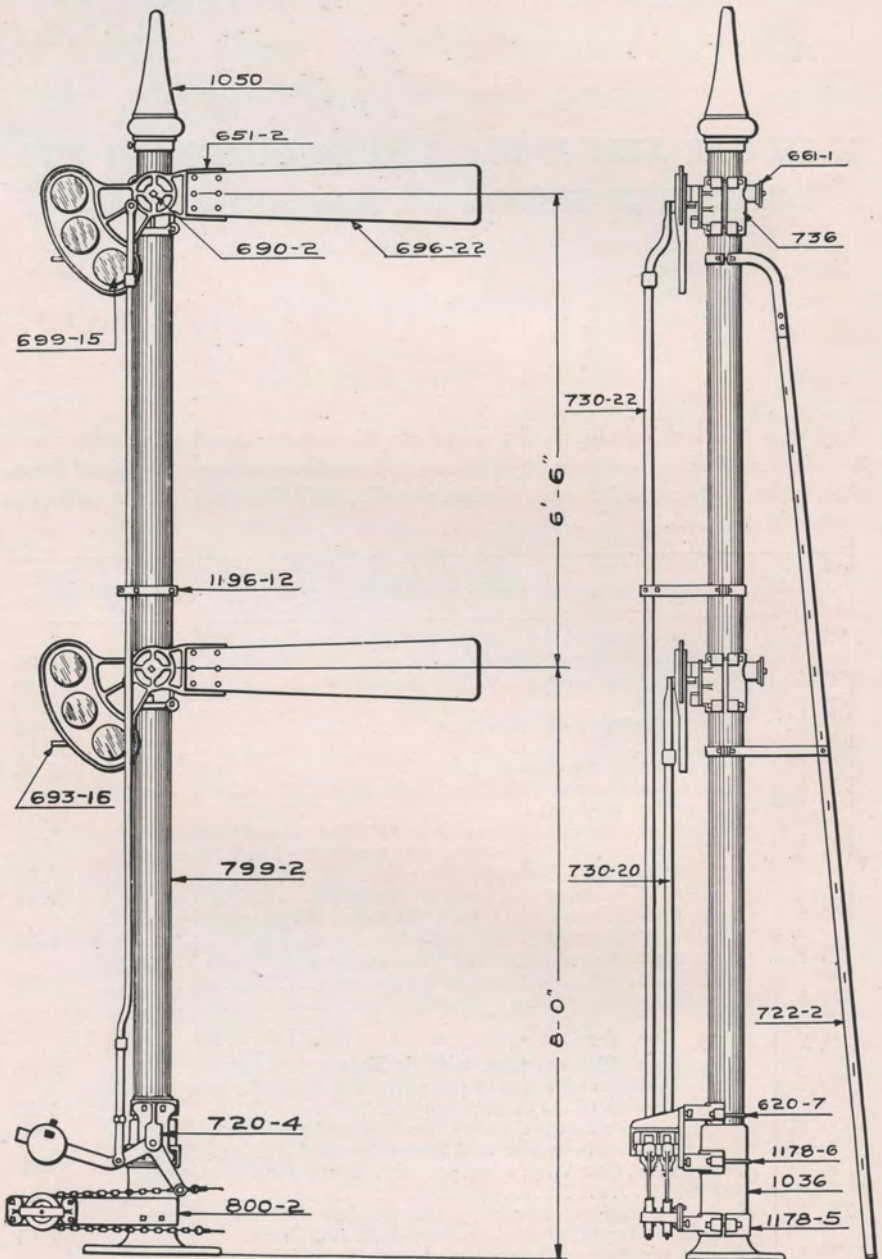


HIGH ONE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



2237-1

LOW TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2243-1 and 2243-3

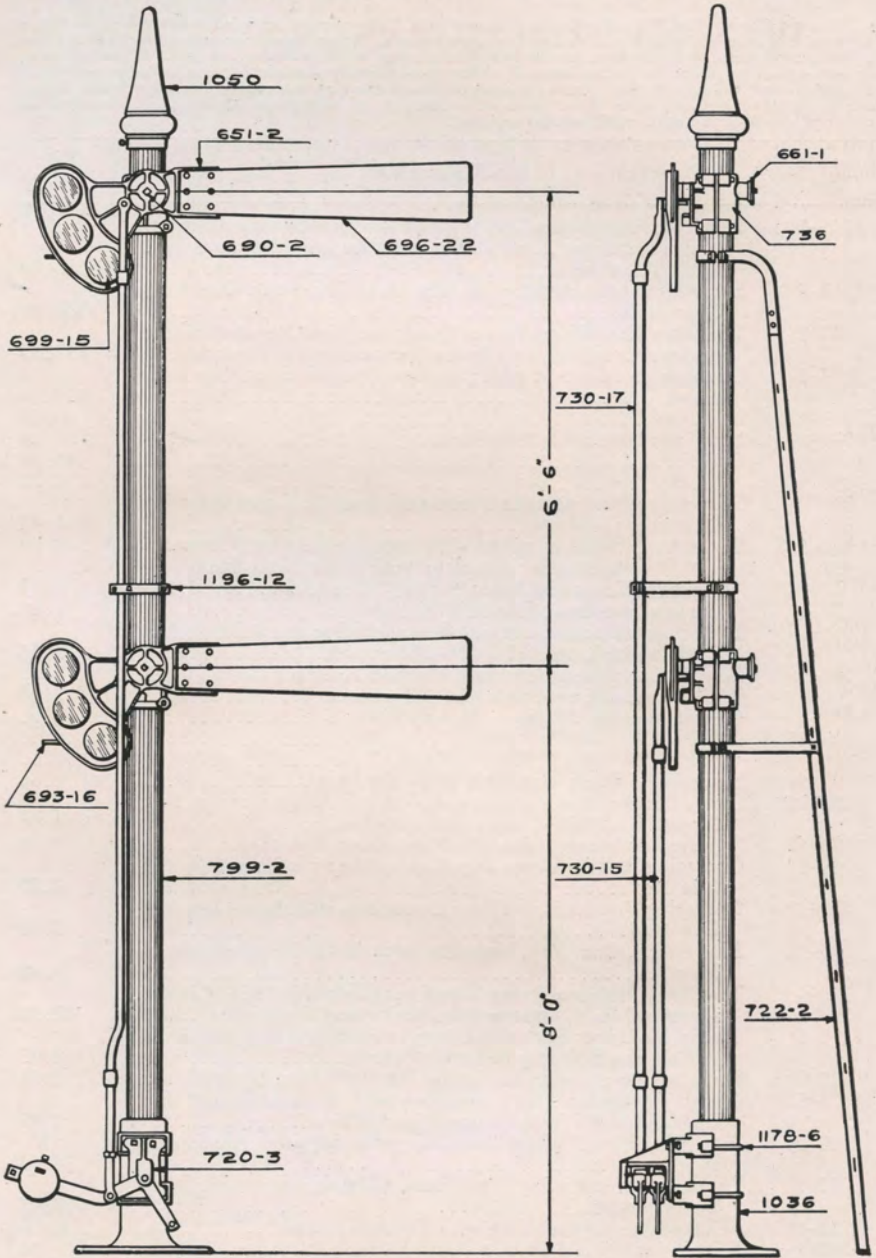


LOW TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list price, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 30 deg. position. When Signals are ordered with Arms which are limited in travel, orders should specify whether they are limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at the same price. Orders should specify Blade required, also color and number of Roundels required.

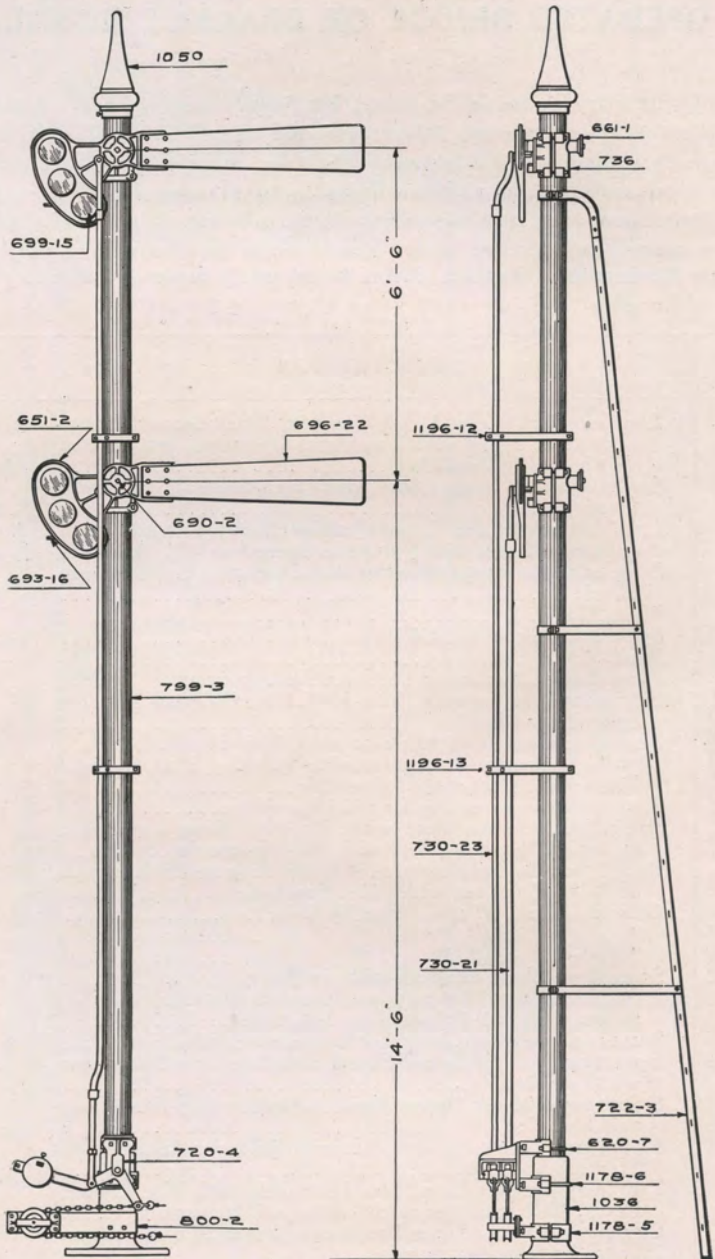
Trade No.	DESCRIPTION	List Price
2243-1	Low Two Arm 60 deg. Lower Quadrant Wire Operated Bridge or Bracket Signal, Two Arms Operative, complete as shown, 6½" Roundels	\$133.20
2243-3	Same as above except with One Arm Fixed and One Arm Operative	126.90
2243-2	Low Two Arm 60 deg. Lower Quadrant Wire Operated Bridge or Bracket Signal, Two Arms Operative, 8¾" Roundels	135.20
2243-4	Same as above except with One Arm Operative and One Arm Fixed	128.90
799-2	Mast Only	36.00
799-22	Same as above with 1036 Base	57.60
1036	Base	16.20
1050	Pinnacle	2.70
736	Semaphore Bearing with Front and Rear Half and Bolts for fastening to Mast	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotters	2.70
651-2	" Spectacle complete with Operating Stud and Roundel Rings and Bolts for 6½" Roundels	7.74
652-2	Same as above except for 8¾" Roundels	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 651-2 Spectacle	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 652-2 Spectacle	1.26
699-5	Glass Roundels, 3" dia. Specify Color . . . . .	. . . . .
699-15	" " 6½" " " " " . . . . .	. . . . .
699-19	" " 8¾" " " " " . . . . .	. . . . .
696-22	Semaphore Blade complete with six Bolts	2.46
693-16	Lamp Bracket and Support complete with Bolts for fastening, for use with 651-2 Semaphore Spectacle	3.60
693-17	Same as above except for 652-2 Semaphore Spectacle	3.60
730-20	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	4.50
730-22	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	5.40
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1.49
720-4	Two Way Balance Lever Stand complete with Pin, Cotter, Lever, 10 lb. Counterweight, Bolts and Separators	12.32
1178-6	Clamp for Lower Part of Balance Lever Stand complete with U Bolt and Bolts for fastening Stand	2.95
620-7	Same as above except for Upper Part of Balance Lever	2.34
1178-5	Clamp for Signal Wheel complete with Back Half and One Bolt and Bolts for fastening Signal Wheel	2.95
800-2	Two Way Signal Wheel complete with Support Brace and Bolt	4.44
722-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening	13.95
703-46	Double Shackle complete with Pin and Cotter . . . . .	.20
703-1	Wire Eyes . . . . .	.04
703-11	Split Link, per C.	3.60
703-16	¼" Proof Chain, per ft. . . . .	.14

LOW TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



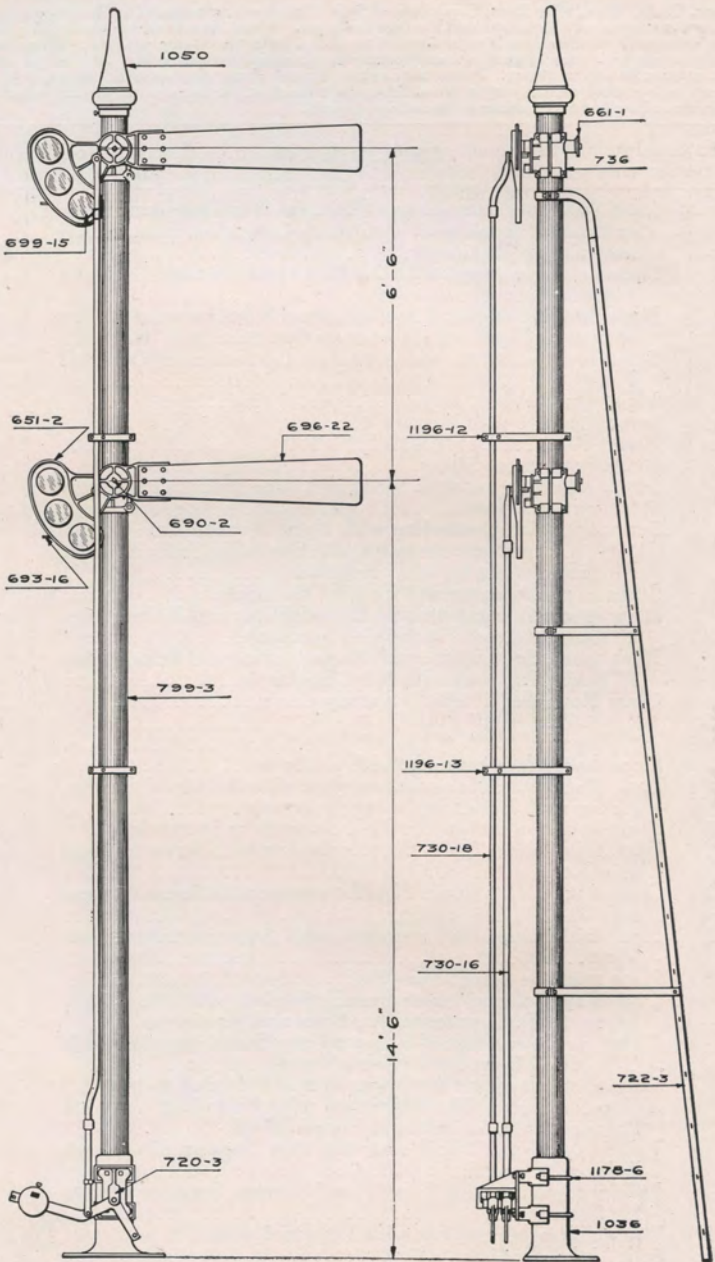
2238-1 and 2238-3

HIGH TWO ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2244-1 and 2244-3

HIGH TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



2239-1 and 2239-3

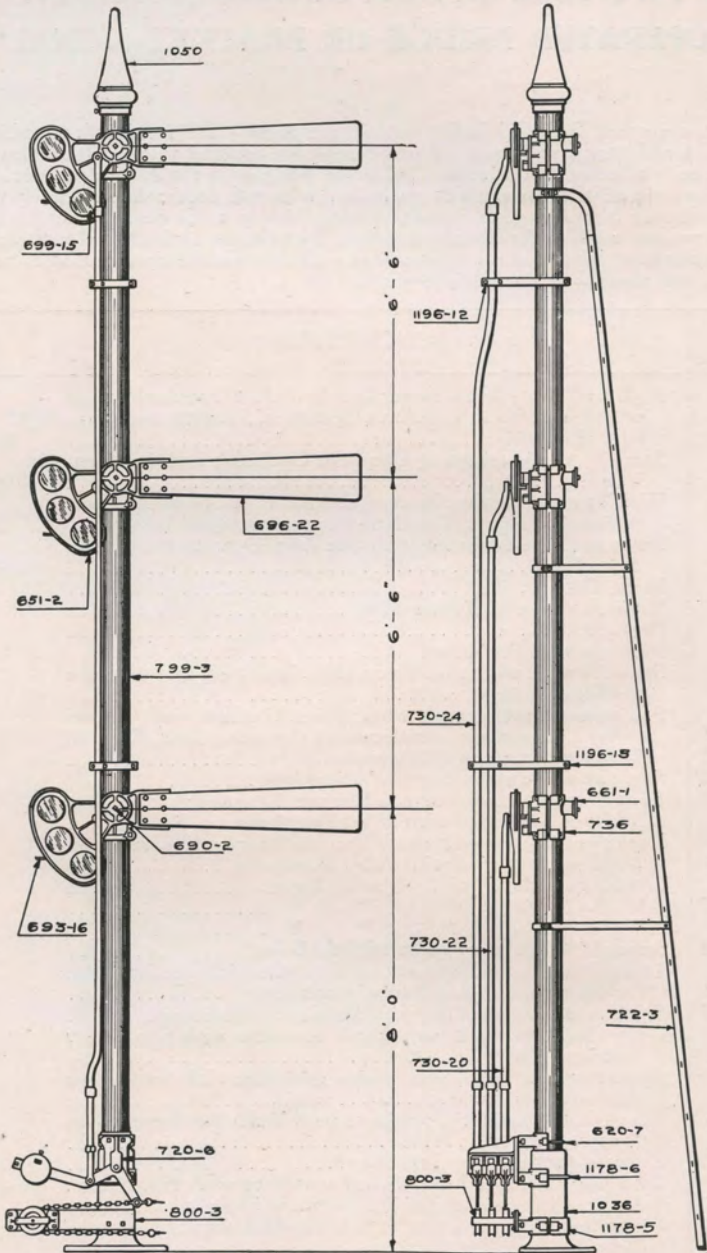


HIGH TWO ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 30 deg. position. When Signals are ordered with Arms which are limited in travel, orders should specify whether they are limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blades at same list prices. Orders should specify Blades required, also color and number of Roundels required.

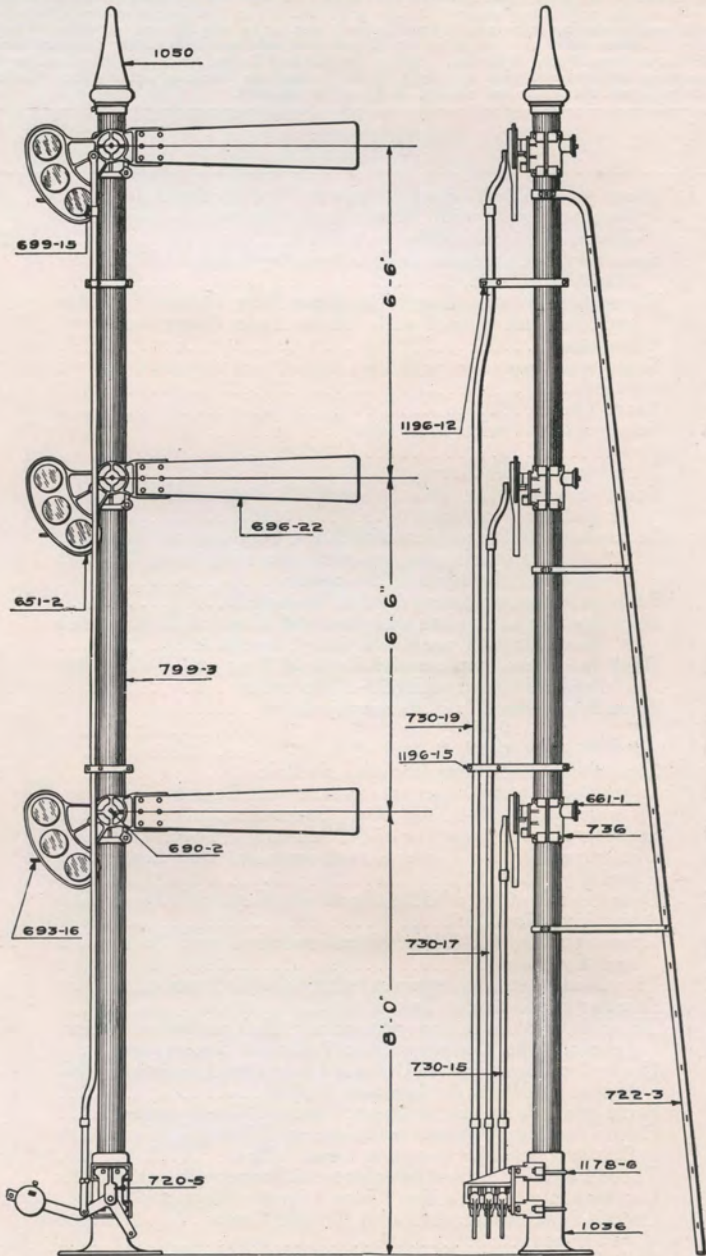
Trade No.	DESCRIPTION	List Price
2239-1	High Two Arm 60 deg. Lower Quadrant Pipe Operated Bridge or Bracket Signal, Two Arms Operative, complete as shown, 6½" Roundels.	\$144.00
2239-3	Same as above excepting One Arm Operative and One Arm Fixed.	137.70
2239-2	High Two Arm 60 deg. Lower Quadrant Pipe Operated Bridge or Bracket Signal, Two Arms Operative, 8⅜" Roundels	146.00
2239-4	Same as above excepting with One Arm Operative and One Arm Fixed.	139.70
799-3	Mast Only.	50.40
799-33	Same as above with Base 1036.	72.00
1036	Base.	16.20
1050	Pinnacle with Set Screw.	2.70
736	Semaphore Bearing with Front Half, Rear Half and Bolts for fastening to Mast.	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotter	2.70
651-2	“ Spectacle complete with Operating Stud, Roundel Rings and Bolts, 6½" Roundels.	7.74
652-2	Same as above excepting 8⅜" Roundels.	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 651-2 Spectacles.	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 652-2 Spectacles.	1.26
699-5	Glass Roundels, 3" dia. Specify Color. . . . .	. . . . .
699-15	“ “ 6½" “ “ “ “ . . . . .	. . . . .
699-19	“ “ 8⅜" “ “ “ “ . . . . .	. . . . .
696-22	Semaphore Blade complete with six Bolts.	2.46
693-16	Lamp Bracket and Support complete with Bolts for fastening, for use with 651-2 Semaphore Spectacle.	3.60
693-17	Same as above except for 652-2 Semaphore Spectacle.	3.60
730-16	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.	4.95
730-18	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.	5.85
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast.	1.49
1196-13	Same as above except Two Way.	1.76
720-3	Two Way Balance Lever Stand complete with Pin, Cotter, Lever, 40 lb. Counterweight, Bolts and Separators.	18.26
1178-6	Clamp for Balance Lever Stand complete with U Bolts and Bolts for fastening Stand.	2.95
722-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.	18.90

THREE ARM 60 DEG. LOWER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2245-1 and 2245-3

THREE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



2240-1 and 2240-3

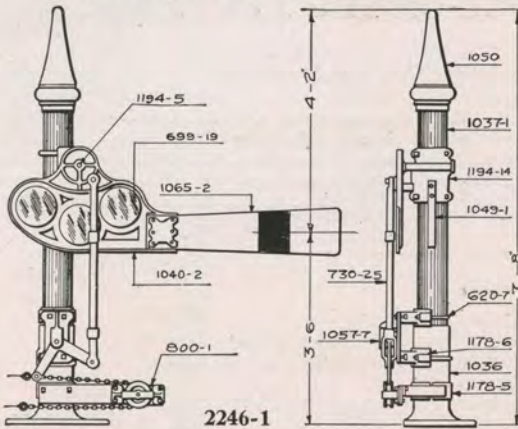


THREE ARM 60 DEG. LOWER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels. When Signals are ordered with Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 30 deg. position. When Signals are ordered with Arms which are limited in travel, orders should specify whether they are limited from 0 deg. to 30 deg. or from 30 deg. to 60 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same list prices. Orders should specify Blades required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2240-1	Three Arm 60 deg. Lower Quadrant Pipe Operated Bridge or Bracket Signal with Three Arms Operative, complete as shown, 6½" Roundels.....	\$180.00
2240-3	Same as above except with Two Arms Operative and One Arm Fixed.....	173.70
2240-2	Three Arm 60 deg. Lower Quadrant Pipe Operated Bridge or Bracket Signal with Three Arms Operative, complete as shown, 8⅜" Roundels.....	183.00
2240-4	Same as above except with Two Arms Operative and One Arm Fixed.....	176.70
799-3	Mast Only.....	50.40
799-33	Same as above with Base 1036.....	72.00
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
736	Semaphore Bearing with Front Half, Rear Half and Bolts for fastening to Mast.....	4.41
690-2	Semaphore Shaft complete with Nuts, Washers and Cotters.....	2.70
651-2	" Spectacle complete with Operating Stud, Round Rings and Bolts for 6½" Roundels.....	7.74
652-2	Same as above, excepting for 8⅜" Roundels.....	8.46
661-1	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 651-2 Spectacles.....	1.26
661-2	Back Spectacle complete with Roundel Ring and Bolts, (takes 3" Roundels), used with 652-2 Spectacles.....	1.26
699-5	Glass Roundels, 3" dia. Specify Color.....	.....
699-15	" " 6½" " " " ".....	.....
699-19	" " 8⅜" " " " ".....	.....
696-22	Semaphore Blade complete with six Bolts.....	2.46
693-16	Lamp Bracket and Support complete with Bolts for fastening, for use with 651-2 Semaphore Spectacle.....	3.60
693-17	Same as above except for 652-2 Semaphore Spectacle.....	3.60
730-15	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	4.50
730-17	Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.....	5.40
730-19	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	6.30
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast.....	1.49
1196-15	Same as above except Two Way.....	1.76
720-5	Three Way Balance Lever Stand complete with Pin, Cotter, Levers, 40 lb. Counterweight, Bolts and Separator.....	26.27
1178-6	Clamp for Balance Lever Stand complete with U Bolts and Bolts for fastening Stand.....	2.95
722-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.....	18.90

LOW ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

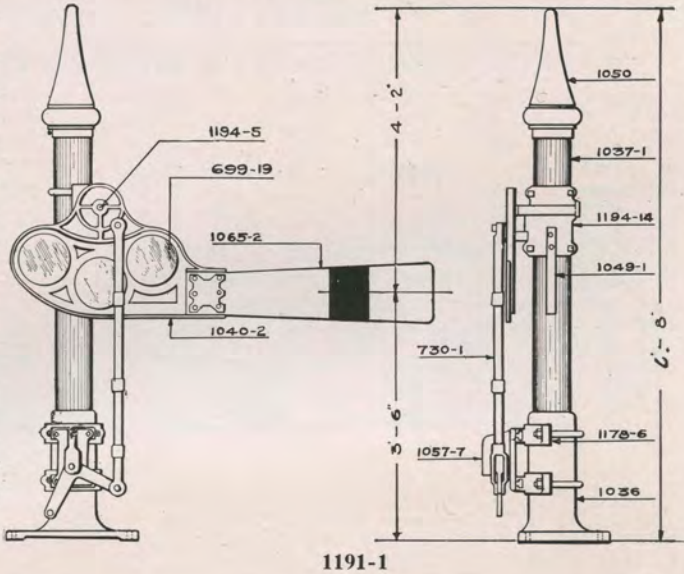


Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any desired style Wood Semaphore Blade at same prices. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2246-1	Low One Arm 90 deg. Upper Quadrant Wire Operated Bridge and Bracket Signal, complete as shown	\$78.30
2246-2	Same as above except with R. S. A. 1041 Design "B" Spectacle	78.30
1037-1	Mast Only	7.20
1037-11	Mast with Base	28.80
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolt for 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	3.60
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1040 Spectacle	4.50
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	3.60
730-25	Operating Rod complete with Screw Jaw and Eye Rod	3.60
1057-7	One Way Crank Stand complete with Pin, Cotter and One 9" x 9" Crank	3.60
1178-5	Clamp for Signal Wheel complete with Back Half and Bolts for fastening Stand	2.95
1178-6	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.95
620-7	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.34
800-1	One Way Signal Wheel complete with Support, Brace and Bolts	3.93
703-46	Double Shackle complete with Pin and Cotter .....	.20
703-1	Wire Eyes .....	.04
703-11	Split Links, per C.	3.60
703-16	$\frac{3}{4}$ " Proof Chain, per ft. ....	.14

R. S. A. ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

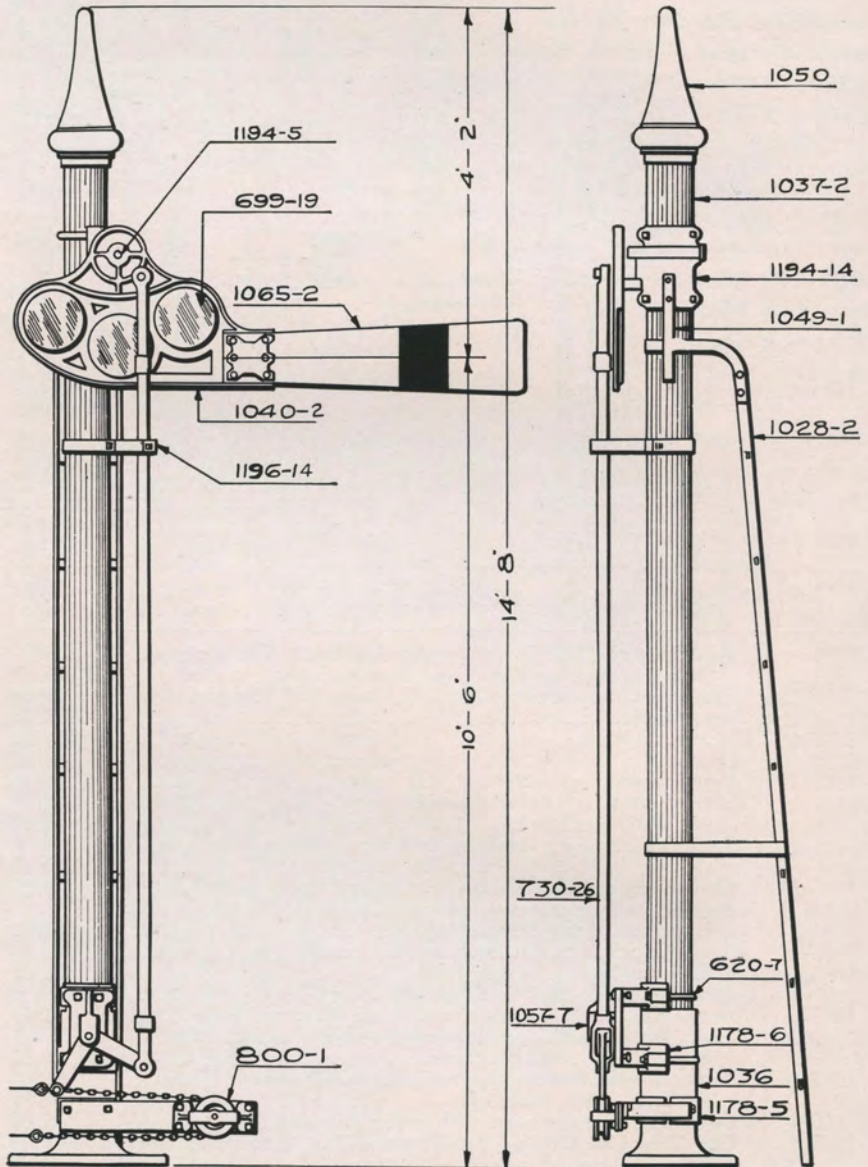
Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at same prices. Orders should specify Blade required, also color and number of Roundels.



1191-1

Trade No.	DESCRIPTION	List Price
1191-1	R. S. A. One Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal, complete as shown	\$72.00
1191-11	Same as above with R. S. A. 1041 Design "B" Spectacle	72.00
1037-1	Mast Only	7.20
1037-11	Mast with Base	28.80
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for No. 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1040 Spectacle	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	4.50
730-1	Operating Rod complete with Screw Jaw and Eye Rod	3.60
1057-7	One Way Crank Stand complete with Pin, Cotter and One 9" x 9" Crank	3.60
1178-6	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.95

HIGH ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2247-1

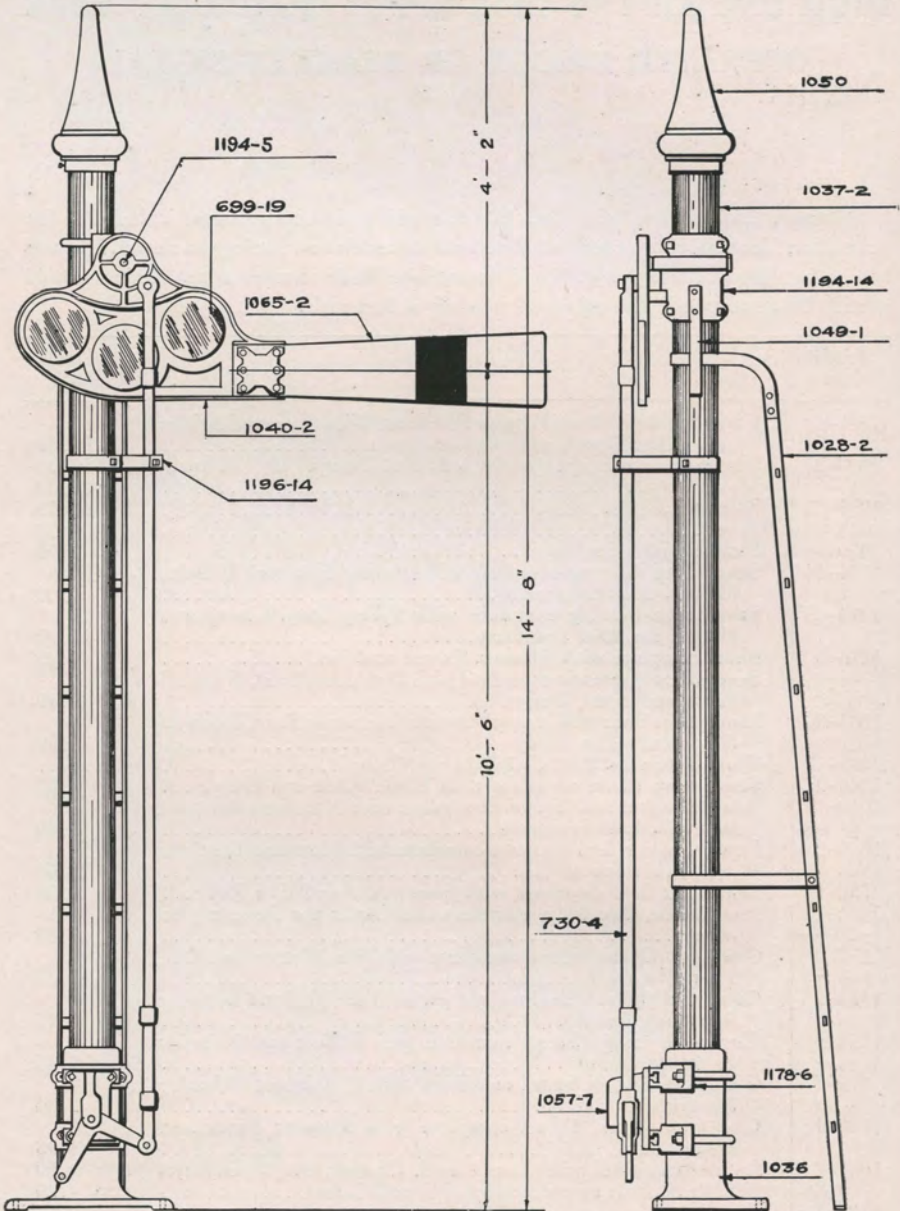


HIGH ONE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2247-1	High One Arm 90 deg. Upper Quadrant Wire Operated Bridge or Bracket Signal, complete as shown	\$102.60
2247-2	Same as above except with R. S. A. 1041 Design "B" Spectacle	102.60
1037-2	Mast Only	21.60
1037-22	Mast with Base	43.20
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for No. 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Class Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1040 Spectacle	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	4.50
730-26	Operating Rod complete with Screw Jaw and Eye Rod	4.50
1196-14	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1.49
1057-7	One Way Crank Stand complete with Pin, Cotter and One 9" x 9" Crank	3.60
1178-5	Clamp for Signal Wheel complete with Back Half and Bolts for fastening Stand	2.95
1178-6	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.95
620-7	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.34
800-1	One Way Signal Wheel complete with Support Brace and Bolts	3.93
1028-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts	9.00
703-46	Double Shackle complete with Pin and Cotter	.20
703-1	Wire Eyes	.04
703-11	Split Links, per C.	3.60
703-16	$\frac{1}{4}$ " Proof Chain, per ft.	.14

HIGH ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



1191-2



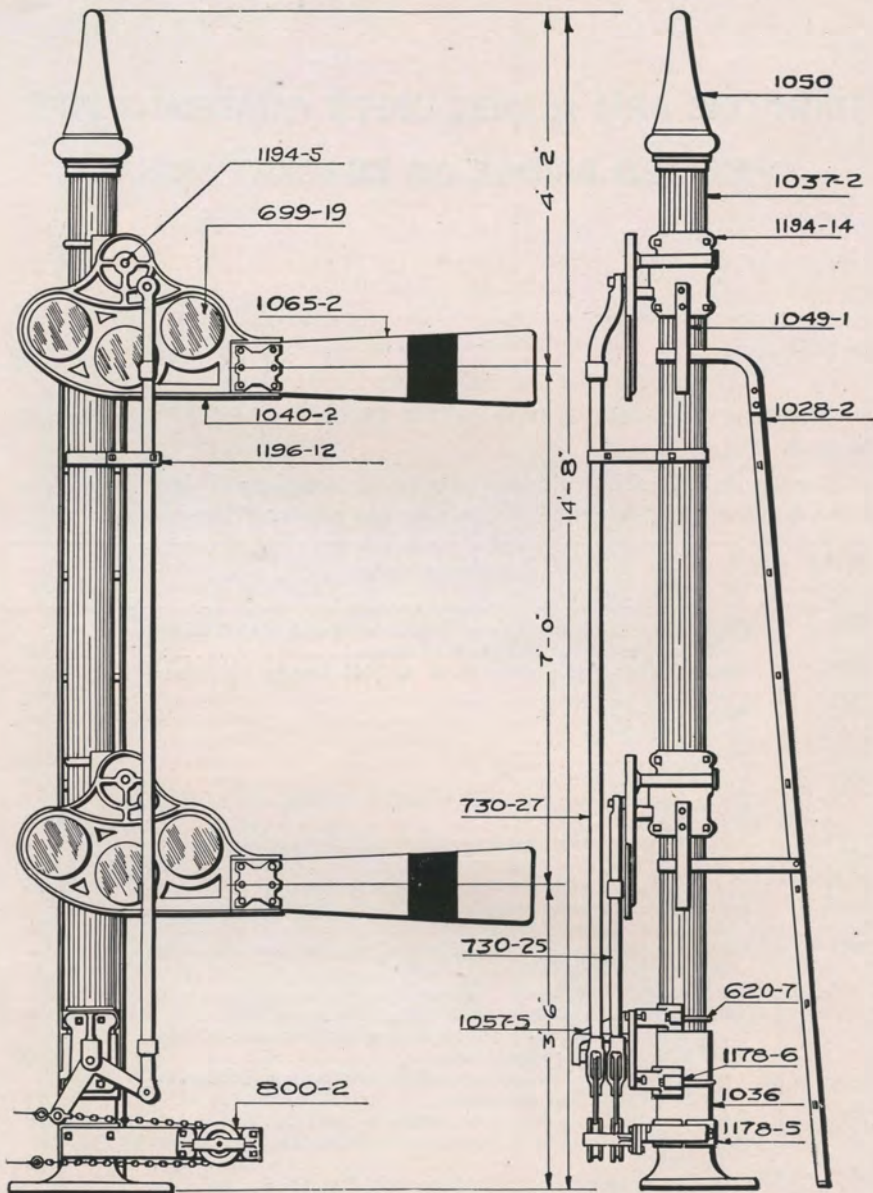
HIGH ONE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels.

Signals can be furnished with any style Wood Semaphore Blade at same prices. Orders should specify Blade required, also color and number of Roundels required.

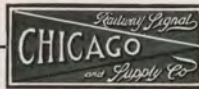
Trade No.	DESCRIPTION	List Price
1191-2	High One Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal, complete as shown.....	\$90.00
1191-22	Same as above except with R. S. A. 1041 Design "B" Spectacle.....	90.00
1037-2	Mast Only.....	21.60
1037-22	Mast with Base.....	43.20
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for No. 1040 Spectacle.....	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for No. 1041 Spectacle.....	10.00
1194-5	Shaft complete with Washer, Cotter and Pin.....	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A".....	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B".....	16.20
699-19	Glass Roundels, 3 $\frac{3}{8}$ " dia. Specify Color.....	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts.....	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1040 Spectacle.....	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1041 Spectacle.....	4.50
730-4	Operating Rod complete with Screw Jaw and Eye Rod.....	4.50
1196-14	Pipe Guide, One Way, complete with Bolts for fastening to Mast.....	1.49
1057-7	One Way Crank Stand complete with Pin, Cotter and One 9" x 9" Crank.....	3.60
1178-6	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand.....	2.95
1028-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts..	9.00

LOW TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2248-1

2248-3

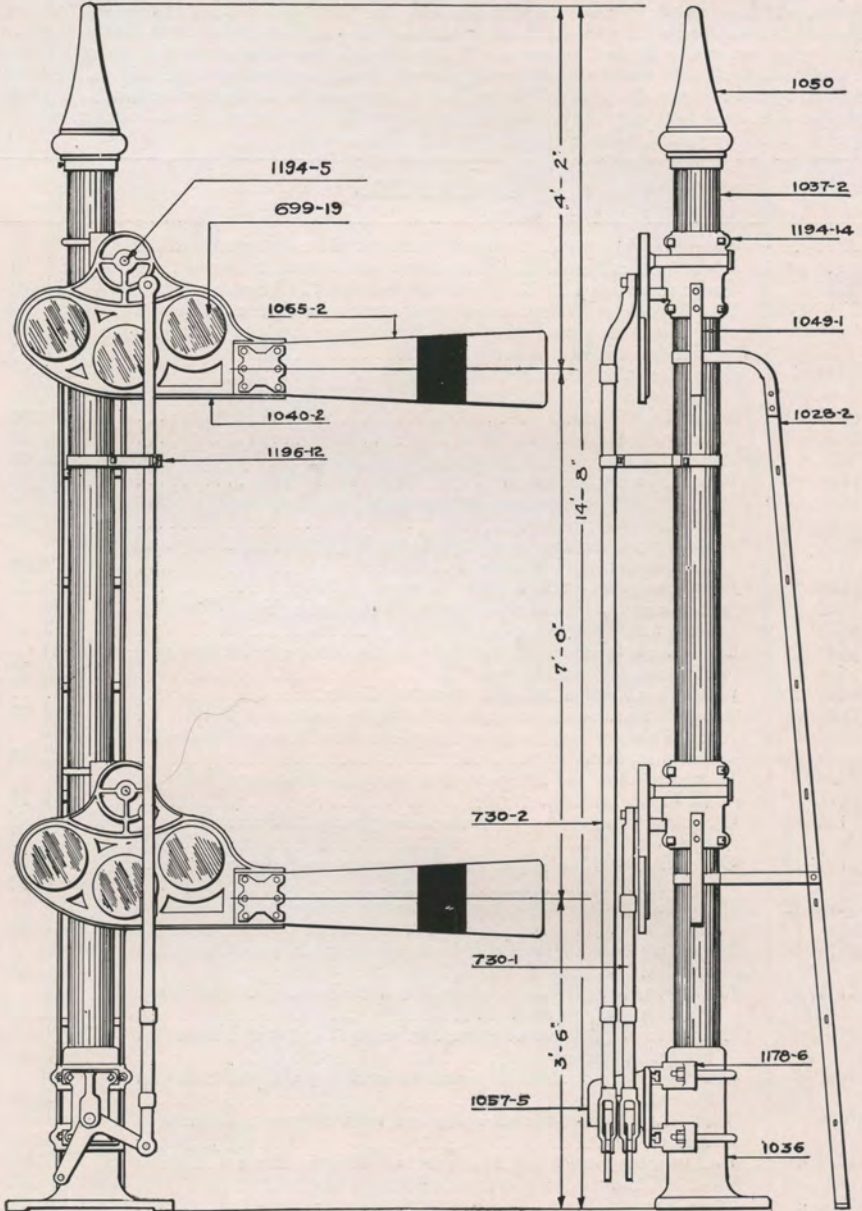


LOW TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2248-1	Low Two Arm 90 deg. Upper Quadrant Wire Operated Bridge or Bracket Signal with Two Arms Operative, as shown	\$134. 10
2248-2	Same as above with R. S. A. 1041 Design "B" Spectacle	134. 10
2248-3	Low Two Arm 90 deg. Upper Quadrant Wire Operated Bridge or Bracket Signal with One Arm Operative and One Arm Fixed, complete as shown	127. 80
2248-4	Same as above except with R. S. A. 1041 Design "B" Spectacle	127. 80
1037-2	Mast Only	21. 60
1037-22	Mast with Base	43. 20
1036	Base	16. 20
1050	Pinnacle with Set Screw	2. 70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for 1040 Spectacle	9. 00
1194-15	Semaphore Bearing complete with Spring Stop and Clamp and U Bolt for 1041 Spectacle	10. 00
1194-5	Shaft complete with Washer, Cotter and Pin	2. 25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17. 10
1041-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16. 20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color . . . . .	. . . . .
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2. 70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1040 Spectacle	3. 60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	4. 50
730-25	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	3. 60
730-27	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	4. 50
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1. 49
1057-5	Two Way Crank Stand complete with Pin, Cotter, Separator and Two 9" x 9" Cranks	5. 40
1178-5	Clamp for Signal Wheel complete with Back Half and Bolts for fastening Stand	2. 95
1178-6	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand	2. 95
620-7	Clamp for Crank Stand complete with U Bolt and Bolts for fastening	2. 34
800-2	Two Way Signal Wheel complete with Support, Brace and Bolts	4. 44
1028-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts	9. 00
703-46	Double Shackle complete with Pin and Cotter . . . . .	. 20
703-1	Wire Eyes . . . . .	. 04
703-11	Split Links, per C.	3. 60
703-16	$\frac{1}{4}$ " Proof Chain, per ft . . . . .	. 14

R. S. A. TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



1191-3 and 1191-13

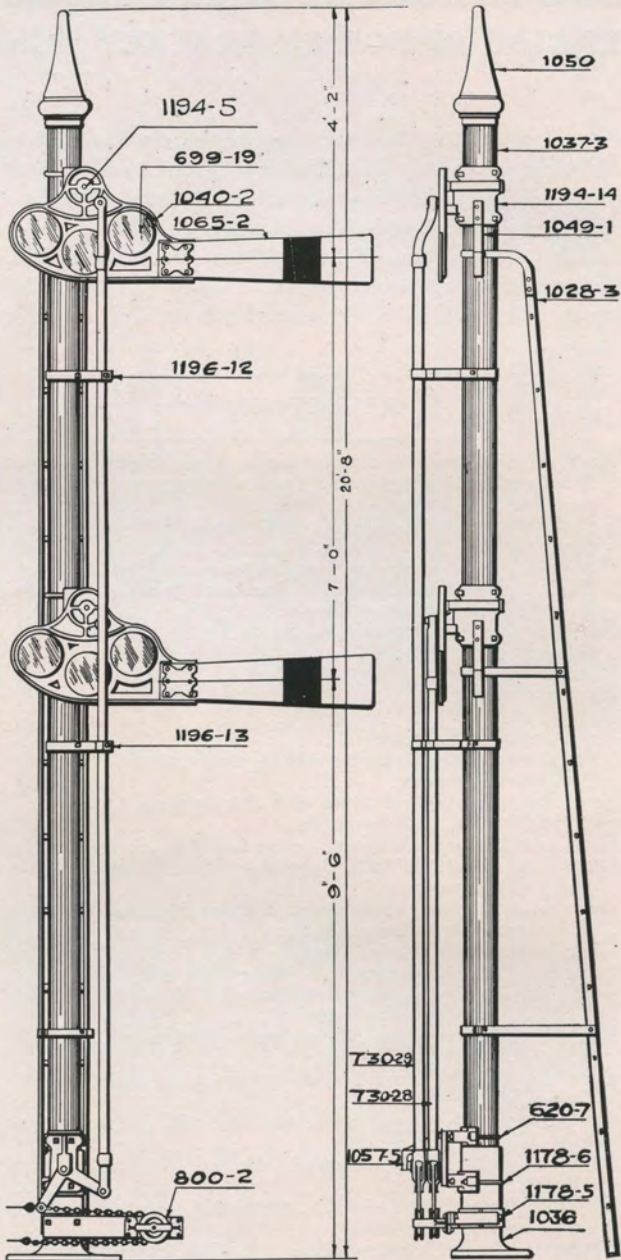


R. S. A. TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arm. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
1191-3	R. S. A. Two Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal with Two Arms Operative, complete as shown.....	\$126.00
1191-33	Same as above with R. S. A. No. 1041 Design "B" Semaphore Spectacle.....	126.00
1191-13	R. S. A. Two Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal with One Arm Operative and One Arm Fixed, complete as shown.....	119.70
1191-23	Same as above except with R. S. A. No. 1041 Design "B" Semaphore Spectacle.....	119.70
1037-2	Mast Only.....	21.60
1037-22	Mast with Base.....	43.20
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolt for No. 1040 Spectacle.....	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for No. 1041 Spectacle.....	10.00
1194-5	Shaft complete with Washer, Cotter and Pin.....	2.25
1040-2	Semaphore Spectacle with Operating Stud, Roundel Rings and Bolts, Design "A".....	17.10
1041-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "B".....	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color.....	.....
1065-2	Semaphore Blade complete with Blade Plate and Bolts.....	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1040 Spectacle.....	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1041 Spectacle.....	4.50
730-1	Operating Rod for Lower Blade complete with Screw Jaw and Eye Rod.....	3.60
730-2	Operating Rod for Upper Blade complete with Screw Jaw and Eye Rod.....	4.50
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast.....	1.49
1057-5	Two Way Crank Stand complete with Pin, Cotter, Separators, and Two 9" x 9" Cranks.....	5.40
1178-6	Clamp for Crank Stand complete, with U Bolts and Bolts for fastening Crank Stand.....	2.95
1028-2	Ladder complete with Top Pieces, Clamps, Stays and Bolts..	9.00

HIGH TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2249-1 and 2249-3

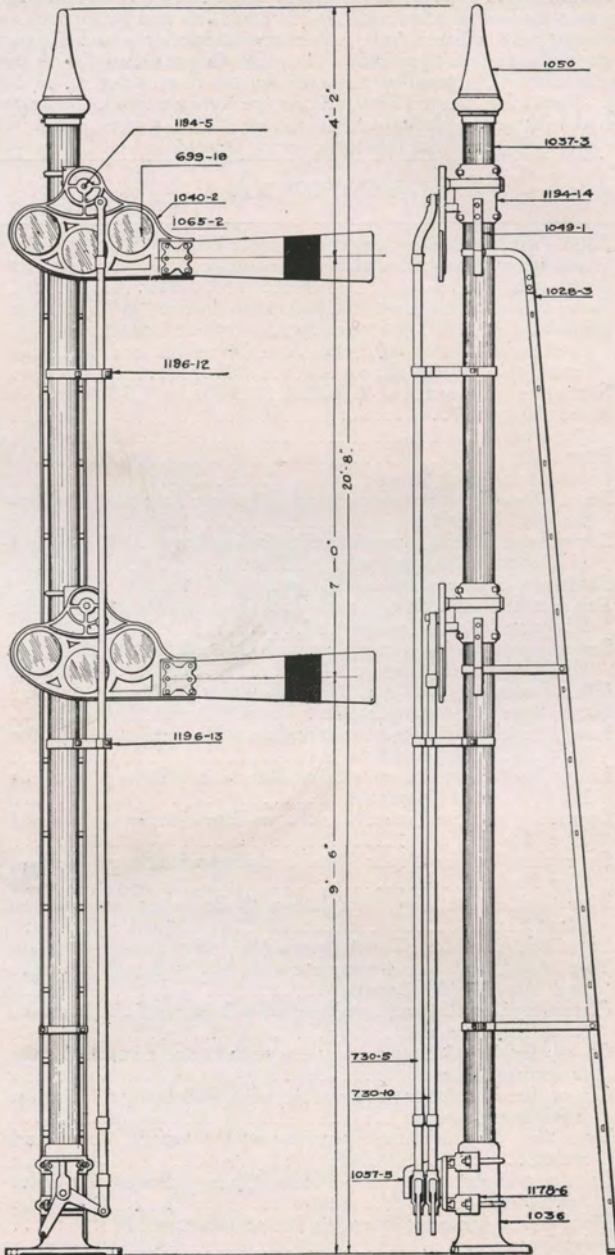


HIGH TWO ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2249-1	High Two Arm 90 deg. Upper Quadrant Wire Operated Bridge and Bracket Signal with Two Arms Operative, complete as shown	\$156.00
2249-2	Same as above except with R. S. A. 1041 Design "B" Spectacle	156.00
2249-3	High Two Arm 90 deg. Upper Quadrant Wire Operated Bridge or Bracket Signal with One Arm Operative and One Arm fixed, complete as shown	149.70
2249-4	Same as above except with R.S.A. 1041 Design "B" Spectacle	149.70
1037-3	Mast Only	36.00
1037-33	" with Base	57.60
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop and Clamp and U Bolt for 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	3.60
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1040 Spectacle	4.50
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	4.50
730-28	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	5.40
730-29	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	5.40
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1.49
1196-13	Pipe Guide complete, Two Way with Bolts for fastening to Mast	1.76
1057-5	Two Way Crank Stand complete with Pin, Cotter, Separators and Two 9" x 9" Cranks	5.40
1178-5	Clamp for Signal Wheel complete with Back Half and Bolts for fastening Stand	2.95
1178-6	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand	2.95
620-7	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand	2.34
800-2	Two Way Signal Wheel complete with Support, Brace and Bolts	4.44
1028-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening	13.95
703-46	Double Shackle complete with Pin and Cotter	.20
703-1	Wire Eyes	.04
703-11	Split Links, per C.	3.60
703-16	$\frac{1}{4}$ " Proof Chain, per ft.	.14

HIGH TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



1191-4 and 1191-14

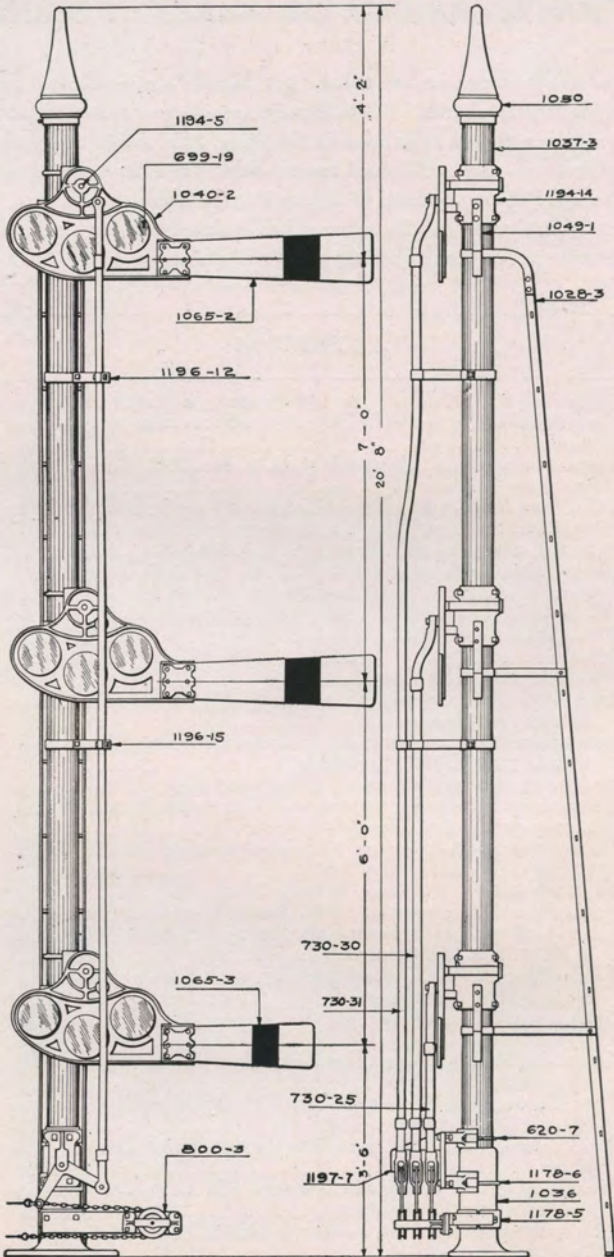


HIGH TWO ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
1191-4	High Two Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal with Two Arms Operative, complete as shown	\$144.00
1191-44	Same as above excepting with R. S. A. No. 1041 Design "B" Spectacle	144.00
1191-14	High Two Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signal with One Arm Operative and One Arm Fixed, complete as shown	137.70
1191-24	Same as above excepting with R. S. A. No. 1041 Design "B" Spectacle	137.70
1037-3	Mast Only	36.00
1037-33	Mast with Base	57.60
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for No. 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for No. 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	3.60
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1040 Spectacle	4.50
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1041 Spectacle	4.50
730-10	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	4.50
730-5	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	5.40
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1.49
1196-13	Pipe Guide, Two Way, complete with Bolts for fastening to Mast	1.76
1057-5	Two Way Crank Stand complete with Pin, Cotter, Separators and Two 9" x 9" Cranks	5.40
1178-6	Clamp for Crank Stand, complete with U Bolt and Bolts for fastening Stand	2.95
1028-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening	13.95

THREE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL



2250-1 and 2250-3

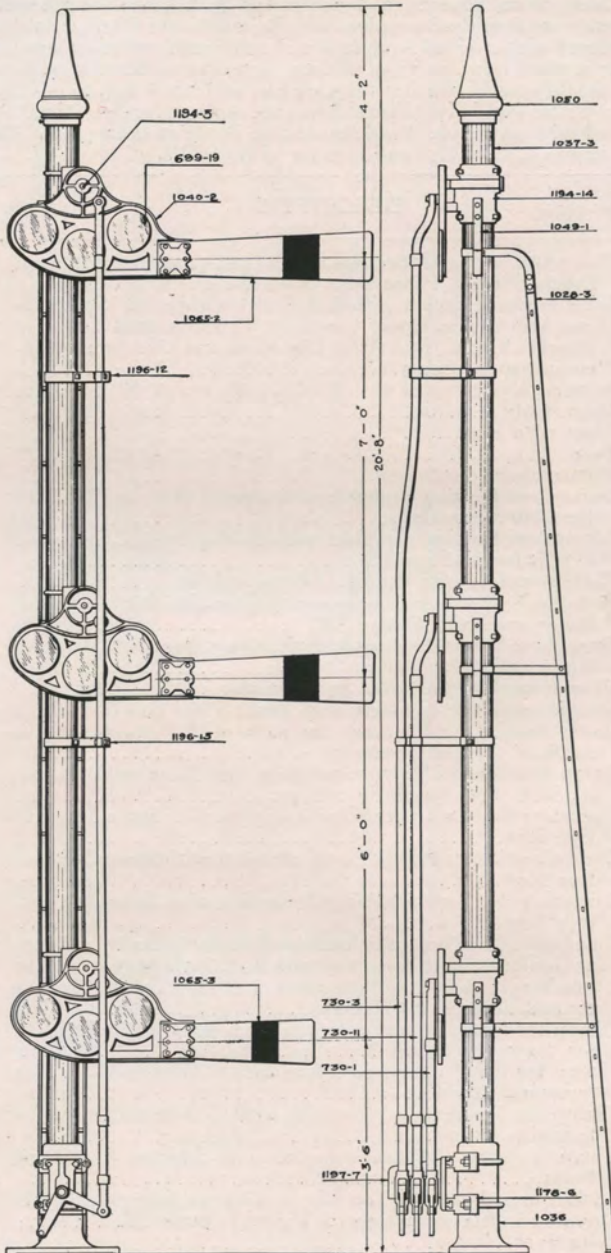


THREE ARM 90 DEG. UPPER QUADRANT WIRE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps, Chain, Wire, Wire Eyes, Shackles and Split Links are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
2250-1	Three Arm 90 deg. Upper Quadrant Wire Operated Bridge and Bracket Signal, Three Arms Operative, complete as shown	\$187.25
2250-2	Same as above except with R.S.A. 1041 Design "B" Spectacle	187.25
2250-3	Three Arm 90 deg. Upper Quadrant Wire Operated Bridge or Bracket Signal, Two Arms Operative and One Arm Fixed, complete as shown	180.95
2250-4	Same as above except with R.S.A. 1040 Design "B" Spectacle	180.95
1037-3	Mast Only	36.00
1037-33	Mast with Base	57.60
1036	Base	16.20
1050	Pinnacle with Set Screw	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for 1040 Spectacle	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for 1041 Spectacle	10.00
1194-5	Shaft complete with Washer, Cotter and Pin	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A"	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B"	16.20
699-19	Glass Roundels, 8 ³ / ₈ " dia. Specify Color	2.70
1065-2	Semaphore Blade complete with Blade Plate and Bolts	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1040 Spectacle	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. 1041 Spectacle	4.50
730-25	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod	3.60
730-30	Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod	4.50
730-31	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod	5.40
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast	1.49
1196-15	Pipe Guide complete, Two Way with Bolts for fastening to Mast	1.76
1197-7	Three Way Crank Stand complete with Pin, Cotter, Separator and Three 9" x 9" Cranks	7.20
1178-5	Clamp for Signal Wheel complete with Back Half and Bolts for fastening Stand	2.95
1178-6	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand	2.95
620-7	Clamp for Crank Stand complete with U Bolt and Bolts for fastening Stand	2.34
800-3	Three Way Signal Wheel complete with Support Brace and Bolts	4.88
1028-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts	13.95
703-40	Double Shackle complete with Pin and Cotter . . . . .	.20
703-1	Wire Eyes . . . . .	.04
703-11	Split Links, per C.	3.60
703-16	1/4" Proof Chain, per ft. . . . .	.14

R. S. A. THREE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL



1191-5 and 1191-15



R. S. A. THREE ARM 90 DEG. UPPER QUADRANT PIPE OPERATED BRIDGE OR BRACKET SIGNAL

Lamps are not included in list prices, but Signals are furnished complete with Roundels and Fittings. When Signals are ordered with a Fixed Arm, orders should specify whether Arm is to be fixed in the 0 deg. or in the 45 deg. position. When Signals are ordered with Arms of limited travel, orders should specify whether they are limited from 0 deg. to 45 deg. or from 45 deg. to 90 deg. Prices for Limited Travel Arms are same as for Operative Arms. Signals can be furnished with any Style Wood Semaphore Blade at same price. Orders should specify Blade required, also color and number of Roundels.

Trade No.	DESCRIPTION	List Price
1191-5	R. S. A. Three Arm 90 deg. Upper Quadrant Pipe Operated Bridge or Bracket Signals with Three Arms Operative, complete as shown.....	\$180.00
1191-55	Same as above except with R. S. A. 1041 Design "B" Semaphore Spectacle.....	180.00
1191-15	R. S. A. Three Arm 90 deg. Upper Quadrant Pipe Operated Bridge and Bracket Signal with Two Arms Operative and One Arm Fixed, complete as shown.....	173.70
1191-25	Same as above except with R. S. A. 1041 Design "B" Semaphore Spectacle.....	173.70
1037-3	Mast Only.....	36.00
1037-33	Mast with Base.....	57.60
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
1194-14	Semaphore Bearing complete with Spring Stop and U Bolts for No. 1040 Spectacle.....	9.00
1194-15	Semaphore Bearing complete with Spring Stop, Clamp and U Bolt for No. 1041 Spectacle.....	10.00
1194-5	Shaft complete with Washer, Cotter and Pin.....	2.25
1040-2	Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts, Design "A".....	17.10
1041-2	Semaphore Spectacle, complete with Operating Stud, Roundel Rings and Bolts, Design "B".....	16.20
699-19	Glass Roundels, 8 $\frac{3}{8}$ " dia. Specify Color.....	.....
1065-2	Semaphore Blade complete with Blade Plate and Bolts.....	2.70
1049-1	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1040 Spectacle.....	3.60
1049-2	Lamp Bracket and Support complete with Nuts and Bolts for R. S. A. No. 1041 Spectacle.....	4.50
730-1	Operating Rod for Lower Signal complete with Screw Jaw and Eye Rod.....	3.60
730-11	Operating Rod for Middle Signal complete with Screw Jaw and Eye Rod.....	4.50
730-3	Operating Rod for Upper Signal complete with Screw Jaw and Eye Rod.....	5.40
1196-12	Pipe Guide, One Way, complete with Bolts for fastening to Mast.....	1.49
1196-15	Pipe Guide complete, Two Way with Bolts for fastening to Mast.....	1.76
1197-7	Three Way Crank Stand complete with Pin, Cotter, Separators and Three 9" x 9" Cranks.....	7.20
1178-6	Clamp for Crank Stand complete with U Bolts and Bolts for fastening Stand.....	2.95
1028-3	Ladder complete with Top Pieces, Clamps, Stays and Bolts for fastening.....	13.95

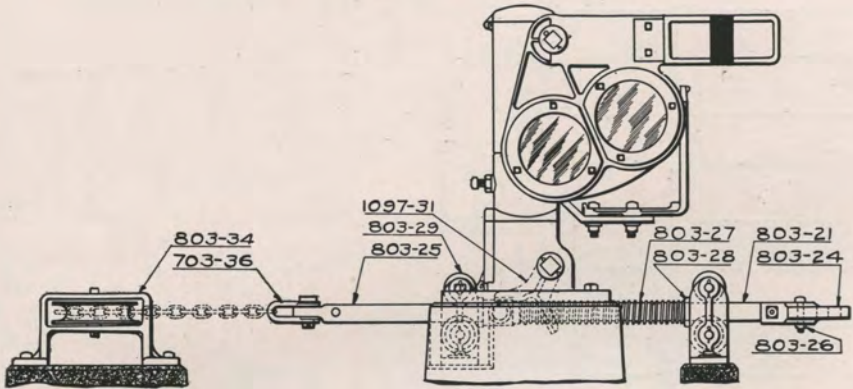
1914

CATALOGUE AND PRICE LIST

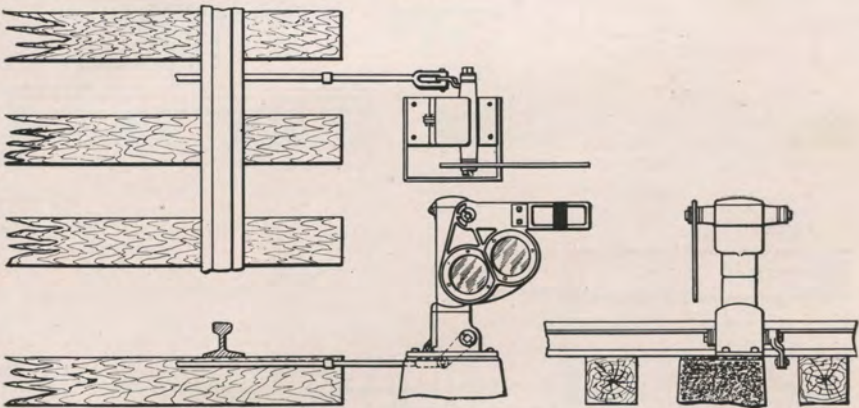
SECTION O

DWARF AND POT SIGNALS

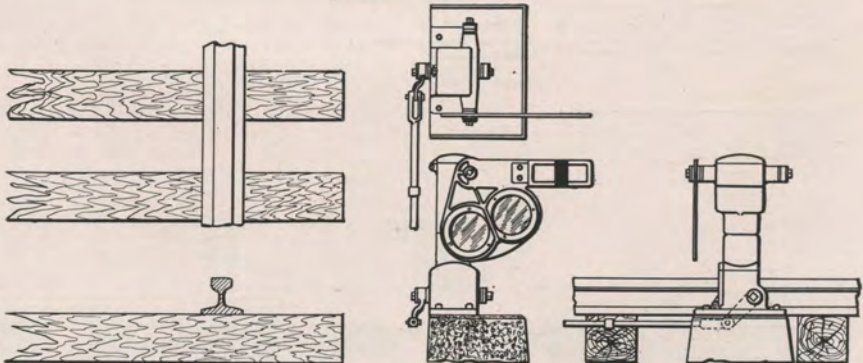
R. S. A. DWARF SIGNAL



1097-1

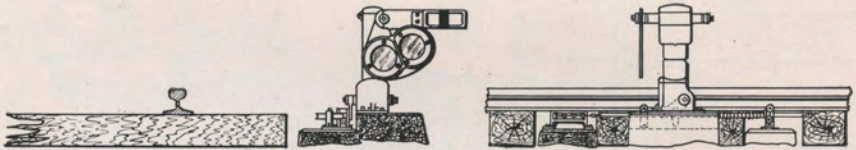
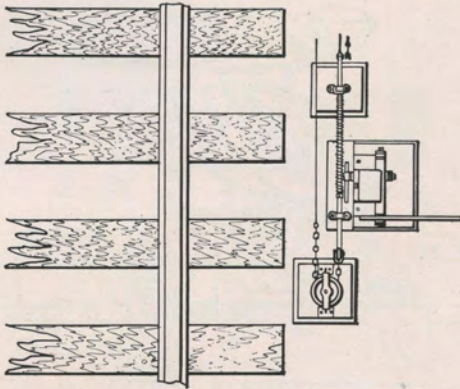


Application 1

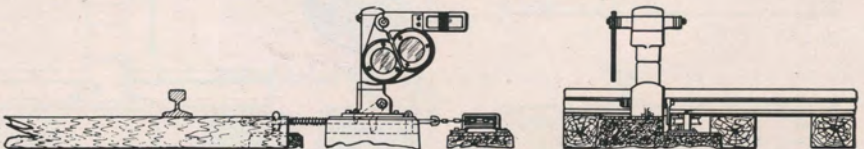
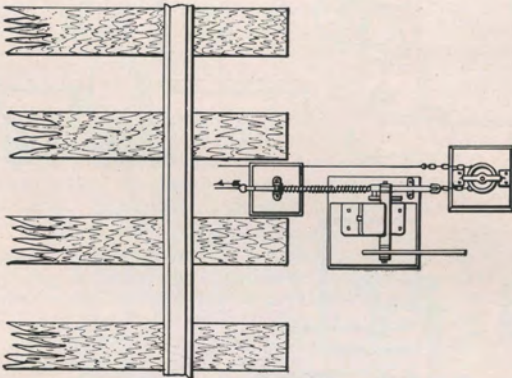


Application 2

R. S. A. DWARF SIGNAL



Application 3



Application 4



ONE AND TWO ARM 60 DEG. LOWER QUADRANT PIPE OR WIRE OPERATED DWARF SIGNAL WITH SPRING ATTACHMENT

Lamps, Chain, Split Links, Wire Eyes and Wire are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Specify color and number of Roundels. This Signal can be furnished with any style Semaphore Spectacle or Blade. Prices on application.

Trade No.	DESCRIPTION	List Price
803-1	One Arm 60 deg. Lower Quadrant Pipe Operated Dwarf Signal with Spring Attachment, complete as shown.....	\$28.00
803-2	One Arm 60 deg. Lower Quadrant Wire Operated Dwarf Signal with Spring attachment, complete as shown.....	28.00
804-1	Two Arm 60 deg. Lower Quadrant Pipe Operated Dwarf Signal with Spring Attachment, complete as shown.....	57.60
804-2	Two Arm 60 deg. Lower Quadrant Wire Operated Dwarf Signal with Spring Attachment complete as shown.....	57.60
803-17	Mast Only.....	2.00
804-13	“ “.....	4.05
803-11	Base with Set Screw.....	7.65
803-12	“ “ Crank, Pin and Cotter.....	8.20
803-13	One Way Pin with Cotter.....	.09
804-11	Base with Set Screw.....	7.65
804-12	“ “ Two Cranks, Pin and Separators.....	8.75
804-14	Two Way Pin with Cotter.....	.11
704-14	$\frac{3}{16}$ " x $1\frac{1}{4}$ " Cotter Pin, per C.....	.90
803-14	Crank Only.....	.45
801-16	Pinnacle with Set Screw.....	1.00
803-31	Semaphore Bearing complete with Front Half, Rear Half and Bolts for fastening to Mast.....	2.16
803-36	Front Half of Semaphore Bearing.....	1.10
803-37	Rear “ “.....	.95
803-16	Semaphore Shaft complete with Nuts, Washers, Cotters, Springs, Seat and Pin.....	1.80
803-19	Spring Seat for Shaft.....	.23
803-18	Coil Spring “ “.....	.36
803-38	Shaft Collar.....	.09
803-20	Pin for fastening Collar to Shaft.....	.03
696-21	Blade complete with Clamps and Bolts.....	.81
665	Two Light 60 deg. Lower Quadrant Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for $5\frac{3}{8}$ " Roundels.....	2.52
662-2	Back Spectacle complete with Roundel Ring and Bolts for $2\frac{3}{8}$ " Roundels.....	.99
699-13	Glass Roundels, $5\frac{3}{8}$ " dia. Specify Color.....	.....

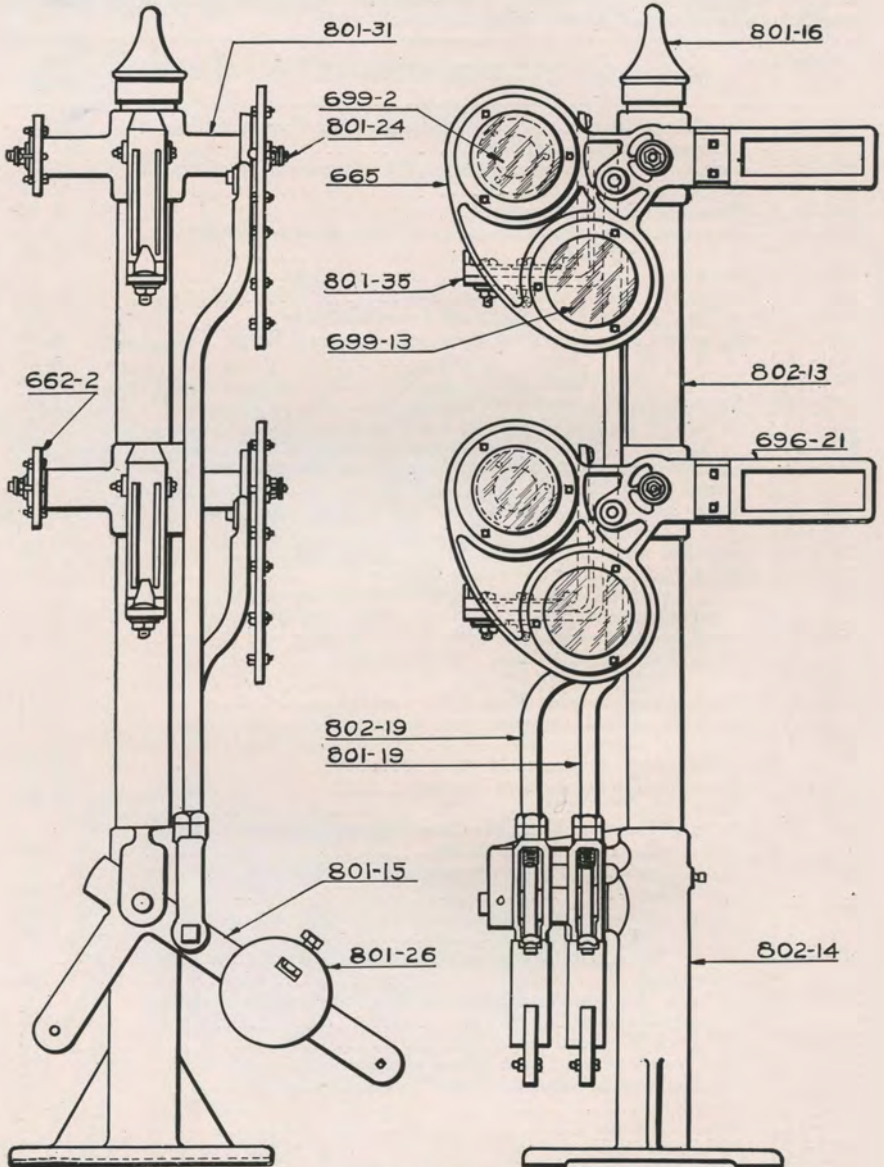


ONE ARM 60 DEG. LOWER QUADRANT PIPE OR WIRE OPERATED DWARF SIGNAL

Lamps, Chain, Split Links, Wire and Wire Eyes are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Orders should specify color and number of Roundels. This Signal can be furnished with any style Semaphore Spectacle or Blade. Prices on application.

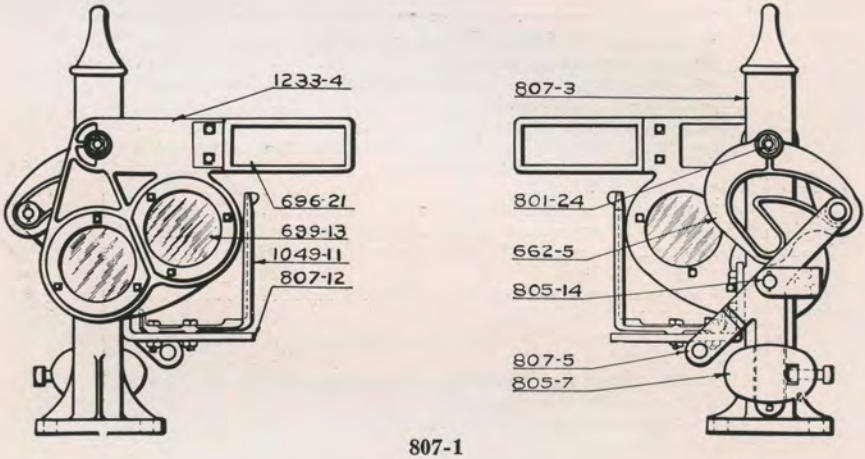
Trade No.	DESCRIPTION	List Price
801-1	One Arm 60 deg. Lower Quadrant Pipe Operated Dwarf Signal, complete as shown	\$32.40
801-2	One Arm 60 deg. Lower Quadrant Wire Operated Dwarf Signal	33.75
801-17	Mast Only	2.00
801-16	Pinnacle with Set Screw	1.00
801-14	Base complete with Balance Lever, 20 lb. Counterweight, Pin, Cotter and Bolts	14.30
801-11	Base Only	7.65
801-25	Pin with Cotter for Balance Lever . . . . .	.18
994-12	$\frac{1}{4}$ " x 3" Cotter Pin for Balance Lever Pin, per C. . . . .	.88
801-15	Balance Lever with 20 lb. Counterweight and Bolts	6.30
801-18	“ “ Only	4.25
801-23	20 lb. Counterweight Only	1.98
801-26	Same as above except with Bolt	2.07
720-16	$\frac{5}{8}$ " x 3 $\frac{1}{2}$ " Square Head Bolt and Nut . . . . .	.09
1097-26	$\frac{1}{4}$ " x 1" “ “ Machine Bolt and Nut . . . . .	.03
801-19	Operating Rod complete with Screw Jaw, Hexagon Nut, Pin and Cotter	2.52
801-32	Screw Jaw with Pin and Cotter . . . . .	.45
801-33	“ “ Only . . . . .	.36
801-34	Jaw Pin with Cotter . . . . .	.09
950-31	$\frac{1}{8}$ " x 1 $\frac{1}{4}$ " Cotter Pin for Jaw Pin, per C. . . . .	.96
665	Two Light 60 deg. Lower Quadrant Semaphore Spectacle complete with Spectacle Rings, Bolts and Operating Stud	2.52
662-2	Back Spectacle complete with Spectacle Ring and Bolts . . . . .	.99
699-2	Glass Roundels, 2 $\frac{3}{8}$ " dia. Specify Color . . . . .	. . . . .
699-13	“ “ “ “ 5 $\frac{3}{8}$" “ “ “ “ . . . . .	. . . . .
696-21	Blade complete with Blade Plate and Bolts . . . . .	.81
801-24	Semaphore Shaft complete with Washers, Nuts and Cotters	1.53
801-31	“ “ Bearing complete with Front Half, Rear Half and Bolts for fastening to Mast	2.16
801-12	Front Half of Semaphore Bearing	1.10
801-13	Rear “ “ “ “ . . . . .	.95
801-28	$\frac{3}{4}$ " x 4" Hexagon Head Machine Bolts and Nuts for fastening Semaphore Bearing to Mast . . . . .	.16
801-35	Lamp Bracket and Support complete with Bolts for fastening to Mast	3.60
801-27	Lamp Bracket Support	2.03
1049-11	“ “ “ “	1.80
1194-10	$\frac{1}{2}$ " x 1" Hexagon Cap Screws for fastening Lamp Bracket to Bearing . . . . .	.04
1049-15	$\frac{1}{2}$ " x 2" Square Head Machine Bolt and Nut for fastening Lamp Bracket . . . . .	.05
1049-16	$\frac{1}{2}$ " Lock Washers . . . . .	.02
930-1	One Way Vertical Chain Wheel complete . . . . .	.95
703-46	Double Shackle complete with Pins and Cotters . . . . .	.20
703-1	Wire Eye . . . . .	.04
703-11	Split Links, per C.	3.60
703-16	$\frac{1}{4}$ " Proof Chain, per ft. . . . .	.14
801-29	$\frac{1}{2}$ " x 1" Square Head Set Screw for Base . . . . .	.04
801-30	$\frac{3}{8}$ " x $\frac{3}{4}$ " “ “ “ “ Pinnacle . . . . .	.03
950-32	$\frac{3}{4}$ " x 4" Lag Screws, per C.	8.40

**TWO ARM 60 DEG. LOWER QUADRANT PIPE OR
WIRE OPERATED DWARF SIGNAL**



802-1

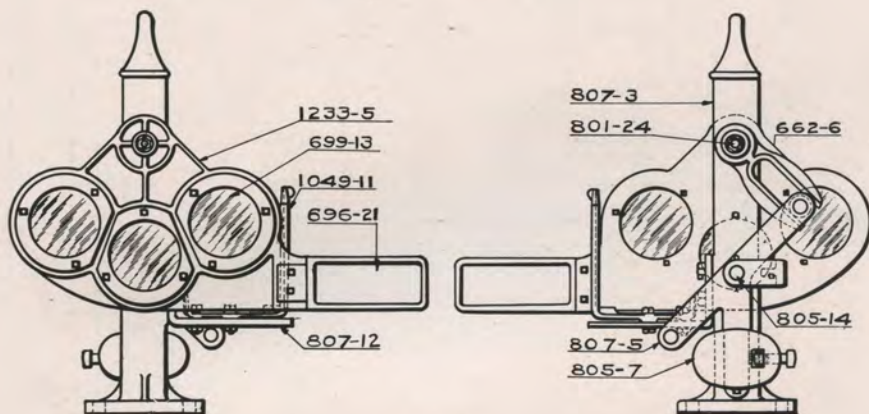
ONE ARM 45 DEG. UPPER QUADRANT DWARF SIGNAL WITH ESCAPEMENT CRANK



Lamps, Chain, Split Links, Wire Eyes and Wire are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Specify color and number of Roundels. This Signal can be furnished with any style Semaphore Spectacle or Blade. Prices on application.

Trade No.	DESCRIPTION	List Price
807-1	One Arm 45 deg. Upper Quadrant Pipe Operated Dwarf Signal, complete as shown	\$25.50
807-2	One Arm 45 deg. Upper Quadrant Wire Operated Dwarf Signal	26.90
807-3	Mast Only	7.74
805-14	Pin for Balance Lever with Cotter	.14
807-5	Balance Lever complete with 11 lb. Counterweight, Roller, Stud and Bolts	8.37
807-6	" " with Stud and Cotter	6.57
805-7	Counterweight with Bolt and Nut	1.17
805-8	11 lb. Counterweight Only	1.08
805-9	Stud with Cotter for Balance Lever	.14
805-10	Roller for Stud	.18
805-11	Washer "	.02
1097-26	$\frac{1}{2}$ " x 1" Square Head Machine Bolt and Nut for Balance Lever	.03
720-16	$\frac{5}{8}$ " x 3 $\frac{1}{2}$ " " " " " Counterweight	.09
801-24	Semaphore Shaft with Washers, Nuts and Cotter	1.53
1233-4	Two Light 45 deg. Upper Quadrant Semaphore Spectacle complete with Roundel Rings and Bolts	2.61
662-5	Escapement Crank	.90
699-13	Glass Roundels, 5 $\frac{3}{8}$ " dia. Specify Color	.81
696-21	Blade complete with Clamps and Bolts	3.60
807-12	Lamp Bracket and Support complete with Two $\frac{1}{2}$ " x 1" Cap Screws	2.03
807-13	" " Support Only	1.80
1049-11	$\frac{1}{2}$ " x 1" Hexagon Head Cap Screws	.04
1194-10	$\frac{1}{2}$ " x 2" Square Head Machine Bolts with Hexagon Nuts	.05
1049-15	Standard $\frac{1}{2}$ " Lock Washers	.02
1049-16	One Way Vertical Chain Wheel complete	.95
930-1	Double Shackle complete with Pin and Cotter	.20
703-46	Wire Eyes	.04
703-1	Split Links, per C.	3.60
703-11	$\frac{1}{2}$ " Proof Chain, per ft.	.14
703-16	$\frac{3}{4}$ " x 4" Lag Screws, per C.	8.40

ONE ARM 90 DEG. UPPER QUADRANT PIPE OR WIRE OPERATED DWARF SIGNAL

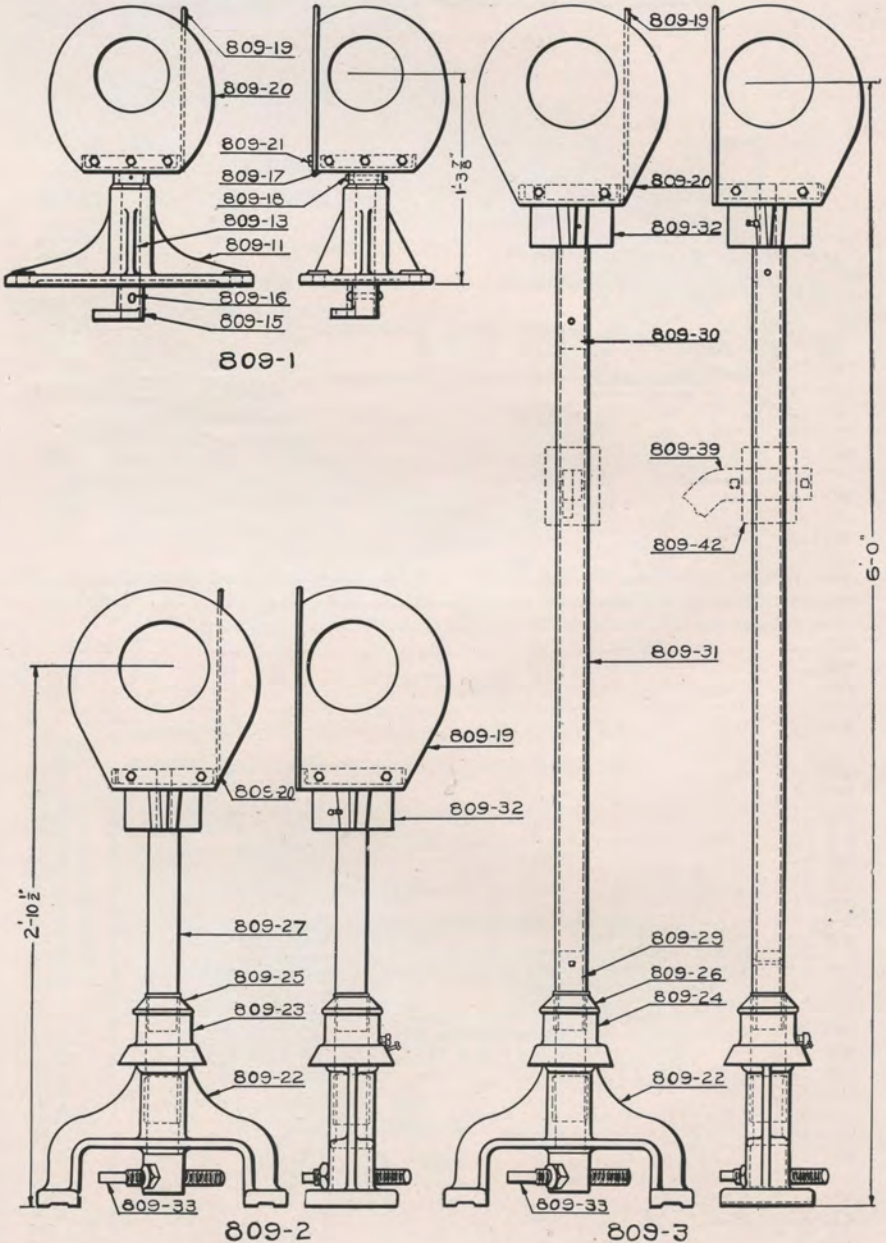


808-1

Lamps, Chain, Split Links, Wire Eyes and Wire are not included in list prices, but Signals are furnished complete with Roundels and Fittings as shown. Specify color and number of Roundels. This Signal can be furnished with any style Semaphore Spectacle or Blade. Prices on application.

Trade No.	DESCRIPTION	List Price
808-1	One Arm 90 deg. Upper Quadrant Pipe Operated Dwarf Signal, complete as shown	\$28. 80
808-2	One Arm 90 deg. Upper Quadrant Wire Operated Dwarf Signal complete Mast Only	30. 15 7. 74
805-14	Pin for Balance Lever with Cotter	. 14
807-5	Balance Lever complete with 11 lb. Counterweight, Roller Stud and Bolts	8. 37
807-6	" " " " with Stud and Cotter	6. 57
805-7	11 lb. Counterweight with Bolt and Nut	1. 17
805-8	" " " " Only	1. 08
805-9	Stud with Cotter for Balance Lever	. 14
805-10	Roller for Stud	. 18
805-11	Washer	. 02
1097-26	$\frac{1}{4}$ " x 1" Square Head Machine Bolt and Nut for Balance Lever	. 03
720-16	$\frac{5}{8}$ " x $3\frac{1}{2}$ " Counterweight	. 09
801-24	Semaphore Shaft complete with Washer, Nuts and Cotters	1. 53
1233-5	Three Light 90 deg. Upper Quadrant Semaphore Spectacle complete with Roundel Rings and Bolts	5. 85
662-6	Operating Crank	. 90
699-13	Glass Roundels, $5\frac{3}{8}$ " dia. Specify Color	. . . . .
696-21	Blade complete with Clamps and Bolts	. 81
807-12	Lamp Bracket and Support with Two $\frac{1}{2}$ " x 1" Hexagon Cap Screws for fastening to Mast	3. 60
807-13	Lamp Bracket Support Only	2. 03
1049-11	$\frac{1}{2}$ " x 1" Hexagon Head Cap Screws	1. 80
1194-10	$\frac{1}{2}$ " x 2" Square Head Machine Bolts with Hexagon Nuts	. 04
1049-15	Standard $\frac{1}{2}$ " Lock Washers	. 05
1049-16	One Way Vertical Chain Wheel complete	. 02
930-1	Double Shackle complete with Pin and Cotter	. 95
703-46	Wire Eyes	. 20
703-1	Split Links, per C.	. 04
703-11	$\frac{1}{4}$ " Proof Chain, per ft.	3. 60
703-16	$\frac{3}{4}$ " x 4" Lag Screws, per C.	. 14
950-32		8. 40

HIGH AND LOW POT SIGNALS



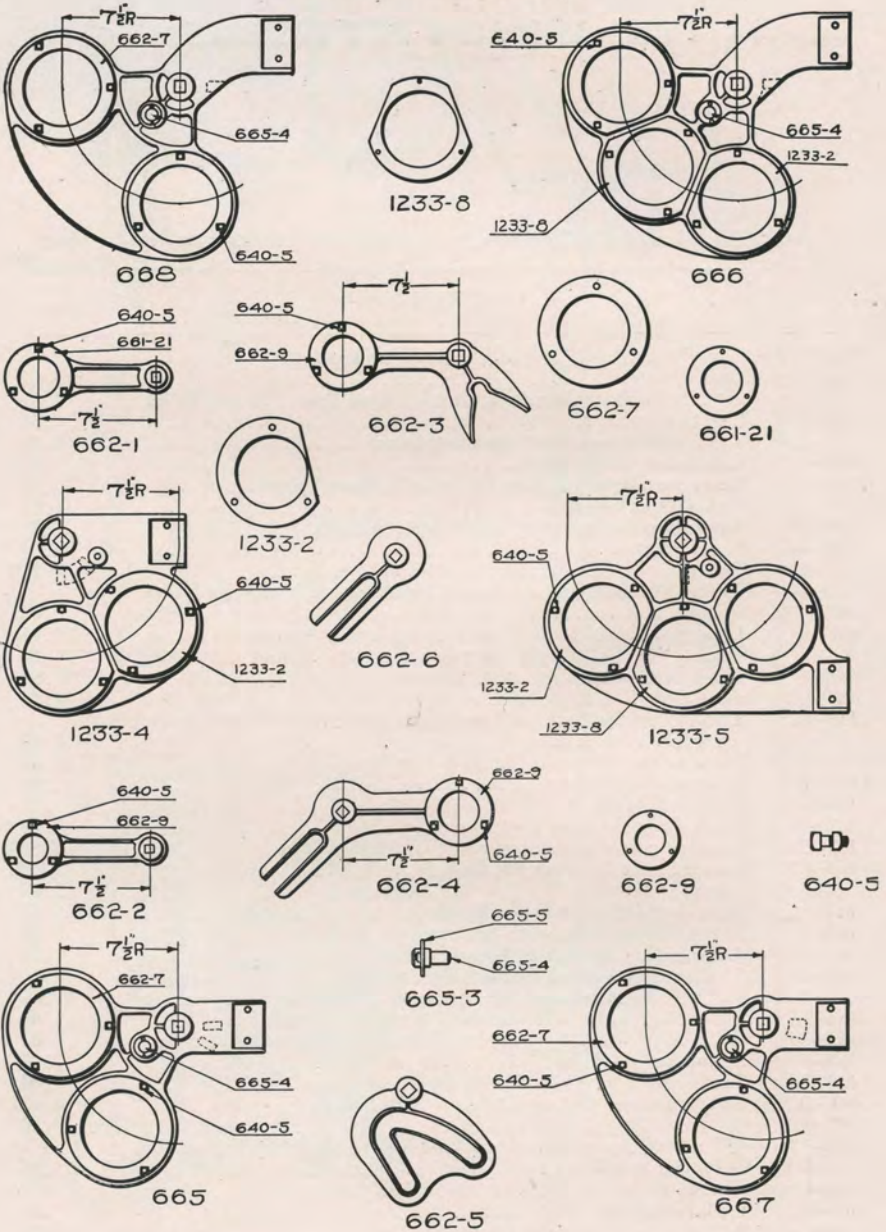


HIGH AND LOW POT SIGNALS

Lamps are not included in list prices, but Signals are furnished complete as shown.

Trade No.	DESCRIPTION	List Price
809-1	Low Pot Signal 1' 3 7/8" high, complete as shown	\$12.35
809-11	Base Only	3.87
809-12	“ with Shaft Operating Crank, Lamp Base, Pin and Rivet	8.73
809-13	Shaft Only . . . . .	.54
809-14	“ with Operating Crank and Rivet	1.44
809-15	Operating Crank Only . . . . .	.72
809-16	Rivet for Operating Arm 3/8" x 2 1/4" Round Head . . . . .	.03
809-17	Lamp Base Only	1.53
809-18	Dowel Pin for fastening Lamp Base to Shaft . . . . .	.32
809-19	Inside Vane	1.17
809-20	Outside “	1.17
809-21	3/8" x 1/2" Hexagon Cap Screws for fastening Vanes to Lamp Base . . . . .	.03
809-2	Low Pot Signal 2' 10 1/2" high, complete as shown	19.45
809-3	High “ “ 6' high, complete as shown without support	26.10
809-4	Same as above except with Support	31.00
809-22	Base Only	4.68
809-23	Thrust Bearing Only for Low Signal with Set Screw and Screw for Oil Hole	1.17
809-24	Same as above except for High Pot Signal	1.53
809-25	Cover for Low Pot Signal . . . . .	.18
809-26	“ “ High “ “ . . . . .	.27
809-27	Shaft Only for Low Pot Signal	3.78
809-28	Same as above with Adjustable Crank and Nut	4.32
809-29	Lower Shaft for High Pot Signal	3.78
809-30	Upper “ “ “ “	2.07
809-31	Pipe Post Only for High Signal	1.17
809-32	Lamp Socket Only with Set Screw	1.80
809-33	Adjustable Crank with Hexagon Nut . . . . .	.54
809-34	1" Hexagon Nut for Adjustable Crank . . . . .	.10
150-3	3/8" x 1" Square Head Set Screw for Lamp Base . . . . .	.03
809-35	3/8" x 2 3/4" R. H. I. Rivets for Pipe Post to Shaft . . . . .	.04
809-36	3/8" x 3 1/4" R. H. I. Rivet for Thrust Bearing to Shaft . . . . .	.05
809-37	Screw for Oil Hole . . . . .	.01
809-38	Set Screw 1/2" x 1 1/2" for Thrust Bearing . . . . .	.04
809-39	Support complete with Clamp and Bolts	4.05
809-40	“ “ “ “ Only	3.24
1049-14	1/2" x 1 1/2" Square Head Machine Bolts with Hexagon Nuts for fastening Clamp to Support . . . . .	.05
809-41	Clamp Only . . . . .	.72
809-42	Collar with Set Screw . . . . .	.54
801-29	1/2" x 1" Set Screw for above . . . . .	.04

SPECTACLES, BACK SPECTACLES, ESCAPEMENT CRANKS AND OPERATING CRANKS FOR DWARF SIGNALS





SPECTACLES, BACK SPECTACLES, ESCAPEMENT CRANKS AND OPERATING CRANKS FOR DWARF SIGNALS

Trade No.	DESCRIPTION	List Price
665	Two Light 60 deg. Lower Quadrant Semaphore Spectacle with Operating Stud, Roundel Rings and Bolts for 5 $\frac{3}{8}$ " Roundels	\$2.52
665-1	Same as above except without Operating Stud	2.37
667	Two Light 75 deg. Lower Quadrant Semaphore Spectacle with Operating Stud, Roundel Rings and Bolts for 5 $\frac{3}{8}$ " Roundels	2.52
667-1	Same as above except without Operating Stud	2.37
668	Two Light 90 deg. Lower Quadrant Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for 5 $\frac{3}{8}$ " Roundels	3.15
668-1	Same as above without Operating Stud	3.00
666	Three Light 90 deg. Lower Quadrant Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts for 5 $\frac{3}{8}$ " Roundels	3.15
666-1	Same as above without Operating Stud	3.00
1233-4	R. S. A. Two Light 45 deg. Upper Quadrant Semaphore Spectacle complete with Roundel Ring and Bolts for 5 $\frac{3}{8}$ " Roundels	2.60
1233-6	Same as above with Operating Stud	2.75
1233-5	Three Light 90 deg. Upper Quadrant Semaphore Spectacle complete with Roundel Rings and Bolts	5.85
1233-7	Same as above except with Operating Stud	6.00
662-1	Back Spectacle complete with Roundel Ring and Bolts for 3" Roundels	.99
662-2	Same as above except for 2 $\frac{3}{8}$ " Roundels	.99
662-3	Combined Escapement Crank and Back Spectacle with Roundel Ring and Bolts for 2 $\frac{3}{8}$ " Roundels	1.26
662-4	Combined Operating Crank and Back Spectacle with Roundel Ring and Bolts for 2 $\frac{3}{8}$ " Roundels	1.26
662-5	Escapement Crank	.90
662-6	Operating Crank	.90
662-7	Roundel Ring for 5 $\frac{3}{8}$ " Roundels	.13
1233-2	" " " 5 $\frac{3}{8}$ " "	.18
661-21	" " " 3" "	.13
662-9	" " " 2 $\frac{3}{8}$ " "	.13
640-5	$\frac{1}{4}$ " x $\frac{3}{4}$ " Square Head Machine Bolts and Nuts	.03
665-3	Operating Stud complete with Cotter and Washer	.15
665-4	" " and Cotter	.13
665-5	Washer for Operating Stud	.02
1233-8	Roundel Ring for 5 $\frac{3}{8}$ " Roundel	.27

1914

CATALOGUE AND PRICE LIST

SECTION P

STATION SIGNALS

Train Order

Flag Station

TRAIN ORDER SIGNALS

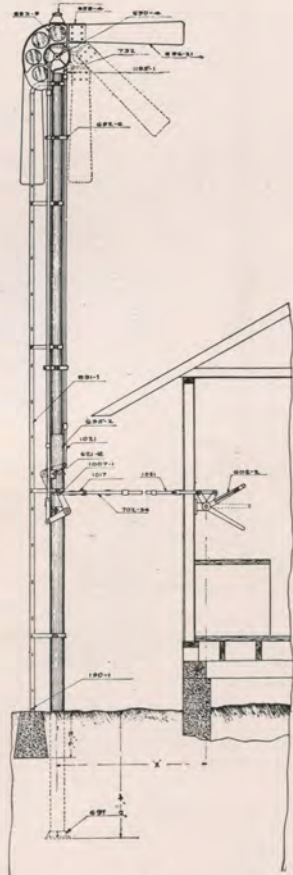
On the following pages we illustrate mechanically operated Semaphore Signals of the Two Blade Type as commonly used for Train Order and Telegraph Block Signals.

We illustrate only the more prominent types. From the illustrations it will be seen that almost any desired combination can be had from the complete line of operating levers, spectacle castings, masts, etc., manufactured by us. Practically each Signal may be equipped with any desired operating lever or spectacles suitable, shown in catalogue.

The illustrations show operating levers on ground floor; it is self-evident that they may be located at any convenient point as in Block Towers on first or second floor, station, shanty, etc.

Signals may be located across tracks from operating levers in which case it is customary to run pipe or wire lines through oil filled pipes equipped with Stuffing Boxes.

Prices on any combination desired and not shown herein will be cheerfully furnished.

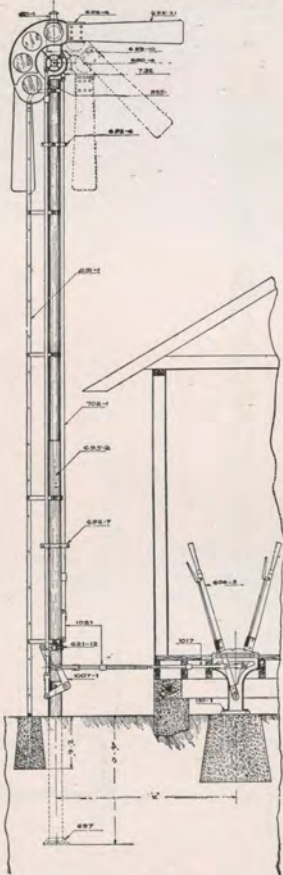


2101

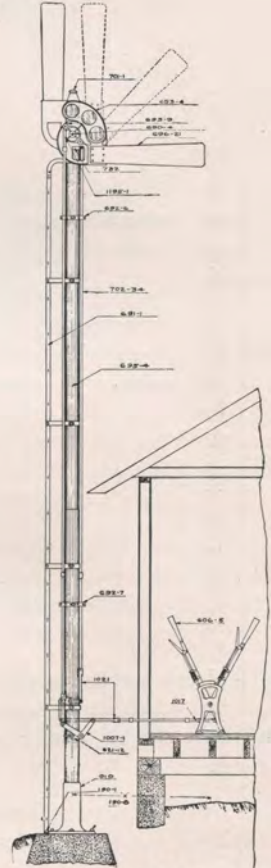
Trade No.	DESCRIPTION	List Price
2101	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Ladder, Spectacle Casting with 6½" Glass, Blade, Operating Levers No. 602-2 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers.	\$161.75
2101-1	Same as above with 23' Steel Pole and Base Casting No. 910 complete with Anchor Bolts for use on Concrete Foundation	172.75

In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application. Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2102



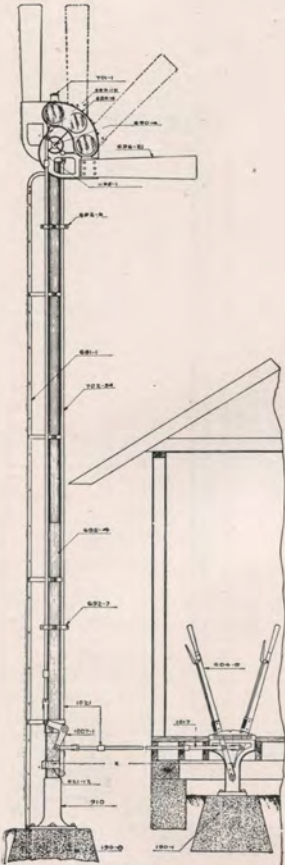
2103-1

Trade No.	DESCRIPTION	List Price
2102	Train Order Signal complete as shown, with 27' Steel Pole, Ladder, Universal Spectacle Casting with 8 $\frac{3}{8}$ " Glass and Blade, Operating Levers No. 604-5 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers	\$203.50
2102-1	Same as above with 23' Steel Pole and Base Casting No. 910, complete with Anchor Bolts for use on Concrete Foundations	214.50
2103-1	Train Order Signal complete as shown, consisting of 23' Pole, Base, Ladder, Spectacle Casting with 6 $\frac{1}{2}$ " Glass, Blade, Operating Levers No. 606-5 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers	209.75
2103	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation	198.75

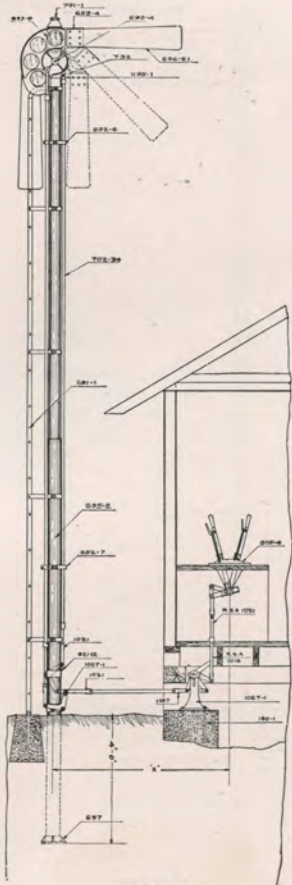
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2104-1



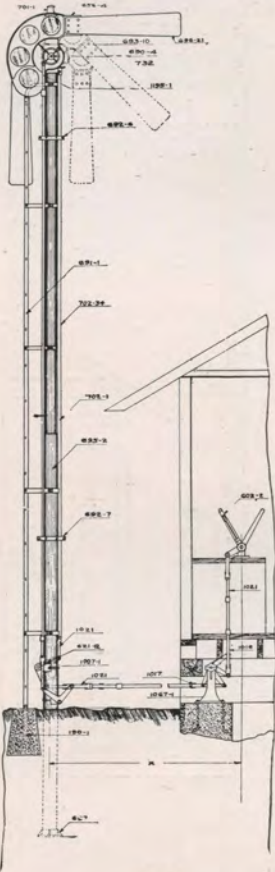
2105

Trade No.	DESCRIPTION	List Price
2104-1	Train Order Signal complete as shown, with 23' Steel Pole, Ladder, Spectacle Casting with 8 $\frac{3}{8}$ " Glass and Blade, Operating Levers No. 604-5 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers	\$217.00
2104	Same as above with 27' Steel Pole and Base No. 697, complete for use without Concrete Foundation.	205.00
2105	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Ladder, Universal Spectacle Casting with 6 $\frac{1}{2}$ " Glass, Blade, Operating Levers No. 605-4 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers.	201.50
2105-1	Same as above with 23' Steel Pole and Base Casting No. 910 with Anchor Bolts for use on Concrete Foundation.	212.50

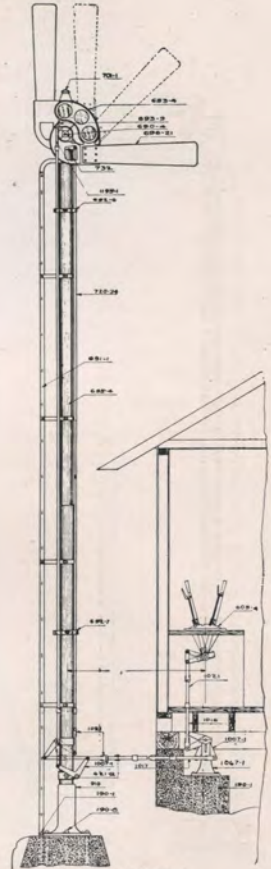
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2106



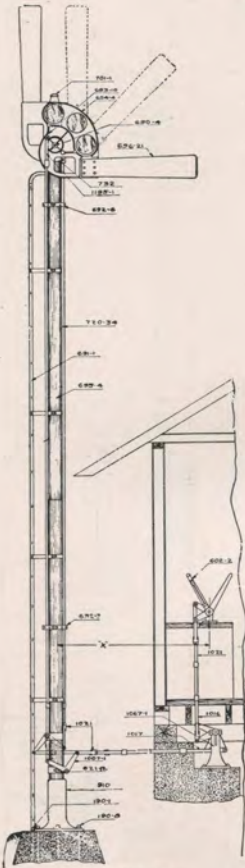
2107-1

Trade No.	DESCRIPTION	List Price
2106	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Ladder, Universal Spectacle Casting with 8 $\frac{3}{8}$ " Glass, Blade, Operating Levers No. 602-2 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers.....	\$193.50
2106-1	Same as above with 23' Steel Pole and Base Casting No. 910 with Anchor Bolts for use on Concrete Foundation.....	204.50
2107-1	Train Order Signal complete as shown, consisting of 23' Steel Pole, Base, Ladder, Spectacle Casting with 6 $\frac{1}{2}$ " Glass, Blade, Operating Levers No. 605-4 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers.....	215.50
2107	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation.....	204.50

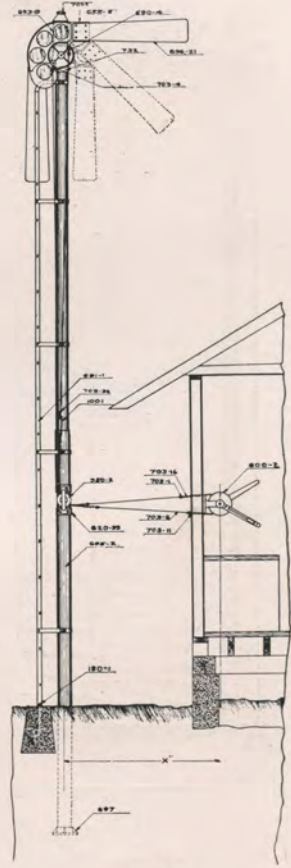
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style of Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2108-1

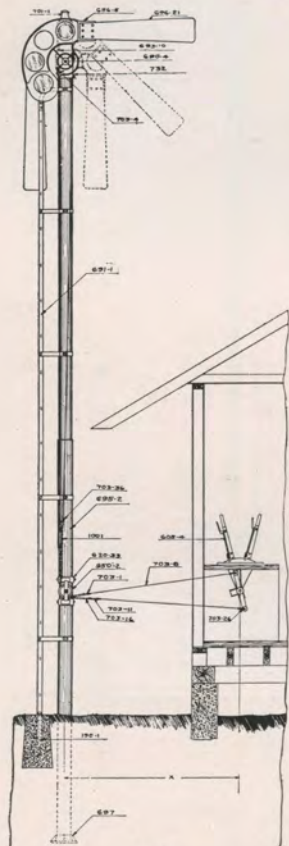


2109

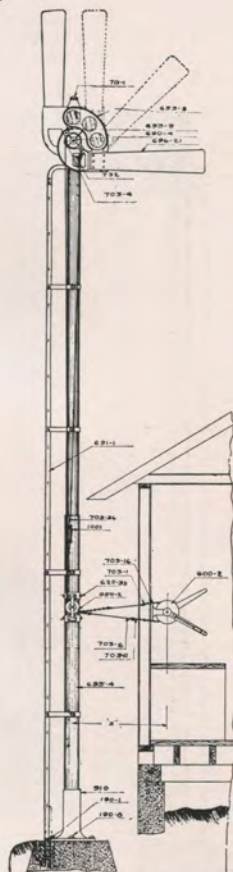
Trade No.	DESCRIPTION	List Price
2108-1	Train Order Signal complete as shown with 23' Steel Pole, Ladder, Spectacle Casting with 8 3/8" Glass and Blade, Operating Levers No. 602-2 and all necessary Pipe and Fittings, etc., for locations within 8' from Operating Levers	\$207.00
2108	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation	196.00
2109	Train Order Signal complete as shown consisting of 27' Steel Pole, Base, Ladder, Universal Spectacle with 6 1/2" Roundels, Levers No. 600-2 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Lever	153.30
2109-1	Same as above with 23' Steel Pole and Base Casting No. 910, complete with Anchor Bolts for use on Concrete Foundation	164.50

In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style of Spectacle Casting, also with any desired Operating Levers. Prices upon application.
Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2110



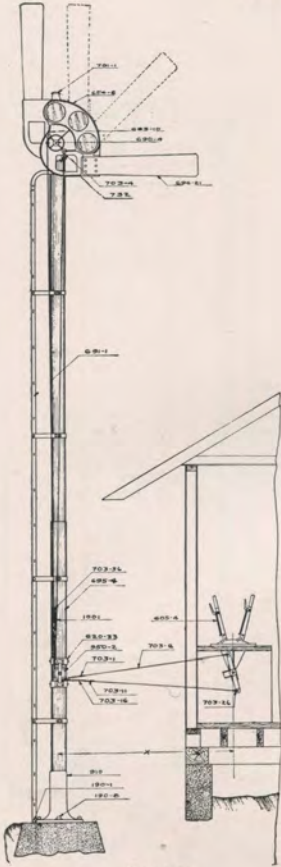
2111-1

Trade No.	DESCRIPTION	List Price
2110	Train Order Signal complete as shown, consisting of 27' Steel Pole, Ladder, Universal Spectacle Casting with 8 $\frac{3}{8}$ " Glass, Blade, Operating Levers No. 605-4 and all necessary Wire, Chain Wheels and Fittings for locations within 8' from Operating Levers.	\$163.00
2110-1	Same as above with 23' Steel Pole and Base Casting No. 910 complete with Anchor Bolts for use on Concrete Foundation	174.00
2111-1	Train Order Signal complete as shown, consisting of 23' Steel Pole, Base, Ladder, Spectacle Casting with 6 $\frac{1}{2}$ " Glass, Blade, Operating Levers No. 600-2 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Levers.	167.00
2111	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation.	156.00

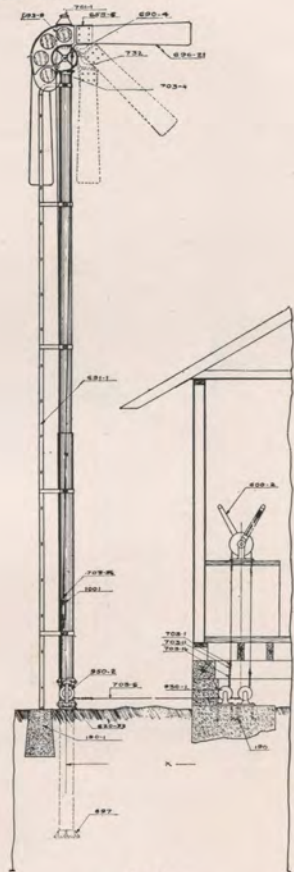
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2112-1



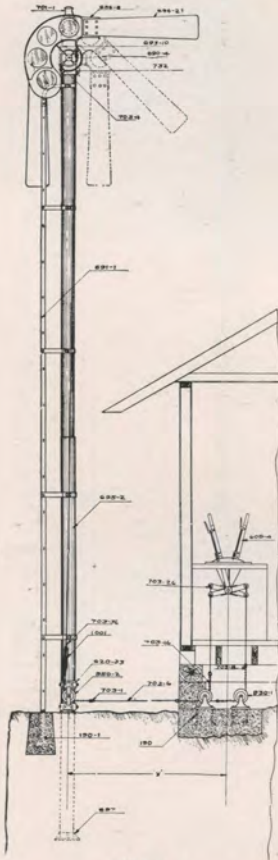
2113

Trade No.	DESCRIPTION	List Price
2112-1	Train Order Signal complete as shown, consisting of 23' Steel Pole, Base, Ladder, Spectacle Casting with 8 3/8" Glass, Blade, Operating Levers No. 605-4 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Levers.	\$176.50
2112	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation.	165.50
2113	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Ladder, Universal Spectacle Casting with 6 1/2" Glass, Blade, Operating Levers No. 600-2 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Levers.	171.25
2113-1	Same as above with 23' Steel Pole and Base Casting No. 910 complete with Anchor Bolts for use on Concrete Foundation	182.25

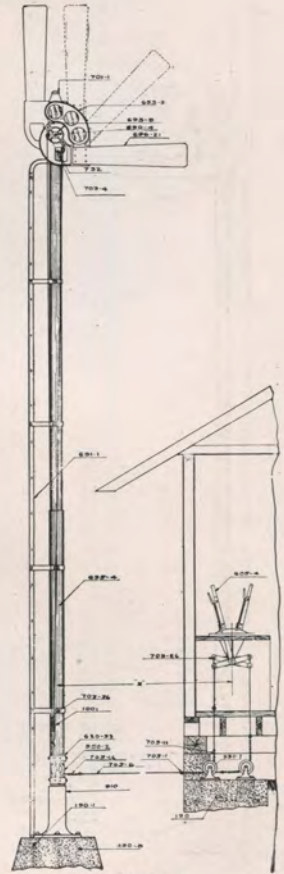
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2114



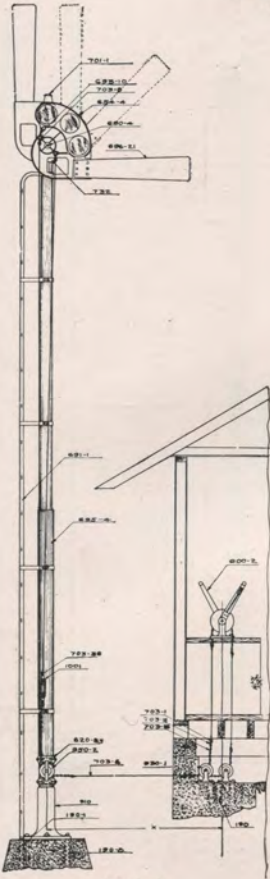
2115-1

Trade No.	DESCRIPTION	List Price
2114	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Ladders, Universal Spectacle Casting with 8 3/8" Glass, Blade, Operating Levers No. 605-4 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Levers.	\$181.00
2114-1	Same as above with 23' Steel Pole and Base Casting No. 910 complete with Anchor Bolts for use on Concrete Foundation	192.00
2115-1	Train Order Signal complete as shown, consisting of 23' Steel Pole, Base, Anchor Bolts, Ladder, Spectacle Casting with 6 1/2" Glass, Blade, Operating Levers No. 605-4 and all necessary Wire, Chain, Chain Wheels and Fittings for use on Concrete Foundations within 8' from Operating Levers.	193.75
2115	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation.	182.75

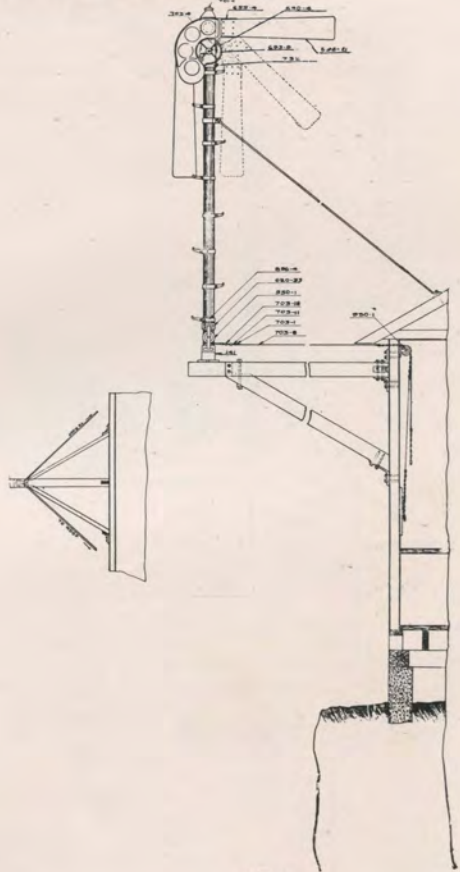
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2116-1



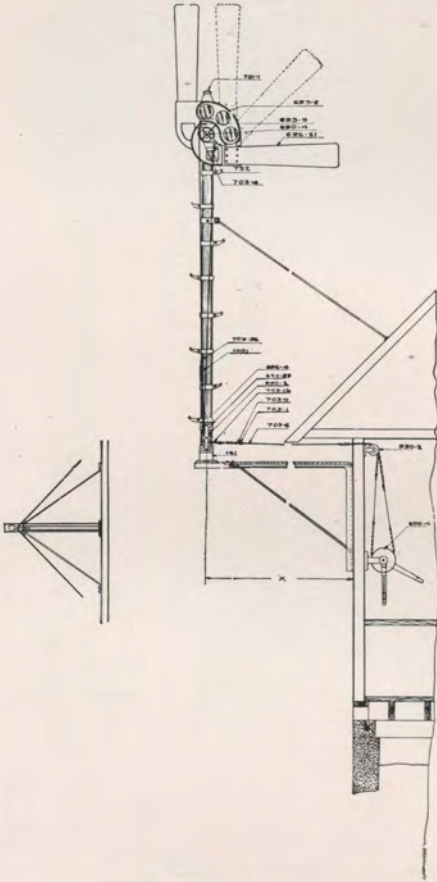
2117

Trade No.	DESCRIPTION	List Price
2116-1	Train Order Signal complete as shown, consisting of 23' Steel Pole, Base, Ladder, Spectacle Casting with 8 $\frac{3}{8}$ " Glass, Blade, Operating Levers No. 600-2 and all necessary Wire, Chain, Chain Wheels and Fittings for locations within 8' from Operating Levers.	\$186.00
2116	Same as above with 27' Steel Pole and Base Casting No. 697 for use without Concrete Foundation.	175.00
2117	Train Order Signal as shown, without Wooden Support and Brace, for location within 8' from building, Universal Spectacle Casting with 6 $\frac{1}{2}$ " Glass, 12' Pole, Pole Steps and all necessary Wire, Chain, Chain Wheels and Fittings Wood Support is usually furnished by Railroad Co. Prices if desired, furnished upon request.	123.00

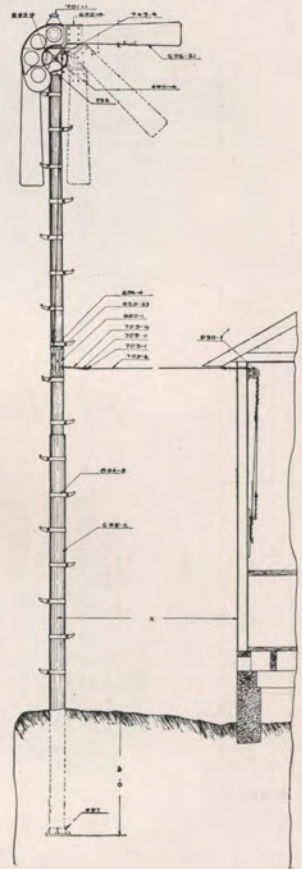
In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style of Spectacle Casting, also with any desired Operating Levers. Prices upon application.

Lamps are not included in above list prices. If desired, should be ordered separately.

TRAIN ORDER SIGNALS



2118

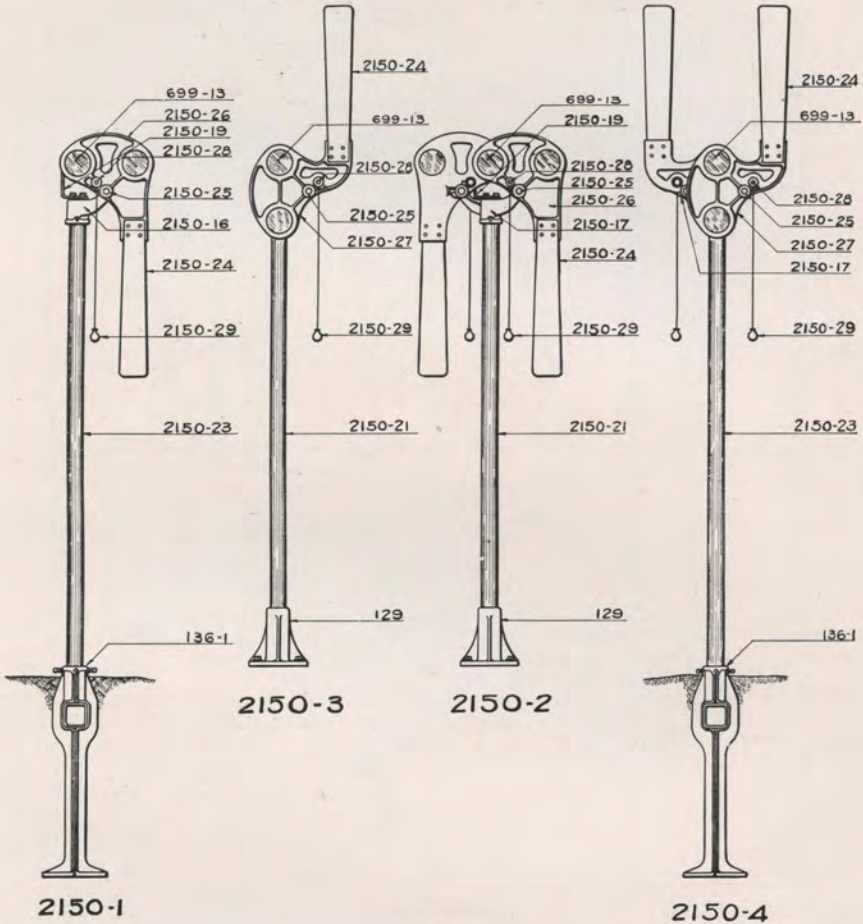


2119

Trade No.	DESCRIPTION	List Price
2118	Train Order Signal complete as shown, consisting of 12' Pole, with Pole Steps, Channel Iron Support and Braces for location of Signal within 8' from building, Spectacle Casting with 6½" Glass, Operating Lever No. 600-4, together with all necessary Wire, Chain, Chain Wheels, Fittings, etc.	\$165.00
2119	Train Order Signal complete as shown, consisting of 27' Steel Pole, Base, Universal Spectacle Casting with 6½" Glass, Blade and all necessary Wire, Chain Wheels, Chain, Steps and Fittings, etc.	131.75
2119-1	Same as above with 23' Steel Pole and Base Casting No. 910 complete with Anchor Bolts for use on Concrete Foundation	142.75

In ordering, specify whether Signal is wanted for Two Position or Three Position, also color of glass required. Above Signals can be furnished with any desired style of Spectacle Casting, also with any desired Operating Levers. Prices upon application.
 Lamps not included in above list prices. If desired, should be ordered separately.

FLAG STATION SIGNALS



2150

Flag Station Signals as shown above can be mounted on Station Platforms, Concrete Foundations, or are furnished with our Standard Underground Base for setting them directly into ground. They can be furnished for One or Two Light Indication with any desired color Roundels. One Light Indication shows a stop signal only, while handle is being held down. Two Light Indication normally shows a clear signal, and when pulled down a stop signal, letting go of handle restores signal blade to clear. Oil Lamps or Electric Lamps can be used for illumination.

Signals as shown are equipped with 8' Iron Pole, but any length Pole can be furnished. These Signals are in every way modern and are substantially constructed, as the Signals are usually placed at Flag Stations where there is no agent and where chances of malicious persons tampering with them and damaging them are great, the simplicity and durable construction is of great importance.



FLAG STATION SIGNALS

Lamps are not included in prices below, they must be ordered separately, but Signals are furnished with Roundels. Orders should specify number and color of Roundels required.

Trade No.	DESCRIPTION	List Price
2150-1	Single Arm Lower Quadrant Flag Station Signal complete as shown, 8' High	\$27.50
2150-2	Double Arm Lower Quadrant Flag Station Signal complete as shown, 8' High	36.00
2150-3	Single Arm Upper Quadrant Flag Station Signal complete as shown, 8' High	26.00
2150-4	Double Arm Upper Quadrant Flag Station Signal complete as shown, 8' High	37.50
	Add to above prices, for each additional foot of height up to 12 ft. . . . .	.65
136-1	Underground Base with Set Screws	6.00
129	Foundation Base	5.00
2150-21	Mast for 2150-2 and 2150-3 Signal	4.25
2150-23	“ “ 2150-1 “ 2150-4 “	4.75
2150-16	Single Arm Bearing complete with Stud, Washer, Cotter and Set Screws	7.50
2150-17	Double Arm Bearing complete with Studs, Washers, Cotter and Set Screws	9.00
2150-25	Bearing Stud with Washer and Cotter . . . . .	.27
2150-18	Stud Only . . . . .	.22
1194-3	Washer Only . . . . .	.04
2150-19	Lamp Bracket . . . . .	.72
2150-26	Lower Quadrant Spectacle complete with Roundel Rings and Bolts	4.50
2150-27	Upper Quadrant Spectacle complete with Roundel Rings and Bolts	4.50
2150-12	Lower Quadrant Spectacle Only	4.00
2150-15	Upper “ “	4.00
662-7	Spectacle Ring for 5 ³ / ₈ " Roundels . . . . .	.13
2150-14	“ “ “ Obscuring Light . . . . .	.13
699-13	Glass Roundels, 5 ³ / ₈ " dia. Specify Color . . . . .	. . . . .
2150-24	Semaphore Blade, 2' 6" long	2.16
2150-29	Pull Chain complete with Handle . . . . .	.70
703-16	³ / ₄ " Proof Chain for above . . . . .	.30
2150-20	Pull Handle . . . . .	.40
703-11	Split Links, per C.	3.60
1194-9	¹ / ₂ " x 1 ¹ / ₄ " Square Head Set Screws for Base . . . . .	.04
704-14	³ / ₈ " x 1 ¹ / ₂ " Cotter Pin for Operating Stud, per C. . . . .	.90
2150-30	³ / ₈ " x 1 ³ / ₄ " “ “ Bearing Stud, per C. . . . .	.90
696-7	³ / ₈ " x 1 ¹ / ₂ " Mushroom Head Bolts and Square Nuts for fastening Semaphore Blade to Spectacle . . . . .	.11
1097-26	¹ / ₄ " x 1" Square Head Machine Bolts and Nuts for fastening Roundel Rings to Spectacle . . . . .	.03
801-29	¹ / ₂ " x 1" Set Screw for Bearings . . . . .	.04
602-20	¹ / ₂ " x ⁷ / ₈ " Hexagon Cap Screws Lamp Bracket to Bearing . .	.04

1 9 1 4

CATALOGUE AND PRICE LIST

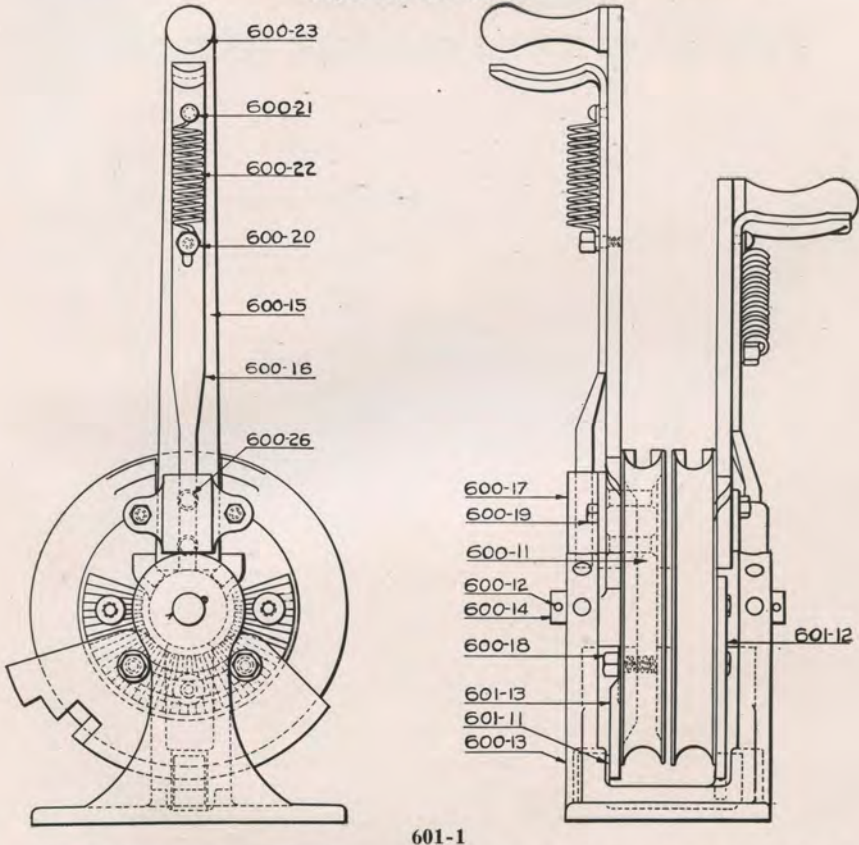
SECTION Q

SIGNAL AND SWITCH
OPERATING LEVERS

Table
Wall
Floor
Ground

TWO LEVER TABLE OR WALL MACHINE

Style No. 600 and 601

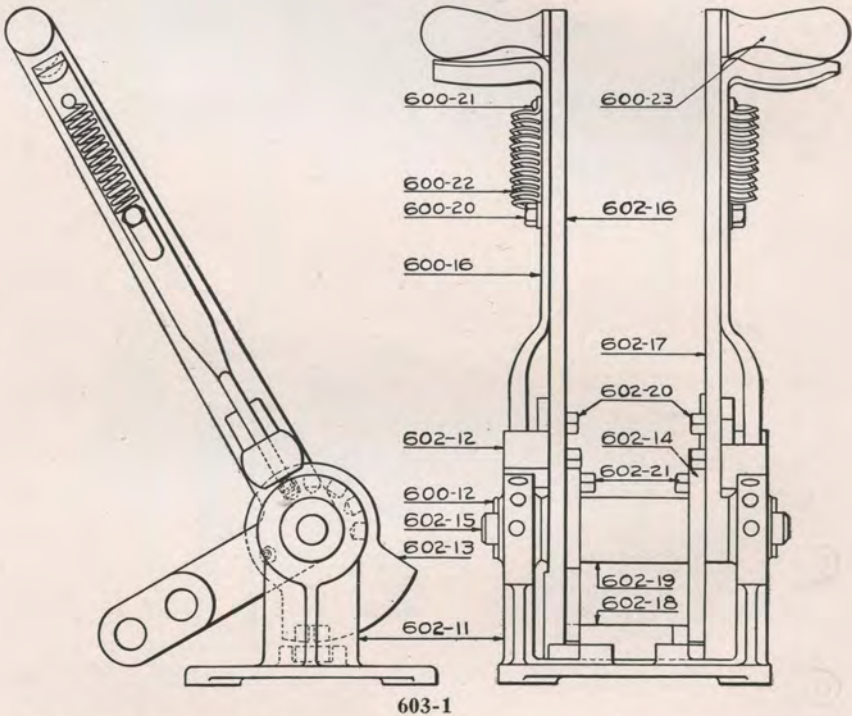


This Table Lever is suitable for Vertical or Horizontal Leadout as shown in connection with Train Order Signals. It is furnished for two or three positions and with or without locking. The levers are provided with Spring Latches to hold same in "Clear", "Caution" or "Stop" position. Two styles of locking can be furnished, viz.: Locking No. 1 where only one lever can be operated at any one time. Locking No. 2, one lever is locked and cannot be operated until the other lever is thrown.

Orders should specify positions desired and position machine will be used in.

Trade No.	DESCRIPTION	List Price
600-1	Double Table Lever, Two Position for Chain and Wire Operation, Vertical Leadout, complete	\$14.50
600-2	Double Table Lever, Three Position for Chain and Wire Operation, Vertical Leadout, complete	15.00
600-3	Double Wall Lever, Two Position for Chain and Wire Operation, Horizontal Leadout, complete	14.50
600-4	Double Wall Lever, Three Position for Chain and Wire Operation, Horizontal Leadout, complete	15.00
601-1	Double Table Lever, Two Position with No. 1 Locking for Chain and Wire Operation, Vertical Leadout, complete as shown	17.50
601-5	Same as above except with No. 2 Locking	17.50
601-2	Double Table Lever, Three Position with No. 1 Locking for Chain and Wire Operation, Vertical Leadouts, complete as shown	18.00
601-6	Same as above except with No. 2 Locking	18.00
601-3	Double Wall Lever, Two Position with No. 1 Locking for Chain and Wire Operation, Horizontal Leadout, complete	17.50
601-7	Same as above except with No. 2 Locking	17.50
601-4	Double Wall Lever, Three Position with No. 1 Locking for Chain and Wire Operation, Horizontal Leadout, complete	18.00
601-8	Same as above except with No. 2 Locking	18.00

TWO LEVER TABLE OR WALL MACHINE



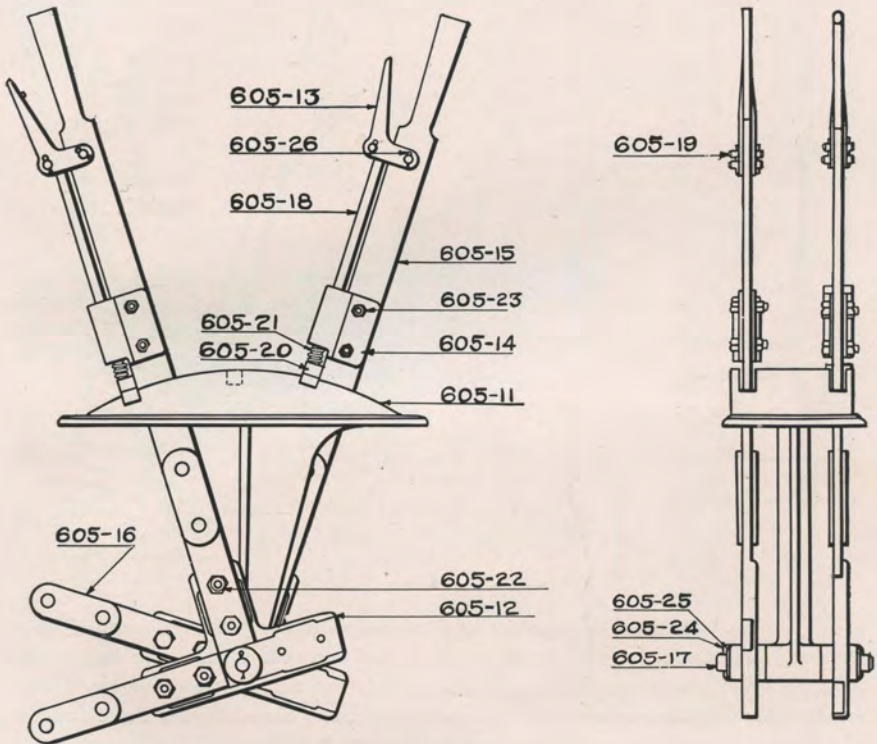
This machine is furnished for operation in two or three positions, for either table or wall use, with or without locking. The latches are spring operated, allowing Signal to be held in any of the three positions. The crank end is provided with two holes so as to allow either a short or a long stroke. Two styles of locking can be furnished, viz.: Locking No. 1 where only one lever can be operated at any one time, Locking No. 2, one lever is locked and cannot be operated until the other lever is thrown.

Orders should specify positions desired and position machine will be used in.

Trade No.	DESCRIPTION	List Price
602-1	Double Table Lever, Two Position Pipe Operation for Vertical Leadout, complete.....	\$13.75
602-2	Same as above except for Three Position.....	14.25
602-3	Double Wall Lever, Two Position Pipe Operation for Horizontal Leadout, complete.....	13.75
602-4	Same as above except for Three Position.....	14.25
603-1	Double Table Lever, Two Position with No. 1 Locking, Pipe Operation for Vertical Leadout, complete as shown.....	16.75
603-5	Same as above except with No. 2 Locking.....	16.75
603-2	Double Table Lever, Three Position with No. 1 Locking, Pipe Operation for Vertical Leadout, complete as shown.....	17.25
603-6	Same as above except with No. 2 Locking.....	17.25
603-3	Double Wall Lever, Two Position with No. 1 Locking, Pipe Operation for Horizontal Leadout, complete.....	16.75
603-7	Same as above except with No. 2 Locking.....	16.75
603-4	Double Wall Lever, Three Position with No. 1 Locking, Pipe Operation for Horizontal Leadout, complete.....	17.25
603-8	Same as above except with No. 2 Locking.....	17.25

TABLE MACHINE

Style No. 605



605-4

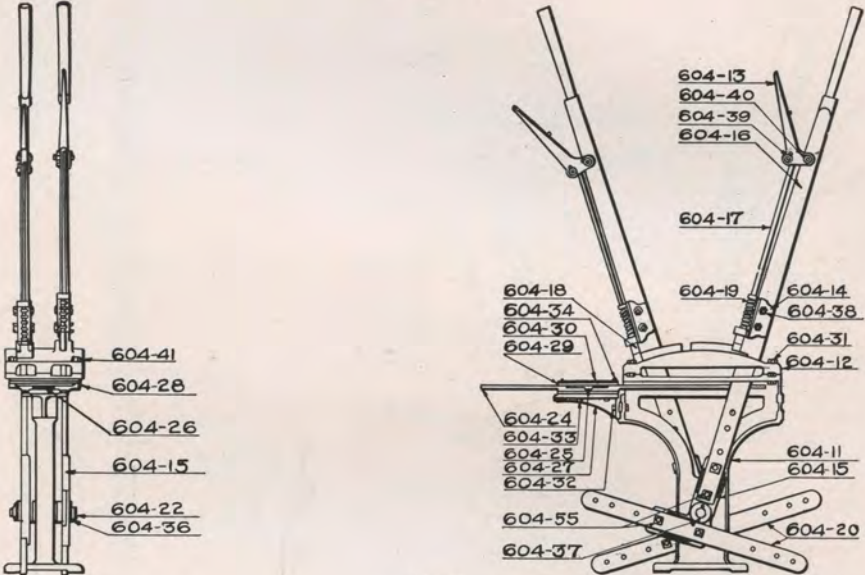
This type of Table Machine is used in connection with Pipe or Wire Operated Train Order or Block Signals, and may be used for Vertical or Horizontal Leadouts. When used for Wire Operated Signals with Vertical Leadout (as shown on Signal No. 2114) an extra Tail Lever is required. The Machine is simple and strong and can be attached directly into Operator's Table, thus requiring no extra space.

The Tail Lever shown may be used in any of the three positions provided for and as shown on Signals No. 2105, 2112 and 2115, thus making practically a "Universal" Table Lever Machine for Pipe or Wire Operation.

Trade No.	DESCRIPTION	List Price
605-4	Double Table Machine complete as shown, for Three Position	\$21.42
605-3	Same as above except for Two Position	19.62
605-2	Single Table Machine, One Lever Only, for Three Position . .	14.89
605-1	Same as 605-2 except for Two Position	13.09
605-16	Extra Tail Lever, each	1.00

FLOOR LEVER MACHINE

Style No. 604



604-6

Type No. 604 Floor Machine can be furnished with any desired number of levers up to and including eight levers, with or without locking. As this machine has no preliminary locking, it is used and recommended only for throwing switches in Ladder Tracks, Side Tracks and for operating Signals governing them, also for Train Order or Block Signals for which use machine can be furnished for Three Position Operation.

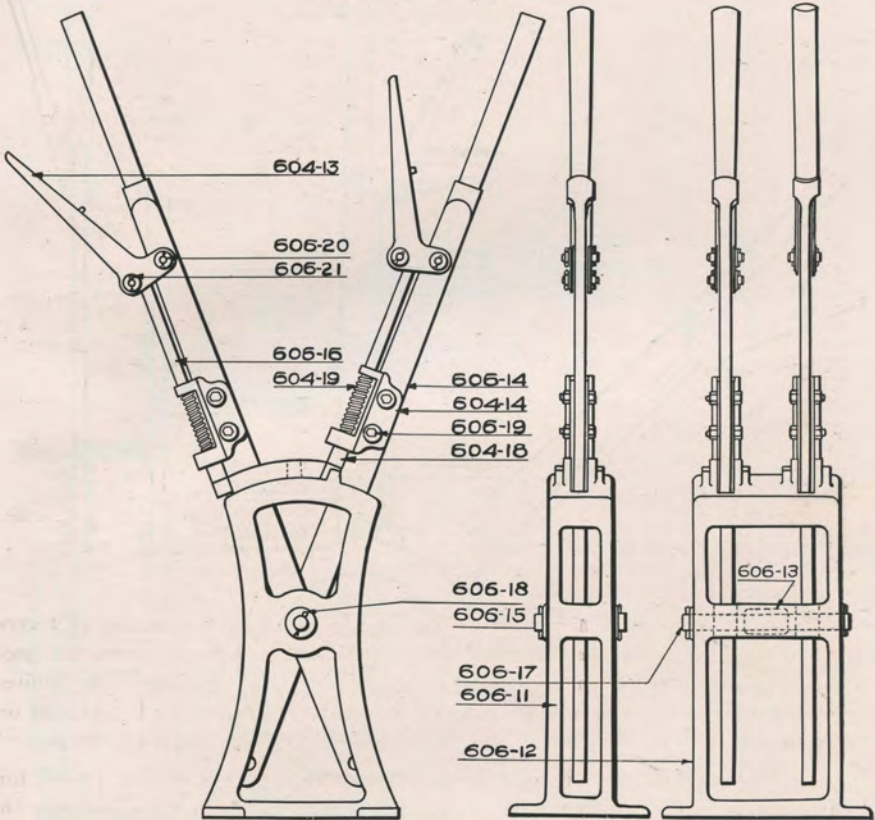
For Vertical Pipe Operation, the machine can be fitted with Short Tail Levers, for either Front or Rear Lever Operation ; for Vertical Wire Operation machine is fitted with Long Tail Levers as shown in illustration. When wanted for Horizontal Pipe Operation, no Tail Levers are required, prices given below are for this type of machine.

All orders should specify number of spaces required. If locking is wanted, order should be accompanied with full instructions and plans showing each lever function.

Trade No.	DESCRIPTION	List Price
604-4	Two Lever, Two Position Machine complete with Stand and with Locking	\$64.80
604-3	Same as 604-4 except without Locking	49.32
604-6	Two Lever Three Position Machine with Stand and Locking, complete as shown	68.00
604-5	Same as 604-6 except without Locking	53.00
604-2	Two Lever Stand complete with One Lever Only, for Three Position	42.00
604-1	Same as above except for Two Position	38.16
	For Short Tail Lever for Vertical Connections, add per lever	1.35
	" Long	4.05
	" each Additional Lever without Locking, add	24.66
	" with	32.40
	" " Spare Space on Machines without Locking, add	13.50
	" with	19.80

FLOOR LEVER MACHINE

Style No. 606



606-1 and 606-3

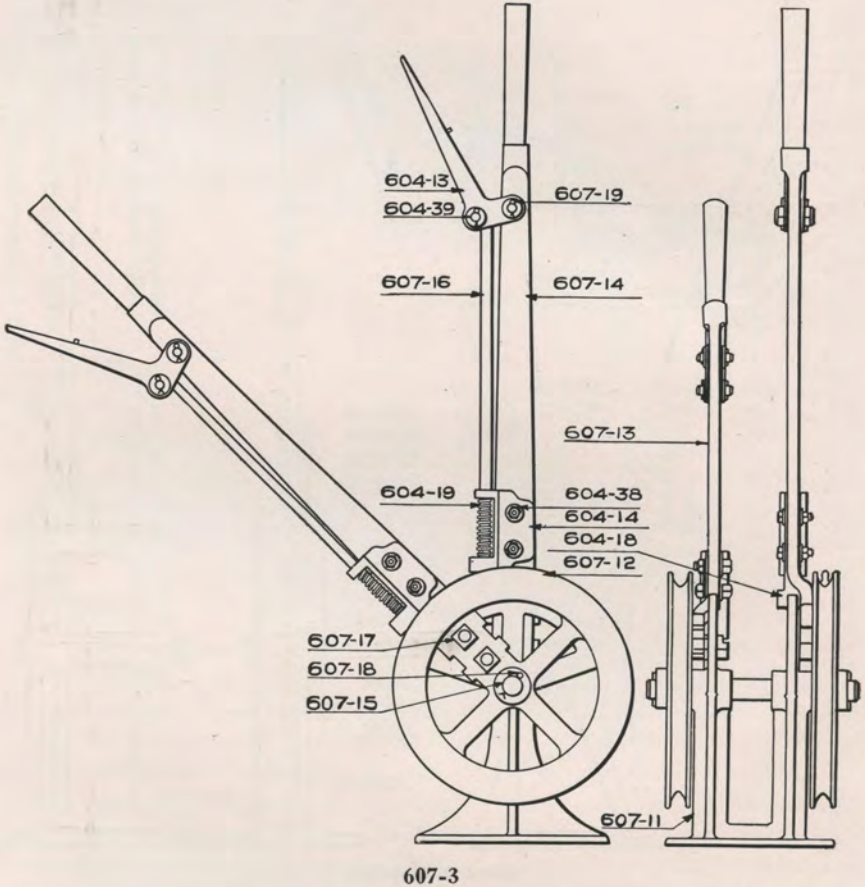
The machines above illustrated are especially adapted for operation of switches leading on to main line, outlying switches, derails, Train Order and Block Signals. By using Electric Locks and Indicators on these machines, the control of outlying switches and Signals are entirely under control of operator. Machine is built in single and double units and is furnished for two or three positions.

Trade No.	DESCRIPTION	List Price
606-1	Floor Machine, Single Lever, Two Positions.....	\$25.20
606-2	“ “ “ “ Three “	26.20
606-3	“ “ Two “ Two “	45.00
606-4	“ “ “ “ Three “	46.50

Above machines can be furnished with Electric Locks and Indicators where desired Prices upon request.

FLOOR LEVER

Style No. 607

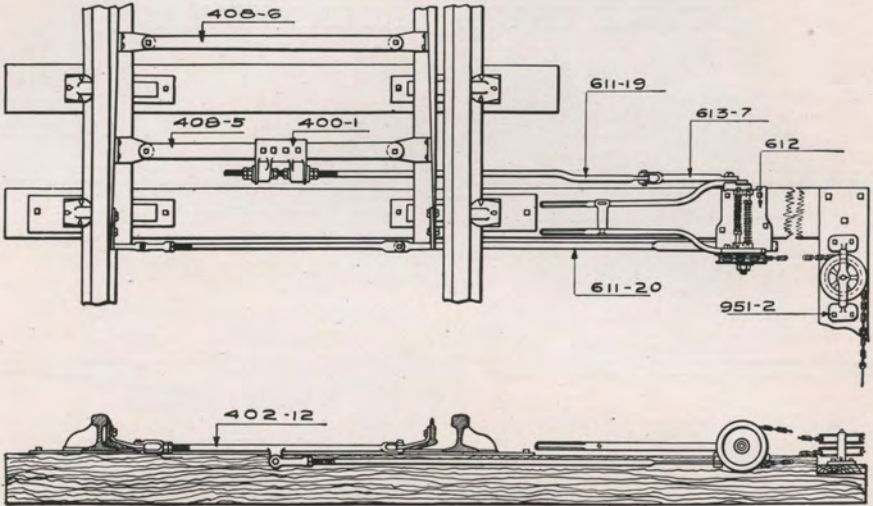


607-3

This style Floor Lever is used for operation of Wire Operated Train Order or Block Signals for which purpose it is furnished for two or three positions. It is also extensively used for Wire Operated Highway Crossing Gates. The Latches are Spring Operated, so Lever may be locked in desired position. The Sheaves have ample clearance over base so chain leadouts may be vertical or horizontal.

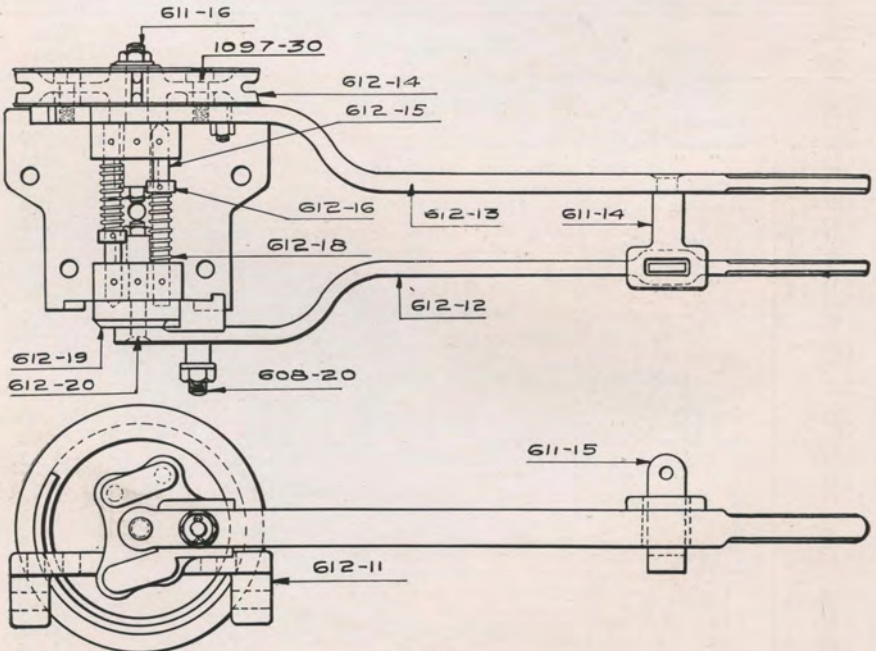
Trade No.	DESCRIPTION	List Price
607-1	Style No. 607 Floor Lever complete with One Lever Only for Two Positions.	\$29.00
607-2	Same as above except for Three Positions.	30.00
607-3	Style No. 607 Floor Lever complete as shown with Two Levers for Two Positions.	44.00
607-4	Same as above for Three Positions.	45.00

DOUBLE GROUND LEVER INTERLOCKED



Application of Ground Lever

612-1



612

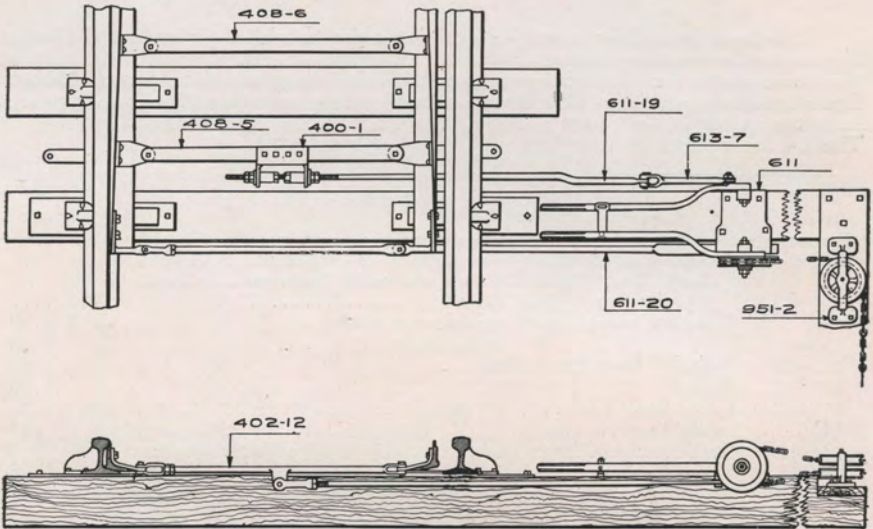


DOUBLE INTERLOCKED GROUND LEVER

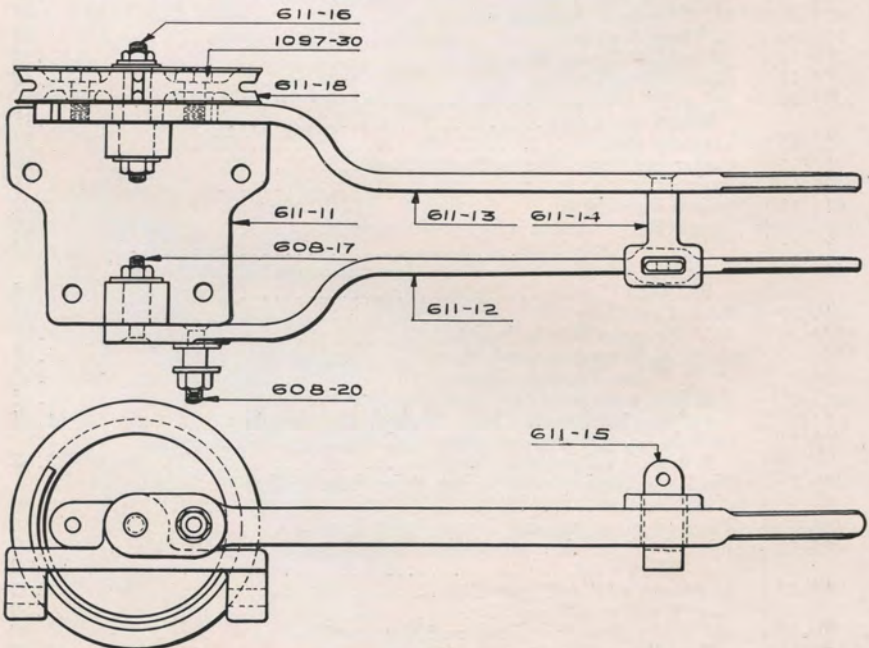
This Lever is used for operating outlying switches with their associated Distant Signals, the Levers are so interlocked that the Lever operating the Distant Signal must be thrown before the Switch can be opened, and the Switch must be closed before the Distant Signal can be cleared. The Chain Wheel on the Signal Lever is of the Rim Lock Type and locks the switch in the closed position. No Chain, Wire, Rail Braces, Tie Plates or Timbers are included in list prices.

Trade No.	DESCRIPTION	List Price
612-1	Double Ground Lever complete as shown with Front Rod, Lock Rod, Throw Rod with Switch Adjustment, Tie Rods, Eye Rod and Chain Wheel.....	\$36.50
612	Double Ground Lever, complete as shown.....	5.85
612-11	“ “ “ Stand Only.....	4.30
612-12	Switch Throw Lever Only.....	4.30
612-13	Signal “ “ “.....	1.32
611-14	Cross Lock Lug.....	.45
611-15	Lock Lug.....	1.15
611-16	Stud for Signal Lever complete with Hexagon Nuts, Washers and Cotters.....	.63
612-20	Stud for Switch Lever complete with Hexagon Nut, Washer and Cotter.....	.45
608-20	Operating Stud complete with Hexagon Nut, Washers and Cotters.....	1.00
611-17	Stud Only for Signal Lever.....	.56
612-21	“ “ “ Switch Throw Lever.....	.35
608-16	Operating Stud Only.....	.08
419-8	3/4" Standard Hexagon Nut.....	.02
950-34	3/4" Iron Washer.....	.90
704-14	7/8" x 1 1/2" Cotter Pins, per C.....	4.32
612-14	Chain Wheel Only.....	.15
1097-30	3/4" x 2" Hexagon Head Cap Screws for fastening Chain Wheel to Lever.....	.73
612-15	Locking Pin.....	.10
612-16	Collar and Dowel Pin for Spring Seat.....	1.15
612-18	Spring.....	1.02
612-19	Switch Lever Shoe.....	3.50
611-19	Throw Rod complete with six Hexagon Nuts.....	2.45
611-21	“ “ “ Only.....	4.82
611-20	Lock Rod complete with Screw Jaw, Hexagon Nut and Jaw Pin with Cotter.....	3.67
611-22	Lock Rod Only.....	.18
1002-5	1 1/4" Hexagon Nut 3/4" thick.....	.86
1020	R. S. A. Forged Screw Jaw.....	.11
1033-1	“ “ “ Jaw Pin with Cotter.....	5.42
613-7	Eye Rod with Solid Jaw End with Jaw Pin and Cotter....	1.87
951-2	Two Way Horizontal Chain Wheel Stand complete.....	5.68
400-1	Switch Adjustment complete with Bushings and Bolts for fastening to Tie Rods.....	8.50
408-5	Tie Rod complete with Switch Point Lugs drilled for Switch Adjustment.....	8.35
408-6	Tie Rod complete with Switch Point Lugs.....	7.90
402-12	Front Rod complete with Switch Point Lugs, Screw Jaw, Nut and Jaw Pins.....	8.40
950-32	Lag Screws 3/4" x 4", per C.....	9.50
950-33	Cast Washers 3/4", per C.....	15.40
950-35	3/4" x 6" Square Head Bolt and Nut, per C.....	15.40
950-36	3/4" x 7" “ “ “ “ “ “ “ “.....	15.40
950-37	3/4" x 8" “ “ “ “ “ “ “ “.....	17.60

DOUBLE GROUND LEVER



Application of Ground Lever
611-1



611



DOUBLE GROUND LEVER

(Single Throw)

This Lever is used for operating outlying Switches and their associated Distant Signals. The Lever governing the Distant Signal must be thrown first, as the Cross Lock Lug prevents the Switch from being thrown until this is done. The Chain Wheel on the Lever is of the Rim Lock Type, locking the Switch in the closed position only. No Chain, Wire, Rail Braces, Tie Plates or Timbers are included in list prices.

Trade No.	DESCRIPTION	List Price
611-1	Ground Lever complete with Throw Rod, Eye Rod, Lock Rod, Front Rod, Tie Rod with Switch Adjustment, Tie Rod and Chain Wheel.....	\$32.30
611	Ground Lever complete as shown.....	5.58
611-11	“ “ Base Only.....	10.35
611-12	Switch Throw Lever Only.....	9.45
611-13	Signal.....	1.32
611-14	Cross Lock Lug.....	.45
611-15	Lock Lug.....	1.15
611-16	Stud for Signal Lever complete with Hexagon Nuts, Washers and Cotters.....	.54
608-17	Stud for Switch Lever complete with Hexagon Nuts, Washers and Cotters.....	.45
608-20	Operating Stud complete with Hexagon Nut, Washers and Cotters.....	1.00
611-17	Stud Only for Signal Lever.....	.44
608-14	“ “ “ Switch Throw Lever.....	.35
608-16	Operating Stud Only.....	.08
419-8	$\frac{3}{4}$ " Standard Hexagon Nut.....	.02
950-34	$\frac{3}{4}$ " Iron Washer.....	.90
704-14	$\frac{3}{16}$ " x $1\frac{1}{2}$ " Cotter Pin, per C.....	2.70
611-18	Chain Wheel Only.....	.15
1097-30	$\frac{3}{4}$ " x 2" Hexagon Cap Screws for fastening Chain Wheels to Lever.....	3.50
611-19	Throw Rod complete with six Hexagon Nuts.....	2.45
611-21	“ “ Only.....	4.82
611-20	Lock Rod complete with Screw Jaw, Nut and Jaw Pin.....	3.67
611-22	“ “ Only.....	.18
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick.....	.86
1020	R. S. A. Forged Screw Jaw.....	8.40
950-32	Lag Screws $\frac{3}{4}$ " x 4", per C.....	9.50
950-33	Cast Washer $\frac{3}{4}$ ", per C.....	15.40
950-35	$\frac{3}{4}$ " x 6" Square Head Machine Bolt and Nut, per C.....	15.40
950-36	$\frac{3}{4}$ " x 7" “ “ “ “ “ “ “ “.....	17.60
950-37	$\frac{3}{4}$ " x 8" “ “ “ “ “ “ “ “.....	5.42
613-7	Eye Rod with Solid Jaw End and Pin and Cotter.....	1.87
951-2	Two Way 8" Horizontal Chain Wheel Stand complete with Wheels Pin and Cotters.....	5.68
400-1	Switch Adjustment complete with Bushings and Bolts for fastening to Tie Rod.....	8.50
408-5	Tie Rod complete with Switch Point Lugs drilled for Switch Adjustment.....	8.35
408-6	Tie Rod complete with Switch Point Lugs.....	7.90
402-12	Front Rod complete with Switch Point Lugs, Screw Jaw, Nut and Jaw Pins.....	

1 9 1 4

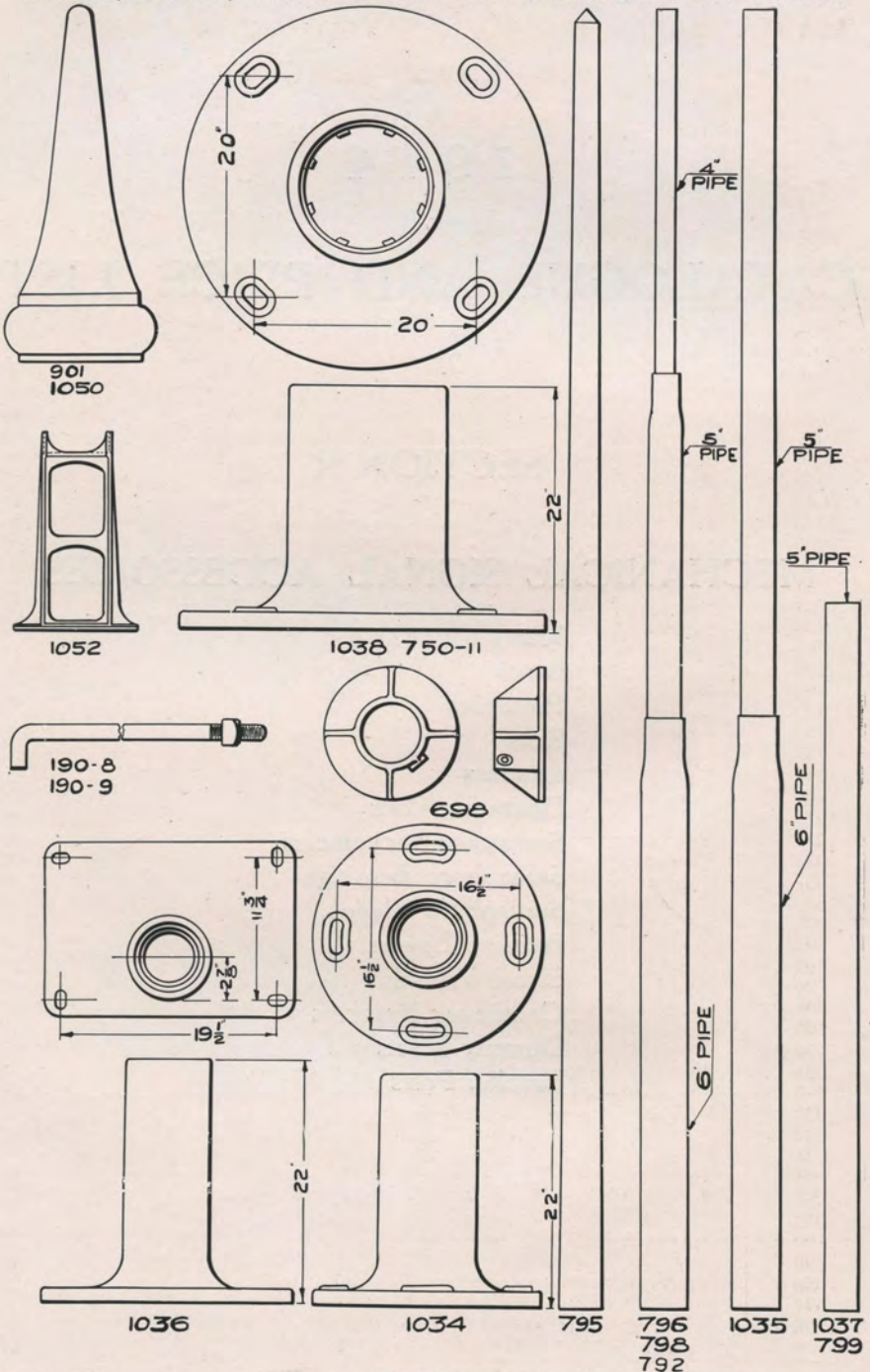
CATALOGUE AND PRICE LIST

SECTION R

MECHANICAL SIGNAL ACCESSORIES

Masts
Bases
Pinnacles
Slots
Ladders
Operating Rods
Semaphore Spectacles
Semaphore Bearings
Semaphore Blades
Balance Levers
Signal Wheels
Cantilever Brackets
Dummy Masts
Bracket Posts

MASTS, BASES, PINNACLES AND LADDER FOUNDATION

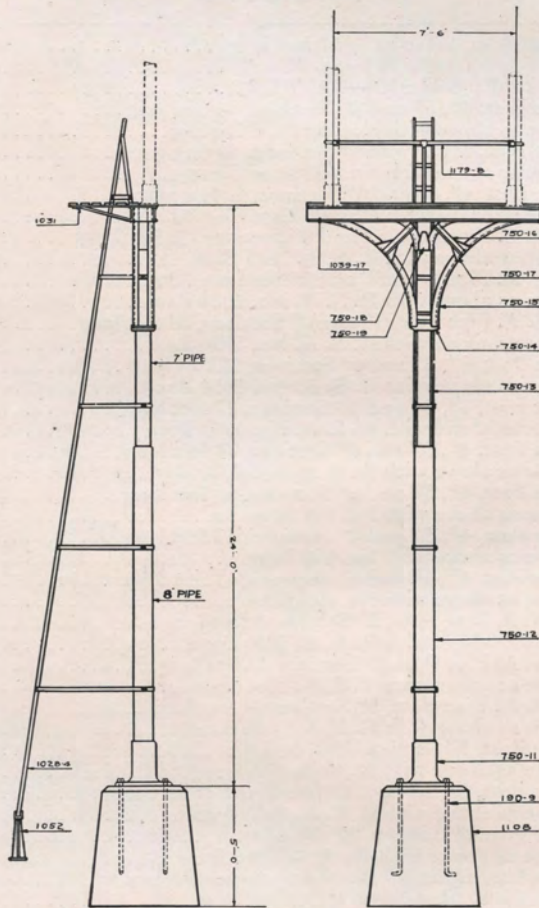




MASTS, BASES, PINNACLES AND LADDER FOUNDATION FOR BRIDGE, BRACKET AND GROUND SIGNALS

Trade No.	DESCRIPTION	List Price
795-1	Wood Post, 10" x 10"—32 feet long	\$37.26
795-2	“ “ 10" x 10"—38 “ “	44.00
795-3	“ “ 10" x 10"—42 “ “	54.72
796-1	Pipe Post, 4", 5" and 6" Sections, 32 feet long	53.10
796-11	Same as above with No. 698 Base Casting	57.60
796-2	Pipe Post, 4", 5" and 6" Sections, 39 feet long	71.10
796-22	Same as above with No. 698 Base Casting	75.60
796-3	Pipe Post, 4", 5" and 6" Sections, 46 feet long	136.80
796-33	Same as above with No. 698 Base Casting	141.30
1035-1	R. S. A. Pipe Post, 5" and 6" Sections, 25 feet long	46.80
1035-11	Same as above with R. S. A. 1034 Base	72.00
1035-2	R. S. A. Pipe Post, 5" and 6" Sections, 32 feet long	64.80
1035-22	Same as above with R. S. A. No. 1034 Base	90.00
1035-3	R. S. A. Pipe Post, 5" and 6" Sections, 38 feet long	82.80
1035-33	Same as above with R. S. A. No. 1034 Base	108.00
798-1	Pipe Post, 4", 5" and 6" Sections, 27 feet long	46.80
798-11	Same as above with R. S. A. No. 1034 Base	72.00
798-2	Pipe Post, 4", 5" and 6" Sections, 33 feet long	64.80
798-22	Same as above with R. S. A. No. 1034 Base	90.00
798-3	Pipe Post, 4", 5" and 6" Sections, 40 feet long	82.80
798-33	Same as above with R. S. A. No. 1034 Base	108.00
792-1	Pipe Post, 4", 5" and 6" Sections, 30 feet long	53.10
792-11	Same as above with No. 698 Base	57.60
792-2	Pipe Post, 4", 5" and 6" Sections, 37 feet long	71.10
792-22	Same as above with No. 698 Base	75.60
792-3	Pipe Post, 4", 5" and 6" Sections, 44 feet long	136.80
792-33	Same as above with No. 698 Base	141.30
1037-1	R. S. A. Pipe Post, 5" Section, 6 feet long	7.20
1037-11	Same as above with R. S. A. 1036 Base	28.80
1037-2	R. S. A. Pipe Post, 5" Section, 13 feet long	21.60
1037-22	Same as above with R. S. A. 1036 Base	43.20
1037-3	R. S. A. Pipe Post, 5" Section, 19 feet long	36.00
1037-33	Same as above with R. S. A. 1036 Base	57.60
799-1	Pipe Post, 5" Section, 8' 6" long	21.60
799-11	Same as above with R. S. A. Base	43.20
799-2	Pipe Post, 5" Section, 15 feet long	36.00
799-22	Same as above with R. S. A. 1036 Base	57.60
799-3	Pipe Post, 5" Section, 21' 6" long	50.40
799-33	Same as above with R. S. A. 1036 Base	72.00
698	Base Casting for 6" Pipe Section with Set Screw	4.50
750-11	“ for 8" Pipe Section Bracket Post	31.50
1038	R. S. A. Base for Bracket Post	45.00
1034	“ “ “ “ Ground Signals	19.80
1036	“ “ “ “ Bracket “	16.20
901	Pinnacle for 4" Pipe Section with Set Screw	2.40
1050	R. S. A. Pinnacle for 5" Pipe Section with Set Screw	2.70
1052	“ “ “ Ladder Foundation	3.51
190-8	Anchor Bolts, 1" x 3' with Square Nut and 2½" Hook . . . . .	.72
190-9	“ “ 1½" x 4" “ “ “ “ “	3.15
1050-1	Set Screw for Pinnacles ⅝" x 1¼" . . . . .	.05
697-1	“ “ “ Base Casting ½" x 1¼" . . . . .	.03
1196-10	½" x 1½" Square Head Bolts for Ladder to Ladder Foundations . . . . .	.05

PIPE BRACKET POST

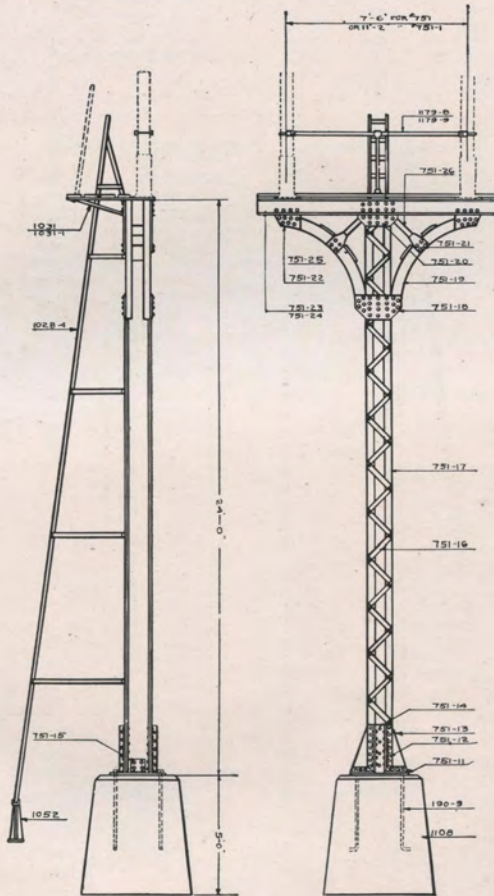


750

Trade No.	DESCRIPTION	List Price
750	Bracket Post complete as shown with Ladder and Handrail for Two Signals.....	.....
750-1	Same as above without Ladder and Handrail.....	.....

Concrete Foundations are not included in list price.

COLUMN BRACKET POST

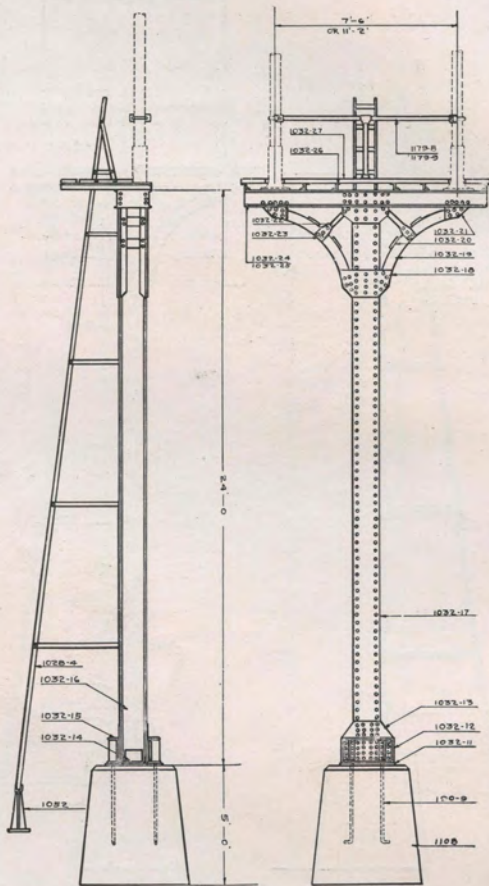


751

Trade No.	DESCRIPTION	List Price
751	Bracket Post complete as shown with Ladder and Handrail for Two Signals.....	.....
751-2	Same as above without Ladder and Handrail.....	.....
751-1	Bracket Post complete with Ladder and Handrail for Three Signals.....	.....
751-3	Same as above without Ladder and Handrail.....	.....

Concrete Foundations are not included in list prices.

R. S. A. COLUMN BRACKET POST

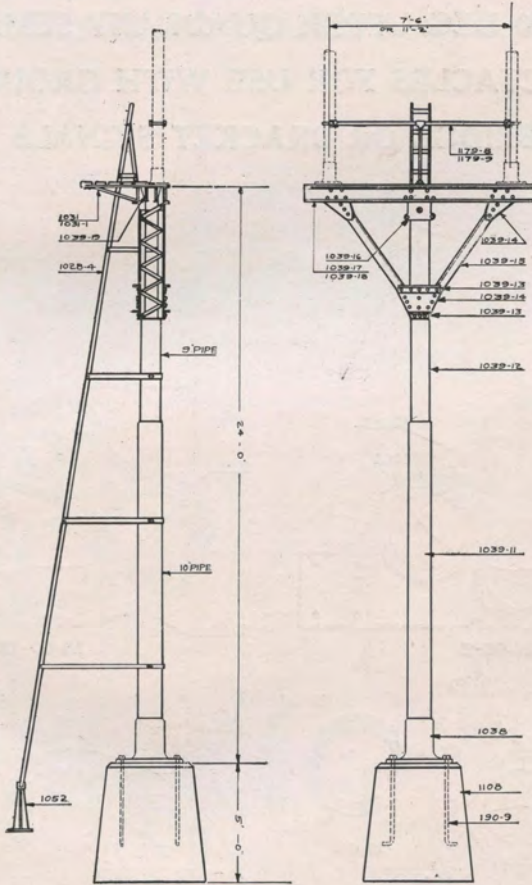


1032

Trade No.	DESCRIPTION	List Price
1032	R. S. A. Column Bracket Post complete with Ladder and Handrail for Two Signals . . . . .	.....
1032-2	Same as above without Ladder and Handrail . . . . .	.....
1032-1	R. S. A. Column Bracket Post complete with Ladder and Handrail for Three Signals . . . . .	.....
1032-3	Same as above without Ladder and Handrail . . . . .	.....

Concrete Foundations are not included in list price.

R. S. A. BRACKET POST

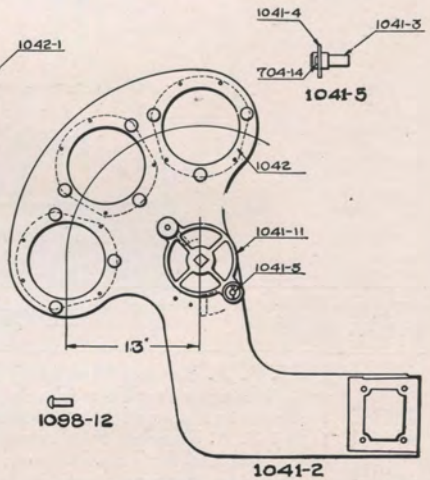
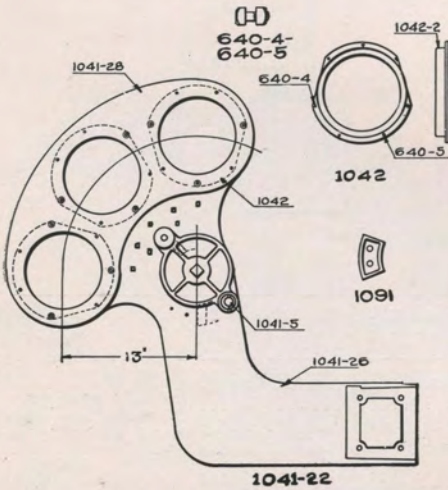
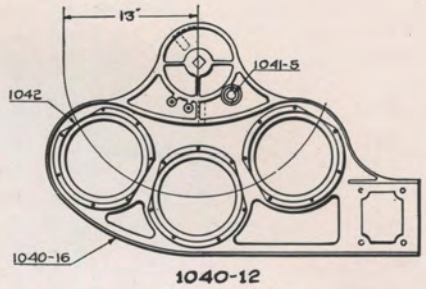
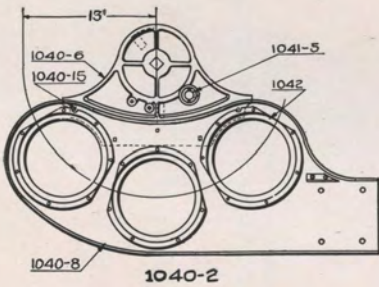


1039

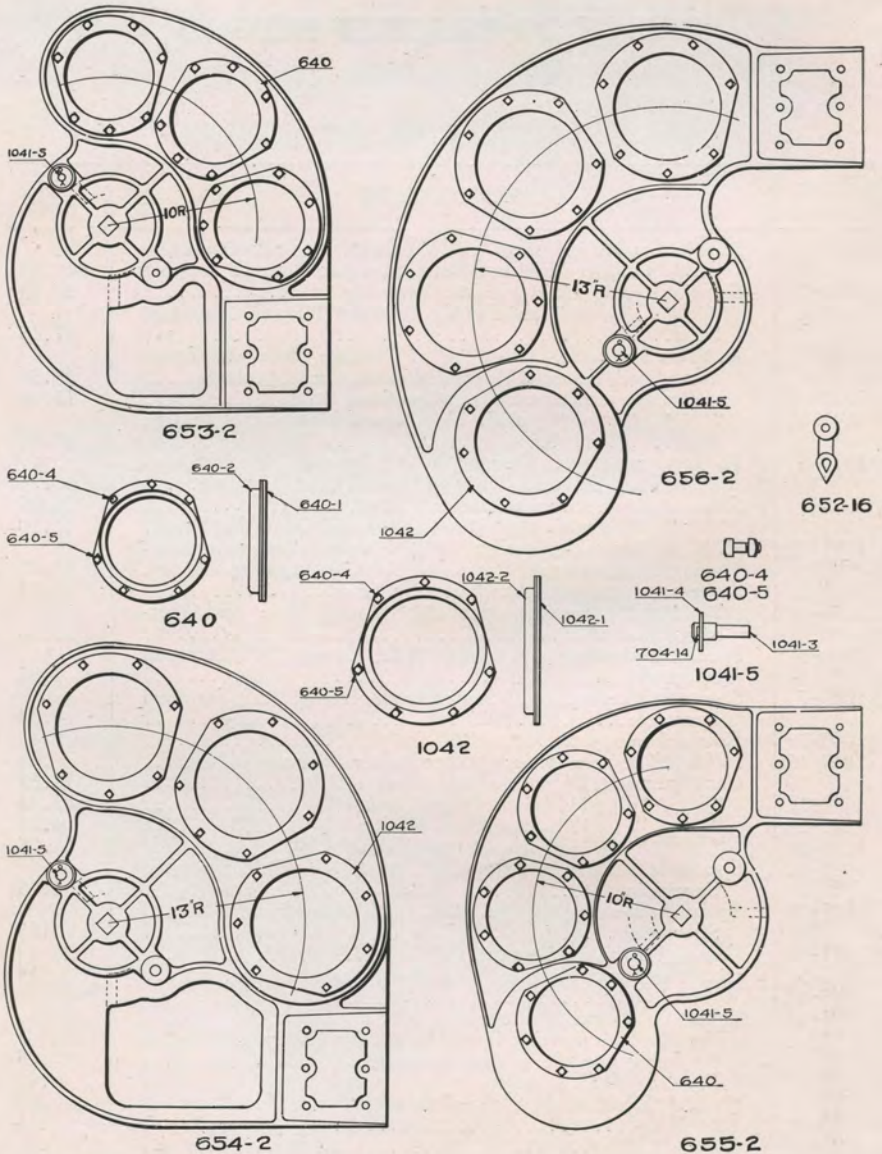
Trade No.	DESCRIPTION	List Price
1039	R. S. A. Bracket Post complete as shown with Ladder and Handrail for Two Signals.....	\$360.00
1039-2	Same as above without Ladder and Handrail.....	333.00
1039-1	R. S. A. Bracket Post complete as shown with Ladder and Handrail for Three Signals.....	405.00
1039-3	Same as above without Ladder and Handrail.....	378.00

Concrete Foundations are not included in list price.

**R. S. A. 90 DEG. UPPER QUADRANT SEMAPHORE
 SPECTACLES FOR USE WITH GROUND,
 BRIDGE OR BRACKET SIGNALS**



SEMAPHORE SPECTACLES FOR TRAIN ORDER SIGNALS



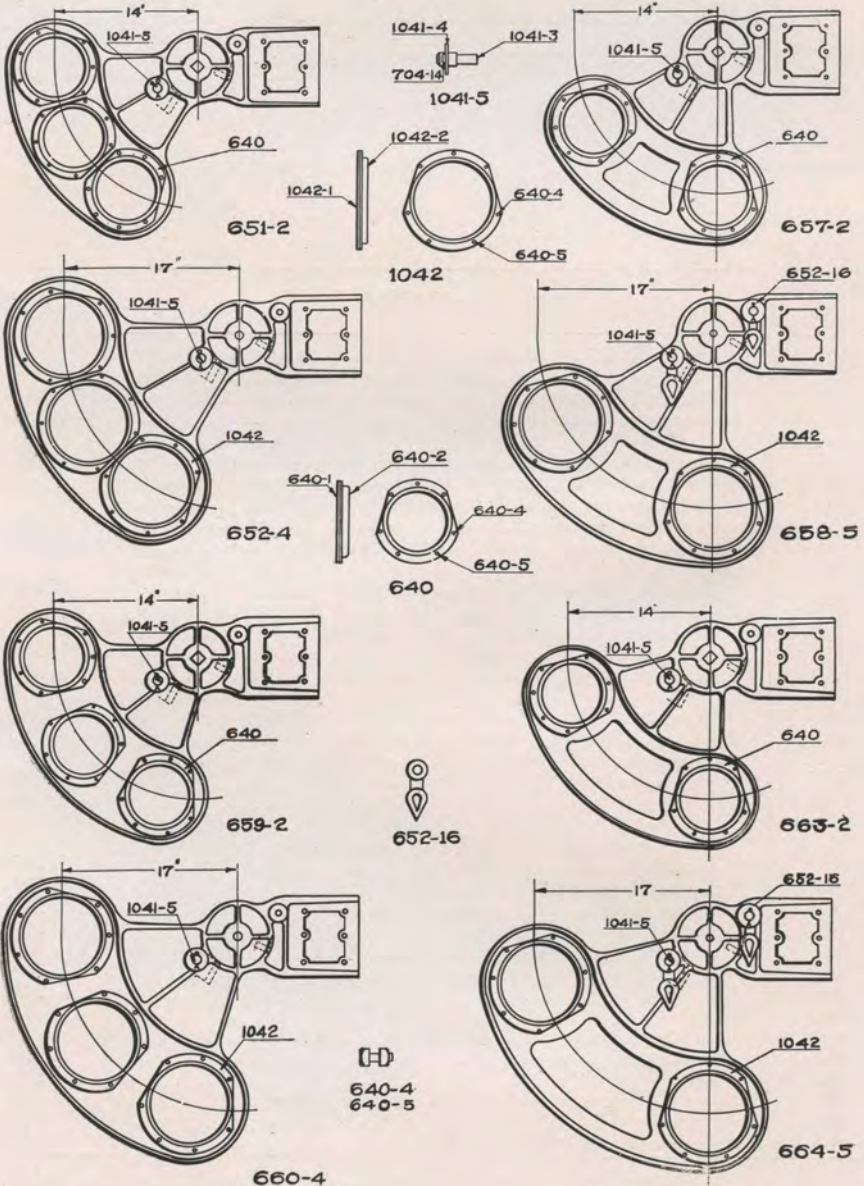


SEMAPHORE SPECTACLES FOR TRAIN ORDER SIGNALS

Trade No.	DESCRIPTION	List Price
653-2	Three Light 90 deg. Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts, 1" Square Hole, 6½" Roundels	\$14.55
653-4	Same as above except with 1¼" Round Hole	14.55
653-5	“ “ “ “ “ “ “ “ “ “ “ Two Operating Studs and Two Combination Shackle and Wire eyes	14.91
654-2	Three Light 90 deg. Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts, 1" Square Hole, 8¾" Roundels	15.30
654-4	Same as above except with 1¼" Round Hole	15.30
654-5	“ “ “ “ “ “ “ “ “ “ “ Two Operating Studs and Two Combination Shackles and Wire Eyes	15.66
655-2	Four Light 90 deg. Universal Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts, 1" Square Hole, 6½" Roundels	11.70
655-4	Same as above except with 1¼" Round Hole	11.70
655-5	“ “ “ “ “ “ “ “ “ “ “ Two Operating Studs and Two Combination Shackles and Wire Eyes	12.06
656-2	Four Light 90 deg. Universal Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts 1" Square Hole, 8¾" Roundels	12.70
656-4	Same as above except with 1¼" Round Hole	12.70
656-5	“ “ “ “ “ “ “ “ “ “ “ complete with Two Operating Studs and Two Combination Shackles and Wire Eyes	13.05
1041-5	Operating Stud with Washer and Cotter . . . . .	.15
1041-4	Washer Only . . . . .	.02
704-14	⅜" x 1½" Cotter Pins, per C. . . . .	.90
1042	R. S. A. Roundel Rings complete with Bolts and Nuts, 8¾" Roundels . . . . .	.60
1042-1	Flat Ring for above . . . . .	.18
1042-2	Cup “ “ “ “ . . . . .	.21
640	Roundel Rings complete with Bolts, 6½" dia. . . . .	.60
640-1	Flat Ring for above . . . . .	.18
640-2	Cup “ “ “ “ . . . . .	.21
640-4	¾" x 5/8" Square Head Machine Bolts and Nuts . . . . .	.03
640-5	¼" x 3/4" “ “ “ “ “ “ “ “ . . . . .	.03
652-16	Combination Shackle and Wire Eye . . . . .	.11

Glass is not included in above prices. Roundels, if desired, must be ordered separately.

60 DEG. AND 75 DEG. LOWER QUADRANT SEMAPHORE SPECTACLES



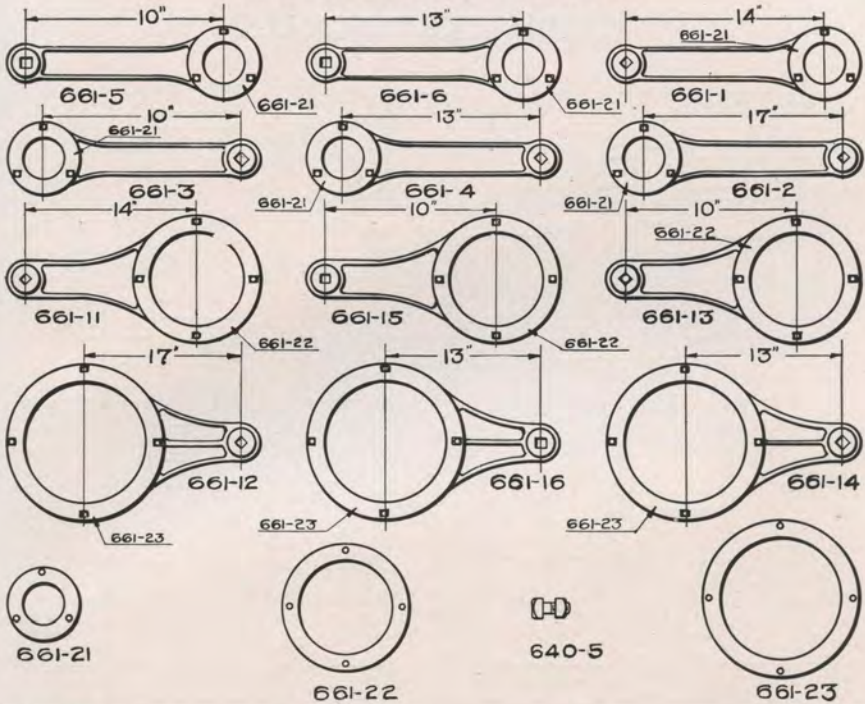


60 DEG. AND 75 DEG. LOWER QUADRANT SEMAPHORE SPECTACLES

Trade No.	DESCRIPTION	List Price
659-2	Three Light 75 deg. Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts, 1" Square Hole, 6½" Roundels.	\$7.74
659-4	Same as above except with 1" Round Hole.	7.74
659-5	Three Light 75 deg. Semaphore Spectacle complete with Two Operating Studs, Roundel Rings, Bolts and Two Combination Shackles and Wire Eyes, 1¼" Round Hole, 6½" Roundels.	8.00
660-2	Three Light 75 deg. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts with 1" Square Hole, 8¾" Roundels.	8.46
660-4	Same as above with 1" Round Hole as shown.	8.46
660-5	Three Light 75 deg. Semaphore Spectacle complete with Two Operating Studs, Roundel Rings, Bolts and Two Combination Shackles and Wire Eyes, 1¼" Round Hole, 8¾" Roundels.	8.72
663-2	Two Light 75 deg. Semaphore Spectacle complete as shown with Operating Stud, Roundel Rings and Bolts, 1" Square Hole, 6½" Roundels.	7.74
663-4	Same as above except with 1" Round Hole.	7.74
663-5	Two Light 75 deg. Semaphore Spectacle complete with Two Operating Studs, Roundel Rings, Bolts and Two Combination Shackles and Wire Eyes, 1¼" Round Hole, 6½" Roundels.	8.00
664-2	Two Light 75 deg. Semaphore Spectacle complete with Operating Stud, Roundel Rings and Bolts with 1" Square Hole, 8¾" Roundels.	8.46
664-4	Same as above except with 1" Round Hole.	8.46
664-5	Two Light 75 deg. Semaphore Spectacle complete as shown with Two Operating Studs, Roundel Rings, Bolts and Two Combination Shackles and Wire Eyes, 1¼" Round Hole, 8¾" Roundels.	8.72

Glass is not included in above prices. Roundels, if desired, must be ordered separately.

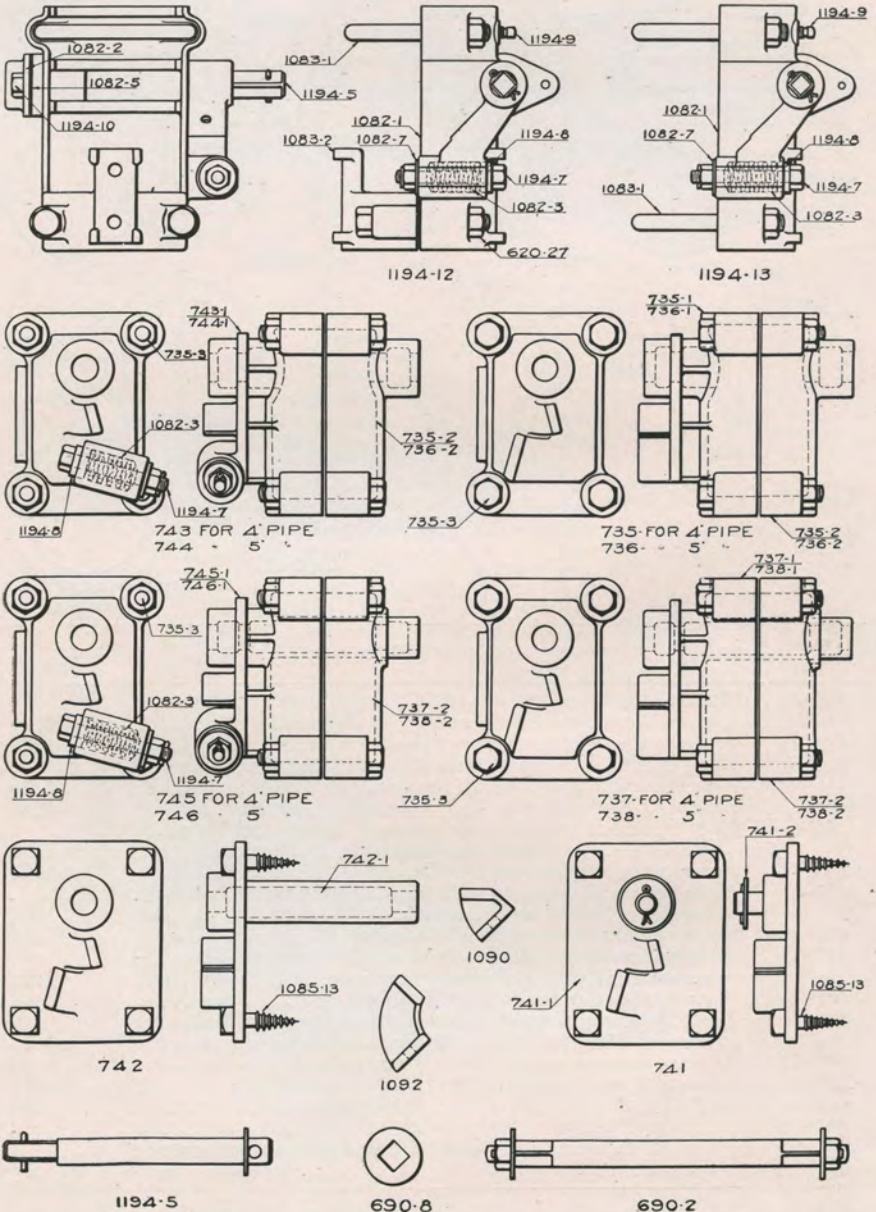
BACK SPECTACLES FOR GROUND, BRIDGE AND BRACKET SIGNALS



Trade No.	DESCRIPTION	List Price
661-3	Back Spectacle complete with Roundel Rings and Bolts, for use with 653 and 655 Spectacles, 3" Roundels.....	\$1.26
661-13	Same as above except for 6 1/2" Roundels.....	1.35
661-5	Back Spectacle complete with Roundel Rings and Bolts, for use with 655 Spectacle, 3" Roundel	1.26
661-15	Same as above except for 6 1/2" Roundel	1.35
661-4	Back Spectacle complete with Roundel Rings and Bolts, for use with 654, 656 and 1041 Spectacle, 3" Roundel.....	1.26
661-14	Same as above except for 8 3/8" Roundel	1.98
661-6	Back Spectacle complete with Roundel Rings and Bolts, for use with 656 and 1040 Spectacle, 3" Roundel.....	1.26
661-16	Same as above except for 8 3/8" Roundel	1.98
661-1	Back Spectacle complete with Roundel Rings and Bolts, for use with 651, 657, 659 and 663 Spectacle, 3" Roundel.....	1.26
661-11	Same as above except for 6 1/2" Roundel	1.44
661-2	Back Spectacle complete with Roundel Ring and Bolts, for use with 652, 658, 660 and 664 Spectacle, 3" Roundel.....	1.26
661-12	Same as above except for 8 3/8" Roundels.....	1.98
661-21	Roundel Ring, Sheet Steel.....	.13
661-22	" " " ".....	.18
661-23	" " " ".....	.18
640-5	1/4" x 3/4" Square Head Machine Bolt and Nut for fastening Sheet Steel Ring to Spectacle.....	.03

Glass is not included in above prices. Roundels, if desired, must be ordered separately.

SEMAPHORE BEARINGS FOR GROUND, BRIDGE OR BRACKET SIGNALS

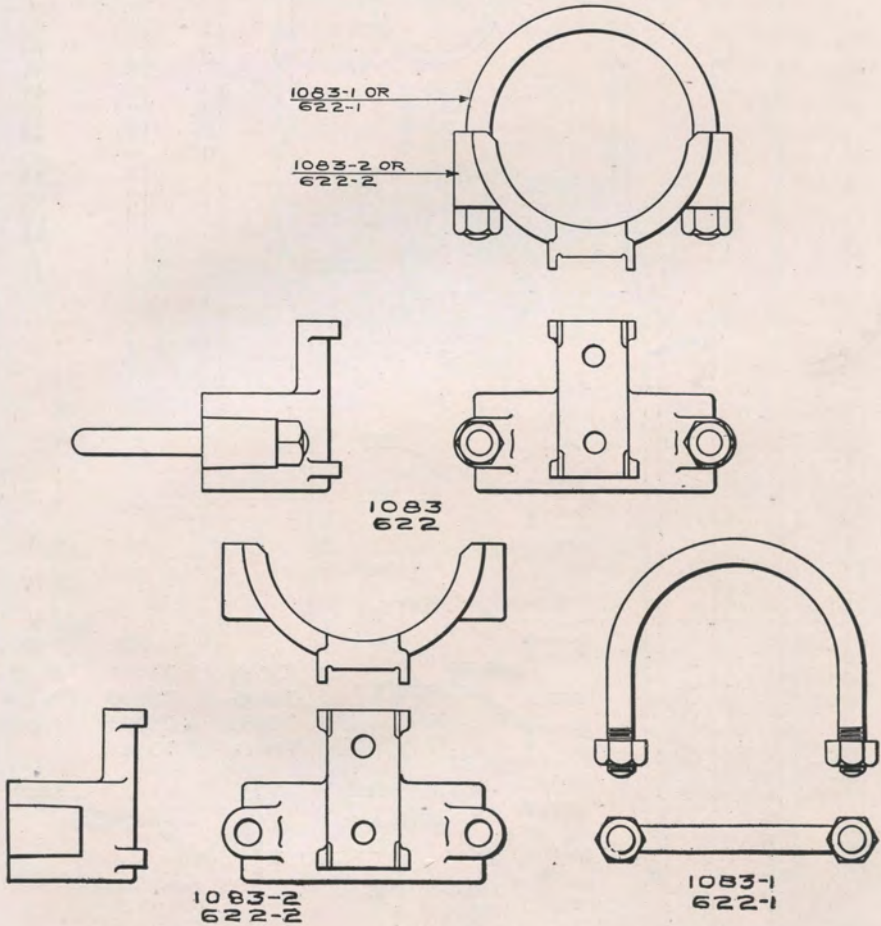




SEMAPHORE BEARINGS FOR GROUND, BRIDGE OR BRACKET SIGNALS

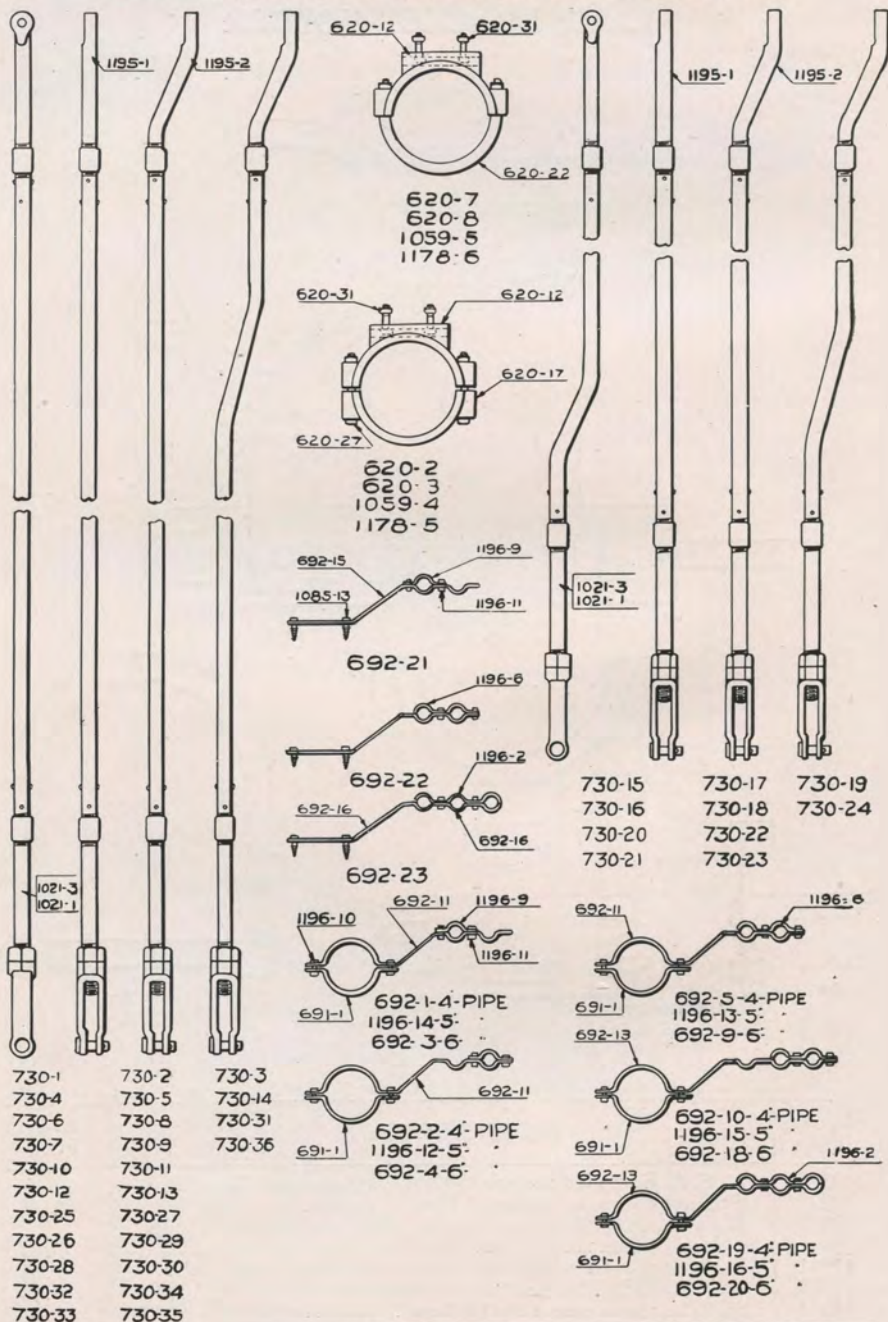
Trade No.	DESCRIPTION	List Price
690-2	Semaphore Shaft 1" Square, for use with Back Spectacle . . .	\$2.70
1083-1	U Bolt for 5" Pipe . . . . .	.81
1083-2	Clamp " 5" "	1.44
622-1	U Bolt " 4" " . . . . .	.81
622-2	Clamp " 4" "	1.44
620-27	3/4" x 5 1/2" Hexagon Head Machine Bolts and Nuts for fastening Clamp to R. S. A. Semaphore Bearing . . . . .	.18
1194-10	1/2" x 1" Hexagon Head Cap Screws . . . . .	.04
1194-9	1/2" x 1 1/4" Square Head Set Screw . . . . .	.04
1082-7	5/8" Standard Washer . . . . .	.02
735-3	3/4" x 5" Square Head Machine Bolts and Nuts for fastening Semaphore Bearings . . . . .	.18
735-1	Semaphore Bearing (Front Half Only), for 4" Pipe Lower Quadrant Spectacle	2.25
736-1	Same as above except for 5" Pipe	2.25
747-1	" " " " " 4" " and Upper Quadrant Spectacles	2.25
748-1	Same as above except for 5" Pipe and Upper Quadrant Spectacles	2.25
743-1	Semaphore Bearing (Front Half Only), for 4" Pipe, Lower Quadrant Spectacles	2.70
744-1	Same as above except for 5" Pipe	2.70
749-1	" " " " " 4" " and Upper Quadrant Spectacles	2.70
760-1	Same as above except for 5" Pipe and Upper Quadrant Spectacles	2.70
737-1	Semaphore Bearing (Front Half Only), for 4" Pipe Lower Quadrant Spectacles	2.40
738-1	Same as above except for 5" Pipe	2.40
761-1	" " " " " 4" " and Upper Quadrant Spectacles	2.40
762-1	Same as above except for 5" Pipe and Upper Quadrant Spectacles	2.40
745-1	Semaphore Bearing (Front Half Only), for 4" Pipe and Lower Quadrant Spectacles	2.85
746-1	Same as above except for 5" Pipe	2.85
739-1	" " " " " 4" " and Upper Quadrant Spectacle	2.85
740-1	Same as above except for 5" Pipe and Upper Quadrant Spectacles	2.85
735-2	Semaphore Bearing (Rear Half Only), for No. 735, 747, 743 and 749 Bearing	1.67
736-2	Semaphore Bearing (Rear Half Only), for 736, 748, 744 and 760 Bearing	1.67
737-2	Semaphore Bearing (Rear Half Only), of No. 737, 761, 745 and 739 Bearing	1.67
738-2	Same as above except for 738, 762, 746 and 740 Bearing	1.67
1090	R. S. A. Filler Block, used to limit travel of Signal Blade from 0 to 45 deg. and also used in connection with R. S. A. 1091 Filler Block for fixing Signal in the 45 deg. position . . . . .	.14
1092	R. S. A. Filler Block, used for fixing Signal Arm in 0 deg. " . . . . .	.18
1196-10	1/2" x 1 1/2" Square Head Machine Bolt and Nut for Filler Block . . . . .	.05
690-8	Collar used when Back Spectacle is not required . . . . .	.09
741	Bearing for Wood Post complete with Stud and Lag Screws	1.60
742	Horn Bearing for Wood Post complete with Lag Screws	1.76

LAMP BRACKET HOLDER



Trade No.	DESCRIPTION	List Price
1083	R. S. A. Lamp Bracket Holder complete as shown for 5" Pipe	\$2.03
622	Same as above except for 4" Pipe.	2.03
1083-1	U Bolt with $\frac{3}{4}$ " Hexagon Nuts for 1083 Lamp Bracket Holder for 5" Pipe. ....	.81
622-1	Same as above except for 4" Pipe. ....	.81
1083-2	R. S. A. Lamp Bracket Holder Only for 5" Pipe.	1.44
622-2	Same as above except for 4" Pipe.	1.44

OPERATING RODS, PIPE GUIDES AND CLAMPS FOR GROUND, BRIDGE OR BRACKET SIGNALS





OPERATING RODS, PIPE GUIDES AND CLAMPS FOR GROUND, BRIDGE AND BRACKET SIGNALS

Trade No.	DESCRIPTION	List Price
730-1	Operating Rod complete as shown for 90 deg. Pipe Operated Bridge and Bracket Signals, 3' 8½" long.....	\$3.60
730-10	Same as above except 9' 8½" long.....	4.50
730-4	" " " " 10' 8½" ".....	4.50
730-11	Operating Rod complete as shown for 90 deg. Pipe Operated Bridge and Bracket Signals, Offset Eye Rod, 9' 8½" long..	4.50
730-2	Same as above except 10' 8½" long.....	4.50
730-5	" " " " 16' 8½" ".....	5.40
730-3	Operating Rod complete as shown for 90 deg. Pipe Operated Bridge and Bracket Signals, Offset Pipe and Eye Rod, 16' 8½" long.....	5.40
730-25	Operating Rod complete as shown for 90 deg. Wire Operated Bridge and Bracket Signals, 3' 2" long.....	3.60
730-28	Same as above except 9' 2" long.....	4.50
730-26	" " " " 10' 2" ".....	4.50
730-30	Operating Rod complete as shown for 90 deg. Wire Operated Bridge and Bracket Signals, Offset Eye Rod, 9' 2" long..	4.50
730-27	Same as above except 10' 2" long.....	4.50
730-29	" " " " 16' 2" ".....	5.40
730-31	" " " " Offset in Pipe.....	5.40
730-15	Operating Rod complete as shown for 60 deg. Pipe Operated Bridge and Bracket Signals, 6' 10" long.....	4.50
730-16	Same as above except 13' 4" long.....	4.95
730-17	Operating Rod complete as shown for 60 deg. Pipe Operated Bridge and Bracket Signal, Offset Eye Rod, 13' 4" long..	5.40
730-18	Same as above excepting 19' 10" long.....	5.85
730-19	" " " " Offset in Pipe.....	6.30
730-20	Operating Rod complete as shown for 60 deg. Wire Operated Bridge and Bracket Signal, 6' 3½" long.....	4.50
730-21	Same as above except 12' 9½" long.....	4.95
730-22	Operating Rod complete as shown for 60 deg. Wire Operated Bridge and Bracket Signal, Offset Eye Rod, 12' 9½" long..	5.40
730-23	Same as above except 19' 3½" long.....	5.85
730-24	" " " " Offset in Pipe.....	6.30
730-6	Operating Rod complete as shown for 90 deg. Ground Signal, 22' 6" long.....	7.20
730-12	Same as above except 28' 6" long.....	8.10
730-7	" " " " 29' 6" ".....	8.10
730-13	Operating Rod complete as shown for 90 deg. Ground Signal with Offset Eye Rod, 28' 6" long.....	8.10
730-8	Same as above except 29' 6" ".....	8.10
730-9	" " " " 35' 6" ".....	9.45
730-14	" " " " with Offset in Pipe.....	9.45
730-32	Operating Rod complete as shown for 60 deg. Ground Signal, 25 feet long.....	7.20
730-33	Same as above except 32 feet long.....	7.65



OPERATING RODS, PIPE GUIDES AND CLAMPS FOR GROUND, BRIDGE AND BRACKET SIGNALS

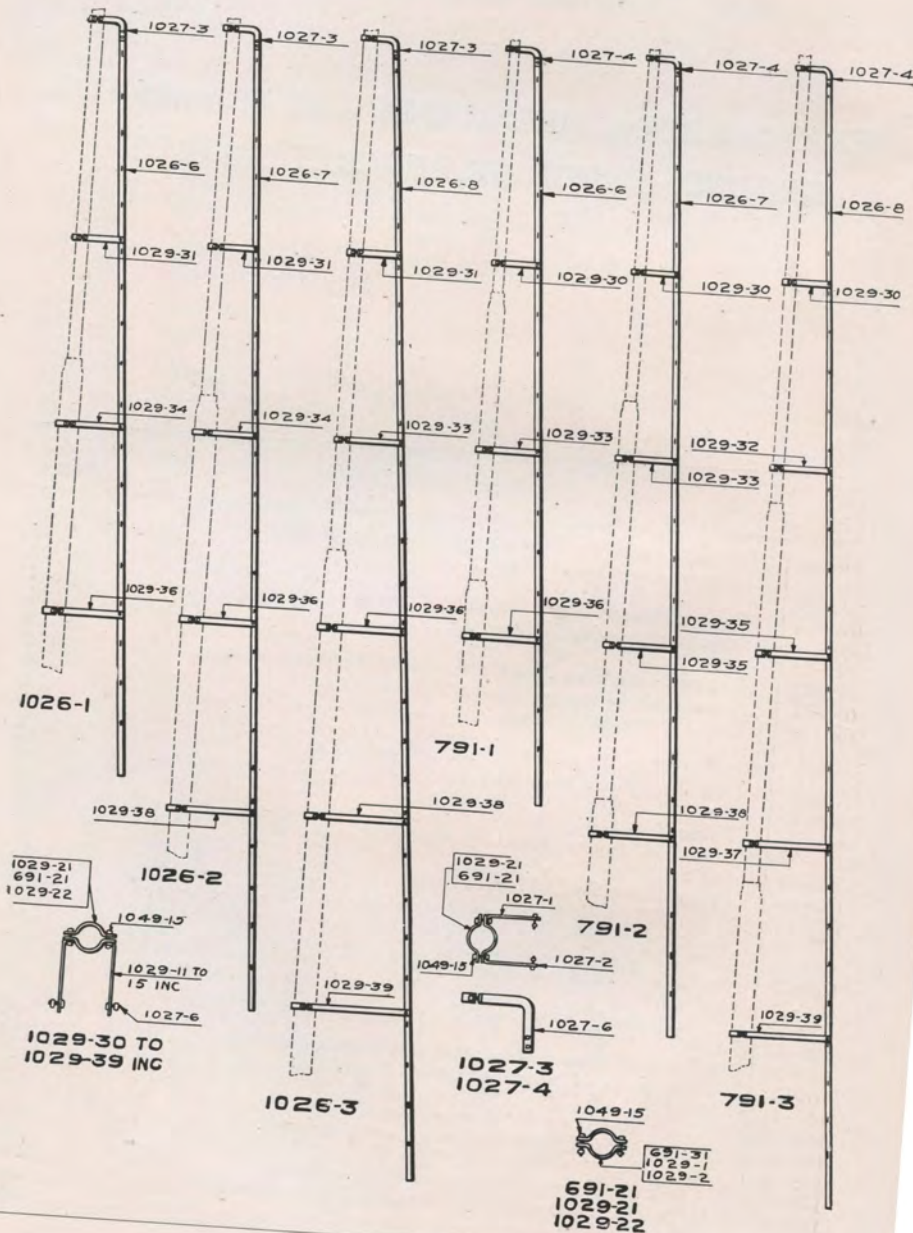
Trade No.	DESCRIPTION	List Price
730-34	Operating Rod complete as shown for 60 deg. Ground Signal with Offset Eye Rod, 32 feet long	\$8.10
730-35	Same as above except 38 feet long	8.80
730-36	“ “ “ “ Offset in Pipe	9.45
692-1	Pipe Guide, One Way, complete as shown for 4" Pipe	1.49
1196-14	Same as above except for 5" Pipe	1.49
692-3	“ “ “ “ 6" “	1.53
692-2	Pipe Guide, One Way, complete as shown for 4" Pipe	1.49
1196-12	Same as above except for 5" Pipe	1.49
692-4	“ “ “ “ 6" “	1.53
692-5	Pipe Guide, Two Way, complete as shown for 4" Pipe	1.76
1196-13	Same as above except for 5" Pipe	1.76
692-9	“ “ “ “ 6" “	1.80
692-10	Pipe Guide, Two Way, complete as shown for 4" Pipe	1.76
1196-15	Same as above except for 5" Pipe	1.76
692-18	“ “ “ “ 6" “	1.80
692-19	Pipe Guide, Three Way, complete as shown for 4" Pipe	2.03
1196-16	Same as above except for 5" Pipe	2.03
692-20	“ “ “ “ 6" “	2.07
692-21	Pipe Guide, One Way, for Wood Post, complete as shown	1.45
692-24	Same as above except with Cap on Outer Guide	1.45
692-22	Pipe Guide, Two Way, for Wood Post, complete as shown ..	1.71
692-23	“ “ “ “ Three “ “ “ “	1.98
692-25	Same as above except with Two Way Pipe Guide Cap	1.98
620-2	Clamp for Crank Stands or Balance Lever Stands complete as shown with Back Half, Bolts and Bolts for fastening Stand for 5" Pipe	2.34
620-3	Same as above except for 6" Pipe	2.34
1059-4	“ “ “ “ “ 1034 Ground Signal Base	2.95
1178-5	“ “ “ “ “ 1036 Bridge and Bracket Base ..	2.95
620-7	Clamp for Crank Stands, Balance Lever Stands complete as shown with U Bolt and Bolts for fastening Stand for 5" Pipe	2.34
620-8	Same as above except for 6" Pipe	2.34
1059-5	“ “ “ “ “ 1034 Ground Signal Base	2.95
1178-6	“ “ “ “ “ 1036 Bridge or Bracket Base ..	2.95
1021-1	R. S. A. Screw Jaw complete with Pin and Cotter Forged Jaw	2.21
1021-3	Same as above except with Malleable Jaw	1.89
1033-1	R. S. A. Jaw Pin $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter .....	.11
1195-1	“ “ “ Straight Eye Rod, Tang End	1.53
1195-2	“ “ “ Offset “ “ “	2.34
1015-6	1" Galvanized Pipe with Plug Sleeve and Rivets R. S. A. (specify length), per ft. ....	.....
1015-7	1" Black Pipe with Plug Sleeve and Rivets (specify length), per ft. ....	.....
1015-1	Pipe Plug for 1" Pipe .....	.22
1015-2	1" x $2\frac{1}{4}$ " Coupling, Black .....	.27
1015-3	1" x $2\frac{1}{4}$ " “ Galvanized .....	.32
1015-4	$\frac{1}{4}$ " x $1\frac{1}{8}$ " Rivets, Galvanized, per C. ....	.13
1015-5	$\frac{1}{4}$ " x $1\frac{1}{8}$ " “ Black, per C. ....	.54



OPERATING RODS, PIPE GUIDES AND CLAMPS FOR GROUND, BRIDGE OR BRACKET SIGNALS

Trade No.	DESCRIPTION	List Price
692-11	One and Two Way Pipe Guide Clamp for 4" Pipe.....	\$0.54
1196-8	Same as above for 5" Pipe.....	.54
692-12	" " " 6" " ".....	.58
692-13	Two and Three Way Pipe Guide Clamps for 4" Pipe.....	.54
1196-5	Same as above for 5" Pipe.....	.54
692-14	" " " 6" " ".....	.58
692-15	One and Two Way Pipe Guide Clamp for Wood Post.....	.54
692-16	Same as above except Two and Three Way.....	.54
691-1	Pipe Clamp for 4" Pipe.....	.41
1029-1	" " " 5" " ".....	.44
1029-2	" " " 6" " ".....	.47
1196-9	One Way Pipe Guide Cap.....	.35
1196-6	Two " " " " " ".....	.62
1196-2	Three " " " " " ".....	.89
1196-10	$\frac{1}{2}$ " x $1\frac{1}{2}$ " Square Head Machine Bolts and Nuts.....	.05
1196-11	$\frac{3}{8}$ " x 1" " " " " " ".....	.03
620-12	Front Clamp for 5" Pipe.....	1.08
620-13	" " " 6" " " ".....	1.08
620-17	Back " " 5" " " ".....	.54
620-18	" " " 6" " " ".....	.54
620-27	$\frac{3}{4}$ " x $5\frac{1}{2}$ " Hexagon Head Machine Bolts and Nuts.....	.18
620-28	$\frac{3}{4}$ " x 6" " " " " " ".....	.18
620-22	U Bolts for 5" Pipe.....	.81
620-23	U " " 6" " " ".....	.81
620-31	$\frac{3}{4}$ " x $2\frac{1}{2}$ " Square Head Machine Bolts and Nuts.....	.13
1059-2	Front Half of Clamp for Ground Signal Base.....	1.62
1059-1	Back " " " " " ".....	.72
1059-3	U Bolt for Clamp for Ground Signal Base.....	1.08
1178-2	Front Half of Clamp for Bridge and Bracket Base.....	1.62
1178-1	Back " " " " " ".....	.72
1178-3	U Bolt for Clamp of Bridge and Bracket Base.....	1.08
1178-4	$\frac{3}{4}$ " x $6\frac{1}{2}$ " Hexagon Head Machine Bolt and Nut.....	.18
1085-13	$\frac{1}{2}$ " x $2\frac{1}{2}$ " Lag Screws.....	.06

LADDERS FOR 90 DEG. UPPER QUADRANT GROUND SIGNALS

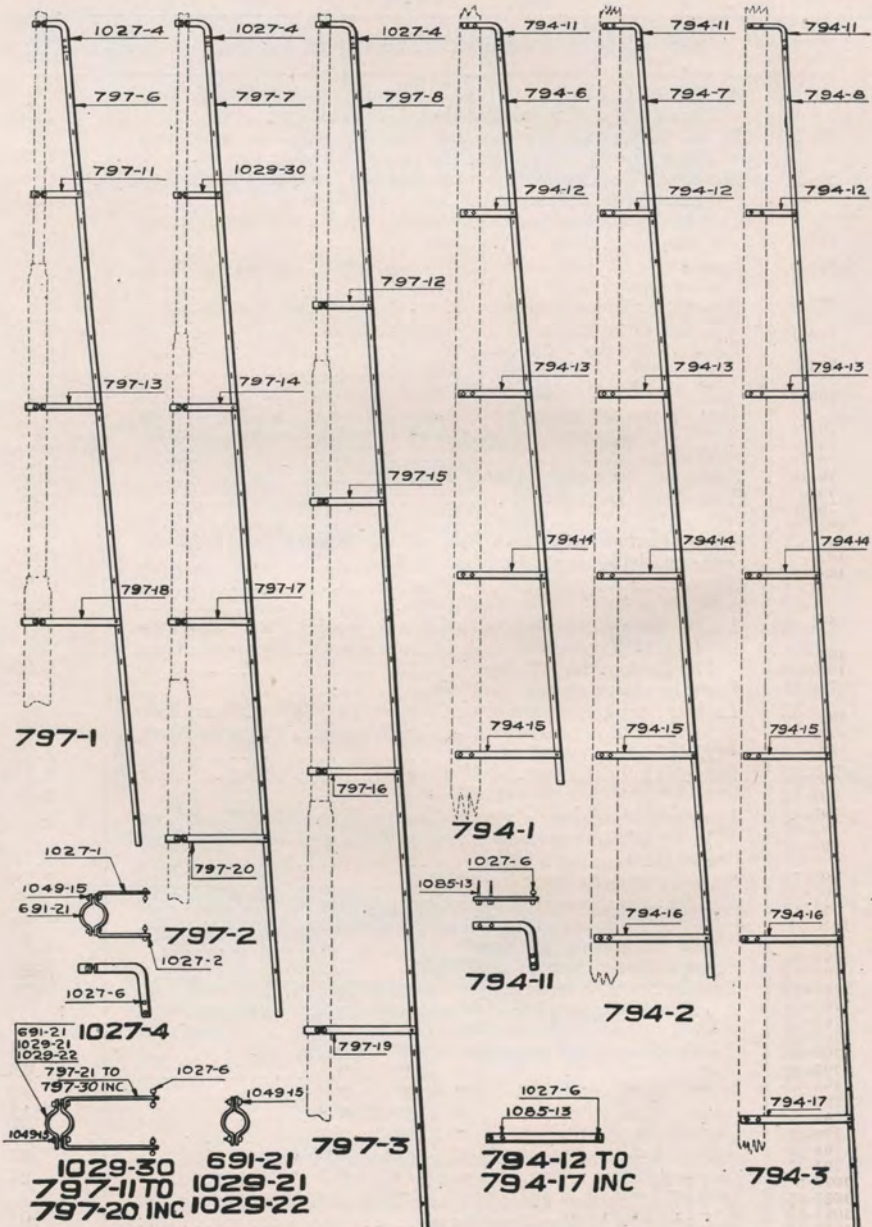




LADDERS FOR 90 DEG. UPPER QUADRANT GROUND SIGNALS

Trade No.	DESCRIPTION	List Price
1026-1	R. S. A. Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 24 feet long	\$20.70
1026-2	R. S. A. Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 30' 10" long	27.00
1026-3	R. S. A. Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 36' 10" long	33.30
791-1	Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 24 feet long	20.70
791-2	Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 30' 10" long	27.00
791-3	Ladder for Ground Signals, complete with Top Pieces, Stays, Clamps and Bolts, 36' 10" long	33.30
1026-6	Ladder Only for 1026-1 and 791-1	11.70
1026-7	“ “ “ 1026-2 “ 791-2	15.30
1026-8	“ “ “ 1026-3 “ 791-3	18.00
1027-3	Top Pieces, complete with Clamps, Two ½" x 2" and Four ½" x 1" Square Head Machine Bolts with Hexagon Nuts for 5" Pipe	2.70
1027-4	Same as above except for 4" Pipe	2.70
1027-1	Top Piece Only, R. H. ....	.81
1027-2	“ “ “ L. H. ....	.81
691-21	Clamp (Two Pieces) with Two ½" x 2" Square Head Machine Bolts and Hexagon Nuts for 4" Pipe .....	.77
1029-21	Same as above except for 5" Pipe .....	.90
1029-22	“ “ “ “ 6" "	1.04
1029-30	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts, 17" Centers for 4" Pipe	1.80
1029-31	Same as above except for 5" Pipe	1.80
1029-32	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts, 23" Centers for 4" Pipe	2.25
1029-33	Same as above except for 5" Pipe	2.25
1029-34	“ “ “ “ 6" "	2.25
1029-35	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts, 29" Centers for 5" Pipe	2.70
1029-36	Same as above except for 6" Pipe	2.70
1029-37	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts and Hexagon Nuts, 35" Centers for 5" Pipe	3.15
1029-38	Same as above except for 6" Pipe	3.15
1029-39	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts and Hexagon Nuts, 40¾" Centers for 6" Pipe	3.60
1029-11	Ladder Stay (One Piece Only), 17" Centers .....	.45
1029-12	“ “ “ “ “ 23" " .....	.68
1029-13	“ “ “ “ “ 29" " .....	.90
1029-14	“ “ “ “ “ 35" "	1.13
1029-15	“ “ “ “ “ 40¾" "	1.35
1027-6	½" x 1" Square Head Machine Bolts and Nuts .....	.05
1049-15	½" x 2" “ “ “ “ “ “ .....	.05
1049-14	½" x 1½" Square Head Machine Bolt with Hexagon Nut for Ladder to Ladder Foundation .....	.05

LADDERS FOR 60 DEG. LOWER QUADRANT GROUND SIGNALS

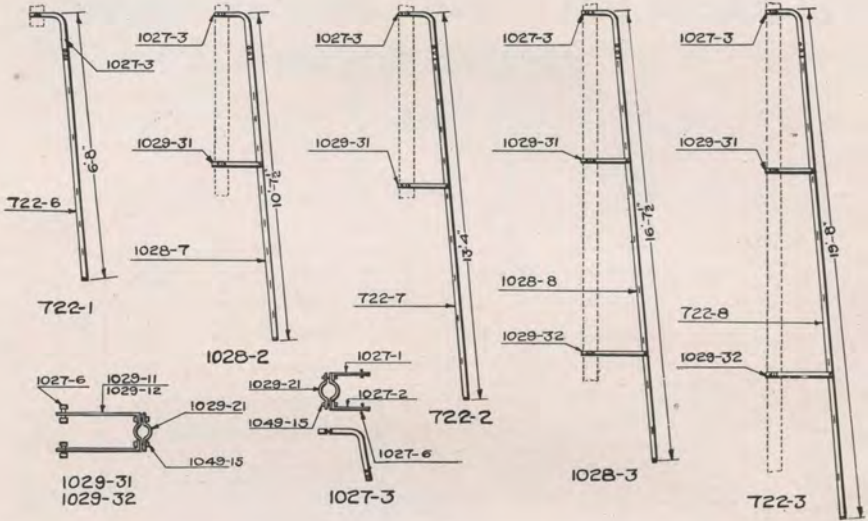




LADDERS FOR 60 DEG. LOWER QUADRANT GROUND SIGNALS

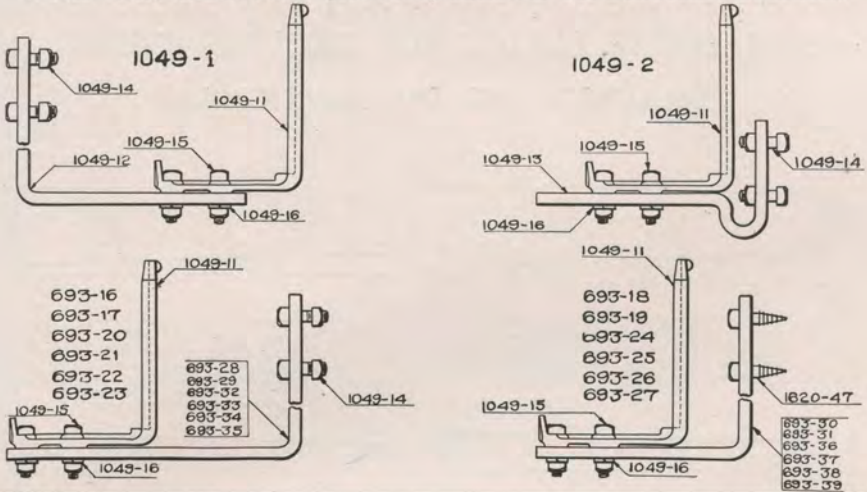
Trade No.	DESCRIPTION	List Price
797-1	Ladder complete as shown, with Top Pieces, Clamps, Stays and Bolts, 24' 7½" long.	\$20.70
797-2	Ladder complete as shown, with Top Pieces, Clamps, Stays and Bolts, 30' 8" long.	27.00
797-3	Ladder complete as shown, with Top Pieces, Clamps, Stays and Bolts, 37' 8" long.	33.30
794-1	Ladder for Wood Post, complete with Top Pieces, Clamps and Bolts, 27 feet long.	14.81
794-2	Ladder for Wood Post, complete with Top Pieces, Clamps, Stays and Bolts, 33 feet long.	18.09
794-3	Ladder for Wood Post, complete with Top Pieces, Clamps, Stays and Bolts, 37 feet long.	20.88
797-6	Ladder Only for 797-1.	11.70
797-7	" " " 797-2.	15.30
797-8	" " " 797-3.	18.00
794-6	" " " 794-1.	11.30
794-7	" " " 794-2.	13.37
794-8	" " " 794-3.	15.12
1027-4	Top Pieces, complete with Clamps, Two ½" x 2" and Four ½" x 1" Square Head Machine Bolts with Hexagon Nuts for 4" Pipe.	2.70
1027-1	Top Piece Only, R. H.	.81
1027-2	" " " L. H.	.81
794-11	Top Piece for Ladder with Two ½" x 2½" Lag Screws and Four ½" x 1" Square Head Machine Bolts with Hexagon Nuts.	.81
691-21	Clamp (Two Pieces), with Two ½" x 2" Square Head Machine Bolts with Hexagon Nuts for 4" Pipe.	.76
1029-21	Same as above except for 5" Pipe.	.90
1029-22	Same as above except for 6" Pipe.	1.04
797-11	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts, 13¾" Centers for 4" Pipe.	1.80
1029-30	Same as above except 17" Centers.	1.80
797-12	" " " 18" " "	1.80
797-13	Ladder Stays, complete with Clamps, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts, 17¾" Centers for 5" Pipe.	2.25
797-14	Same as above except 23¾" Centers.	2.25
797-15	" " " 24" " "	2.25
797-16	" " " 30" " "	2.25
797-17	" " " 31½" " "	2.25
797-18	Ladder Stays, complete with Clamp, Two ½" x 2" and Two ½" x 1" Square Head Machine Bolts with Hexagon Nuts for 6" Pipe, 21¾" Centers.	2.70
797-19	Same as above except 36" Centers.	2.70
797-20	" " " 38" " "	2.70
797-21	Ladder Stay (One Piece Only), 13¾" Centers.	.42
1029-11	" " " 17" " "	.45
797-22	" " " 18" " "	.50
797-23	" " " 17¾" " "	.49
797-24	" " " 23¾" " "	.71
797-25	" " " 24" " "	.72
797-26	" " " 30" " "	.85
797-27	" " " 31½" " "	1.00
797-28	" " " 21¾" " "	.62
797-29	" " " 36" " "	1.17
797-30	" " " 38" " "	1.26
794-12	Ladder Stay for Wood Post, 21" long.	.24
794-13	" " " 27" " "	.30
794-14	" " " 33" " "	.35
794-15	" " " 39" " "	.41
794-16	" " " 45" " "	.46
794-17	" " " 51" " "	.51
1027-6	½" x 1" Square Head Machine Bolt and Nut.	.05
1027-15	½" x 2" " " " " "	.05
1027-13	½" x 2½" Lag Screws.	.06
1027-14	½" x 1½" Square Head Machine Bolts with Nut.	.05

LADDERS FOR BRIDGE AND BRACKET SIGNALS



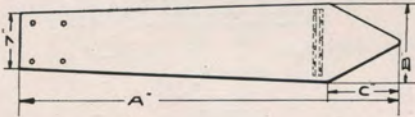
Trade No.	DESCRIPTION	List Price
722-1	Ladder, complete as shown, with Top Pieces, Clamps, Bolts and Nuts for fastening.	\$9.00
722-2	Ladder, complete as shown, with Top Pieces, Clamps, Stays and Bolts for fastening.	13.95
722-3	Ladder, complete as shown, with Top Pieces, Clamps, Stays and Bolts for fastening.	18.90
1028-2	R. S. A. Ladder, complete as shown, with Top Pieces, Clamps, Stays and Bolts for fastening.	9.00
1028-3	R. S. A. Ladder, complete as shown, with Top Pieces, Clamps, Stays and Bolts for fastening.	13.95
722-6	Ladder Only	6.30
722-7	“ “	9.45
722-8	“ “	12.15
1028-7	“ “	5.40
1028-8	“ “	8.10
1027-3	Top Pieces with Clamps, Two $\frac{1}{2}$ " x 2" Square Head Machine Bolts and Hexagon Nuts and Four $\frac{1}{2}$ " x 1" Square Head Machine Bolts and Hexagon Nuts.	2.70
1027-1	Top Piece, R. H. Only . . . . .	.81
1027-2	“ L. H. “ . . . .	.81
1029-21	Clamp Two Pieces with Two $\frac{1}{2}$ " x 2" Square Head Machine Bolts and Hexagon Nuts. . . . .	.90
1029-31	Ladder Stays, 17" Centers, complete with Clamps and Two $\frac{1}{2}$ " x 2" and Two $\frac{1}{2}$ " x 1" Square Head Bolts with Hexagon Nuts.	1.80
1029-32	Same as above except 23" Centers.	2.25
1029-11	Top Ladder Stay, 17" Centers, One Piece Only . . . . .	.45
1029-12	Same as above except 23" Centers. . . . .	.68
1027-6	$\frac{1}{2}$ " x 1" Square Head Machine Bolt and Nut. . . . .	.05
1049-15	$\frac{1}{2}$ " x 2" “ “ “ “ “ “ . . . . .	.05

LAMP BRACKETS FOR GROUND, BRIDGE OR BRACKET SIGNALS

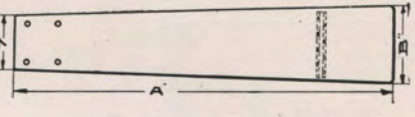


Trade No.	DESCRIPTION	List Price
1049-1	R. S. A. Lamp Bracket, complete as shown	\$3.60
1049-2	Adjustable Lamp Bracket, complete as shown, for use with Three Light, 14" Center, Spectacles and 735 to 738 and 743 to 746 Semaphore Bearings inclusive	4.50
693-16	Same as above for Three Light, 17" Center, Spectacles	3.60
693-17	" " " " Two 60 deg. 14" Center, Spectacles	3.60
693-20	" " " " " 75 " 14" " " "	3.60
693-21	" " " " " 60 " 17" " " "	3.60
693-22	" " " " " 75 " 17" " " "	3.60
693-23	Lamp Bracket, complete with Lag Screws for Wood Post for Three Light, 14" Center, Spectacles	3.60
693-18	Same as above for Three Light, 17" Center, Spectacles	3.60
693-19	" " " " Two 60 deg. 14" Center, Spectacles	3.60
693-24	" " " " " 75 " 14" " " "	3.60
693-25	" " " " " 60 " 17" " " "	3.60
693-26	" " " " " 75 " 17" " " "	3.60
693-27	R. S. A. Lamp Bracket	1.80
1049-11	" " " " " Support for 1049-1	2.03
1049-12	" " " " " " 1049-2	2.70
1049-13	1/2" x 1 1/2" Square Head Bolt with Hexagon Nut .....	.05
1049-14	1/2" x 2" " " and Nut .....	.05
1049-15	Standard 1/2" Lock Washers .....	.02
1049-16	1/2" x 3" Lag Screws .....	.06
1620-47	Lamp Bracket Support for 693-16	2.03
693-28	" " " " " 693-17	2.03
693-29	" " " " " 693-18	2.03
693-30	" " " " " 693-19	2.03
693-31	" " " " " 693-20	2.03
693-32	" " " " " 693-21	2.03
693-33	" " " " " 693-22	2.03
693-34	" " " " " 693-23	2.03
693-35	" " " " " 693-24	2.03
693-36	" " " " " 693-25	2.03
693-37	" " " " " 693-26	2.03
693-38	" " " " " 693-27	2.03
693-39	" " " " " 693-28	2.03
693-40	" " " " " 693-28	2.03

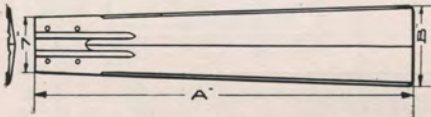
SEMAPHORE BLADES FOR GROUND, BRIDGE, BRACKET AND DWARF SIGNALS



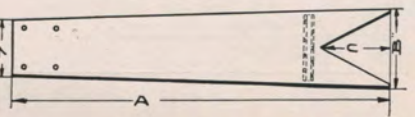
	A	B	C
1065-11	3'-6"	9 1/8"	7 11/16"
696-11	4'-0"	10"	8 1/4"



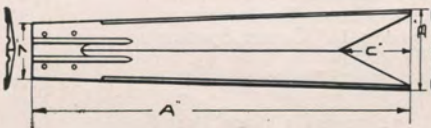
	A	B
1065-13	2'-6"	8 7/8"
1065-12	3'-6"	9 5/8"
696-12	4'-0"	10"
696-13	4'-6"	10"



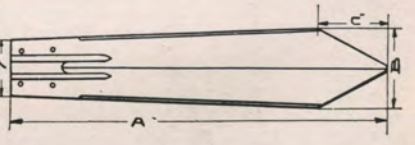
	A	B
1065-23	2'-6"	8 7/8"
1065-22	3'-6"	9 5/8"
696-18	4'-0"	10"



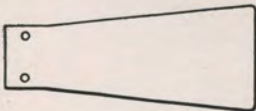
	A	B	C
696-14	3'-6"	10"	8"
696-15	4'-0"	10"	9"
696-16	4'-6"	10"	9"
696-17	5'-0"	11"	8"



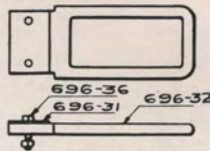
	A	B	C
696-19	4'-0"	10"	9"



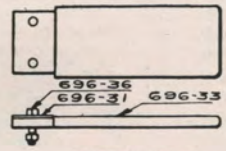
	A	B	C
1065-21	3'-6"	9 1/8"	7 11/16"
696-20	4'-0"	10"	8 1/4"



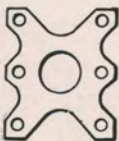
696-34
696-35



696-21



696-23



696-1



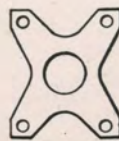
696-4



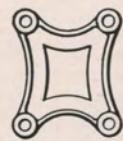
696-7



696-6

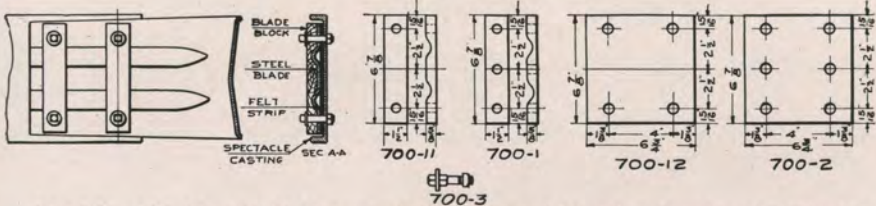


696-3



696-5

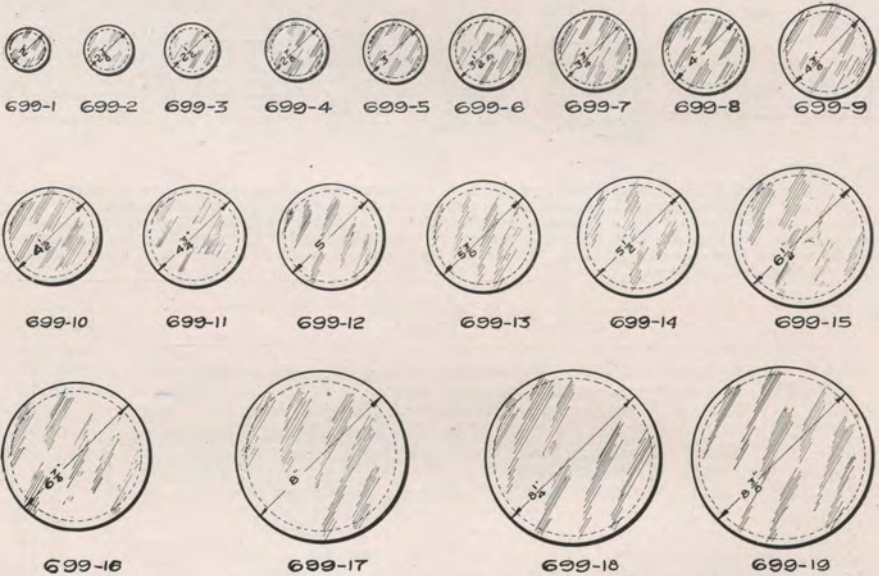
SEMAPHORE BLADES AND FASTENINGS FOR GROUND, BRIDGE, BRACKET AND DWARF SIGNALS



Wood Signal Blades as listed below are made of well-seasoned Ash and are given one priming coat of White Lead before shipment. All Blades (except those for dwarf signals) up to and including 4 feet in length are drilled for Four Bolts; Blades longer than 4 feet are drilled for Six Bolts. Orders for Steel Semaphore Blades must specify Bolt Drilling and color of enamel and striping desired. Prices for painted Blades will be furnished on application. Orders for Steel Semaphore Blade Clamps must specify drilling and notching of Blade Block.

Trade No.	DESCRIPTION	List Price
1065-11	R. S. A. Wood Semaphore Blade for Automatic Signal, 3' 6" long	\$2.16
696-11	Wood Semaphore Blade, 4 feet long	2.16
1065-13	R. S. A. Wood Semaphore Blade for Calling On Arm, 2' 6" long	2.16
1065-12	“ “ “ “ Home Signal, 3' 6" long . . .	2.16
696-12	Wood Semaphore Blade for Home Signal, 4 feet long	2.16
696-13	“ “ “ “ “ 4' 6" “	2.16
696-14	“ “ “ “ Distant “ 3' 6" “	2.16
696-15	“ “ “ “ “ 4' “	2.16
696-16	“ “ “ “ “ 4' 6" “	2.16
696-17	“ “ “ “ “ 5' “	2.16
1065-23	Steel “ “ “ “ Calling On Arm, 2' 6" long . . . . .	. . . . .
1065-22	“ “ “ “ “ Home Signal, 3' 6" long . . . . .	. . . . .
696-18	“ “ “ “ “ 4' long . . . . .	. . . . .
696-19	“ “ “ “ Distant “ 4' long . . . . .	. . . . .
1065-21	“ “ “ “ Automatic Block Home Signal, 3' 6" long . . . . .	. . . . .
696-20	Same as above except 4 feet long . . . . .	. . . . .
696-34	Sheet Steel Dwarf Signal Blade, 10" long . . . . .	.81
696-35	“ “ “ “ “ 12" “ . . . . .	.81
696-21	Rubber Dwarf Signal Blade, complete with Bolts and Blade Plate . . . . .	.81
696-23	Wood Dwarf Signal Blade, complete with Bolts and Blade Plate . . . . .	.60
696-1	Blade Plate for Six Bolts, Sheet Steel . . . . .	.18
696-3	“ “ “ Four “ “ . . . . .	.18
696-4	“ “ “ Six “ Cast Iron . . . . .	.45
696-5	“ “ “ Four “ “ . . . . .	.45
696-6	½" x 1¾" Square Head Machine Bolts with Hexagon Nuts for fastening Blade Plate and Blade to Semaphore Spectacle . .	.05
696-7	⅜" x 1½" Mushroom Head Bolts for fastening Blade to Semaphore Spectacle . . . . .	.11
696-36	¼" x 1¼" Square Head Machine Bolts and Nuts for fastening Dwarf Signal Blade and Blade Plate to Spectacle . . . .	.04
696-32	Rubber Blade Only for Dwarf Signal . . . . .	.70
696-33	Wood “ “ “ “ “ . . . . .	.50
696-31	Blade Plate “ “ “ “ Blades . . . . .	.12
700-1	Oak Blade Block drilled for Three Bolts . . . . .	. . . . .
700-11	“ “ “ “ “ Two “ . . . . .	. . . . .
700-2	Felt Strip with Six Holes . . . . .	. . . . .
700-12	“ “ “ “ Four “ . . . . .	. . . . .
700-3	Blade Bolt with Square Nut . . . . .	. . . . .

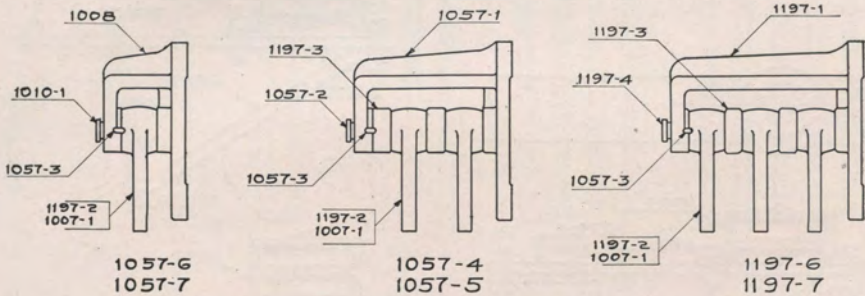
GLASS SEMAPHORE ROUNDELS



We are prepared to furnish Roundels of Red, Green, Yellow, Clear and Purple Glass. All our glass is subject to close photometric and spectroscopic tests. The sizes listed are those most commonly used, but any other size or shape can be furnished upon short notice.

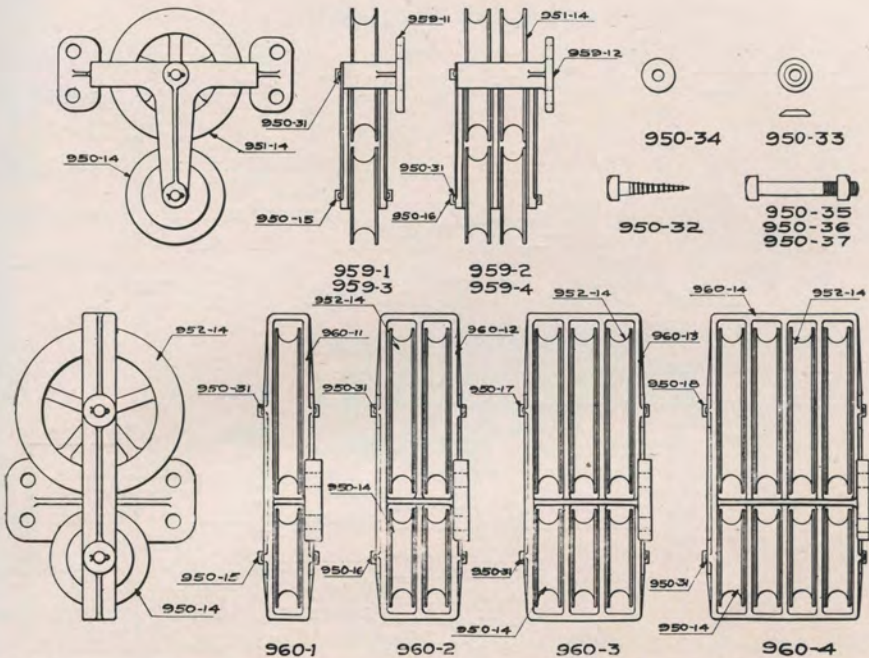
Trade No.	Diameter	Red	Green	Yellow	Blue	Purple	Clear
699-1	A						
699-2	2"	\$0.45	\$0.22	\$0.22	\$0.22	\$0.22	\$0.13
699-2	2 3/8"	.45	.22	.22	.22	.22	.13
699-3	2 1/2"	.45	.22	.22	.22	.22	.13
699-4	2 7/8"	.45	.22	.22	.22	.22	.13
699-5	3"	.45	.22	.22	.22	.22	.13
699-6	3 1/2"	.54	.27	.27	.27	.27	.18
699-7	3 3/4"	.54	.27	.27	.27	.27	.18
699-8	4"	.54	.31	.31	.31	.31	.22
699-9	4 3/8"	.58	.34	.34	.34	.34	.25
699-10	4 1/2"	.63	.36	.36	.36	.36	.25
699-11	4 3/4"	.67	.45	.45	.45	.45	.30
699-12	5"	.67	.45	.45	.45	.45	.30
699-13	5 3/8"	.67	.45	.45	.45	.45	.31
699-14	5 1/2"	.67	.45	.45	.45	.45	.31
699-15	6 1/2"	1.12	.63	.63	.63	.63	.45
699-16	6 7/8"	1.35	.79	.79	.79	.79	.49
699-17	8"	1.69	1.12	1.12	1.12	1.12	.57
699-18	8 1/4"	1.69	1.12	1.12	1.12	1.12	.57
699-19	8 3/8"	1.69	1.12	1.12	1.12	1.12	.57

R. S. A. VERTICAL CRANKS FOR BASE OF GROUND AND BRACKET SIGNALS



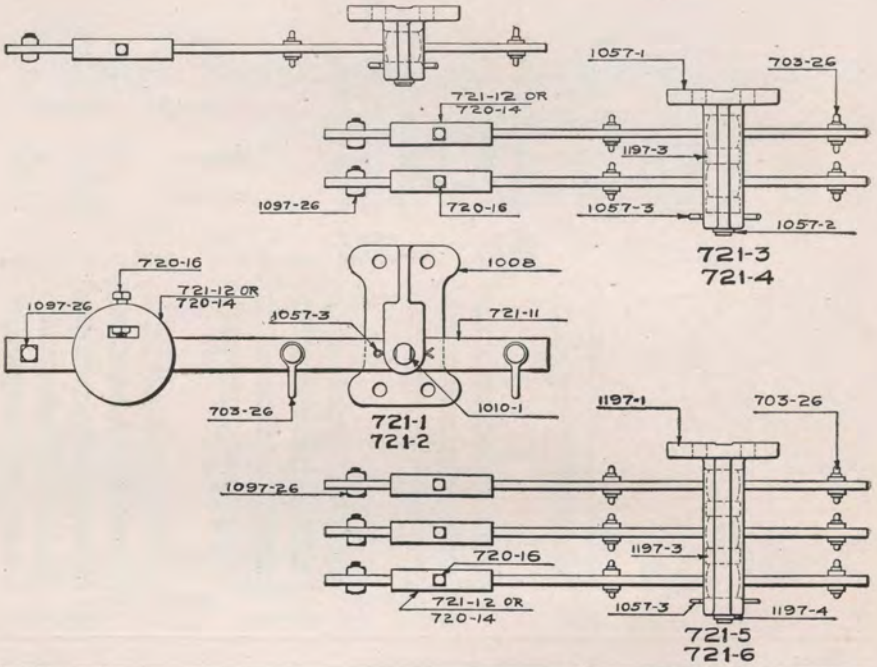
Trade No.	DESCRIPTION	List Price
1057-6	One Way Vertical Cranks, 7" x 7" as shown	\$3.37
1057-4	Two " " " " 7" x 7" " "	4.94
1197-6	Three " " " " 7" x 7" " "	6.51
1057-7	One " " " " 9" x 9" " "	3.60
1057-5	Two " " " " 9" x 9" " "	5.40
1197-7	Three " " " " 9" x 9" " "	7.20
1008	One Way Stand Only	1.89
1057-1	Two " " " "	2.43
1197-1	Three " " " "	2.70
1010-1	One Way Pin with Cotter .....	.32
1057-2	Two " " " " .....	.50
1197-4	Three " " " " .....	.60
1197-2	7" x 7" Crank	1.30
1007-1	9" x 9" " "	1.53
1057-3	1/4" x 3" Cotter Pins .....	.01
1197-3	Collar .....	.14

SIGNAL WHEELS



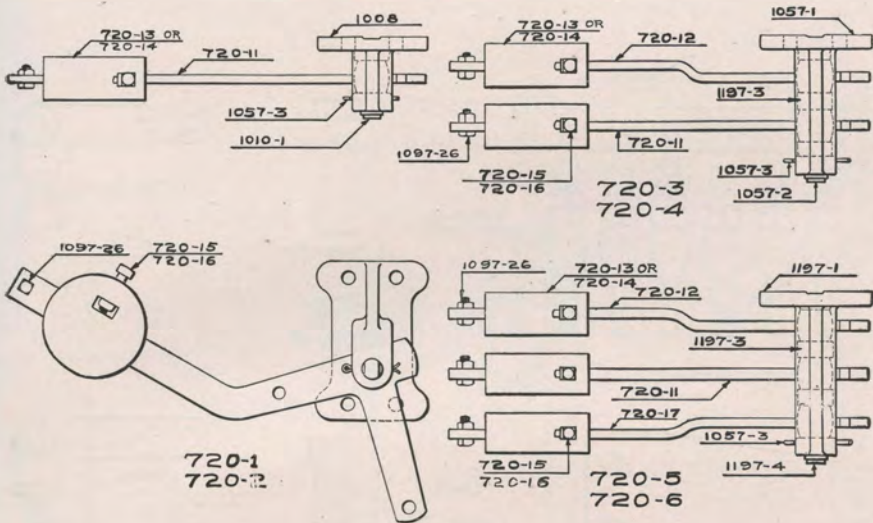
Trade No.	DESCRIPTION	List Price
959-1	One Way 8" and 6" Signal Wheels	\$2.05
959-2	Two " 8" " 6" " "	3.62
959-3	One " 10" " 6" " "	2.46
959-4	Two " 10" " 6" " "	3.51
960-1	" " 10" " 6" " "	2.82
960-2	Four " 10" " 6" " "	3.83
960-3	Six " 10" " 6" " "	5.41
960-4	Eight " 10" " 6" " "	7.04
959-11	One Way Stand, 8" and 6" Wheels	1.35
959-12	Two " " 8" " 6" " "	2.27
959-13	One " " 10" " 6" " "	1.57
959-14	Two " " 10" " 6" " "	2.70
960-11	" " " " " " " "	1.91
960-12	Four " " " " " " " "	2.11
960-13	Six " " " " " " " "	2.64
960-14	Eight " " " " " " " "	3.08
950-14	Six Inch Wheels .....	.21
951-14	Eight " " " " " " " " .....	.32
952-14	Ten " " " " " " " " .....	.53
950-15	Pin for 959-1, 959-3 and 960-1 .....	.05
950-16	" " 959-2, 959-4 " 960-2 .....	.06
950-17	" " 960-3 .....	.07
950-18	" " 960-4 .....	.08
950-31	Cotter Pin Only, 1/8" x 1 1/4", for Pins, per C. ....	.96
959-5	Three Way 8" and 6" Signal Wheel	5.36
959-15	" " Stand, 8" and 6" Wheels	2.43

BALANCE LEVERS FOR WIRE OPERATED SIGNALS



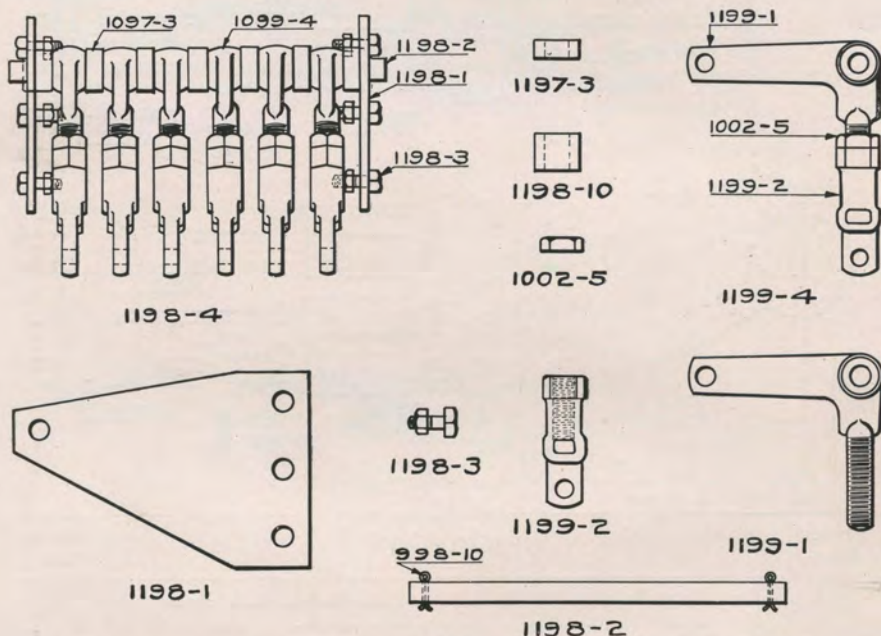
Trade No.	DESCRIPTION	List Price
721-1	One Way Balance Lever Stand, complete as shown, with 14 lb. Counterweight.....	\$6.28
721-2	Same as above with 10 lb. Counterweight.....	5.92
721-3	Two Way Balance Lever Stand, complete as shown, with 14 lb. Counterweight.....	11.35
721-4	Same as above with 10 lb. Counterweight.....	10.63
721-5	Three Way Balance Lever Stand, complete as shown, with 14 lb. Counterweight.....	15.79
721-6	Same as above with 10 lb. Counterweight.....	14.71
721-11	Balance Lever Only.....	2.16
721-12	Counterweight 14 lb.....	1.35
720-14	“ 10 lb.....	.99
703-26	Standard Shackle, complete with Pin and Cotter.....	.22
720-16	$\frac{5}{8}$ " x $3\frac{1}{2}$ " Square Head Bolt and Nut for Clamping Counterweight.....	.09
1097-26	$\frac{1}{4}$ " x 1" Square Head Bolt and Nut for Clamping Counterweight.....	.03
1008	One Way Crank Stand Only.....	1.89
1057-1	Two “ “ “ “.....	2.43
1197-1	Three “ “ “ “.....	2.70
1010-1	One Way Pin with Cotter.....	.32
1057-2	Two “ “ “ “.....	.50
1197-4	Three “ “ “ “.....	.60
1057-3	$\frac{1}{4}$ " x 3" Cotter Pin.....	.01
1197-3	Collar.....	.14

BALANCE LEVER STANDS FOR PIPE OPERATED SIGNALS



Trade No.	DESCRIPTION	List Price
720-1	One Way Balance Lever, complete as shown, with 40 lb. Counterweight.	\$9.62
720-2	Same as above excepting with 10 lb. Counterweight.	6.65
720-3	Two Way Balance Lever, complete as shown, with 40 lb. Counterweight.	18.26
720-4	Same as above excepting with 10 lb. weight.	12.32
720-5	Three Way Balance Lever, complete as shown, with 40 lb. Counterweight.	26.27
720-6	Same as above excepting with 10 lb. Counterweight.	17.36
720-12	Offset Balance Lever Only, R. H.	3.56
720-17	“ “ “ “ L. H.	3.56
720-13	40 lb. Counterweight Only.	3.96
720-14	10 lb.	.99
720-15	5/8" x 4" Square Head Bolt and Nut for clamping 40 lb. Counterweight.	.09
1008	One Way Crank Stand Only.	1.89
1057-1	Two “ “ “ “	2.43
1197-1	Three “ “ “ “	2.70
1010-1	One Way Pin with Cotter.	.32
1057-2	Two “ “ “ “	.50
1197-4	Three “ “ “ “	.60
1057-3	1/4" x 3" Cotter Pin.	.01
1197-3	Collar.	.14
1097-26	1/4" x 1" Square Head Bolts and Nut.	.03
720-16	5/8" x 3 1/2" “ “ “ “ for clamping 10 lb. Counterweight.	.09
720-11	Straight Balance Lever Only.	3.33

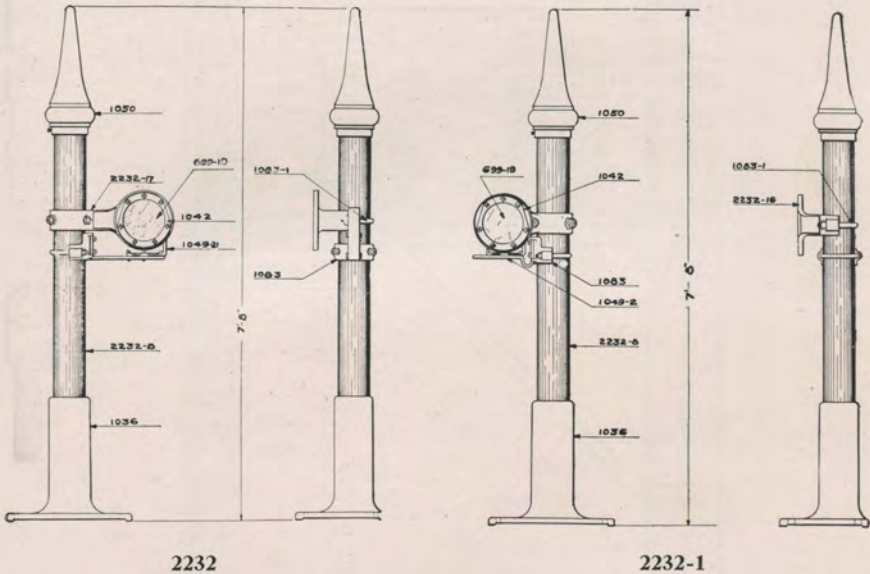
R. S. A. ADJUSTABLE ARM CRANKS AND SUPPORTS FOR R. S. A. BRACKET POST



The Cranks shown above are used for Base of Bracket Post. The assembled unit is intended to be mounted on base of R. S. A. Channel Column Bracket Post, and can be used from one way to six way by the use of Filler Blocks. The adjustable crank can also be used in connection with the regular R. S. A. Horizontal Crank Stands.

Trade No.	DESCRIPTION	List Price
1198-4	Six Way Adjustable Arm Crank Support, complete as shown	.....
1198-5	Same as above except Five Way	.....
1198-6	“ “ “ “ Four “	.....
1198-7	“ “ “ “ Three “	.....
1198-8	“ “ “ “ Two “	.....
1198-9	“ “ “ “ One “	.....
1198-1	End Bearing Support	.....
1198-2	Bearing Shaft with Cotter Pins	.....
997-12	¼" x 2" Cotter Pin for above, per C.	\$0.88
1198-3	¾" x 2" Square Head Machine Bolt with Hexagon Nut	.....
1197-3	Filler, 1" long	.14
1198-10	“ 2" “	.....
1199-4	Adjustable Crank, complete as shown	.....
1199-1	Threaded Arm Only	.....
1199-2	Screw Eye Only	.....
1002-5	1¼" Hexagon Nut, ¾" thick	.18

DUMMY MASTS

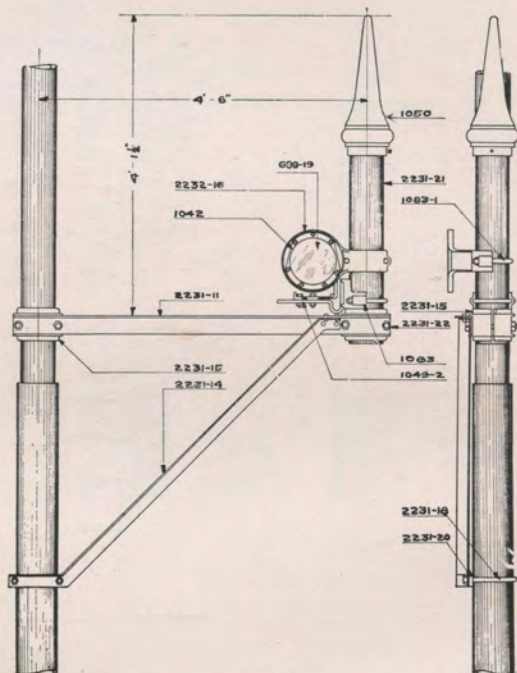


2232

2232-1

Trade No.	DESCRIPTION	List Price
2232	Dummy Mast, complete as shown, for Vertical Light, Lamp not included.....	\$37.80
2232-1	Dummy Mast, complete as shown, for Staggered Light, Lamp not included.....	37.80
2232-8	Mast.....	.....
1036	Base.....	16.20
1050	Pinnacle with Set Screw.....	2.70
2232-16	Spectacle, complete with U Bolt and Roundel Ring, for Staggered Light.....	3.60
2232-17	Spectacle, complete with U Bolt and Roundel Ring, for Vertical Light.....	3.60
1042	Roundel Ring, complete with Bolts for fastening.....	.60
699-19	Glass Roundels, 8 ³ / ₈ " dia. Specify Color.....	.....
1083	Clamp, complete for Lamp.....	2.03
1049-2	Lamp Bracket, Support and Bolts for fastening, for Staggered Light.....	4.50
1049-21	Lamp Bracket, Support and Bolts for fastening, for Vertical Light.....	3.60

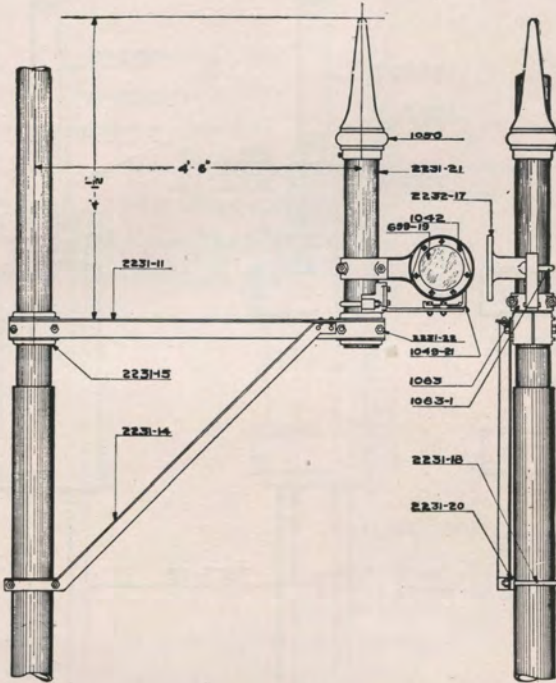
CANTILEVER BRACKET FOR STAGGERED LIGHT



2231-3

Trade No.	DESCRIPTION	List Price
2231-3	Cantilever Bracket for Staggered Light, complete as shown, for 5" and 6" Pipe, Lamp not included.....	\$45.00
2231-4	Same as above except for 5" Pipe.....	45.00
2231-5	Same " " " " 6" " ".....	45.00
2231-21	Mast.....	.....
1050	Pinnacle with Set Screw.....	2.70
2232-16	Spectacle complete with U Bolt, Roundel Ring and Bolts..	3.60
699-19	Glass Roundels, 8 ³ / ₈ " dia. Specify Color.....	.....
1083-1	U Bolt for fastening Spectacle or Lamp Bracket.....	.81
1049-2	Lamp Bracket and Support for, complete with Bolts for fastening to Clamp.....	4.50
1083	Clamp for Lamp Bracket with U Bolt.....	2.03
2231-15	Filler Block for 5" Pipe.....	.....
2231-20	" " " 6" " ".....	.....
2231-19	U Bolt for 5" Pipe.....	.81
2231-18	" " " 6" " ".....	.81
2231-22	3/4" x 8" Hexagon Machine Bolt and Nut.....	.....

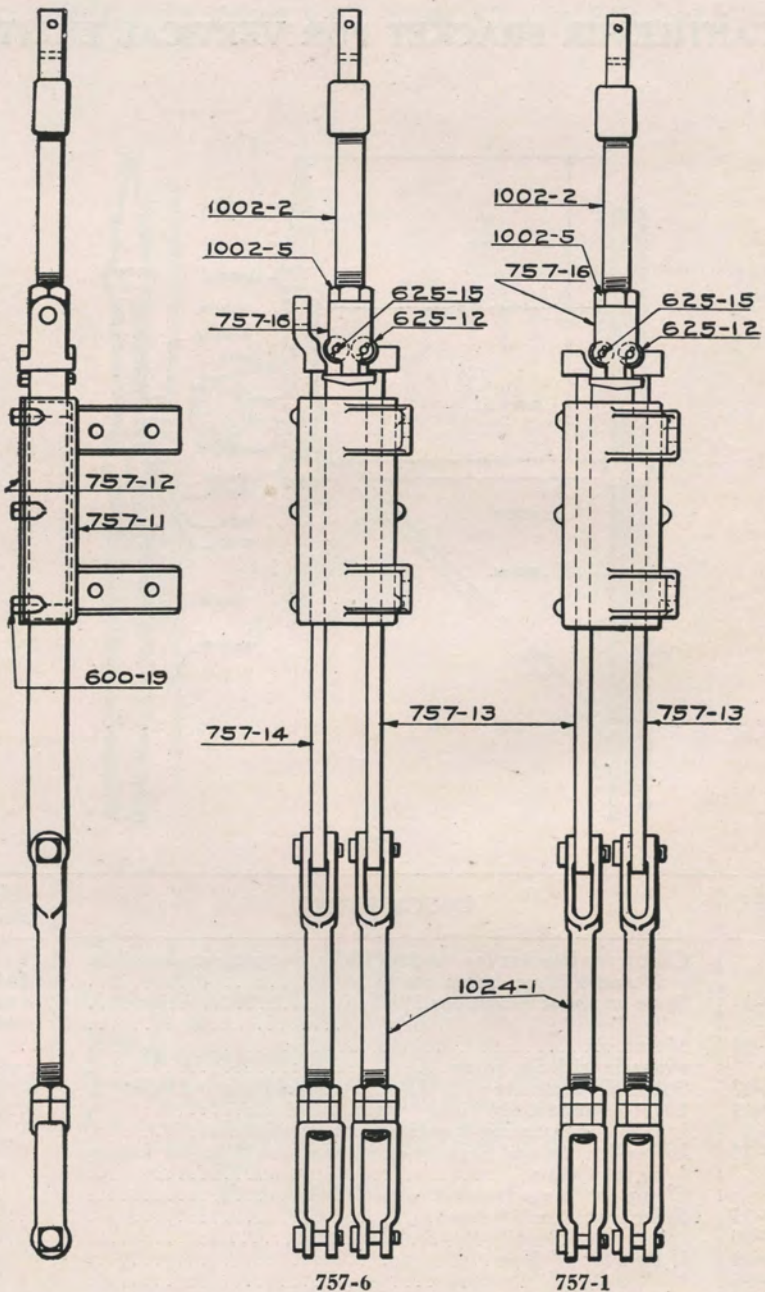
CANTILEVER BRACKET FOR VERTICAL LIGHT



2231

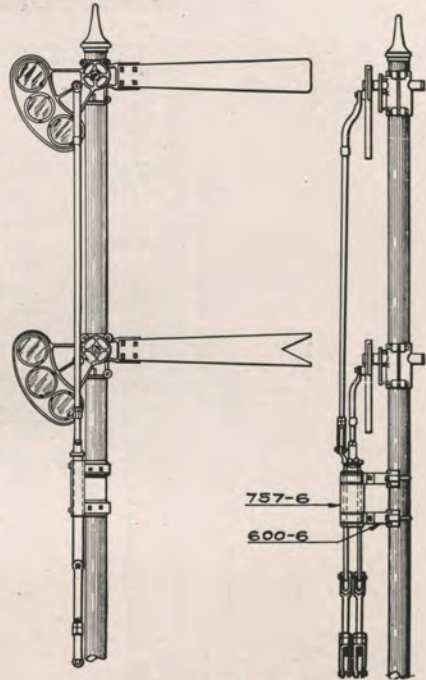
Trade No.	DESCRIPTION	List Price
2231	Cantilever Bracket for Vertical Light, complete as shown, for 5" and 6" Pipe, Lamp not included.	\$44.10
2231-1	Same as above except for 5" Pipe.	44.10
2231-2	Same as above except for 6" Pipe.	44.10
2231-21	Mast. . . . .	. . . . .
1050	Pinnacle with Set Screw.	2.70
2232-17	Spectacle, complete with U Bolt, Roundel Ring and Bolts	3.60
699-19	Glass Roundels, 8 ³ / ₈ " dia. Specify Color. . . . .	. . . . .
1083-1	U Bolt for fastening Spectacle or Lamp Bracket. . . . .	.81
1049-21	Lamp Bracket and Support, complete with Bolts for fastening to Clamp.	3.60
1083	Clamp for Lamp Bracket, with U Bolt.	2.03
2231-15	Filler Block for 5" Pipe. . . . .	. . . . .
2231-20	" " " 6" " . . . . .	. . . . .
2231-19	U Bolt for 5" Pipe . . . . .	.81
2231-18	" " " 6" " . . . . .	.81
2231-22	3/4" x 8" Hexagon Machine Bolt and Nuts . . . . .	. . . . .

MECHANICAL SLOT



MECHANICAL SLOT

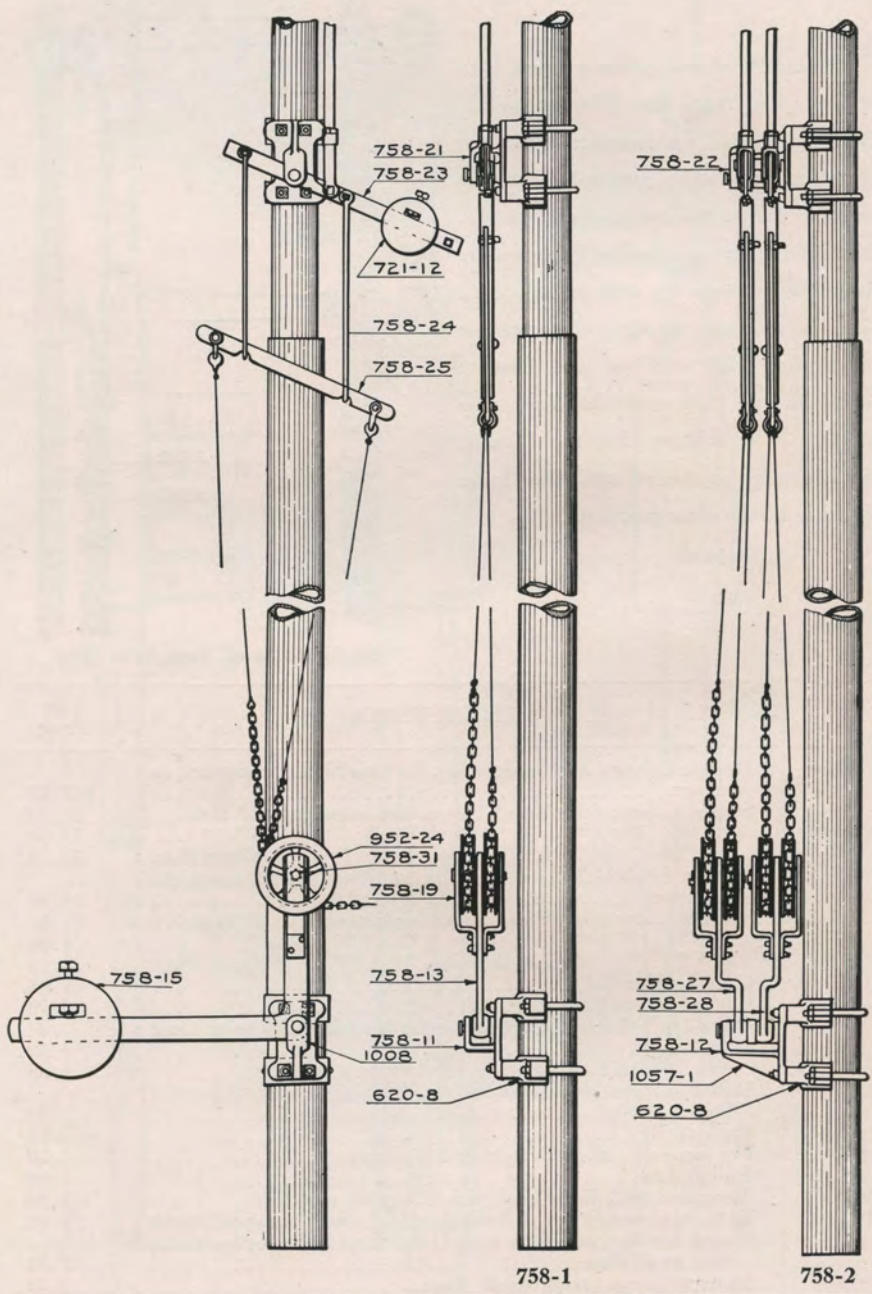
This Slot is used where a Signal is to be controlled from two different points. One Rod pushed up does not affect the Signal, as the Roller Jaw swings to one side and allows the rod to travel up by. When the other rod is pushed up, however, Roller Jaw moves up with it, throwing Signal to proceed. Application shows our 757-6 Slot with a Home and Distant Signal on one Pole controlled from two points. It is evident that the Distant Signal cannot be cleared until the Home Signal is in the clear position.



Application of Two Arm Slot

Trade No.	DESCRIPTION	List Price
757-1	Double Control Mechanical Slot for One Signal, complete as shown	\$17.80
757-2	Same as above with Two Clamps for fastening to 4" Pole...	22.50
757-3	“ “ “ “ Lag Screws “ “ “ 5" “	22.50
757-4	“ “ “ “ Lag Screws “ “ “ Wood Post	18.00
757-6	Double Control Mechanical Slot for Two Signals, complete as shown	19.90
757-7	Same as above with Two Clamps for fastening to 4" Pipe...	24.60
757-8	“ “ “ “ Lag Screws “ “ “ 5" “	24.60
757-9	“ “ “ “ Lag Screws “ “ “ Wood Post	20.10
757-11	Case for Slot Only	1.95
757-12	Cover for Slot Case .....	.70
600-19	3/8" x 1 1/4" Hexagon Cap Screws for fastening Cover to Case .....	.04
757-13	Slide Bar	3.30
757-14	“ “ with Lug	5.35
757-15	Roller Jaw complete with Rollers, Pins, Tang End, Threaded Rod and Nut	3.80
625-12	Roller Only .....	.18
625-15	Pin for Roller with Cotters and Washers .....	.09
757-16	Roller Jaw	1.00
1002-2	Threaded Rod, Tang End with Coupling and Nut	1.26
1024-1	R. S. A. Screw Jaw with Solid Jaw End with Pins and Cotters	3.02
620-6	Clamp for Slot, complete with U Bolt and Bolts for fastening Slot to 4" Pipe	2.34
620-7	Same as above except for 5" Pipe	2.34

WIRE COMPENSATOR



WIRE COMPENSATOR

Split Links, Chain, Wire and Wire Eyes are not included in list prices.

Trade No.	DESCRIPTION	List Price
758-1	One Way Wire Compensator, complete as shown, for 5" Upper and 6" Lower Iron Pipe Post.....	\$50.30
758-2	Same as above except Two Way.....	89.80
758-3	One Way Wire Compensator complete for Wood Post.....	44.00
758-4	Same as above except Two Way.....	83.40
758-11	One Way Compensating Lever complete with 100 lb. Counterweight with Bolt and Nut, 10" Chain Wheels, Supports and Pins and Stand with Pin and Cotter.....	32.80
758-12	Same as above except Two Way.....	65.15
758-13	Compensating Lever, with 100 lb. Counterweight with Bolt and Nut, Two 10" Chain Wheels, Chain Wheel Supports, Pin Cotter and Bolts.....	30.60
758-27	Left Hand Offset Compensating Lever with 100 lb. Counterweight with Bolt and Nut, Two 10" Chain Wheels, Chain Wheel Supports, Pin, Cotter and Bolts.....	31.05
758-28	Same as above except R. H. Offset.....	31.05
758-14	Compensating Lever Only.....	18.30
758-29	L. H. Offset Compensating Lever Only.....	18.75
758-30	R. H. " " " ".....	18.75
758-15	100 lb. Counterweight with Bolt and Nut.....	8.97
758-16	" " " " Only.....	8.87
758-17	Bolt and Nut for Counterweight.....	.10
952-14	10" Chain Wheel.....	.54
758-18	Chain Wheel Support, R. H.....	.99
758-19	" " " " L. H.....	.99
758-31	Bearing Pin for Chain Wheels with Cotter Pins.....	.10
150-5	1/2" x 2" Square Head Machine Bolt and Nut for fastening Chain Wheel Support for Compensating Lever.....	.08
758-21	One Way Balance Lever with 14 lb. Counterweight with Bolt and Nut, Two 24" Shackles and Stand with Pin and Cotter.....	7.97
758-22	Same as above except Two Way.....	14.45
758-23	Balance Lever with 14 lb. Counterweight with Bolt and Nut and Two 24" Shackles.....	5.76
721-11	Balance Lever Only.....	2.16
721-12	14 lb. Counterweight Only.....	1.35
720-16	5/8" x 3 1/2" Square Head Machine Bolt and Nut for Counterweight.....	.09
758-24	24" Shackle with Pin and Cotter.....	1.08
758-25	Disengaging Lever with Shackles.....	2.02
758-26	Disengaging Lever Only.....	1.58
703-26	7/8" Shackle with Pin and Cotter.....	.22
1008	R. S. A. One Way Stand.....	1.89
1057-1	Two Way Crank Stand Only.....	2.43
1010-1	One Way Pin with Cotter.....	.32
1057-2	Two " " " ".....	.50
1197-3	Separator.....	.14
620-7	Clamp for 5" Pipe complete with U Bolt and Bolts for fastening Stand.....	2.34
620-8	Same as above except for 6" Pipe.....	2.34

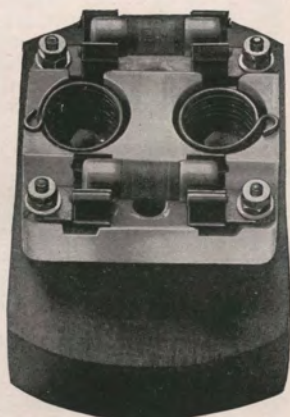
LAMPS



No. 45-156
Electric Semaphore Lamp



No. 45-11
Electric Top Socket



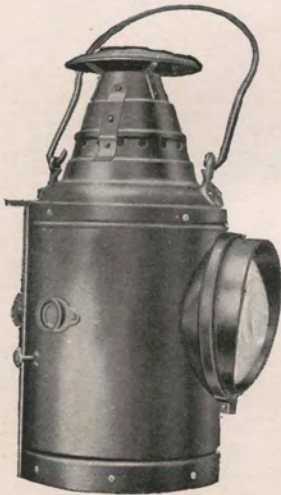
No. 45-9
Electric Bottom Socket

The Electric Semaphore Lamp is fitted with Two Light Electric Sockets at the top, 5" Lens, water shedding sliding door and malleable iron Pocket to receive Bracket.

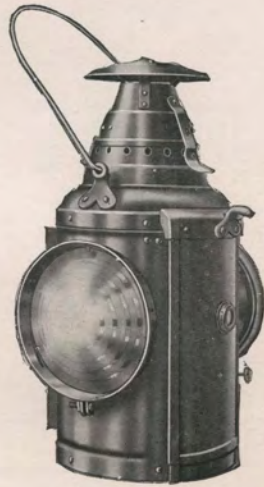
Trade No.	DESCRIPTION	List Price
45-156	Electric Semaphore Lamp, complete as described.....	.....
45-11	Electric Top Socket to fit R. S. A. Standard Semaphore Lamp No. 1100 (will also fit most other Standard Semaphore Lamps).....	.....
45-9	Electric Socket for No. 1100 R. S. A. (Interchanges with Long Time Founts).....	.....

We handle the complete "Dressel" Line of Switch, Bridge, Pier and other Lamps and Lanterns and Accessories. Separate catalogue upon request.

LAMPS



No. 1100
R. S. A. Semaphore Lamp



No. 45-154
Two Lens Train Lamps

The R. S. A. Semaphore Lamp is fitted with Ventilator: Balanced Draught or "No-Sweat" Principle; Lens: 5" diameter or 5 $\frac{3}{8}$ " as specified; Hood: Separate, One Piece Drawn Steel, Slanting; Lens and Hood Holder: U-Shaped Adjustable Band; Fount and Burner: No. 152 Drawn Steel and Tinned, Long Burning Fount, 31 oz. capacity and No. 25 Long Time Burner or No. 0 "Dressel" Interchangeable One-Day, No-Chimney, Long Shaft Burner; Reflector: Prismatic Glass if specified; Socket: Steel, R. S. A. Standard.

Trade No.	DESCRIPTION	List Price
1100	R. S. A. Standard Semaphore Lamp.....	.....
45-154	Two Lens Train Order Semaphore Lamp.....	.....

We handle the complete "Dressel" Line of Switch, Bridge, Pier and other Lamps and Accessories. Separate catalogue upon request.

1914

CATALOGUE AND PRICE LIST

SECTION S

MECHANICAL GROUND AND
LEADOUT CONNECTIONS

Crank Stands and Compensators

Bridge Couplers and Locks

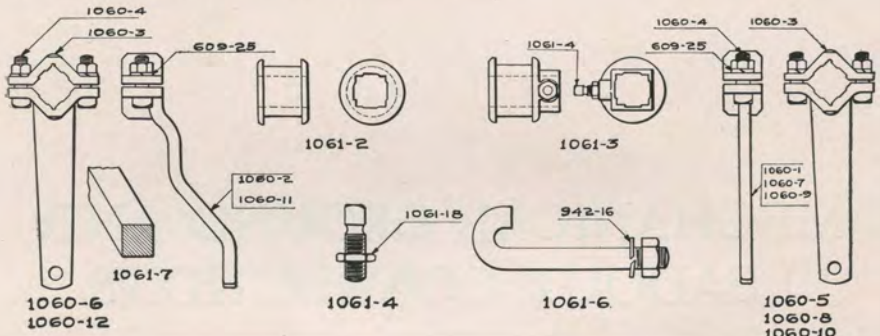
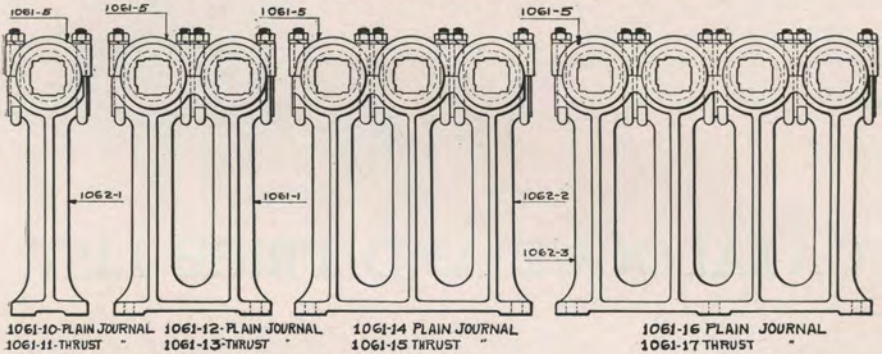
Turnbuckles, Eye Rods, Jaws

Pipe, Stuffing Boxes

Signal Wire and Pipe

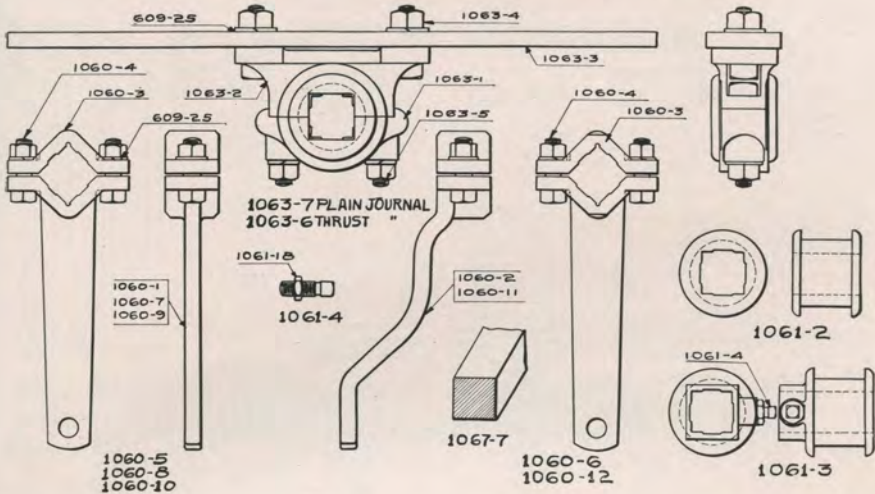
Pipe and Rod Insulations

R. S. A. ROCKER SHAFT BEARINGS



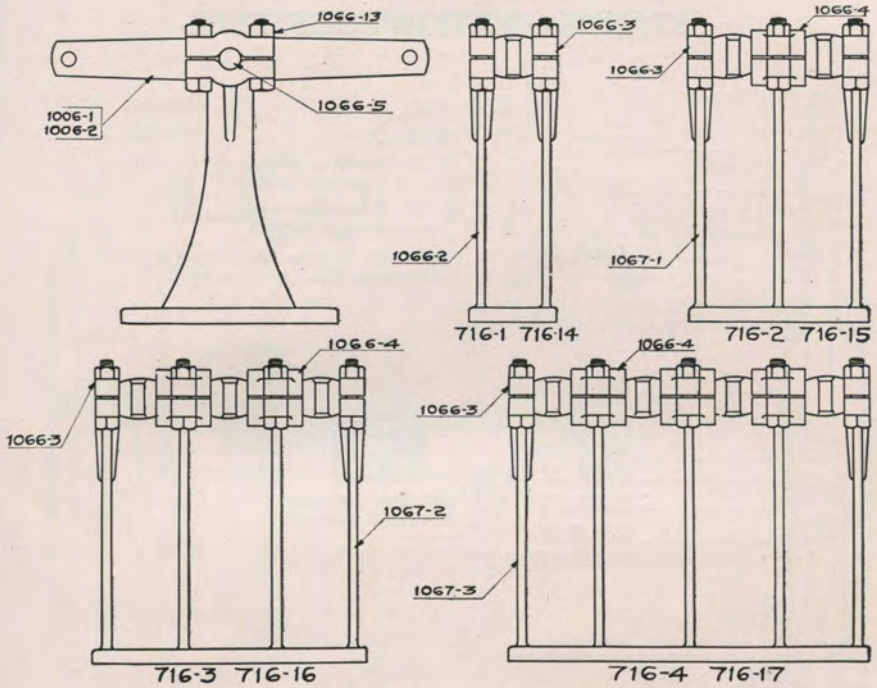
Trade No.	DESCRIPTION	List Price
1061-10	One Way Rocker Shaft complete as shown with Plain Journal.	\$5.85
1061-11	Same as above except with Thrust Journal.	6.30
1061-12	Two Way Rocker Shaft complete as shown with Plain Journal.	11.07
1061-13	Same as above except with Thrust Journal.	11.97
1061-14	Three Way Rocker Shaft complete as shown with Plain Journal.	15.75
1061-15	Same as above except with Thrust Journal.	17.10
1061-16	Four Way Rocker Shaft complete as shown with Plain Journal.	20.25
1061-17	Same as above except with Thrust Journal.	22.05
1060-5	Straight Arm, 11 $\frac{3}{4}$ ", complete as shown.	3.51
1060-8	" " 7 $\frac{1}{2}$ " " " " "	3.33
1060-10	Offset " 11 $\frac{3}{4}$ " " " " "	3.24
1060-6	Offset " 9 $\frac{1}{4}$ " " " " "	5.31
1060-12	" " " " " " "	5.13
1062-1	One Way Stand Only.	3.24
1061-1	Two " " " " " "	5.76
1062-2	Three " " " " " "	7.56
1062-3	Four " " " " " "	9.72
1061-5	Cap.	.90
1061-2	Plain Journal.	1.71
1061-3	Thrust Journal with Set Screw and Nut.	2.16
1061-4	Set Screw with Nut.	.11
1061-18	Nut for Set Screw.	.05
1061-6	Hook Bolt with Nut and Lock Washer.	.14
1061-7	Square Rocker Shaft, 2" x 2" (specify length), per ft.	1.58
1060-1	Straight Arm, 11 $\frac{3}{4}$ " Only.	2.25
1060-7	" " 7 $\frac{1}{2}$ " " " " "	2.07
1060-9	" " 11 $\frac{3}{4}$ " " " " "	1.98
1060-2	Offset " 9 $\frac{1}{4}$ " " " " "	3.78
1060-11	" " " " " " "	3.60
1060-3	Cap.	1.08
1060-4	$\frac{3}{4}$ " x 2 $\frac{1}{2}$ " Bolt with Hexagon Nut and Lock Washer.	.11
609-25	$\frac{3}{4}$ " Lock Washer.	.02
942-16	$\frac{5}{8}$ " " " " " "	.02
950-32	$\frac{3}{4}$ " x 4" Lag Screw, per C.	8.40
1061-19	$\frac{3}{4}$ " x 5" " " " "	10.60
1061-20	$\frac{3}{4}$ " x 6" " " " "	12.80

R. S. A. LOW ROCKER SHAFT BEARINGS



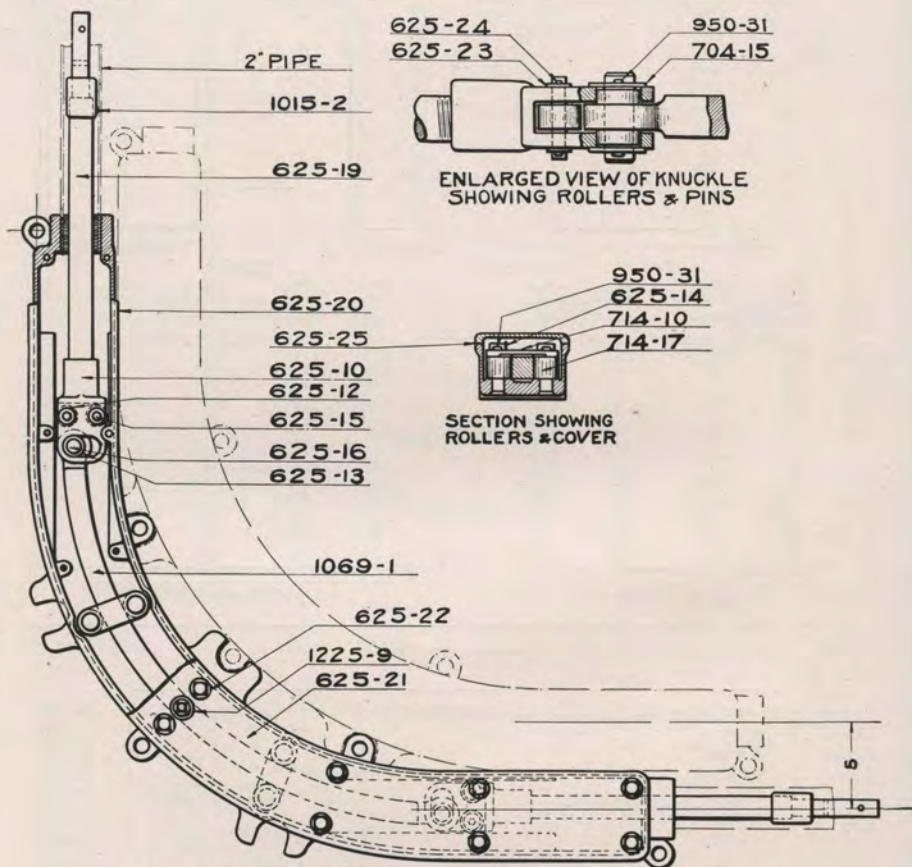
Trade No.	DESCRIPTION	List Price
1063-6	Low Rocker Shaft complete as shown with End Thrust Journal	\$8.10
1063-7	Same as above excepting with Plain Journal	7.65
1060-5	Straight Arm, 11 $\frac{3}{4}$ " , complete as shown	3.51
1060-8	" " 9" " " "	3.33
1060-10	" " 7 $\frac{1}{2}$ " " " "	3.24
1060-6	Offset Arm 11 $\frac{3}{4}$ " " " "	5.31
1060-12	" " 9" " " "	5.13
1063-1	Cap for Low Rocker Shaft Bearing	1.35
1063-2	Low Stand Only	2.16
1063-3	Base Plate "	2.25
1063-4	$\frac{3}{4}$ " x 2 $\frac{3}{4}$ " Square Head Machine Bolt and Nut with Lock Washer	.11
1063-5	$\frac{3}{4}$ " x 4" Square Head Machine Bolt and Nut with Lock Washer	.13
1061-2	Plain Journal	1.71
1061-3	Thrust " with Set Screw and Nut	2.16
1061-4	Set Screw with Nut	.11
1061-18	Nut for Set Screw	.05
1061-7	Square Rocker Shaft, 2" x 2" (specify length), per ft.	1.58
1060-1	Straight Arm, 11 $\frac{3}{4}$ " Only	2.25
1060-7	" " 9" " " "	2.07
1060-9	" " 7 $\frac{1}{2}$ " " " "	1.98
1060-2	Offset Arm, 11 $\frac{3}{4}$ " " " "	3.78
1060-11	" " 9" " " "	3.60
1060-3	Cap	1.08
1060-4	$\frac{3}{4}$ " x 2 $\frac{1}{2}$ " Bolt with Standard Hexagon Nut and Lock Washer	.11
609-25	$\frac{3}{4}$ " Lock Washer	.02
950-32	$\frac{3}{4}$ " x 4" Lag Screws, per C.	8.40
1061-19	$\frac{3}{4}$ " x 5" " " " "	10.60
1061-20	$\frac{3}{4}$ " x 6" " " " "	12.80
950-33	Cast Washer for $\frac{3}{4}$ " Bolt	9.50
950-34	Wrought Iron Washer for $\frac{3}{4}$ " Bolt, each	.02
950-35	Bolt and Nut, $\frac{3}{4}$ " x 6", per C.	15.40
950-36	" " " $\frac{3}{4}$ " x 7" " " "	15.40
950-37	" " " $\frac{3}{4}$ " x 8" " " "	17.60

180 DEG. VERTICAL TYPE CRANKS



Trade No.	DESCRIPTION	List Price
716-1	One Way Vertical Crank complete with 9" x 9" Crank.....	\$4.91
716-2	Two " " " " " " 9" x 9" "	9.81
716-3	Three " " " " " " 9" x 9" "	13.59
716-4	Four " " " " " " 9" x 9" "	16.92
716-14	One " " " " " " 11 3/4" x 11 3/4" Crank	5.18
716-15	Two " " " " " " 11 3/4" x 11 3/4" "	10.35
716-16	Three " " " " " " 11 3/4" x 11 3/4" "	14.40
716-17	Four " " " " " " 11 3/4" x 11 3/4" "	18.00
1066-2	R. S. A. One Way Stand Only for above	2.70
1067-1	" " " Two " " " " " "	5.49
1067-2	" " " Three " " " " " "	7.22
1067-3	" " " Four " " " " " "	8.46
1066-3	" " " End Cap .....	.14
1066-4	" " " Intermediate Cap .....	.27
1066-5	" " " Pin .....	.27
1006-1	" " " 9" x 9" Crank	1.53
1006-2	" " " 11 3/4" x 11 3/4" Crank	1.80
1066-13	5/8" x 3" Square Head Machine Bolt and Hexagon Nut.....	.09
942-16	5/8" Lock Washer, each .....	.02
950-32	Lag Screw, 3/4" x 4", per C.	8.40
950-33	Cast Washer, 3/4", per C.	9.50
950-34	Wrought Iron Washer, 3/4", each .....	.02
950-35	Bolt and Nut, 3/4" x 6", per C.	15.40
950-36	" " " 3/4" x 7" " "	15.40
950-37	" " " 3/4" x 8" " "	17.60

HORIZONTAL AND VERTICAL DEFLECTING STANDS—WATERPROOF TYPE



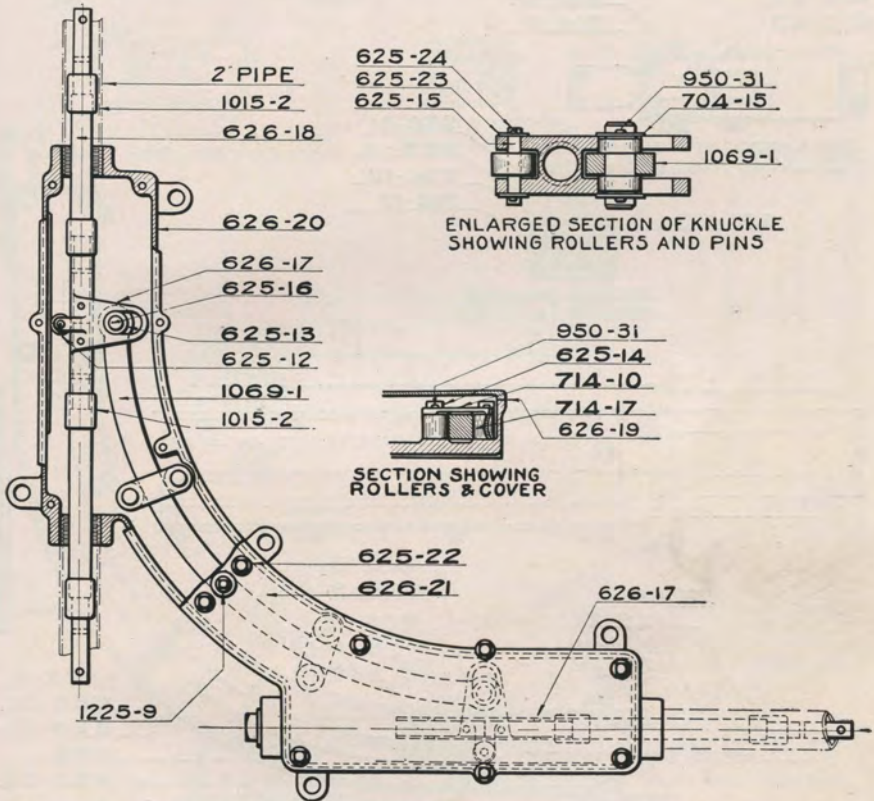
No. 625 Horizontal Waterproof 90 deg. Deflecting Stand

The Stands illustrated above and on the following pages, are absolutely waterproof and are so constructed that all moving parts are held in line by Rollers, guided on finished surfaces, thus preventing cramping or binding.

R. S. A. 90 deg. Deflecting Bars and Rollers are used for the moving members, and R. S. A. 1" Signal Pipe Fittings for leading to and from the Stands. All Outlets are threaded with 2" Pipe Thread, so that either 2" Pipe or R. S. A. Stuffing Boxes (without coupling) can be used. A 3/4" Pipe Plug is provided for filling the Boxes with Oil, the maximum stroke is 12" and Boxes can be mounted for 5" centers (except for No. 626 Stand).

It will be seen from the illustration that these Stands may be used to advantage in connection with Leadouts, Crossing Gates or for running pipe lines under Tracks, Streets, Platforms, etc., or when waterproof connections are desired.

HORIZONTAL AND VERTICAL DEFLECTING STANDS—WATERPROOF TYPE

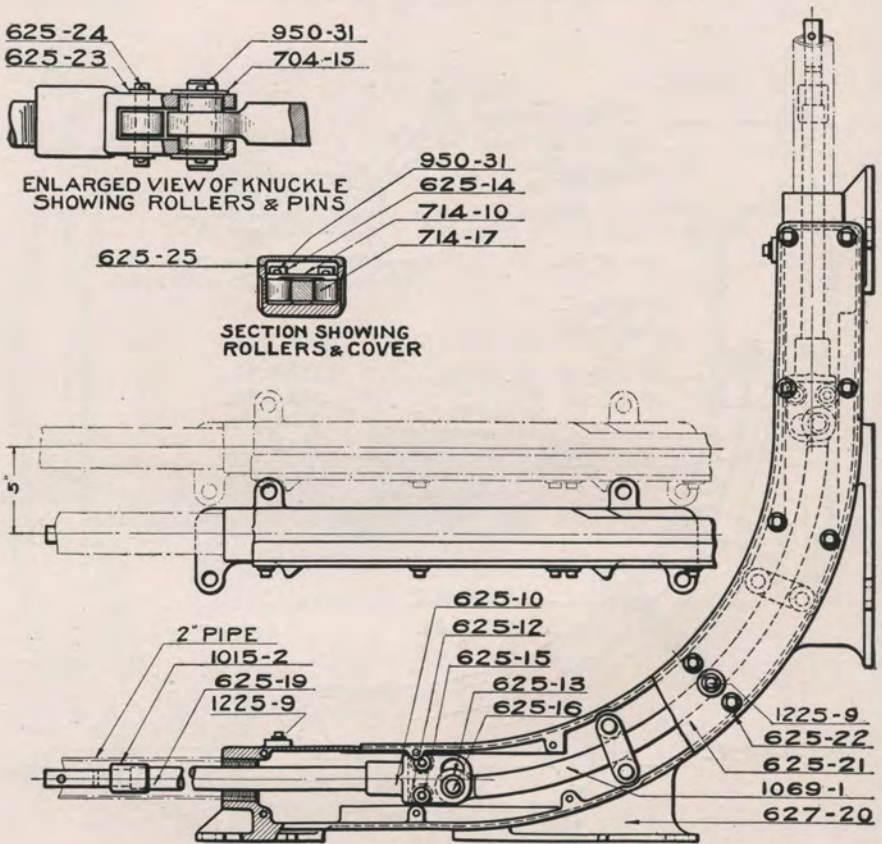


No. 626 Horizontal Waterproof 90 deg. Deflecting Stand, Four Outlets

The Stand illustrated above is used at all places when T Cranks are used, but when connections are desired to be waterproof. Connections may be attached to any outlet.

Trade No.	DESCRIPTION	List Price
625	Horizontal Deflecting Stand with Two Outlets, complete as shown .....	.....
626	Horizontal Deflecting Stand with Four Outlets, complete as shown .....	.....
627	Vertical Deflecting Stand with Two Outlets, complete as shown .....	.....
628	Vertical Deflecting Stand with Four Outlets, complete as shown .....	.....
	For each Packing Box required for above Stands, add	\$4.75
	For Parts of Stand, see next page.	

HORIZONTAL AND VERTICAL DEFLECTING STANDS—WATERPROOF TYPE

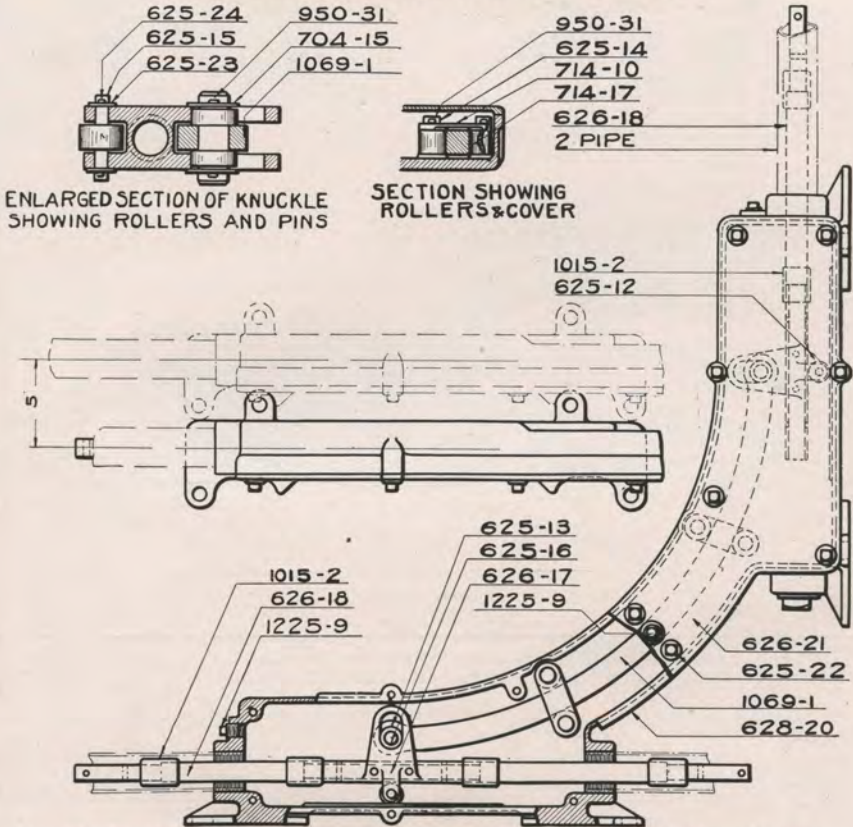


627

No. 627 Vertical Waterproof 90 deg. Deflecting Stand

Trade No.	DESCRIPTION	List Price
625-20	Horizontal Deflecting Box Only with Two Outlets .....	.....
626-20	" " " " " Four " .....	.....
627-20	Vertical " " " " Two " .....	.....
628-20	" " " " " Four " .....	.....
625-21	Cover for No. 625-20 and 627-20 Deflecting Box .....	.....
626-21	" " " 626-20 and 628-20 " " .....	.....
1069-1	R. S. A. Deflecting Bar	\$3.60
714-10	Cap for Deflecting Bar Guide Roller .....	.27
714-17	Deflecting Bar Guide Roller .....	.18
625-14	" " " " Pin with Cotter .....	.18
625-13	" " Roller .....	.18
625-16	" " " Pin with Cotters .....	.24

HORIZONTAL AND VERTICAL DEFLECTING STANDS—WATERPROOF TYPE

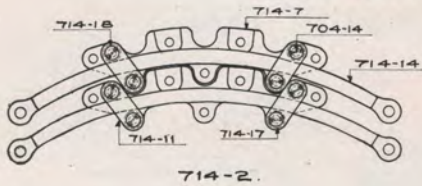


No. 628 Vertical Waterproof 90 deg. Deflecting Stand with Four Outlets

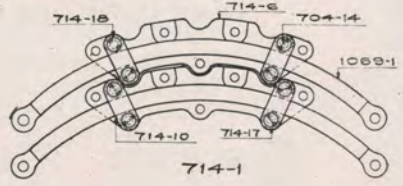
Used in place of Vertical T Cranks where watertight connections are desired. Connections may be attached to any of the Four Outlets.

Trade No.	DESCRIPTION	List Price
625-12	Knuckle Jaw Roller.....	\$0.18
625-15	“ “ Pin with Cotters.....	.09
625-10	“ “ for Double Roller.....	.....
626-17	“ “ Single.....	.....
625-19	Operating Rod with Coupling and Threaded End.....	1.90
626-18	“ “ Two Tang Ends.....	2.05
1015-2	1" x 2 1/4" Coupling.....	.27
1015-5	3/4" x 1 1/8" Rivets, per C.....	.54
625-22	3/8" x 7/8" Hexagon Head Cap Screws for fastening Cover to Box.....	.04
1225-9	3/4" Galvanized Pipe Plug.....	.07
704-15	7/8" Iron Washer for Deflecting Bar Roller Pin.....	.02
625-23	3/8" “ “ Knuckle Jaw “ “.....	.01
950-31	1/8" x 1 1/4" Cotter Pin for Guide Roller, per C.....	.96
625-24	3/8" x 3/4" “ “ “ Knuckle Roller Pin, Per C.....	.90

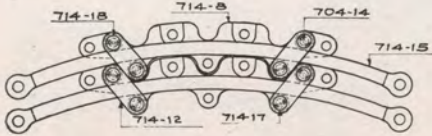
DEFLECTING BARS



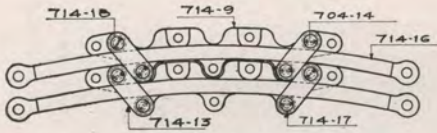
714-2.



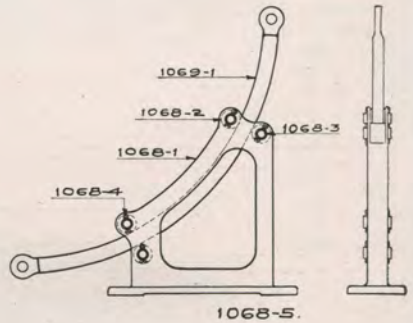
714-1



714-3



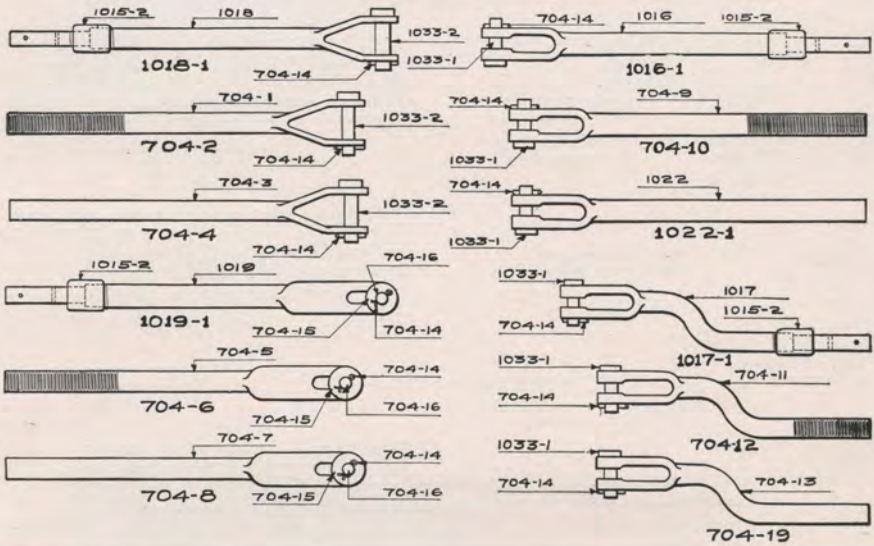
714-4



1068-5.

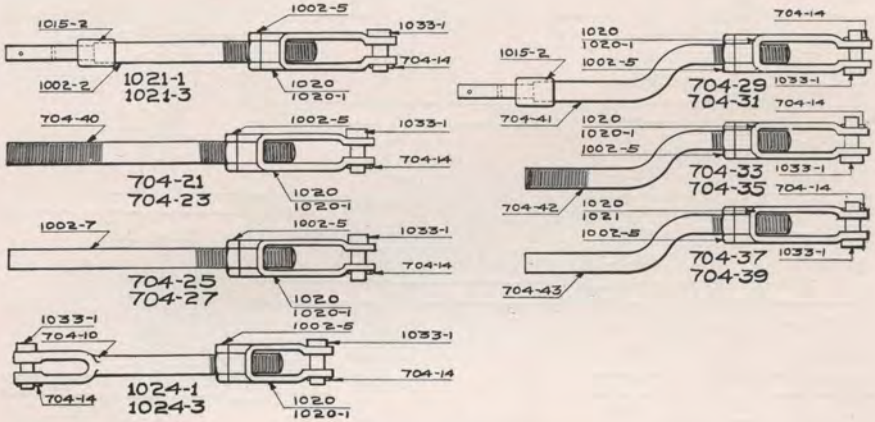
Trade No.	DESCRIPTION	List Price
1068-5	Vertical Deflecting Bar, complete as shown	\$10.80
714-1	Horizontal 90 deg. Deflecting Bar, complete as shown	10.80
714-2	“ 67 1/2 “ “ “ “ “ “ “	10.80
714-3	“ 45 “ “ “ “ “ “ “	10.80
714-4	“ 22 1/2 “ “ “ “ “ “ “	10.80
1068-1	Vertical Stand Only	4.50
714-6	90 deg. Horizontal Stand Only	4.50
714-7	67 1/2 “ “ “ “ “ “ “ “	4.50
714-8	45 “ “ “ “ “ “ “ “	4.50
714-9	22 1/2 “ “ “ “ “ “ “ “	4.50
714-10	90 deg. Horizontal Cap Only . . . . .	.27
714-11	67 1/2 “ “ “ “ “ “ “ “ . . . . .	.27
714-12	45 “ “ “ “ “ “ “ “ . . . . .	.27
714-13	22 1/2 “ “ “ “ “ “ “ “ . . . . .	.27
1069-1	90 deg. Deflecting Bar	3.60
714-14	67 1/2 “ “ “ “ “ “ “ “	3.60
714-15	45 “ “ “ “ “ “ “ “	3.60
714-16	22 1/2 “ “ “ “ “ “ “ “	3.60
714-17	Roller for Horizontal Deflecting Bars . . . . .	.18
714-18	Pin “ “ “ “ with Two 1/4" x 1 1/2" Cotters . . . . .	.18
704-14	3/8" x 1 1/2" Cotter Pin, per C. . . . .	.90
1068-2	Roller for Vertical Deflecting Bars . . . . .	.18
1068-3	Pin “ “ “ “ “ “ “ “ . . . . .	.18
1068-4	1/4" x 1 1/2" Cotter Pin, per C. . . . .	.96
950-32	Lag Screw, 3/4" x 4", per C.	8.40
950-33	Cast Washer for 3/4" Bolts, per C.	9.50
950-34	Wrought Iron Washer for 3/4" Bolts . . . . .	.02
950-35	Bolt and Nut, 3/4" x 6", per C.	15.40
950-36	“ “ “ 3/4" x 7" “ “	15.40
950-37	“ “ “ 3/4" x 8" “ “	17.60

SOLID JAWS



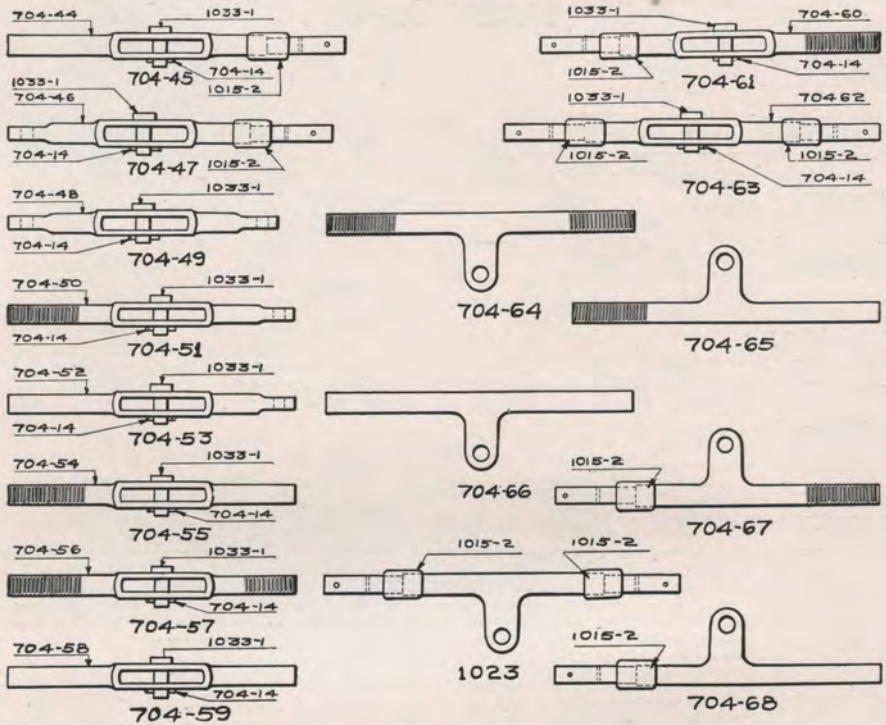
Trade No.	DESCRIPTION	List Price
1018	R. S. A. Straight Solid Wide Jaw, Tang End	\$2.05
1018-1	Same as above with Pin and Cotter	2.16
704-1	Straight Solid Wide Jaw, Threaded End	1.83
704-2	Same as above with Pin and Cotter	1.94
704-3	Straight Solid Wide Jaw, Butt End	1.60
704-4	Same as above with Pin and Cotter	1.71
1019	R. S. A. Straight Slotted Jaw, Tang End	4.37
1019-1	Same as above with Pin, Cotter and Washer	4.50
704-5	Straight Slotted Jaw, Threaded End	4.15
704-6	Same as above with Pin, Cotter and Washer	4.28
704-7	Straight Slotted Jaw, Butt End	3.92
704-8	Same as above with Pin, Cotter and Washer	4.05
1016	R. S. A. Straight Solid Jaw, Tang End	1.33
1016-1	Same as above with Pin and Cotter	1.44
704-9	Straight Solid Jaw, Threaded End	1.11
704-10	Same as above with Pin and Cotter	1.22
1022	R. S. A. Straight Solid Jaw, Butt End . . . . .	.88
1022-1	Same as above with Pin and Cotter . . . . .	.99
1017	R. S. A. Offset Solid Jaw, Tang End	2.14
1017-1	Same as above with Pin and Cotter	2.25
704-11	Offset Solid Jaw, Threaded End	1.92
704-12	Same as above with Pin and Cotter	2.03
704-13	Offset Solid Jaw, Butt End	1.69
704-14	Same as above with Pin and Cotter	1.80
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter . . . . .	.11
1033-2	" " " " " $\frac{7}{8}$ " x $3\frac{1}{4}$" " " . . . . .	.18
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pin, per C. . . . .	.90
704-15	$\frac{7}{8}$ " Washer for Slotted Jaws . . . . .	.02
1015-2	1" x $2\frac{1}{4}$ " Coupling, Black . . . . .	.27
1015-3	1" x $2\frac{1}{4}$ " " Galvanized . . . . .	.32
1015-4	$\frac{1}{4}$ " x $1\frac{1}{8}$ " Rivets, Galvanized, per C.	1.13
1015-5	$\frac{1}{4}$ " x $1\frac{1}{8}$ " " Black, per C. . . . .	.54

SCREW JAWS



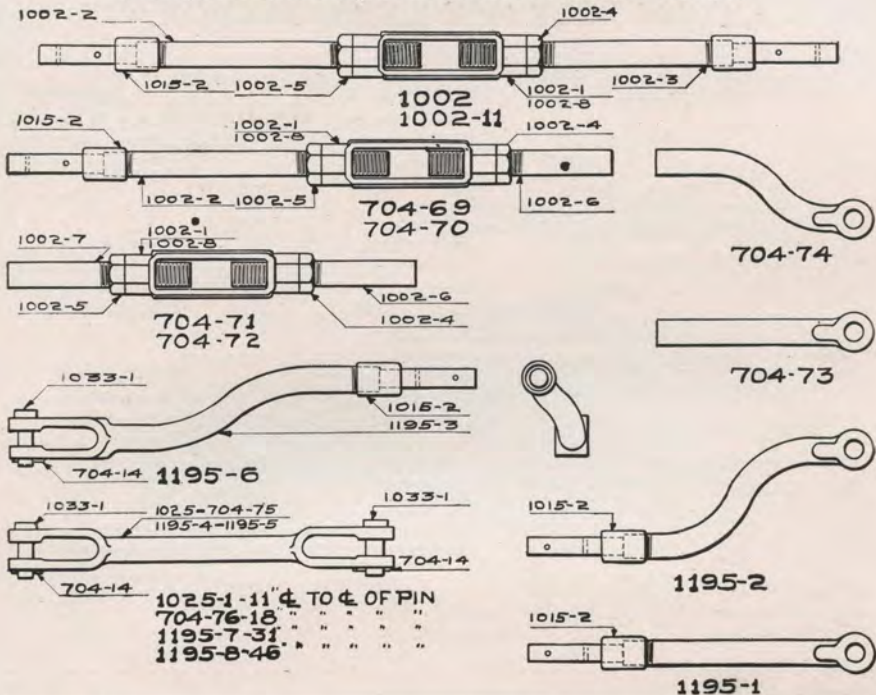
Trade No.	DESCRIPTION	List Price
1021	R. S. A. Screw Jaw, Tang End with Nut and Forged Jaw	\$2.10
1021-1	Same as above with Pin and Cotter	2.21
1021-2	Screw Jaw, Tang End with Nut and Malleable Jaw	1.78
1021-3	Same as above with Pin and Cotter	1.89
704-20	Screw Jaw, Threaded End with Nut and Forged Jaw	1.88
704-21	Same as above with Pin and Cotter	1.99
704-22	Screw Jaw, Threaded End with Nut and Malleable Jaw	1.56
704-23	Same as above with Pin and Cotter	1.67
704-24	Screw Jaw, Butt End with Nut and Forged Jaw	1.65
704-25	Same as above with Pin and Cotter	1.76
704-26	Screw Jaw, Butt End with Nut and Malleable Jaw	1.33
704-27	Same as above with Pin and Cotter	1.44
1024	R. S. A. Screw Jaw, Solid Jaw End with Nut and Forged Jaw	2.91
1024-1	Same as above with Pin and Cotter	3.02
1024-2	Screw Jaw, Solid Jaw End with Nut and Malleable Jaw	2.59
1024-3	Same as above with Pin and Cotter	2.70
704-28	Offset Screw Jaw, Tang End with Nut and Forged Jaw	2.91
704-29	Same as above with Pin and Cotter	3.02
704-30	Offset Screw Jaw, Tang End with Nut and Malleable Jaw	2.59
704-31	Same as above with Pin and Cotter	2.70
704-32	Offset Screw Jaw, Threaded End with Nut and Forged Jaw	2.69
704-33	Same as above with Pin and Cotter	2.80
704-34	Offset Screw Jaw, Threaded End with Nut and Malleable Jaw	2.37
704-35	Same as above with Pin and Cotter	2.48
704-36	Offset Screw Jaw, Butt End with Nut and Forged Jaw	2.46
704-37	Same as above with Pin and Cotter	2.57
704-38	Offset Screw Jaw, Butt End with Nut and Malleable Jaw	2.14
704-39	Same as above with Pin and Cotter	2.25
1002-2	Threaded Rod, Tang End with Nut	1.26
704-40	" " Threaded End with Nut	1.04
1002-7	" " Butt End with Nut .....	.81
704-10	Solid Jaw with Nut	1.22
704-41	Threaded Offset Rod, Tang End with Nut	2.07
704-42	" " Threaded End with Nut	1.85
704-43	" " Butt End with Nut	1.62
1020	Screw Jaw, Forging .....	.86
1020-1	" " Malleable Iron .....	.54
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{3}{4}$ ", with Cotter .....	.11
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pin, per C. ....	.90
1002-5	Standard $1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick .....	.18
1015-2	1" x $2\frac{3}{4}$ " Coupling, Black .....	.27
1015-3	1" x $2\frac{3}{4}$ " " Galvanized .....	.32
1015-4	$\frac{3}{4}$ " x $1\frac{1}{4}$ " Rivets, Galvanized, per C.	1.13
1015-5	$\frac{3}{4}$ " x $1\frac{1}{4}$ " " Black, per C. ....	.54

DOUBLE JAWS AND LUGS



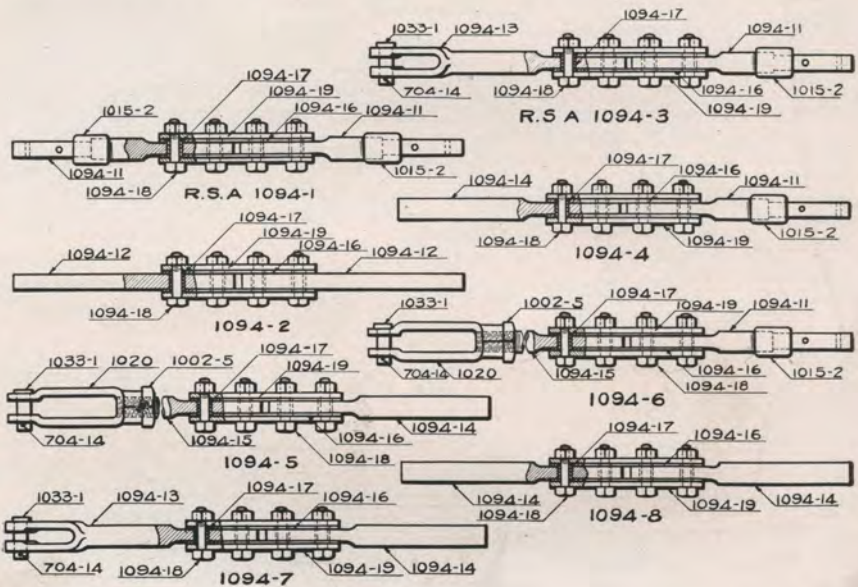
Trade No.	DESCRIPTION	List Price
704-44	Double Jaw, Butt and Tang End	\$4.84
704-45	Same as above with Pin and Cotter	4.95
704-46	Double Jaw, Eye and Tang End	5.29
704-47	Same as above with Pin and Cotter	5.40
704-48	Double Jaw, Two Eye Ends	5.29
704-49	Same as above with Pin and Cotter	5.40
704-50	Double Jaw, Eye End and Threaded End	5.06
704-51	Same as above with Pin and Cotter	5.17
704-52	Double Jaw, Eye End and Butt End	4.84
704-53	Same as above with Pin and Cotter	4.95
704-54	Double Jaw, Threaded End and Butt End	4.61
704-55	Same as above with Pin and Cotter	4.72
704-56	Double Jaw, Two Threaded Ends	4.84
704-57	Same as above with Pin and Cotter	4.95
704-58	Double Jaw, Two Butt Ends	4.39
704-59	Same as above with Pin and Cotter	4.50
704-60	Double Jaw, Tang and Threaded End	5.06
704-61	Same as above with Pin and Cotter	5.17
704-62	Double Jaw, Two Tang Ends	5.29
704-63	Same as above with Pin and Cotter	5.40
704-64	Lug, Two Ends Threaded	1.80
704-65	" One Threaded and One Butt End	1.57
704-66	" Two Butt Ends	1.35
704-67	" One Threaded and One Tang End	2.02
704-68	" Butt End "	1.80
1023	R. S. A. Lug, Two Tang Ends	2.25
1015-2	1" x 2 3/4" Sleeve, Black .....	.27
1015-3	1" x 2 3/4" " Galvanized .....	.32
1015-4	3/4" x 1 1/8" Rivets	1.13
1015-5	3/4" x 1 1/8" " Black .....	.54
1033-1	R. S. A. Jaw Pin, 3/8" x 2 1/4" with Cotter .....	.11
704-14	3/8" x 1 1/2" Cotter Pin, per C. ....	.90

TURNBUCKLES, EYE RODS AND LINKS



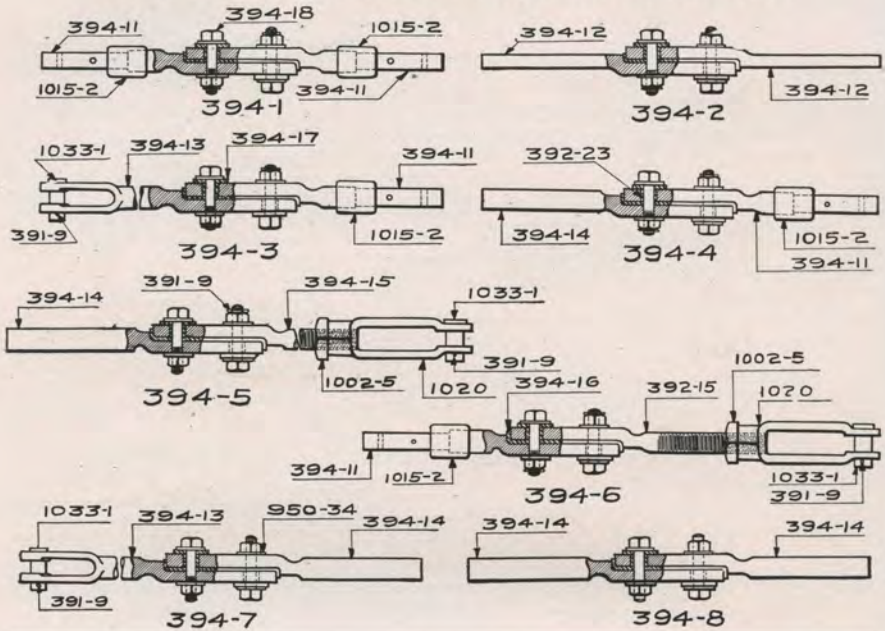
Trade No.	DESCRIPTION	List Price
1002	R. S. A. Wrought Iron Pipe Adjusting Screw, Tang Ends, complete as shown with Forged Turnbuckle	\$3. 60
1002-11	Same as above except with Malleable Turnbuckle	3. 38
704-69	Wrought Iron Pipe Adjusting Screw, One Tang End and One Butt End, complete as shown with forged Turnbuckle	3. 15
704-70	Same as above except with Malleable Turnbuckle	2. 93
704-71	Wrought Iron Pipe Adjusting Screw with Two Butt Ends with Forged Turnbuckle	2. 70
704-72	Same as above with Malleable Turnbuckle	2. 48
1002-1	Turnbuckle, Forging	1. 17
1002-8	" Malleable Iron . . . . .	. 95
1002-2	Threaded Rod, Tang End, R. H. with Nut	1. 26
1002-3	" " " " L. H. " " " "	1. 26
1002-4	1 1/4" Hexagon Nut, 3/4" thick, L. H. . . . .	. 18
1002-5	1 1/4" " " " " R. H. . . . .	. 18
1002-6	Threaded Rod, Butt End, R. H. with Nut . . . . .	. 81
1002-7	" " " " L. H. " " " " . . . . .	. 81
704-73	Straight Eye Rod, Butt End	1. 08
704-74	Offset " " " "	1. 89
1195-1	R. S. A. Straight Eye Rod, Tang End	1. 53
1195-2	" " " " Offset	2. 34
1195-3	" " " " Double Offset Solid Jaw, Tang End	2. 49
1195-6	Same as above with Pin and Cotter	2. 60
1025	R. S. A. Solid Link, 11" C	2. 03
1025-1	Same as above with Pins and Cotters	2. 25
704-75	Solid Link, 18" C	2. 59
704-76	Same as above with Pins and Cotters	2. 81
1195-4	R. S. A. Solid Link, 31" C	3. 63
1195-7	Same as above with Pins and Cotters	3. 85
1195-5	R. S. A. Solid Link, 46" C	4. 83
1195-8	Same as above with Pins and Cotters	5. 05
1033-1	R. S. A. Jaw Pin, 3/8" x 2 1/4" with Cotter . . . . .	. 11
704-14	3/8" x 1 1/2" Cotter Pins, per C . . . . .	. 90
1015-2	1" x 2 1/4" Coupling, Black . . . . .	. 27
1015-3	1" x 2 1/4" " " Galvanized . . . . .	. 32
1015-4	3/4" x 1 1/8" Rivets, Galvanized	1. 13
1015-5	3/4" x 1 1/8" " " Black . . . . .	. 54

R. S. A. FOUR BOLT PIPE AND ROD INSULATIONS



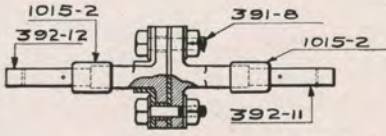
Trade No.	DESCRIPTION	List Price
1094-1	Four Bolt Insulation with Tang Ends and Sleeves, each	\$3.87
1094-2	“ “ “ “ Flat Stub Ends, each	2.07
1094-3	“ “ “ “ Tang End, Sleeve and Solid Jaw, each	5.40
1094-4	Four Bolt Insulation with One Tang End and Sleeve and One Round Butt End, each	3.42
1094-5	Four Bolt Insulation with One Round Butt End and R. S. A. Forged Screw Jaw	4.34
1094-55	Same as above but with Malleable Screw Jaw, each	4.02
1094-6	Four Bolt Insulation with One Tang End and Sleeve and R. S. A. Screw Jaw, each	4.79
1094-66	Same as above but with Malleable Screw Jaw, each	4.47
1094-7	Four Bolt Insulation with One Round Butt End and Solid Jaw, each	4.95
1094-8	Four Bolt Insulation with Two Butt Ends, each	2.97
1094-11	Half Rod with Tang End and Sleeve, each	1.35
1094-12	“ “ “ Flat Stub End, each . . . . .	.45
1094-13	“ “ “ Standard Solid Jaw, each	2.70
1094-14	“ “ “ Round Butt End, each . . . . .	.90
1094-15	“ “ “ Threaded to Fit R. S. A. Screw Jaw, each	1.12
1094-16	Fibre Plate, each . . . . .	.18
1094-17	“ Bushing, per C.	5.40
1094-18	$\frac{5}{8}$ " Nut and Bolt Only, each . . . . .	.11
1094-19	Splice Plate Only, each . . . . .	.36
1002-5	$\frac{3}{4}$ " x $1\frac{1}{4}$ " Hexagon Nut, each . . . . .	.18
1020	Standard $1\frac{1}{4}$ " R. S. A. Forged Screw Jaw, each . . . . .	.86
1020-1	“ “ $1\frac{1}{4}$ " Malleable Screw Jaw, each . . . . .	.54
1033-1	$\frac{7}{8}$ " x $2\frac{1}{4}$ " Jaw Pin with Cotter . . . . .	.11
704-14	$\frac{3}{16}$ " x $1\frac{1}{2}$ " Cotter Pins for above, per C. . . . .	.96

TWO BOLT PIPE AND ROD INSULATIONS

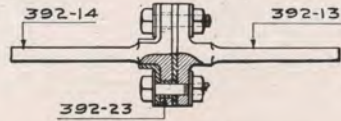


Trade No.	DESCRIPTION	List Price
394-1	Two Bolt Insulation with Tang Ends and Sleeves, each	\$3.90
394-2	“ “ “ “ Flat Stub Ends, each	3.00
394-3	“ “ “ “ Tang End and Sleeve and Solid Jaw, each	5.36
394-4	Two Bolt Insulation with One Tang End and Sleeve and One Round Butt End, each	3.45
394-5	Two Bolt Insulation with One Round Butt End and R. S. A. Forged Screw Jaw, each	4.37
394-55	Same as above but with Malleable Screw Jaw, each	4.05
394-6	Two Bolt Insulation with One Tang End and Sleeve and R. S. A. Forged Screw Jaw, each	4.82
394-66	Same as above but with Malleable Screw Jaw, each	4.50
394-7	Two Bolt Insulation with One Round Butt End and Solid Jaw	4.91.
394-8	Two Bolt Insulation with Two Round Butt Ends, each	3.00
394-11	Half Rod with Tang End and Sleeve, each	1.70
394-12	“ “ “ Flat Stub End, each	1.25
394-13	“ “ “ Solid Jaw, each	3.05
394-14	“ “ “ Round Butt End, each	1.25
394-15	“ “ “ Threaded End for Screw Jaw, each	1.47
394-16	Bent Fibre Insulating Plate Only, each . . . . .	.24
394-17	Fibre Washer Only for Bolt Head, each . . . . .	.04
394-18	3/4" Nut and Bolt for above, each . . . . .	.13
950-34	3/4" Standard Washer for above, each . . . . .	.02
392-23	Fibre Bolt Bushing Only for 394-18, per C.	5.40
1002-5	1 1/4" Hexagon Nut, 3/4" thick . . . . .	.18
1020	Standard 1 1/4" R. S. A. Forged Screw Jaw, each . . . . .	.86
1020-1	“ “ 1 1/4" Malleable Screw Jaw, each . . . . .	.54
1033-1	Jaw Pin and Cotter for above, each . . . . .	.11

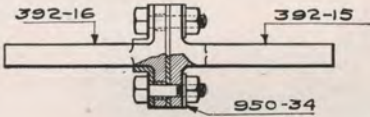
"T" PIPE AND ROD INSULATIONS



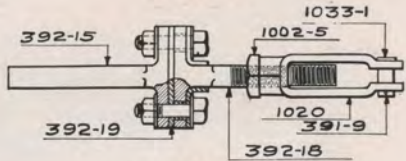
392-1



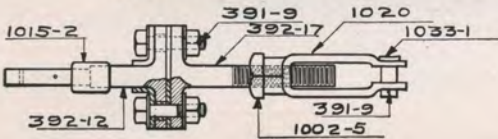
392-2



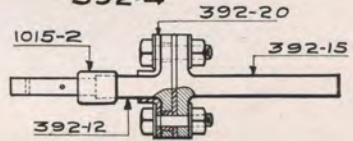
392-3



392-4



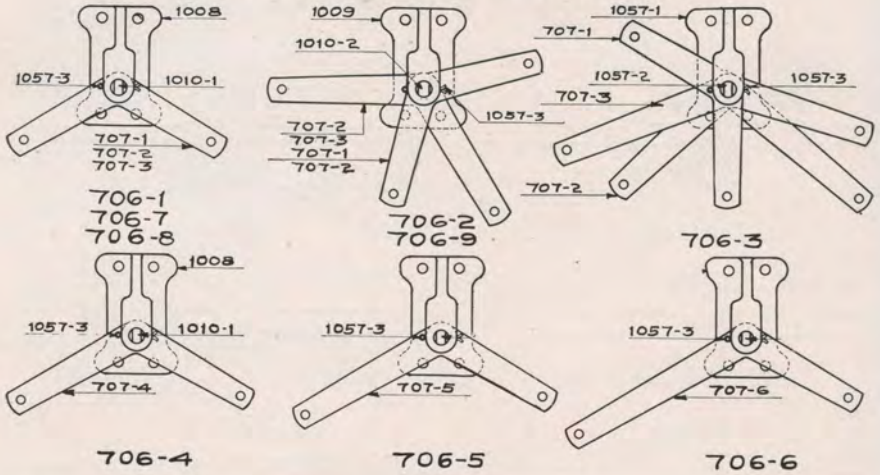
392-5



392-6

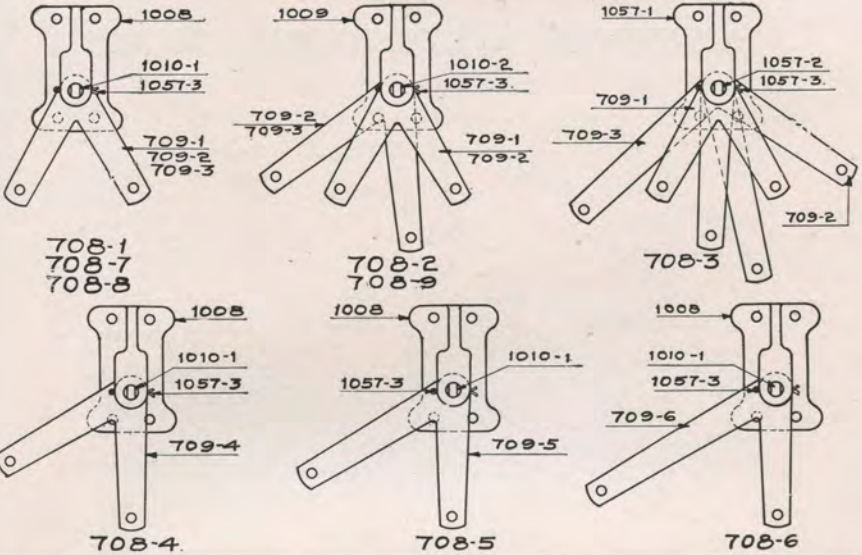
Trade No.	DESCRIPTION	List Price
392-1	"T" Insulation with Tang Ends and Sleeve.....	\$3.55
392-2	" " " Flat Stub Ends, each.....	2.65
392-3	" " " Round Butt Ends, each.....	2.65
392-4	" " " One Round Butt End and One R. S. A. Forged Screw Jaw, each.....	4.02
392-44	Same as above but with Malleable Screw Jaw, each.....	3.70
392-5	"T" Insulation with One Tang End and Sleeve and One R. S. A. Forged Screw Jaw, each.....	4.47
392-55	Same as above but with Malleable Screw Jaw, each.....	4.15
392-6	"T" Insulation with One Tang End and Sleeve and One Round Butt End, each.....	3.10
392-11	Half Rod with Tang End and Sleeve for Bolt Side, each.....	1.35
392-12	" " " " " Fibre " " ".....	1.35
392-13	" " " Square Stub Ends for Bolt Side, each.....	.90
392-14	" " " " " Fibre " " ".....	.90
392-15	" " " Round " " " Bolt " " ".....	.90
392-16	" " " " " Fibre " " ".....	.90
392-17	" " " Threaded for Screw Jaw for Bolt Side, each.....	1.12
392-18	" " " " " Fibre " " ".....	1.12
392-19	Fibre Center Plate Only, each.....	.12
392-20	Bent Fibre Plate for Bolt, each.....	.15
950-34	Washer for 3/4" Bolt, each.....	.02
1002-5	3/4" x 1 1/4" Hexagon Nut, each.....	.18
392-23	Fibre Bolt Bushing, per C.....	5.40
391-8	3/4" Bolt and Nut drilled for Cotter Pin, each.....	.13
391-9	1/8" Cotter Pin for above, each.....	.01
1020	Forged R. S. A. Screw Jaw, each.....	.86
1020-1	Malleable Screw Jaw, each.....	.54
1033-1	7/8" x 2 1/4" Jaw Pin with Cotter.....	.11

OBTUSE HORIZONTAL CRANKS



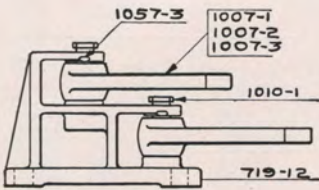
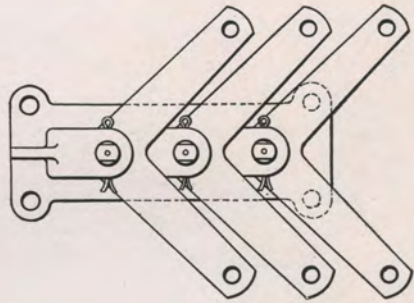
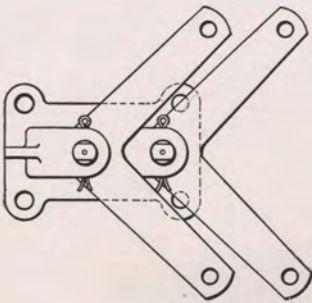
Trade No.	DESCRIPTION	List Price
706-1	One Way Obtuse Horizontal Crank, 9" x 9", complete as shown	\$3.60
706-2	Two " " " 9" x 9", 11 3/4" x 11 3/4", complete as shown	5.67
706-3	Three Way Obtuse Horizontal Crank, 9" x 9", 11 3/4" x 11 3/4", 14 1/2" x 14 1/2", complete as shown	8.10
706-4	One Way Obtuse Horizontal Crank, 10" x 11", complete as shown	3.87
706-5	One Way Obtuse Horizontal Crank, 10" x 13", complete as shown	4.05
706-6	One Way Obtuse Horizontal Crank, 10" x 16", complete as shown	4.23
706-7	One Way Obtuse Horizontal Crank, 11 3/4" x 11 3/4", complete as shown	3.87
706-8	One Way Obtuse Horizontal Crank, 14 1/2" x 14 1/2", complete as shown	4.14
706-9	Two Way Obtuse Horizontal Crank, 11 3/4" x 11 3/4" and 14 1/2" x 14 1/2", complete as shown	6.21
1008	R. S. A. One Way Stand Only	1.89
1009	" " " Two " " "	2.16
1057-1	" " " Three " " "	2.43
1010-1	" " " One Way Pin	.32
1010-2	" " " Two " " "	.40
1057-2	" " " Three " " "	.50
707-1	9" x 9" Obtuse Crank	1.53
707-2	11 3/4" x 11 3/4" Obtuse Crank	1.80
707-3	14 1/2" x 14 1/2" " "	2.61
707-4	10" x 11" " "	1.80
707-5	10" x 13" " "	1.98
707-6	10" x 16" " "	2.16
1057-3	3/4" x 3" Cotter Pin	.01
950-32	Lag Screw, 3/4" x 4", per C.	8.40
950-33	Cast Washer, 3/4", per C.	9.50
950-34	Wrought Iron Washer, 3/4", each	.02
950-35	Bolt and Nut, 3/4" x 6", per C.	15.40
950-36	" " " 3/4" x 7" " "	15.40
950-37	" " " 3/4" x 8" " "	17.60

ACUTE HORIZONTAL CRANKS

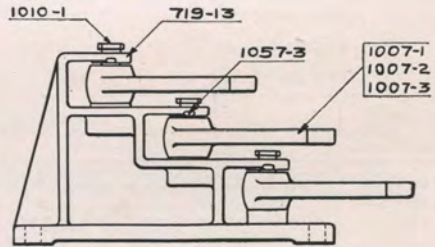


Trade No.	DESCRIPTION	List Price
708-1	One Way Acute Horizontal Crank, 9" x 9", complete as shown	\$3.60
708-2	Two " " " " " " 9" x 9", 11 3/4" x 11 3/4", complete as shown	5.67
708-3	Three Way Acute Horizontal Crank, 9" x 9", 11 3/4" x 11 3/4", 14 1/2" x 14 1/2", complete as shown	8.10
708-4	One Way Acute Horizontal Crank, 10" x 11", complete as shown	3.87
708-5	" " " " " " 10" x 13" " " "	4.05
708-6	" " " " " " 10" x 16" " " "	4.23
708-7	One Way Acute Horizontal Crank, 11 3/4" x 11 3/4", complete as shown	3.87
708-8	One Way Acute Horizontal Crank, 14 1/2" x 14 1/2", complete as shown	4.14
708-9	Two Way Acute Horizontal Crank, 11 3/4" x 11 3/4", 14 1/2" x 14 1/2", complete as shown	6.21
1008	R. S. A. One Way Stand Only	1.89
1009	" " " Two " " "	2.16
1057-1	" " " Three " " "	2.43
1010-1	" " " One Way Pin with Cotter	.32
1010-2	" " " Two " " "	.40
1057-2	" " " Three " " "	.50
709-1	9" x 9" Acute Crank	1.53
709-2	11 3/4" x 11 3/4" Acute Crank	1.80
709-3	14 1/2" x 14 1/2" " " "	2.61
709-4	10" x 11" " " "	1.80
709-5	10" x 13" " " "	1.98
709-6	10" x 16" " " "	2.16
1057-3	1/4" x 3" Cotter Pin	.01
950-32	Lag Screw, 3/4" x 4", per C.	8.40
950-33	Cast Washer, 3/4", per C.	9.50
950-34	Wrought Iron Washer, 3/4", each	.02
950-35	Bolt and Nut, 3/4" x 6", per C.	15.40
950-36	" " " 3/4" x 7" " "	15.40
950-37	" " " 3/4" x 8" " "	17.60

SEPARATE PIN HORIZONTAL CRANK STANDS



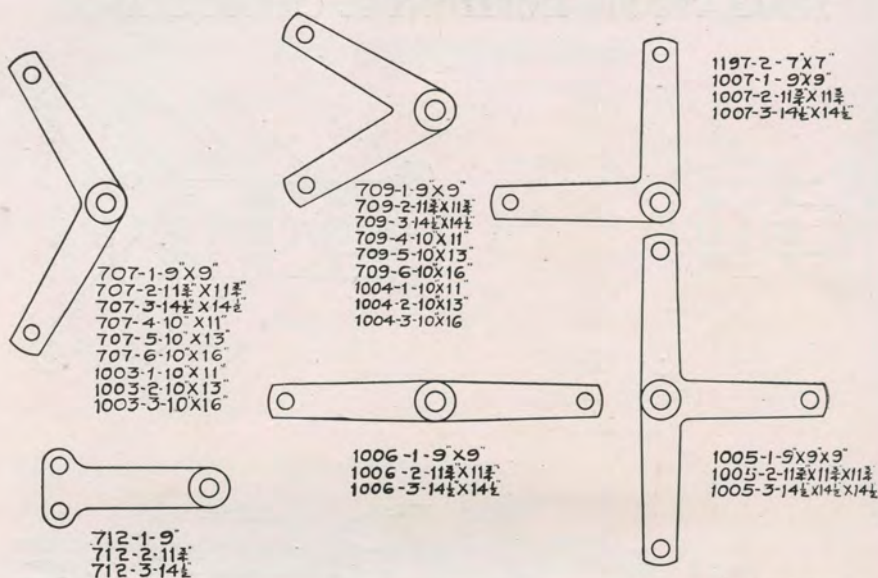
719-1
719-2
719-3



719-4
719-5
719-6

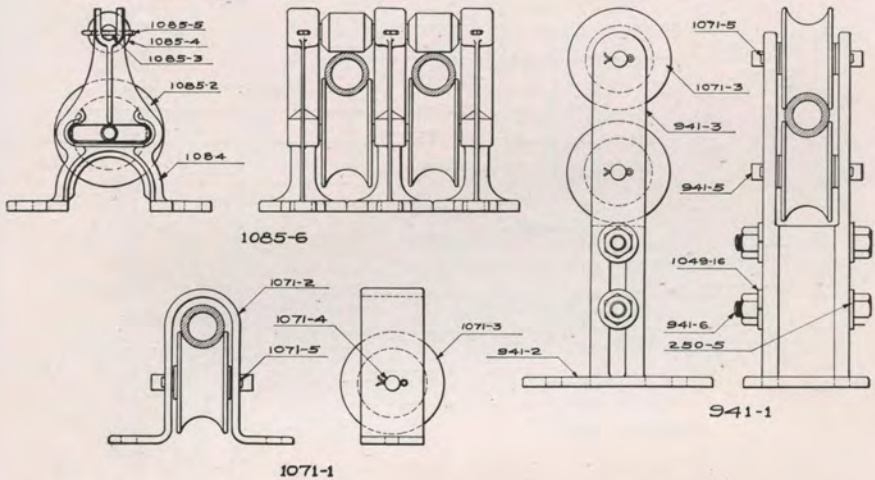
Trade No.	DESCRIPTION	List Price
719-1	Two Way Horizontal Crank Stand with 9" x 9" Cranks...	\$6.57
719-2	“ “ “ “ “ “ 11 3/4" x 11 3/4" Cranks	7.11
719-3	“ “ “ “ “ “ 14 1/2" x 14 1/2" “	8.19
719-4	Three “ “ “ “ “ “ 9" x 9" “	10.08
719-5	“ “ “ “ “ “ 11 3/4" x 11 3/4" “	10.89
719-6	“ “ “ “ “ “ 14 1/2" x 14 1/2" “	12.51
719-12	Two “ “ “ “ “ Only	3.15
719-13	Three “ “ “ “ “	4.86
1007-1	R. S. A. 90 deg. 9" x 9" Crank	1.53
1007-2	“ “ “ “ 11 3/4" x 11 3/4" “	1.80
1007-3	“ “ “ “ 14 1/2" x 14 1/2" “	2.61
1010-1	Pin for Stands	.32
1057-3	3/4" x 3" Cotter Pins	.01
950-32	Lag Screw, 3/4" x 4"	8.40
950-33	Cast Washer for 3/4" Bolt, per C.	9.50
950-34	Wrought Iron Washer for 3/4" Bolt, each	.02
950-35	Bolt and Nut, 3/4" x 6", per C.	15.40
950-36	“ “ “ 3/4" x 7" “	15.40
950-37	“ “ “ 3/4" x 8" “	17.60

CRANKS



Trade No.	DESCRIPTION	List Price
1197-2	R. S. A. 90 deg. Crank, 7" x 7".....	\$1.30
1007-1	" " " " " " 9" x 9".....	1.53
1007-2	" " " " " " 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ".....	1.80
1007-3	" " " " " " 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ ".....	2.61
707-1	Obtuse Crank, 9" x 9".....	1.53
707-2	" " 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ".....	1.80
707-3	" " 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ ".....	2.61
707-4	" " 10" x 11".....	1.80
707-5	" " 10" x 13".....	1.98
707-6	" " 10" x 16".....	2.16
709-1	Acute Crank, 9" x 9".....	1.53
709-2	" " 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ".....	1.80
709-3	" " 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ ".....	2.61
709-4	" " 10" x 11".....	1.80
709-5	" " 10" x 13".....	1.98
709-6	" " 10" x 16".....	2.16
1005-1	R. S. A. Three Arm Crank, 9" x 9" x 9".....	3.42
1005-2	" " " " " " 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ".....	3.78
1005-3	" " " " " " 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ ".....	4.77
1006-1	" " " 180 deg. Crank, 9" x 9".....	1.53
1006-2	" " " " " " 11 $\frac{3}{4}$ " x 11 $\frac{3}{4}$ ".....	1.80
1006-3	" " " " " " 14 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ ".....	2.61
1003-1	" " " Obtuse Crank, $\frac{3}{4}$ " Offset in Long Arm, 10" x 11".....	1.98
1003-2	" " " " " " $\frac{3}{4}$ " " " " " 10" x 13".....	2.16
1003-3	" " " " " " $\frac{3}{4}$ " " " " " 10" x 16".....	2.34
1004-1	" " " Acute " " " " " " 10" x 11".....	1.98
1004-2	" " " " " " $\frac{3}{4}$ " " " " " 10" x 13".....	2.16
1004-3	" " " " " " $\frac{3}{4}$ " " " " " 10" x 16".....	2.34
712-1	Radial Crank, 9".....	1.80
712-2	" " 11 $\frac{3}{4}$ ".....	2.07
712-3	" " 14 $\frac{1}{2}$ ".....	2.34

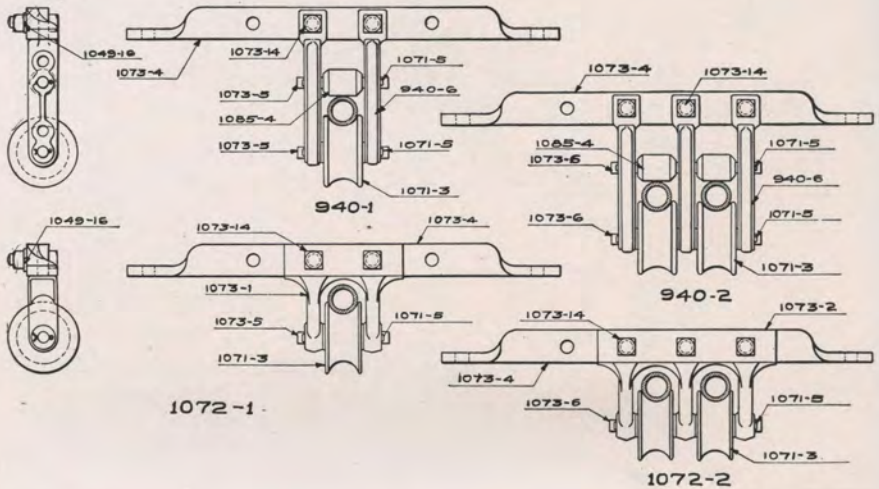
STRAP AND UNIVERSAL PIPE CARRIERS



Trade No.	DESCRIPTION	List Price
1085-1	R. S. A. One Way Universal Pipe Carrier complete.....	\$0.81
1085-6	“ “ “ Two “ “ “ “ “ “	1.35
1085-7	“ “ “ Three “ “ “ “ “ “	1.89
1085-8	“ “ “ Four “ “ “ “ “ “	2.43
1085-9	“ “ “ Five “ “ “ “ “ “	2.97
1085-10	“ “ “ Six “ “ “ “ “ “	3.51
1085-11	“ “ “ Seven “ “ “ “ “ “	4.05
1085-12	“ “ “ Eight “ “ “ “ “ “	4.59
1084	“ “ “ Universal Pipe Carrier Stand.....	.31
1085-2	“ “ “ Bottom Roller.....	.18
1085-3	“ “ “ Pin.....	.04
1085-4	“ “ “ Top Roller.....	.04
1085-5	“ “ “ $\frac{1}{4}$ " x $1\frac{1}{2}$ " Cotter Pins, per C.....	.88
1071-1	“ “ “ Strap Pipe Carrier complete.....	.45
1071-2	“ “ “ Stand for above.....	.21
1071-3	“ “ “ Sheave “ “ .....	.18
1071-4	“ “ “ Pin with Cotters for above.....	.09
1071-5	“ “ “ $\frac{3}{8}$ " x 1" Cotter Pin, per C.....	.90
941-1	Adjustable Pipe Carrier complete.....	2.34
941-2	Stand.....	1.04
941-3	Adjustable Arm.....	.38
941-5	Pin.....	.04
941-6	$\frac{1}{2}$ " x 4" Square Hexagon Head Bolt and Nut.....	.07
1049-16	$\frac{1}{2}$ " Lock Washer.....	.02
250-5	$\frac{1}{2}$ " Washer.....	.01
1620-47	$\frac{1}{2}$ " x 3" Lag Screws.....	.06
1085-13	$\frac{1}{2}$ " x $2\frac{1}{2}$" “ “ .....	.07
605-28	$\frac{5}{8}$ " x 4" “ “ .....	.08

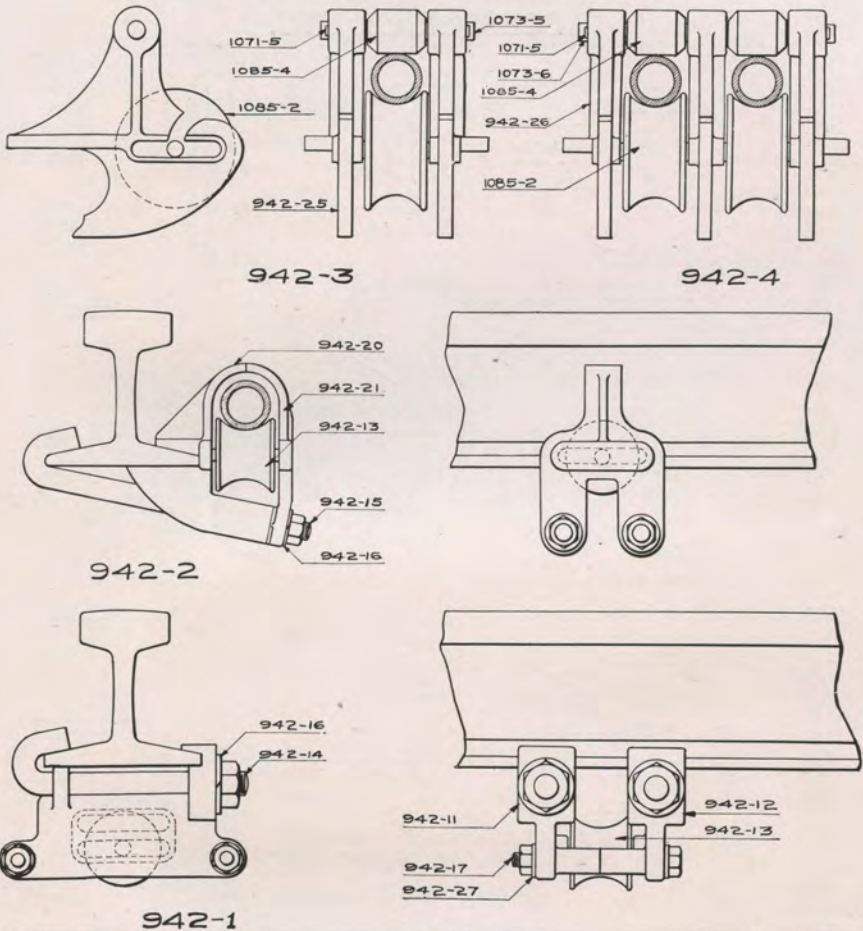
Style No. 1085 Universal Pipe Carriers can be furnished up to Thirty Way. Prices on application.

TRANSVERSE PIPE CARRIERS



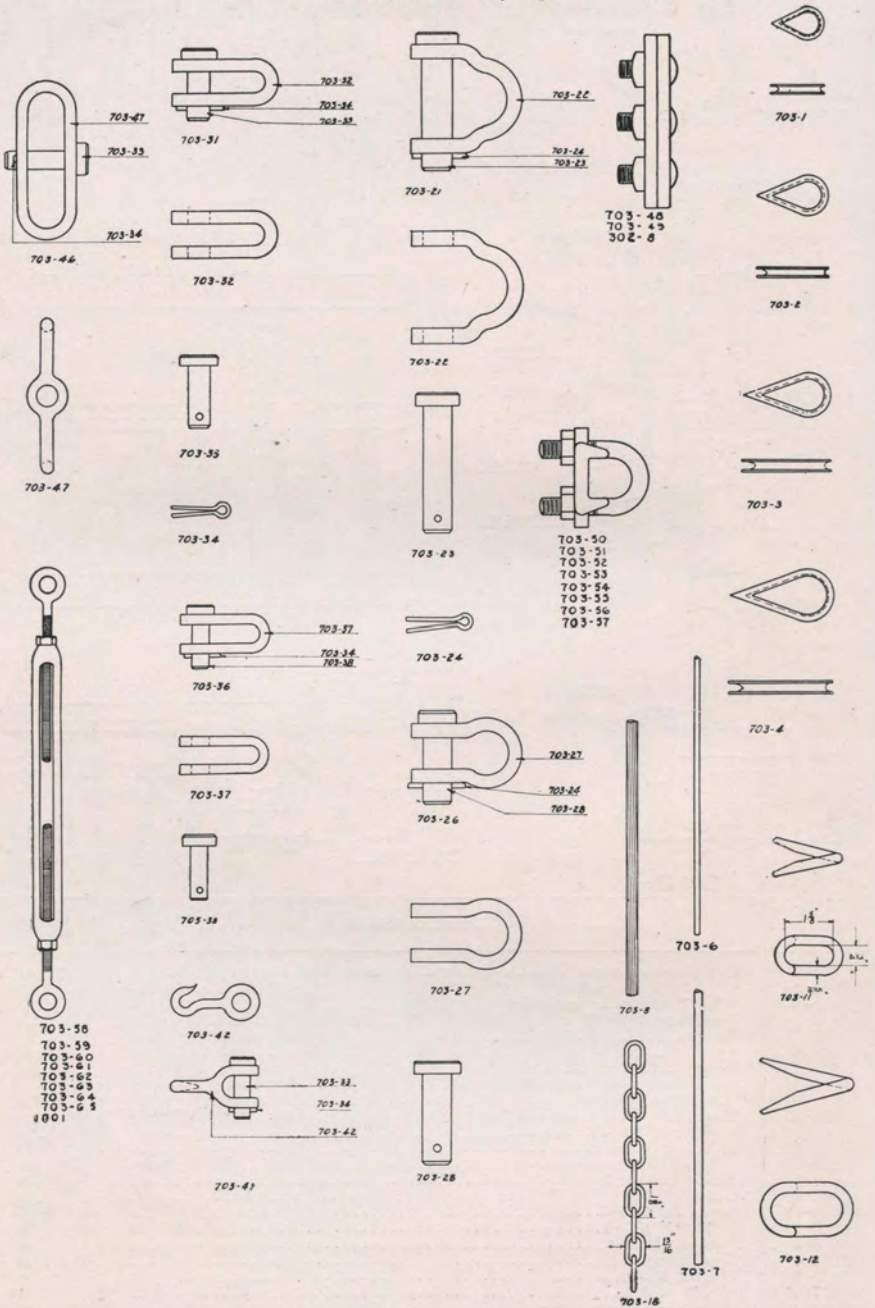
Trade No.	DESCRIPTION	List Price
940-1	One Way Transverse Pipe Carrier.....	\$0.95
940-2	Two " " " "	1.31
940-3	Three " " " "	1.62
940-4	Four " " " "	2.03
940-5	Five " " " "	2.39
1072-1	R. S. A. One Way Transverse Pipe Carrier.....	1.26
1072-2	" " " Two " " " "	1.75
1072-3	" " " Three " " " "	2.25
1072-4	" " " Four " " " "	2.83
1072-5	" " " Five " " " "	3.33
940-6	Hanger for No. 940 Carriers.....	.14
1073-1	R. S. A. One Way Hanger.....	.58
1073-2	" " " Two " " " " .....	.85
1073-3	Three Way Hanger, R. S. A.....	1.16
1073-4	R. S. A. Support for One, Two and Three Way Carriers.....	.50
1073-5	" " " One Way Pin.....	.09
1073-6	" " " Two " " " " .....	.11
1073-7	" " " Three " " " " .....	.13
1073-8	" " " Four " " " " .....	.14
1073-9	" " " Five " " " " .....	.16
1073-10	" " " Support for Four Way Carrier.....	.54
1073-11	" " " " Five " " " " .....	.58
1071-3	" " " Sheave.....	.18
1085-4	" " " Top Roller.....	.04
1073-12	" " " 5/8" x 3" Lag Screws.....	.05
605-28	5/8" x 4" Lag Screws.....	.08
1073-14	R. S. A. 1/2" x 2" Square Head Bolts and Nuts.....	.05
1049-16	" " " Lock Washer, 1/2".....	.02
1071-5	" " " 3/16" x 1" Cotter Pins, per C.....	.90

SPECIAL PIPE CARRIERS

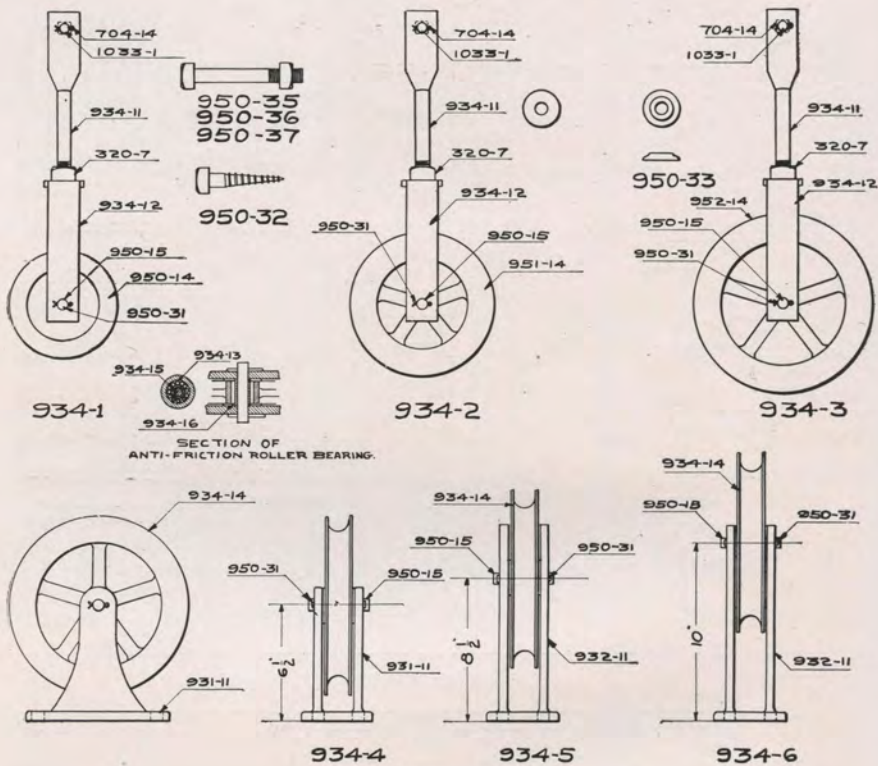


Trade No.	DESCRIPTION	List Price
942-1	One Way Transverse Pipe Carrier for clamping to Rail.....	\$1.17
942-2	" " Longitudinal ".....	.81
942-3	" " Pipe Carrier for fastening to Ties.....	.67
942-4	Two Way.....	1.03
942-11	Hanger, R. H., for 942-1.....	.37
942-12	" " L. H. ".....	.37
942-13	Roller.....	.09
942-14	Hook Bolt with Lock Washer and Nut for 942-1 Pipe Carrier. Specify width of Rail.....	.14
942-15	Hook Bolt with Lock Washer and Nut for 942-2 Pipe Carrier. Specify width of Rail.....	.14
942-16	$\frac{5}{8}$ " Lock Washer.....	.02
942-17	$\frac{3}{8}$ " x 4" Bolt and Nut.....	.05
942-20	Inside Hanger for 942-2.....	.34
942-21	" " Outside.....	.15
942-25	Stand for 942-3.....	.45
942-26	" " 942-4.....	.70
1085-2	Bottom Roller.....	.18
1085-4	Top Roller.....	.04
1073-5	Pin for 942-3.....	.09
1073-6	" " 942-4.....	.11
1071-5	$\frac{3}{16}$ " x 1" Cotter Pin, per C.....	.90

SIGNAL WIRE, CHAIN, TURNBUCKLES, ACCESSORIES, ETC.

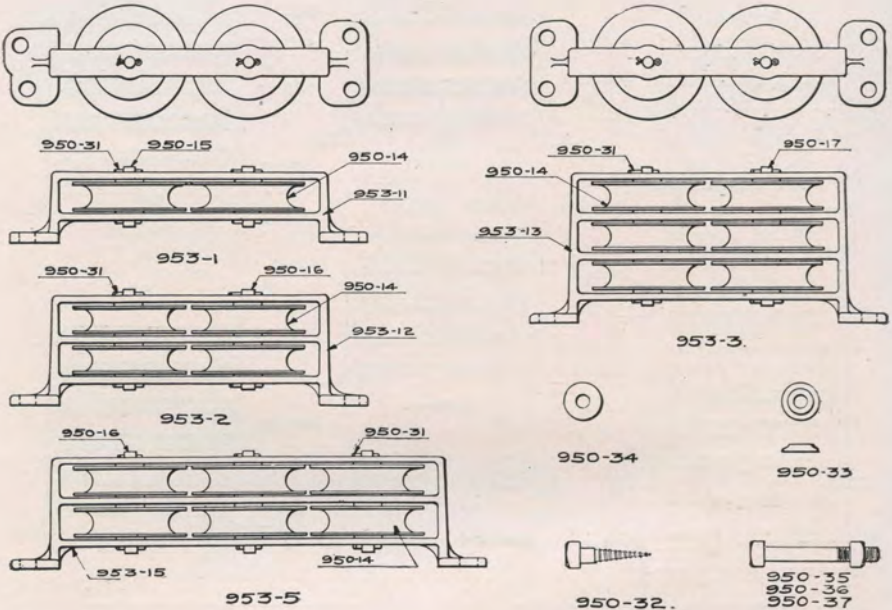


VERTICAL CHAIN WHEEL



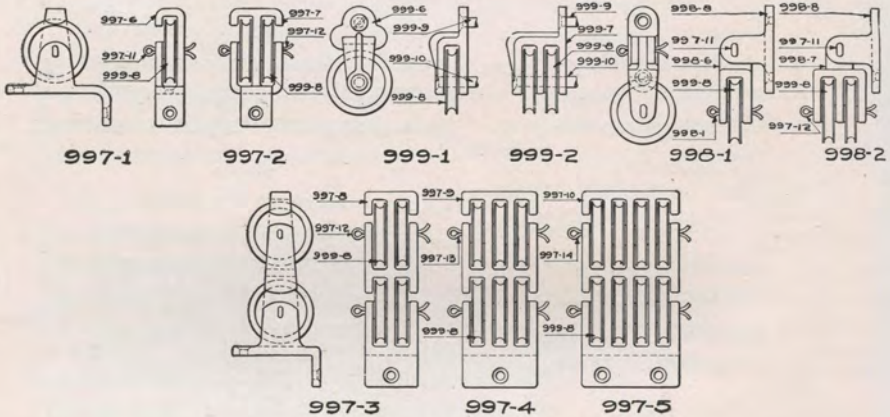
Trade No.	DESCRIPTION	List Price
934-1	Gain Stroke Wheel, 6".....	\$2.02
934-2	" " " 8".....	2.11
934-3	" " " 10".....	2.32
934-4	One Way 10" Vertical Wheel, 6½" Stand, Anti-Friction.....	4.00
934-5	" " 10" " 8" " ".....	4.18
934-6	" " 10" " 10" " ".....	4.49
934-11	Jaw for Gain Stroke Wheel.....	.84
934-12	Bridle for Gain Stroke Wheel.....	.68
950-15	Pin.....	.05
1033-1	Jaw Pin, 7/8" x 2 1/4", with Cotter.....	.11
704-14	3/8" x 1 1/2" Cotter Pin, per C.....	.90
320-7	3/4" Square Nuts, per C.....	2.70
950-14	6" Wheel.....	.21
951-14	8" ".....	.31
952-14	10" ".....	.53
931-11	6 1/2" One Way Stand.....	.70
932-11	8 1/2" and 10" One Way Stand.....	1.32
934-13	Steel Roller.....	.05
934-15	Inner Bushing.....	.60
934-16	Special Washer.....	.05
934-14	10" Anti Friction Wheel.....	.53
950-31	Cotter Pin Only, 3/8" x 1 1/4" for Pins, per C.....	.96
950-32	Lag Screw, 3/4" x 4", per C.....	8.40
950-33	Cast Washer for 3/4" Bolts, per C.....	9.50
950-34	Wrought Iron Washer for 3/4" Bolts, each.....	.02
950-35	Bolt and Nut, 3/2" x 6", per C.....	15.40
950-36	" " " 3/4" x 7" " ".....	15.40
950-37	" " " 3/4" x 8" " ".....	17.60

HORIZONTAL TANDEM WHEELS



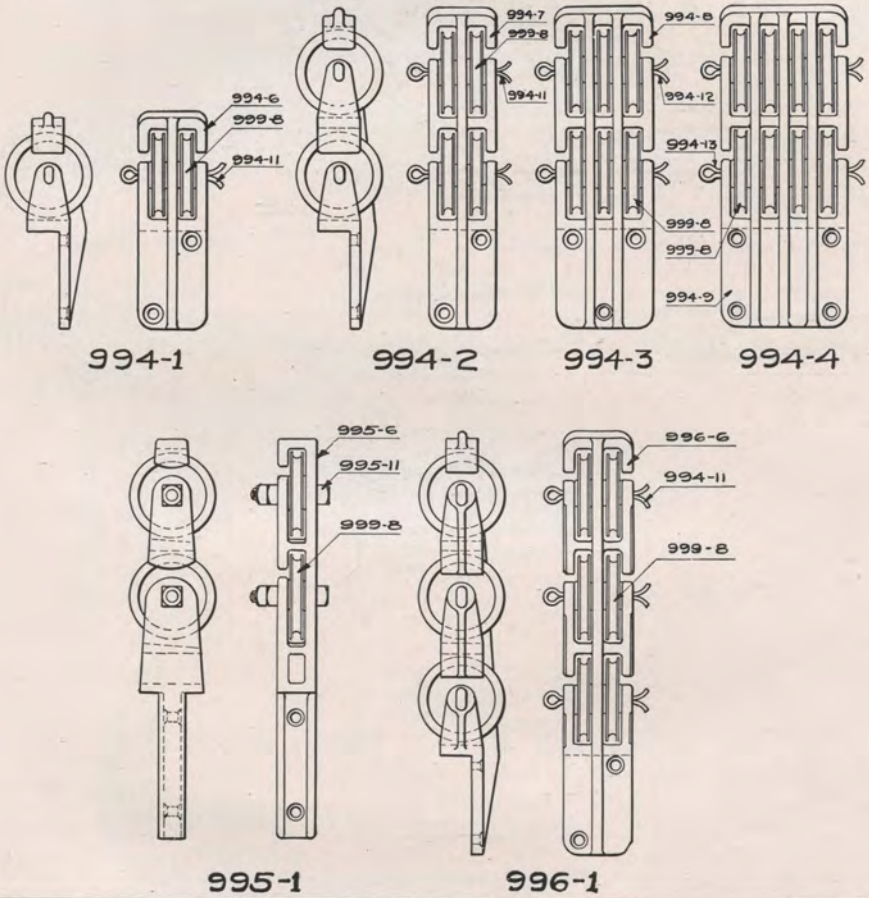
Trade No.	DESCRIPTION	List Price
953-1	Two Way 1 High 6" Horizontal Tandem Wheel.....	\$2.60
953-2	Four " 2 " 6" " " "	3.19
953-3	Six " 3 " 6" " " "	4.25
953-4	Eight " 4 " 6" " " "	5.50
953-5	Six " 2 " 6" " " "	4.73
953-6	Eight " 2 " 6" " " "	6.29
953-11	Two Way Stand.....	1.80
953-12	Four " " " "	2.05
953-13	Six " " 3 High.....	2.51
953-14	Eight " " 4 "	3.61
953-15	Six " " 2 "	2.78
953-16	Eight " " 2 "	3.73
950-14	Six Inch Wheel.....	.21
950-15	Pin for 953-1.....	.05
950-16	" " 953-2, 953-5 and 953-6.....	.06
950-17	" " 953-3.....	.07
950-18	" " 953-4.....	.08
950-31	Cotter Pin Only, 1/8" x 1 1/4" for Pins, per C.....	.96
950-32	Lag Screw, 3/4" x 4", per C.....	8.40
950-33	Cast Washer for 3/4" Bolts, per C.....	9.50
950-34	Wrought Iron Washer for 3/4" Bolts, each.....	.02
950-35	Bolt and Nut, 3/4" x 6", per C.....	15.40
950-36	" " " 3/4" x 7" " "	15.40
950-37	" " " 3/4" x 8" " "	17.60

WIRE CARRIERS



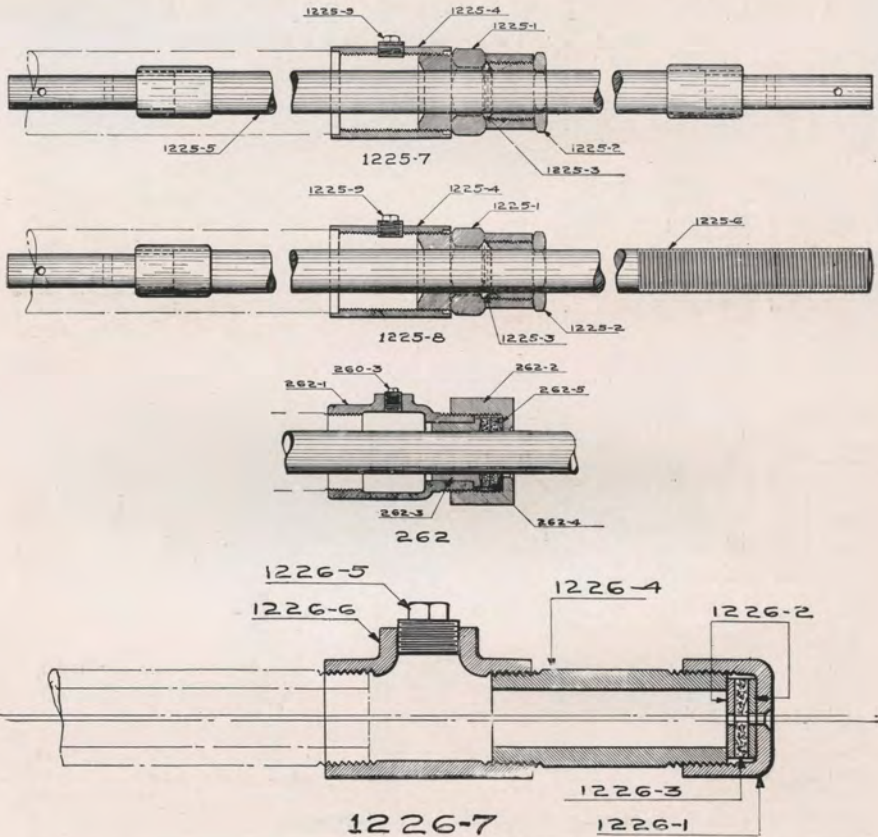
Trade No.	DESCRIPTION	List Price
997-1	One Way Wire Carrier.....	\$0.10
997-2	Two " " " ".....	.18
997-3	Four " " " ".....	.31
997-4	Six " " " ".....	.40
997-5	Eight " " " ".....	.53
997-6	One Way Stand.....	.06
997-7	Two " " " ".....	.08
997-8	Four " " " ".....	.13
997-9	Six " " " ".....	.18
997-10	Eight " " " ".....	.29
997-11	$\frac{1}{4}$ " x $1\frac{1}{2}$ " Cotter Pin for One Way Stand, per C.....	.88
997-12	$\frac{1}{4}$ " x 2" " " " Two and Four Way Stand, per C... ..	.88
997-13	$\frac{1}{4}$ " x 3" " " " Six Way Stand, per C.....	.88
997-14	$\frac{1}{4}$ " x 4" " " " Eight " " " ".....	.88
998-1	Angle Wire Carrier complete, One Way, each.....	.18
998-2	Two " " " ".....	.29
998-6	One Way Stand Only, each.....	.06
998-7	Two " " " ".....	.06
998-8	Bracket for 998-1 or 998-2, each.....	.06
999-1	Side Wire Carrier complete with Wood Screws, One Way, each.....	.11
999-2	Two " " " ".....	.15
999-6	Stand for 999-1, each.....	.06
999-7	" " 999-2 " ".....	.06
999-8	2" Wire Pulley for Wire Carriers, each.....	.04
999-9	No. 14 x $1\frac{1}{4}$ " Wood Screw, per C.....	.88
999-10	No. 14 x $2\frac{1}{2}$ " " " " ".....	.88

WIRE CARRIERS



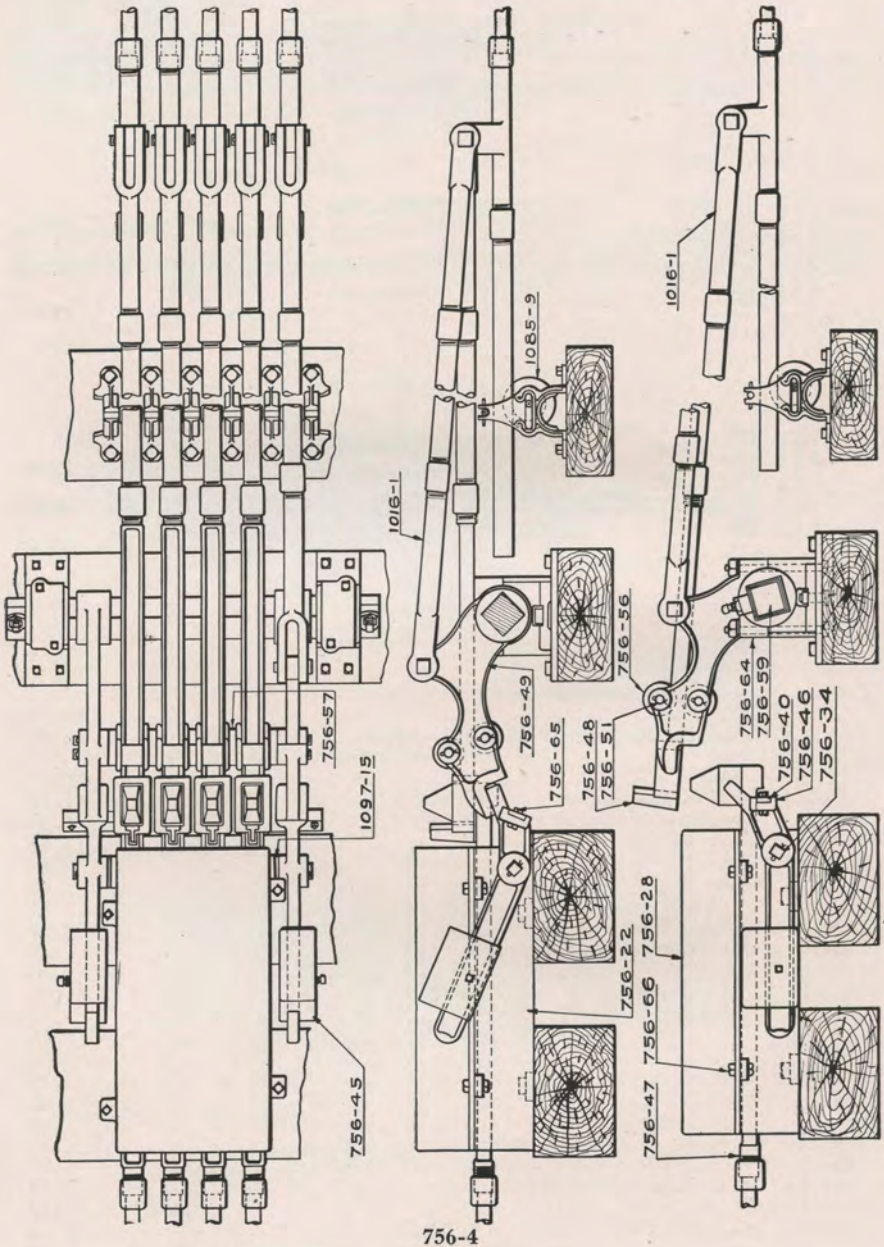
Trade No.	DESCRIPTION	List Price
994-1	Two Way Wire Carrier complete.....	\$0.20
994-2	Four " " " " .....	.39
994-3	Six " " " " .....	.58
994-4	Eight " " " " .....	.75
994-6	Two Way Stand.....	.11
994-7	Four " " .....	.21
994-8	Six " " .....	.31
994-9	Eight " " .....	.37
994-11	$\frac{1}{4}$ " x 2" Cotter Pin for Two Way and Four Way Stand, per C.....	.88
994-12	$\frac{1}{4}$ " x 3" " " " Six " Stand, per C.....	.88
994-13	$\frac{1}{4}$ " x 4" " " " Eight " " " .....	.88
995-1	Two Way Wire Carrier complete.....	.33
995-6	Stand Only .....	.13
995-11	Special Bolts $\frac{7}{8}$ " x $1\frac{5}{8}$ " with Two Nuts, each.....	.05
996-1	Six Way Wire Carrier complete.....	.58
996-6	Stand Only .....	.31
999-8	2" Wire Pulley for above Stands.....	.04

R. S. A. PIPE AND WIRE STUFFING BOXES



Trade No.	DESCRIPTION	List Price
262	Packing Box complete as shown for 2" Pipe Standard 1" Signal Pipe.....	\$4.00
1225-7	Standard R. S. A. Packing Box complete as shown.....	8.10
1225-8	Standard R. S. A. Wire Stuffing Box complete as shown.....	7.95
262-1	Packing Box.....	1.20
262-2	" " Nut.....	.90
262-3	Bushing.....	1.50
262-4	Packing Ring.....	.05
262-5	Washer.....	.08
260-3	Standard 3/8" Pipe Plug.....	.04
1225-1	Extension Gland.....	3.15
1225-2	Bushing.....	1.80
1225-3	Gasket.....	.05
1225-4	Coupling.....	1.35
1225-5	Plunger with Tang Ends.....	2.10
1225-6	" " and Threaded End.....	1.95
1225-9	Standard 3/4" Galvanized Pipe Plug.....	.07
1226-7	R. S. A. One Wire Stuffing Box, complete as shown.....	1.00
1226-1	Pipe Cap for One Way Box.....	.23
1226-2	Washer.....	.17
1226-3	Packing " " " ".....	.02
1226-4	3/4" Pipe Nipple.....	.10
1226-5	Standard 3/8" Pipe Plug.....	.05
1226-6	" " 3/8" Malleable Tee.....	.45

MULTIPLE BRIDGE COUPLER AND LOCK



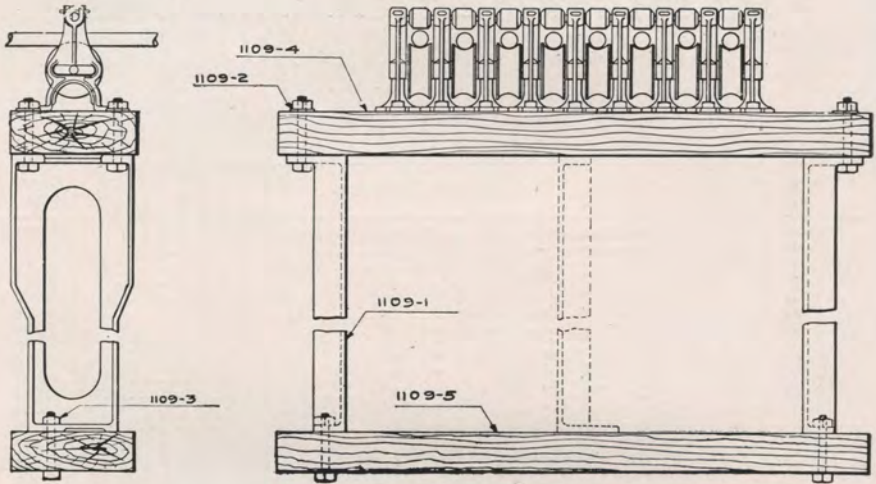


MULTIPLE BRIDGE COUPLER AND LOCK

Trade No.	DESCRIPTION	List Price
756-4	Four Way Multiple Bridge Lock and Coupler, complete as shown	\$63. 25
756-3	Same as above except Two Way	46. 25
756-6	“ “ “ “ Six	80. 02
756-8	“ “ “ “ Eight “	98. 56
756-10	“ “ “ “ Ten	115. 06
756-12	“ “ “ “ Twelve Way	132. 06
756-21	Base for Two Way Bridge Coupler and Lock	4. 00
756-22	“ “ Four “ “ “ “ “ “	6. 98
756-23	“ “ Six “ “ “ “ “ “	10. 23
756-24	“ “ Eight “ “ “ “ “ “	13. 47
756-25	“ “ Ten “ “ “ “ “ “	15. 23
756-26	“ “ Twelve Way “ “ “ “ “	18. 38
756-27	Cover for Two Way Bridge Coupler and Lock	1. 75
756-28	“ “ Four “ “ “ “ “ “	4. 95
756-29	“ “ Six “ “ “ “ “ “	8. 41
756-30	“ “ Eight “ “ “ “ “ “	9. 62
756-31	“ “ Ten “ “ “ “ “ “	11. 38
756-32	“ “ Twelve Way “ “ “ “ “	14. 84
756-33	Shaft with Cotter Pins for Two Way Lock Bar Counterweight Lever . . . . .	. 75
756-34	Same as above except Four Way	1. 15
756-35	“ “ “ “ Six	1. 70
756-36	“ “ “ “ Eight	1. 98
756-37	“ “ “ “ Ten	2. 31
756-38	“ “ “ “ Twelve Way	2. 86
756-39	Lock Bar for Two Way Bridge Lock or Coupler . . . . .	. 40
756-40	Same as above except Four Way . . . . .	. 55
756-41	“ “ “ “ Six . . . . .	. 99
756-42	“ “ “ “ Eight	1. 06
756-43	“ “ “ “ Ten	1. 26
756-44	“ “ “ “ Twelve Way	1. 70
1097-15	Bushing for Lock Bar Shaft . . . . .	. 50
756-45	Counterweight for Lock Bar Lever with Set Screw . . . . .	. 66
756-46	Lock Bar Lever	1. 54
756-47	Hook Slide Bar	1. 87
756-48	Engaging Bar	1. 76
756-49	Engaging Lever	2. 31
756-50	Two Way Guide Roller Shaft with Cotter Pins . . . . .	. 29
756-51	Four “ “ “ “ “ “ “ “ . . . . .	. 33
756-52	Six “ “ “ “ “ “ “ “ . . . . .	. 38
756-53	Eight “ “ “ “ “ “ “ “ . . . . .	. 44
756-54	Ten “ “ “ “ “ “ “ “ . . . . .	. 49
756-55	Twelve Way “ “ “ “ “ “ “ “ . . . . .	. 54
756-56	Guide Roller . . . . .	. 26
756-57	“ “ Separator . . . . .	. 14
756-58	Square Rocker Shaft for Two Way Bridge Coupler	2. 44
756-59	“ “ “ “ Four “ “ “ “	3. 16
756-60	“ “ “ “ Six “ “ “ “	3. 88
756-61	“ “ “ “ Eight “ “ “ “	4. 60
756-62	“ “ “ “ Ten “ “ “ “	5. 32
756-63	“ “ “ “ Twelve Way “ “ “ “	6. 04
756-64	Low Rocker Shaft Bearing with Thrust Journal and Base Plate	8. 10
1016-1	R. S. A. Solid Jaw with Pin and Cotter	1. 44
1023	“ “ Lug with Tang Ends	2. 25
1085-7	“ “ “ “ Universal Three Way Pipe Carrier	1. 89
1085-9	“ “ “ “ Five “ “ “ “	2. 97
1085-11	“ “ “ “ Seven “ “ “ “	4. 05
1085-13	“ “ “ “ Nine “ “ “ “	5. 13
1085-15	“ “ “ “ Eleven “ “ “ “	6. 21
1085-17	“ “ “ “ Thirteen Way “ “ “ “	7. 29
756-65	Bolt and Nut for Lock Bar . . . . .	. 04
756-66	“ “ “ “ Cover to Base . . . . .	. 04
950-32	3/4" x 4" Lag Screws, per C.	8. 40

Signal Pipe, Timber and Bolts for fastening are not included in list price.

R. S. A. PIPE CARRIER FOUNDATION



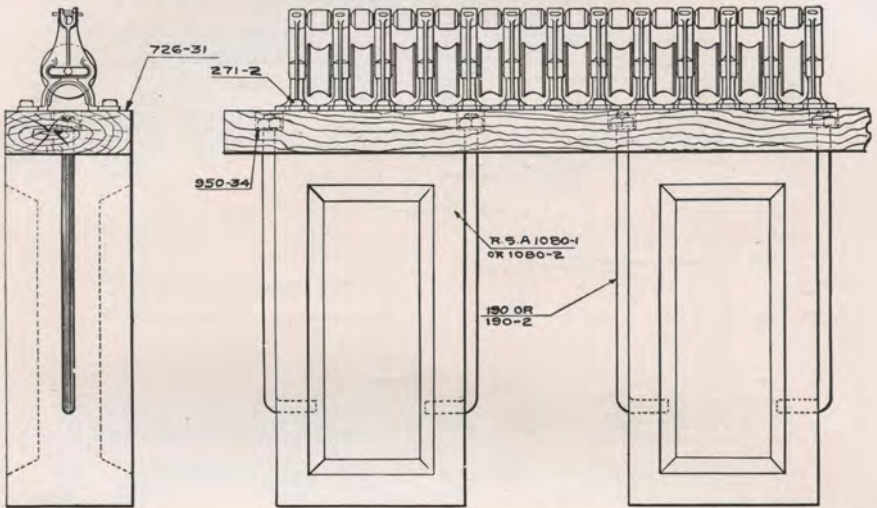
Trade No.	725-1	725-2	725-3	725-4	725-5	725-6	725-7	725-8	725-9	725-10
No. of Ways	1	2	3	4	5	6	7	8	9	10
No. of Iron Piers	2	2	2	2	2	2	2	2	2	2
Length of Top and Bottom	1'5½"	1'8¼"	1'11"	2'1¾"	2'4½"	2'7¼"	2'10"	3'0¾"	3'3½"	3'6¼"
No. of Bolts and Washers	6	6	6	6	6	6	6	6	6	6
List Price complete										

Trade No.	725-11	725-12	725-13	725-14	725-15	725-16	725-17	725-18	725-19	725-20
No. of Ways	11	12	13	14	15	16	17	18	19	20
No. of Iron Piers	2	3	3	3	3	3	3	3	3	3
Length of Top and Bottom	3'9"	3'11¾"	4'2½"	4'5¼"	4'8"	4'10¾"	5'1½"	5'4¼"	5'7"	5'9¾"
No. of Bolts and Washers	6	9	9	9	9	9	9	9	9	9
List Price complete										

Trade No.	725-21	725-22	725-23	725-24	725-25	725-26	725-27	725-28	725-29	725-30
No. of Ways	21	22	23	24	25	26	27	28	29	30
No. of Iron Piers	3	3	3	3	3	4	4	4	4	4
Length of Top and Bottom	6'0½"	6'3¼"	6'6"	6'8¾"	6'11½"	7'2¼"	7'5"	7'7¾"	7'10½"	8'1¼"
No. of Bolts and Washers	9	9	9	9	9	12	12	12	12	12
List Price complete										

Trade No.	DESCRIPTION	List Price
1109-1	Iron Pier.....	\$3.00
1109-3	½" x 4" Square Head Machine Bolt and Nut.....	.07
1109-2	½" Standard Iron Washer.....	.01
1109-4	Pier Top, 3" x 8", per ft.....	
1109-5	Pier Bottom, 3" x 8", per ft.....	

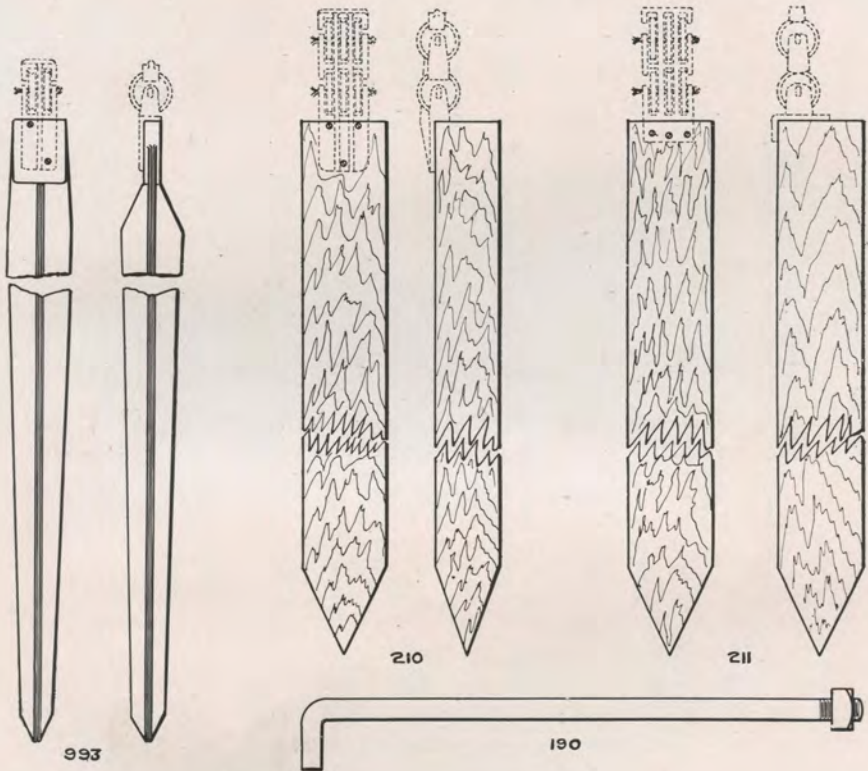
R. S. A. CONCRETE PIPE CARRIER FOUNDATION



Trade No.	726-1	726-2	726-3	726-4	726-5	726-6	726-7	726-8	726-9	726-10
No. of Ways	1	2	3	4	5	6	7	8	9	10
No. of Concrete Piers	1	1	1	1	1	2	2	2	2	2
Length of Top	1'0"	1'2 $\frac{3}{4}$ "	1'5 $\frac{1}{2}$ "	1'8 $\frac{1}{4}$ "	1'11"	2'1 $\frac{3}{4}$ "	2'4 $\frac{1}{2}$ "	2'7 $\frac{1}{4}$ "	2'10"	3'3 $\frac{1}{4}$ "
No. of Anchor Bolts and Washers	2	2	2	2	2	4	4	4	4	4
List Price complete with 24" Concrete Pier										
List Price complete with 36" Concrete Piers										
Trade No.	726-11	726-12	726-13	726-14	726-15	726-16	726-17	726-18	726-19	726-20
No. of Ways	11	12	13	14	15	16	17	18	19	20
No. of Concrete Piers	2	2	2	2	2	2	2	2	3	3
Length of Top	3'3 $\frac{1}{2}$ "	3'6 $\frac{3}{4}$ "	3'9"	3'11 $\frac{3}{4}$ "	4'2 $\frac{1}{2}$ "	4'5 $\frac{1}{4}$ "	4'8"	4'10 $\frac{3}{4}$ "	5'1 $\frac{1}{2}$ "	5'4 $\frac{1}{4}$ "
List Price complete with 24" Concrete Piers										
No. of Anchor Bolts and Washers	4	4	4	4	4	4	4	4	6	6
List Price complete with 36" Concrete Piers										
Trade No.	726-21	726-22	726-23	726-24	726-25	726-26	726-27	726-28	726-29	726-30
No. of Ways	21	22	23	24	25	26	27	28	29	30
No. of Concrete Piers	3	3	3	3	3	3	3	3	3	3
Length of Top	5'7"	5'9 $\frac{3}{4}$ "	6'2"	6'3 $\frac{1}{4}$ "	6'6"	6'8 $\frac{3}{4}$ "	6'11 $\frac{1}{2}$ "	7'2 $\frac{1}{4}$ "	7'5"	7'7 $\frac{3}{4}$ "
List Price complete with 24" Concrete Piers	6	6	6	6	6	6	6	6	6	6
List Price complete with 36" Concrete Piers										

Trade No.	DESCRIPTION	List Price
1080-1	R. S. A. Concrete Pipe Carrier Foundation, 8" x 12" x 24", each	.....
190	Anchor Bolts, $\frac{3}{4}$ " x 18" with Square Nut, 2 $\frac{1}{2}$ " Hook for above, each	\$0.31
1080-2	R. S. A. Concrete Pipe Carrier Foundation, 8" x 12" x 36", each	.....
190-2	Anchor Bolts, $\frac{3}{4}$ " x 30", with Square Nut, 2 $\frac{1}{2}$ " Hook for above, each	.41
726-31	Oak Top, 4" x 12", per ft.	.....
950-34	$\frac{3}{4}$ " Wrought Iron Washer, each	.02

WIRE CARRIER STAKES AND ANCHOR BOLTS



Trade No.	DESCRIPTION	List Price
993-1	Iron Wire Carrier Stake, Tapped and Drilled, complete with Screws for 994-1, 994-2, 996-2 Wire Carrier	\$1.25
993-2	Same as above except for 994-3 Wire Carrier	1.30
993-3	“ “ “ “ “ 994-4 “ “	1.35
993-4	“ “ “ “ “ 995-1, 998-1 or 998-2 Wire Carrier	1.25
993-5	“ “ “ “ “ 997-1, 997-2, 997-3 or 997-4 Wire Carrier	1.25
993-6	Same as above except for 999-1 or 999-2 Wire Carrier	1.25
210	Oak Wire Carrier Stake, 3" x 4" x 3' long .....	.....
210-1	“ “ “ “ “ 3" x 4" x 3' 6" long .....	.....
210-2	“ “ “ “ “ 3" x 4" x 4' long .....	.....
211	“ “ “ “ “ 4" x 4" x 3' “ .....	.....
211-1	“ “ “ “ “ 4" x 4" x 3' 6" long .....	.....
211-2	“ “ “ “ “ 4" x 4" x 4' long .....	.....
190	Anchor Bolt $\frac{3}{4}$ " x 18" with Square Nut and 2½" Hook .....	.31
190-1	“ “ $\frac{3}{4}$ " x 24" “ “ “ “ 2½" “ .....	.36
190-2	“ “ $\frac{3}{4}$ " x 30" “ “ “ “ 2½" “ .....	.41
190-3	“ “ $\frac{3}{4}$ " x 36" “ “ “ “ 2½" “ .....	.45

1 9 1 4

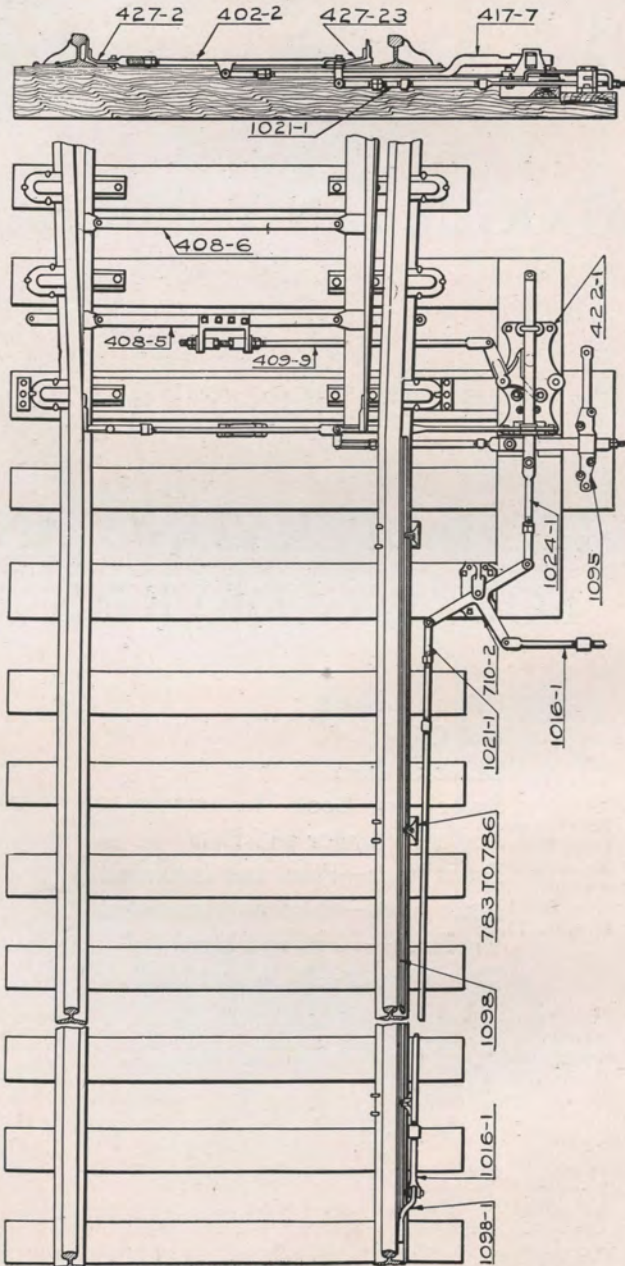
CATALOGUE AND PRICE LIST

SECTION T

SWITCH OPERATING AND
LOCKING DEVICES

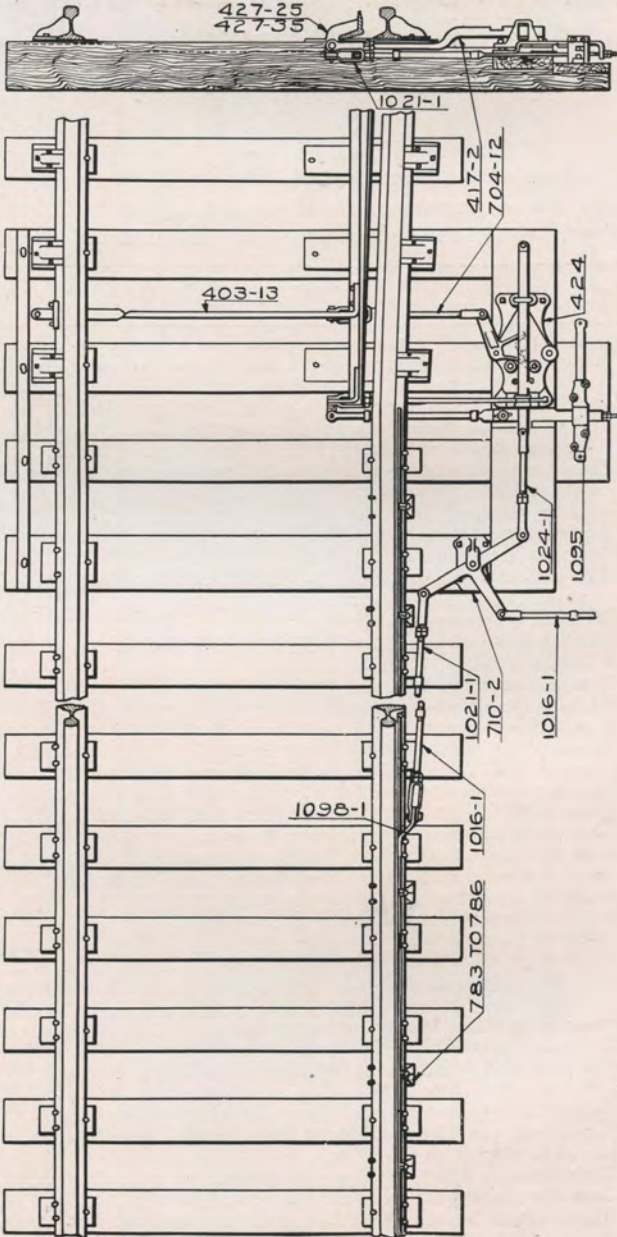
Switch Layouts
Rail Clips
Detector Bars
Switch and Lock Movements
Locks—Plunger and Bolt
Front Rods—Plain and Insulated
Lock Rods—Plain and Insulated
Tie Rods—Plain and Insulated
Throw Rods—Plain and Insulated

SWITCH AND LOCK MOVEMENT WITH R. S. A. BOLT LOCK



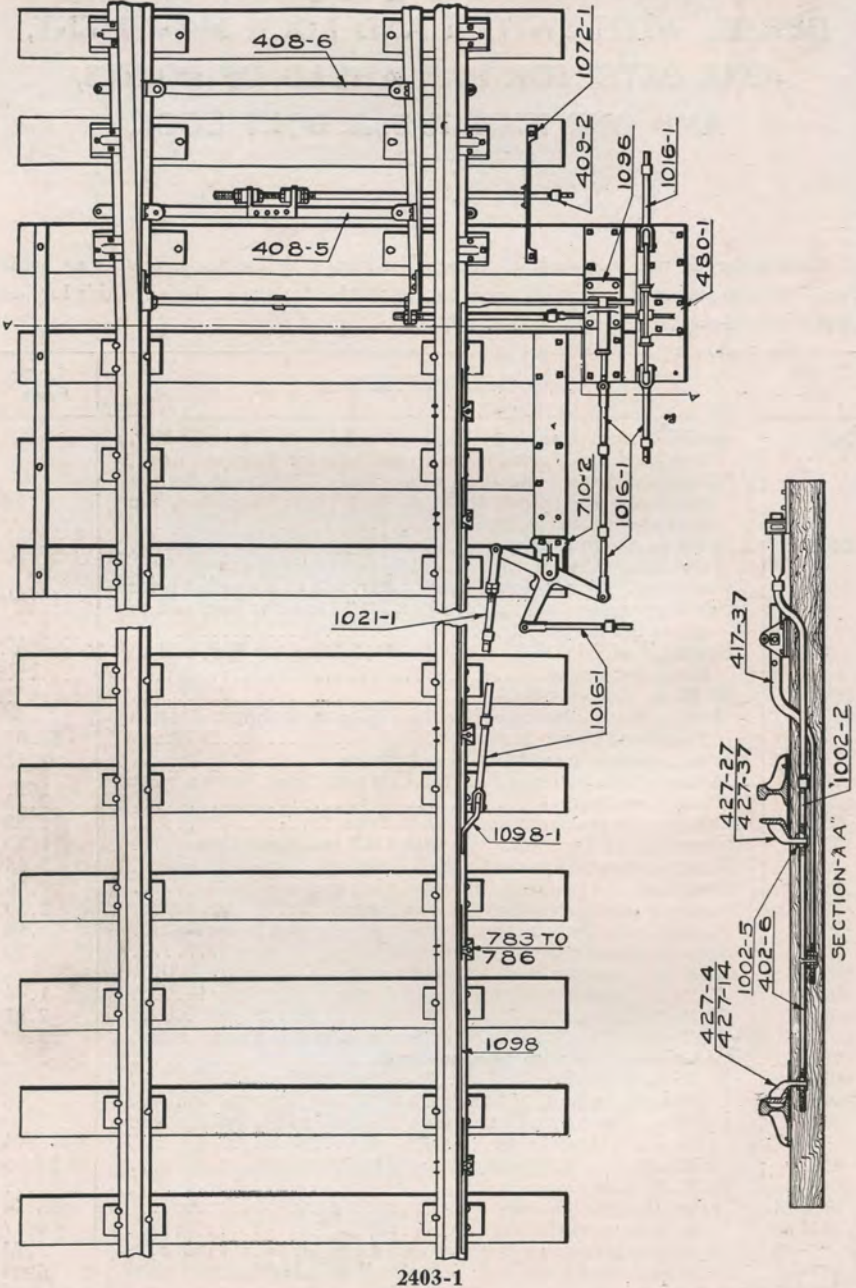
2401-1

**DERAIL WITH SWITCH AND LOCK MOVEMENT,
 ONE DETECTOR BAR AHEAD OF POINTS,
 AND ONE UNIT R. S. A. BOLT LOCK**

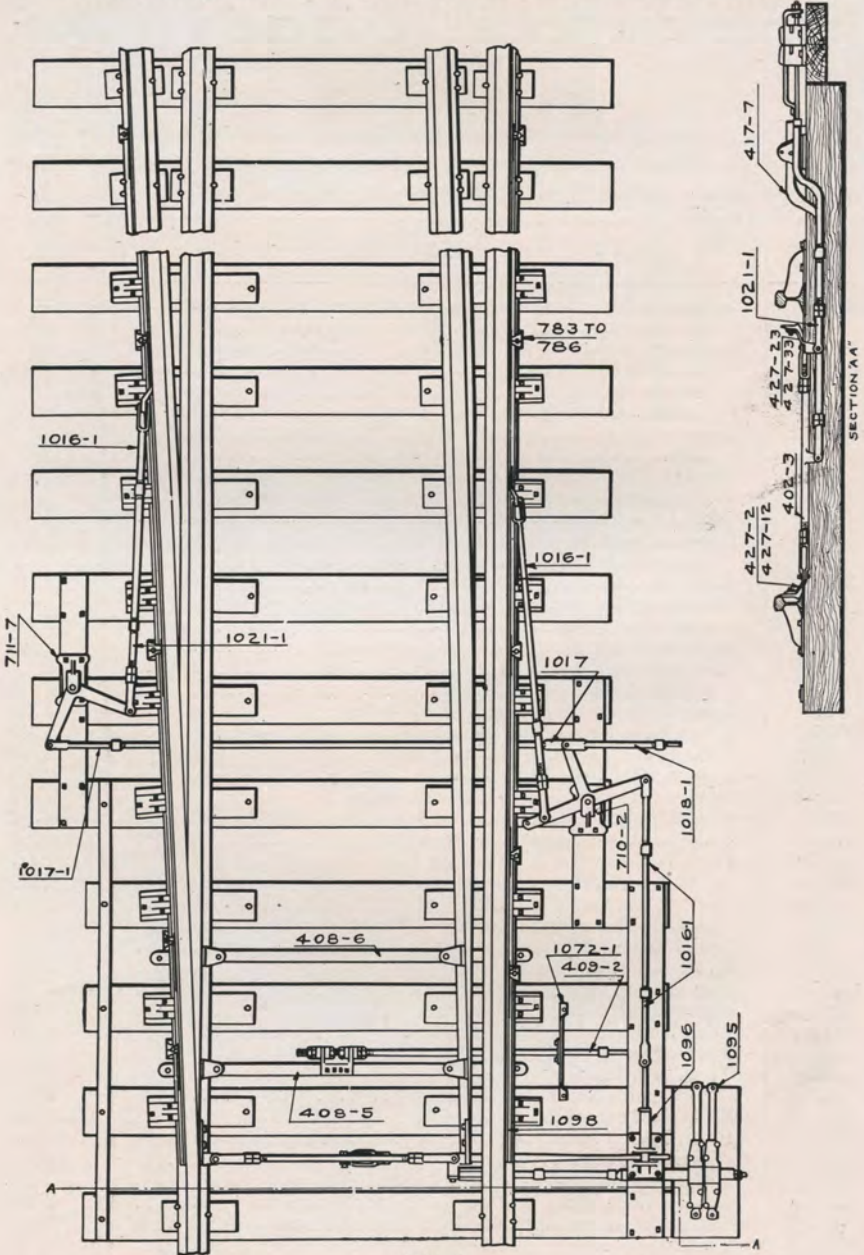


2402-1

SINGLE SLIP SWITCH WITH ONE FACING POINT LOCK, ONE DETECTOR BAR AND ONE BOLT LOCK

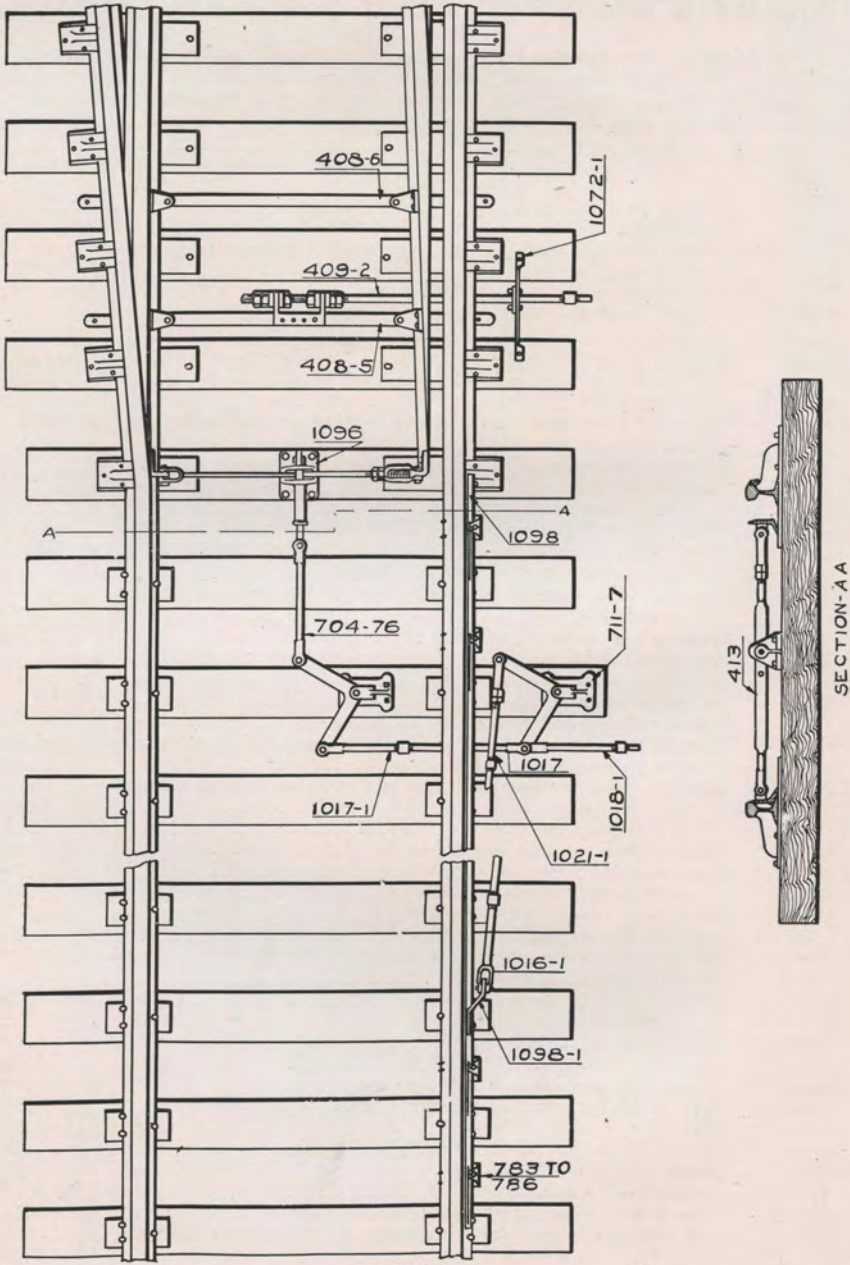


**SINGLE SLIP SWITCH WITH ONE FACING POINT
 LOCK, TWO DETECTOR BARS BEHIND SWITCH
 POINTS AND TWO UNIT R. S. A. BOLT LOCK**



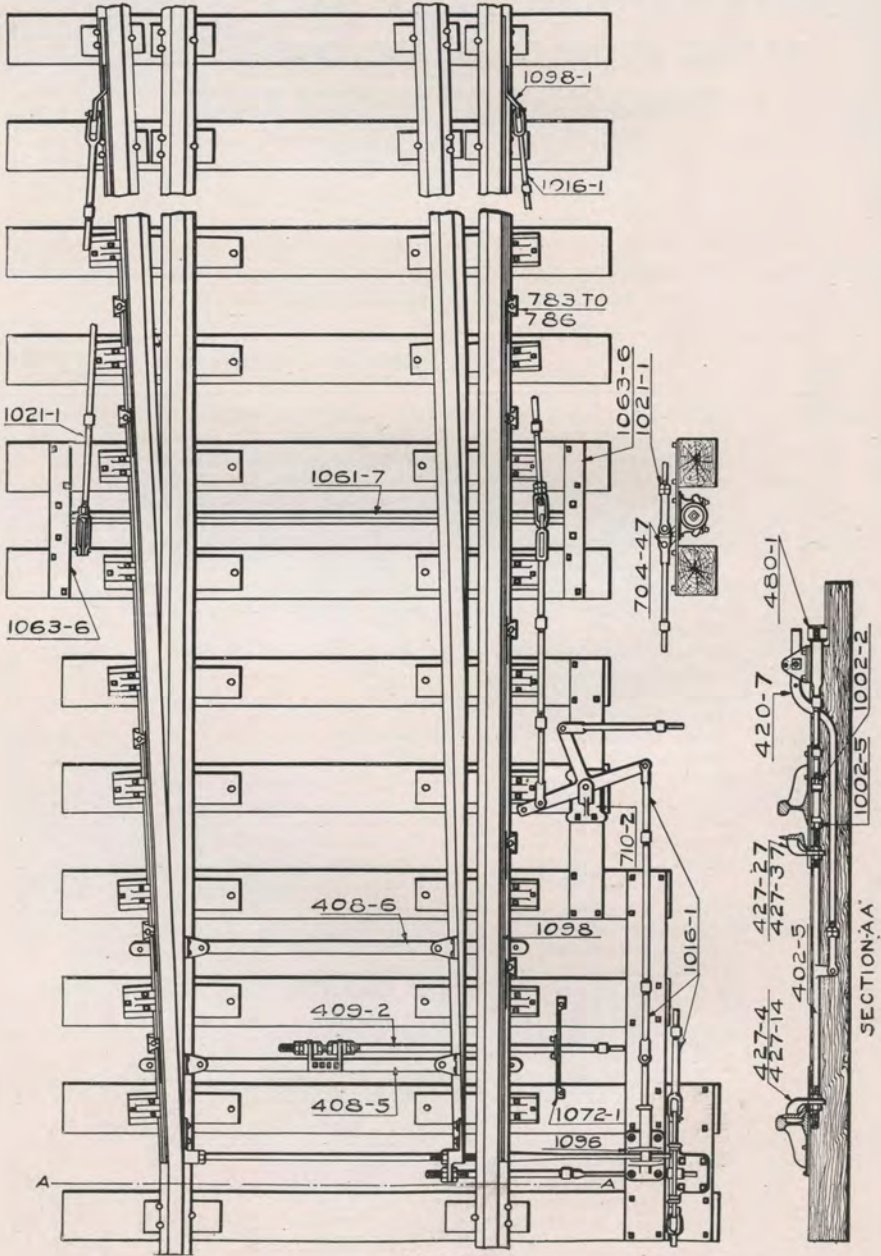
2404-1

SINGLE SLIP SWITCH WITH INSIDE CONNECTED FACING POINT LOCK AND ONE DETECTOR BAR AHEAD OF SWITCH POINTS



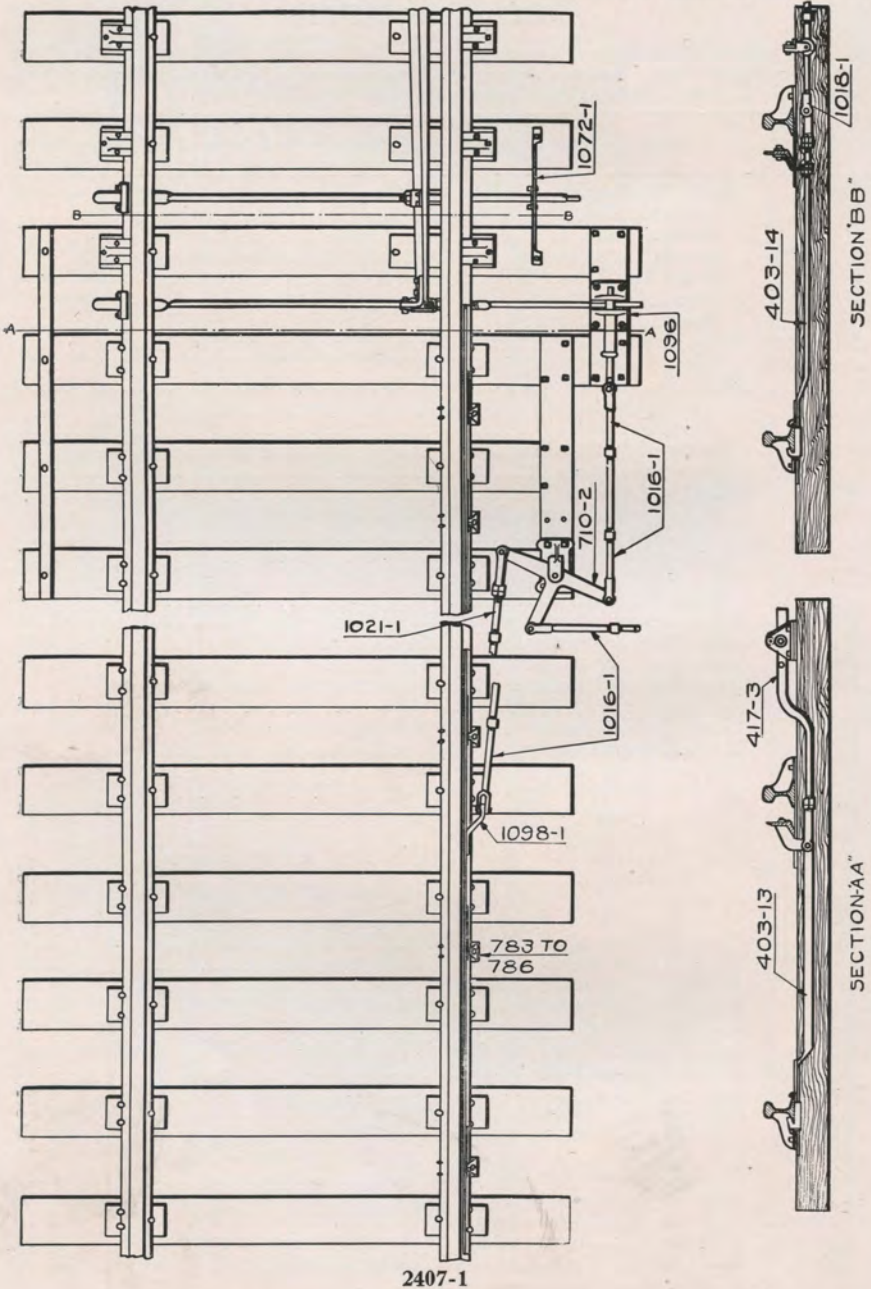
2405-1

**SINGLE SLIP SWITCH WITH ONE FACING POINT LOCK,
ONE BOLT LOCK AND TWO DETECTOR BARS BEHIND
SWITCH POINTS OPERATED BY LOW R. S. A.
ROCKER SHAFTS**

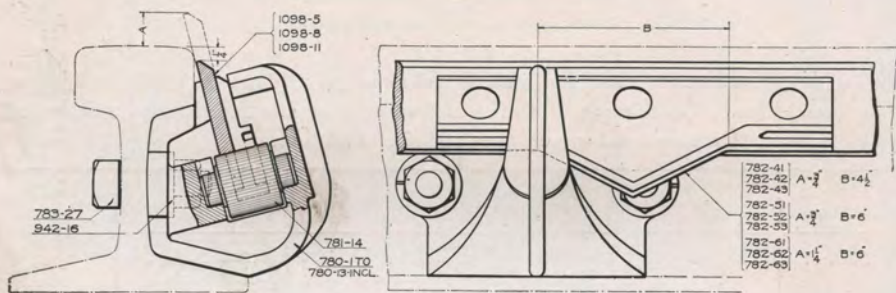


2406-1

DERAIL WITH ONE FACING POINT LOCK AND ONE DETECTOR BAR AHEAD OF POINTS



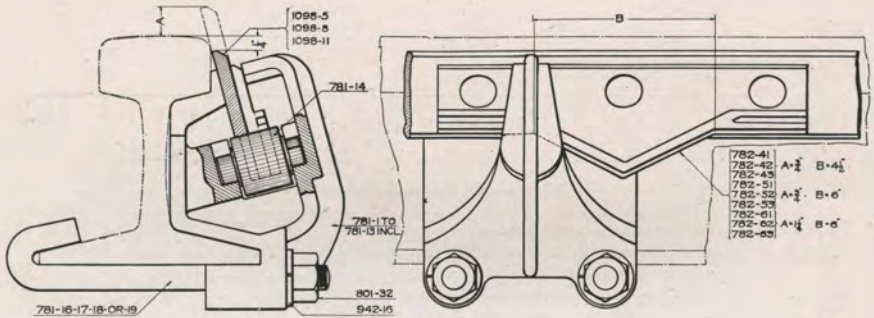
SHORT MOTION PLATE DETECTOR BAR RAIL CLIPS WEB BOLT TYPE



783

Trade No.	DESCRIPTION	List Price
783-1	Rail Clip complete without Motion Plate for 60 lb. A. S. C. E. Rail.....	\$1.50
783-2	Same as above except with Motion Plate.....	2.07
783-3	Rail Clip complete without Motion Plate for 65 lb. A. S. C. E. Rail.....	1.50
783-4	Same as above except with Motion Plate.....	2.07
783-5	Rail Clip complete without Motion Plate for 70 lb. A. S. C. E. Rail.....	1.50
783-6	Same as above except with Motion Plate.....	2.07
783-7	Rail Clip complete without Motion Plate for 75 lb. A. S. C. E. Rail.....	1.50
783-8	Same as above except with Motion Plate.....	2.07
783-9	Rail Clip complete without Motion Plate for 80 lb. A. S. C. E. Rail.....	1.50
783-10	Same as above except with Motion Plate.....	2.07
783-11	Rail Clip complete without Motion Plate for 85 lb. A. S. C. E. Rail.....	1.50
783-12	Same as above except with Motion Plate.....	2.07
783-13	Rail Clip complete without Motion Plate for 90 lb. A. S. C. E. Rail.....	1.50
783-14	Same as above except with Motion Plate.....	2.07
783-15	Rail Clip complete without Motion Plate for 95 lb. A. S. C. E. Rail.....	1.50
783-16	Same as above except with Motion Plate.....	2.07
783-17	Rail Clip complete without Motion Plate for 100 lb. A. S. C. E. Rail.....	1.50
783-18	Same as above except with Motion Plate.....	2.07

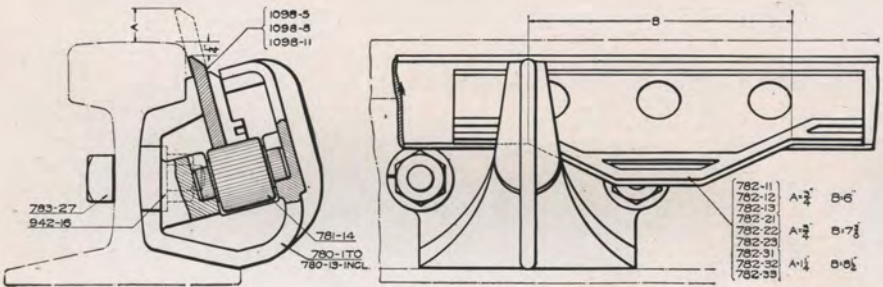
SHORT MOTION PLATE DETECTOR BAR RAIL CLIPS HOOK BOLT TYPE



784

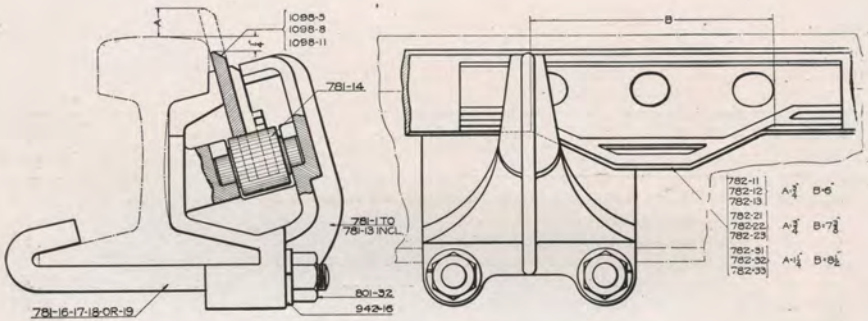
Trade No.	DESCRIPTION	List Price
784-1	Rail Clip complete without Motion Plate for 60 lb. A. S. C. E. Rail.....	\$1.55
784-2	Same as above except with Motion Plate.....	2.12
784-3	Rail Clip complete without Motion Plate for 65 lb. A. S. C. E. Rail.....	1.55
784-4	Same as above except with Motion Plate.....	2.12
784-5	Rail Clip complete without Motion Plate for 70 lb. A. S. C. E. Rail.....	1.55
784-6	Same as above except with Motion Plate.....	2.12
784-7	Rail Clip complete without Motion Plate for 75 lb. A. S. C. E. Rail.....	1.55
784-8	Same as above except with Motion Plate.....	2.12
784-9	Rail Clip complete without Motion Plate for 80 lb. A. S. C. E. Rail.....	1.55
784-10	Same as above except with Motion Plate.....	2.12
784-11	Rail Clip complete without Motion Plate for 85 lb. A. S. C. E. Rail.....	1.55
784-12	Same as above except with Motion Plate.....	2.12
784-13	Rail Clip complete without Motion Plate for 90 lb. A. S. C. E. Rail.....	1.55
784-14	Same as above except with Motion Plate.....	2.12
784-15	Rail Clip complete without Motion Plate for 95 lb. A. S. C. E. Rail.....	1.55
784-16	Same as above except with Motion Plate.....	2.12
784-17	Rail Clip complete without Motion Plate for 100 lb. A. S. C. E. Rail.....	1.55
784-18	Same as above except with Motion Plate.....	2.12

LONG MOTION PLATE DETECTOR BAR RAIL CLIPS WEB BOLT TYPE



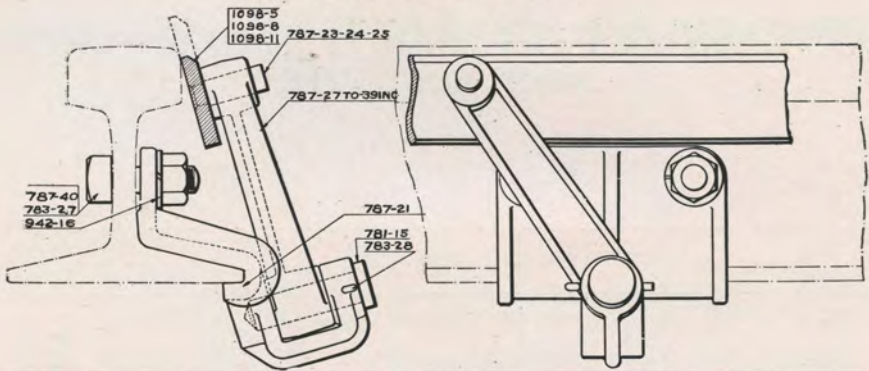
Trade No.	DESCRIPTION	List Price
785-1	Rail Clip complete without Motion Plate for 60 lb. A. S. C. E. Rail.	\$1.50
785-2	Same as above except with Motion Plate.	2.18
785-3	Rail Clip complete without Motion Plate for 65 lb. A. S. C. E. Rail.	1.50
785-4	Same as above except with Motion Plate.	2.18
785-5	Rail Clip complete without Motion Plate for 70 lb. A. S. C. E. Rail.	1.50
785-6	Same as above except with Motion Plate.	2.18
785-7	Rail Clip complete without Motion Plate for 75 lb. A. S. C. E. Rail.	1.50
785-8	Same as above except with Motion Plate.	2.18
785-9	Rail Clip complete without Motion Plate for 80 lb. A. S. C. E. Rail.	1.50
785-10	Same as above except with Motion Plate.	2.18
785-11	Rail Clip complete without Motion Plate for 85 lb. A. S. C. E. Rail.	1.50
785-12	Same as above except with Motion Plate.	2.18
785-13	Rail Clip complete without Motion Plate for 90 lb. A. S. C. E. Rail.	1.50
785-14	Same as above except with Motion Plate.	2.18
785-15	Rail Clip complete without Motion Plate for 95 lb. A. S. C. E. Rail.	1.50
785-16	Same as above except with Motion Plate.	2.18
785-17	Rail Clip complete without Motion Plate for 100 lb. A. S. C. E. Rail.	1.50
785-18	Same as above with Motion Plate.	2.18

LONG MOTION PLATE DETECTOR BAR RAIL CLIPS HOOK BOLT TYPE



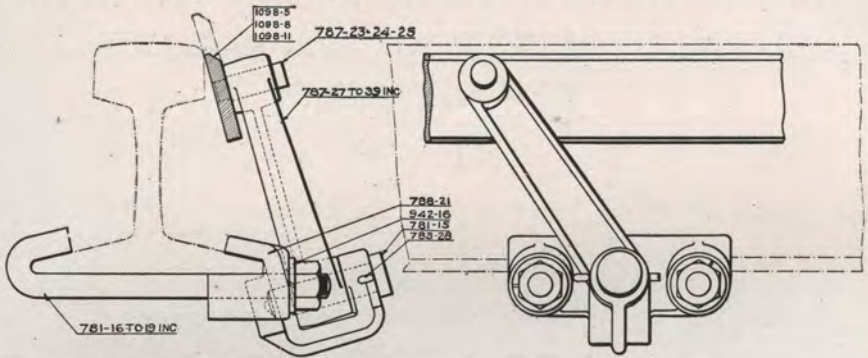
Trade No.	DESCRIPTION	List Price
786-1	Rail clip complete without Motion Plate for 60 lb. A. S. C. E. Rail.....	\$1.55
786-2	Same as above except with Motion Plate.....	2.23
786-3	Rail Clip complete without Motion Plate for 65 lb. A. S. C. E. Rail.....	1.55
786-4	Same as above except with Motion Plate.....	2.23
786-5	Rail Clip complete without Motion Plate for 70 lb. A. S. C. E. Rail.....	1.55
786-6	Same as above except with Motion Plate.....	2.23
786-7	Rail Clip complete without Motion Plate for 75 lb. A. S. C. E. Rail.....	1.55
786-8	Same as above except with Motion Plate.....	2.23
786-9	Rail Clip complete without Motion Plate for 80 lb. A. S. C. E. Rail.....	1.55
786-10	Same as above except with Motion Plate.....	2.23
786-11	Rail Clip complete without Motion Plate for 85 lb. A. S. C. E. Rail.....	1.55
786-12	Same as above except with Motion Plate.....	2.23
786-13	Rail Clip complete without Motion Plate for 90 lb. A. S. C. E. Rail.....	1.55
786-14	Same as above except with Motion Plate.....	2.23
786-15	Rail Clip complete without Motion Plate for 95 lb. A. S. C. E. Rail.....	1.55
786-16	Same as above except with Motion Plate.....	2.23
786-17	Rail Clip complete without Motion Plate for 100 lb. A. S. C. E. Rail.....	1.55
786-18	Same as above except with Motion Plate.....	2.23

LONG RADIAL TYPE DETECTOR BAR RAIL CLIPS WEB BOLT TYPE



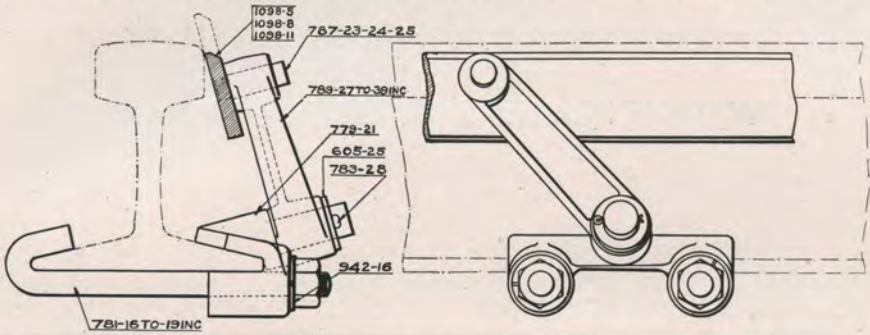
Trade No.	DESCRIPTION	List Price
787-1	Rail Clip complete as shown with Link, Link Stud, Bar Stud, Washer, Cotter and Web Bolts for 60 lb. A. S. C. E. Rail.	\$2.65
787-2	Same as above except for 65 lb. A. S. C. E. Rail.	2.65
787-3	“ “ “ “ “ 70 “ “ “ “ “ “	2.65
787-4	“ “ “ “ “ 75 “ “ “ “ “ “	2.65
787-5	“ “ “ “ “ 80 “ “ “ “ “ “	2.65
787-6	“ “ “ “ “ 85 “ “ “ “ “ “	2.65
787-7	“ “ “ “ “ 90 “ “ “ “ “ “	2.65
787-8	“ “ “ “ “ 95 “ “ “ “ “ “	2.65
787-9	“ “ “ “ “ 100 “ “ “ “ “ “	2.65
787-10	“ “ “ “ “ 90 “ Type “A” A. R. A. Rail.	2.65
787-11	“ “ “ “ “ 90 “ “ “B” “ “ “ “	2.65
787-12	“ “ “ “ “ 100 “ “ “A” “ “ “ “	2.65
787-13	“ “ “ “ “ 100 “ “ “B” “ “ “ “	2.65
787-21	Rail Clip Only. Specify type and size of rail.	1.65
787-23	Stud for $\frac{3}{8}$ " Detector Bar. . . . .	.10
787-24	“ “ $\frac{7}{8}$" “ “ . . . . .	.10
787-25	“ “ $\frac{1}{2}$" “ “ . . . . .	.10
781-15	Link Stud Only. . . . .	.16
783-28	$\frac{1}{8}$ " x $2\frac{1}{2}$ " Cotter Pin. . . . .	.01
783-27	$\frac{5}{8}$ " x 2" Square Head Machine Bolt with Hexagon Nut. . . . .	.13
787-40	$\frac{5}{8}$ " x $2\frac{1}{2}$" “ “ . . . . .	.13
942-16	$\frac{3}{8}$ " Standard Lock Washer. . . . .	.02
787-27	Link Only for 60 lb. A. S. C. E. Rail. . . . .	.50
787-28	“ “ “ 65 “ “ “ “ “ “ . . . . .	.50
787-29	“ “ “ 70 “ “ “ “ “ “ . . . . .	.50
787-30	“ “ “ 75 “ “ “ “ “ “ . . . . .	.50
787-31	“ “ “ 80 “ “ “ “ “ “ . . . . .	.50
787-32	“ “ “ 85 “ “ “ “ “ “ . . . . .	.50
787-33	“ “ “ 90 “ “ “ “ “ “ . . . . .	.50
787-34	“ “ “ 95 “ “ “ “ “ “ . . . . .	.50
787-35	“ “ “ 100 “ “ “ “ “ “ . . . . .	.50
787-36	“ “ “ 90 “ Type “A” A. R. A. Rail. . . . .	.50
787-37	“ “ “ 90 “ “ “B” “ “ “ “ . . . . .	.50
787-38	“ “ “ 100 “ “ “A” “ “ “ “ . . . . .	.50
787-39	“ “ “ 100 “ “ “B” “ “ “ “ . . . . .	.50
1098-5	R. S. A. Detector Bar, $\frac{3}{8}$ " x $2\frac{1}{4}$ ". Specify length. . . . .	. . . . .
1098-8	“ “ “ “ “ $\frac{1}{2}$ " x $2\frac{1}{4}$". . . . .	. . . . .
1098-11	Detector Bar, $\frac{7}{8}$ " x $2\frac{1}{4}$ ". Specify length. . . . .	. . . . .

RADIAL TYPE DETECTOR BAR RAIL CLIPS, HOOK BOLT TYPE



Trade No.	DESCRIPTION	List Price
788-1	Rail Clip complete with Link, Link Stud, Bar Stud, Cotter and Hook Bolts for 60 lb. A. S. C. E. Rail	\$2.70
788-2	Same as above except for 65 lb. A. S. C. E. Rail	2.70
788-3	“ “ “ “ “ 70 “ “ “ “ “ “ “ “	2.70
788-4	“ “ “ “ “ 75 “ “ “ “ “ “ “ “	2.70
788-5	“ “ “ “ “ 80 “ “ “ “ “ “ “ “	2.70
788-6	“ “ “ “ “ 85 “ “ “ “ “ “ “ “	2.70
788-7	“ “ “ “ “ 90 “ “ “ “ “ “ “ “	2.70
788-8	“ “ “ “ “ 95 “ “ “ “ “ “ “ “	2.70
788-9	“ “ “ “ “ 100 “ “ “ “ “ “ “ “	2.70
788-10	“ “ “ “ “ 90 “ Type “A” A. R. A. Rail	2.70
788-11	“ “ “ “ “ 90 “ “B” “ “ “ “ “ “	2.70
788-12	“ “ “ “ “ 100 “ “ “A” “ “ “ “ “ “	2.70
788-13	“ “ “ “ “ 100 “ “ “B” “ “ “ “ “ “	2.70
788-21	Rail Clip Only	1.65
787-23	Operating Stud for $\frac{3}{8}$ " Detector Bars . . . . .	.10
787-24	“ “ “ “ $\frac{7}{16}$" “ “ “ “ . . . . .	.10
787-25	“ “ “ “ $\frac{1}{2}$" “ “ “ “ . . . . .	.10
781-15	Link Stud Only . . . . .	.16
783-28	$\frac{3}{16}$ " x $2\frac{1}{2}$ " Cotter Pin . . . . .	.01
781-16	Hook Bolts for 60 lb. and 65 lb. A. S. C. E. Rail Clip . . . . .	.16
781-17	“ “ “ “ 70 lb., 75 lb. and 80 lb. A. S. C. E. and 90 lb. Type “B” A. R. A. Rails . . . . .	.16
781-18	Hook Bolts for 85 lb. A. S. C. E. Rails . . . . .	.16
781-19	“ “ “ “ 90 lb., 95 lb. and 100 lb. A. S. C. E. and 90 lb. Type “A” and 100 lb. Type “A” and “B” A. R. A. Rails . . . . .	.16
942-16	$\frac{5}{8}$ " Standard Lock Washer . . . . .	.02
787-27	Link Only for 60 lb. A. S. C. E. Rail . . . . .	.50
787-28	“ “ “ “ 65 “ “ “ “ “ “ “ “ . . . . .	.50
787-29	“ “ “ “ 70 “ “ “ “ “ “ “ “ . . . . .	.50
787-30	“ “ “ “ 75 “ “ “ “ “ “ “ “ . . . . .	.50
787-31	“ “ “ “ 80 “ “ “ “ “ “ “ “ . . . . .	.50
787-32	“ “ “ “ 85 “ “ “ “ “ “ “ “ . . . . .	.50
787-33	“ “ “ “ 90 “ “ “ “ “ “ “ “ . . . . .	.50
787-34	“ “ “ “ 95 “ “ “ “ “ “ “ “ . . . . .	.50
787-35	“ “ “ “ 100 “ “ “ “ “ “ “ “ . . . . .	.50
787-36	“ “ “ “ 90 “ Type “A” A. R. A. Rail . . . . .	.50
787-37	“ “ “ “ 90 “ “B” “ “ “ “ “ “ . . . . .	.50
787-38	“ “ “ “ 100 “ “ “A” “ “ “ “ “ “ . . . . .	.50
787-39	“ “ “ “ 100 “ “ “B” “ “ “ “ “ “ . . . . .	.50
1098-5	R. S. A. Detector Bar $\frac{3}{8}$ " x $2\frac{1}{4}$ ". Specify length . . . . .	. . . . .
1098-8	“ “ “ “ “ $\frac{1}{2}$ " x $2\frac{1}{4}$" . . . . .	. . . . .
1098-11	Detector Bar $\frac{7}{16}$ " x $2\frac{1}{4}$ ". Specify length . . . . .	. . . . .

RADIAL TYPE DETECTOR BAR RAIL CLIPS, HOOK BOLT TYPE



Trade No.	DESCRIPTION	List Price
779-1	Rail Clip complete with Link, Link Stud, Bar Stud, Washer, Cotter and Hook Bolts for 60 lb. A. S. C. E. Rail	\$1.80
779-2	Same as above except for 65 lb. A. S. C. E. Rail	1.80
779-3	“ “ “ “ “ “ 70 “ “ “ “ “ “	1.80
779-4	“ “ “ “ “ “ 75 “ “ “ “ “ “	1.80
779-5	“ “ “ “ “ “ 80 “ “ “ “ “ “	1.80
779-6	“ “ “ “ “ “ 85 “ “ “ “ “ “	1.80
779-7	“ “ “ “ “ “ 90 “ “ “ “ “ “	1.80
779-8	“ “ “ “ “ “ 95 “ “ “ “ “ “	1.80
779-9	“ “ “ “ “ “ 100 “ “ “ “ “ “	1.80
779-10	“ “ “ “ “ “ 90 “ Type “A” A. R. A. Rail	1.80
779-11	“ “ “ “ “ “ 90 “ “ “B” “ “ “ “	1.80
779-12	“ “ “ “ “ “ 100 “ “ “A” “ “ “ “	1.80
779-13	“ “ “ “ “ “ 100 “ “ “B” “ “ “ “	1.80
779-21	Rail Clip Only . . . . .	.80
787-23	Operating Stud for $\frac{3}{8}$ " Detector Bar . . . . .	.10
787-24	“ “ “ “ “ $\frac{7}{8}$" “ “ “ “ . . . . .	.10
787-25	“ “ “ “ “ $\frac{1}{2}$" “ “ “ “ . . . . .	.10
789-26	Link Stud Only . . . . .	.01
783-28	$\frac{3}{8}$ " x $2\frac{1}{2}$ " Cotter Pin . . . . .	.02
605-25	$\frac{1}{4}$ " Standard Iron Washer . . . . .	.16
781-16	Hook Bolt for 60 lb. and 65 lb. A. S. C. E. Rails . . . . .	.16
781-17	“ “ “ “ 70 lb., 75 lb. and 80 lb. A. S. C. E. and 90 lb. Type “B” A. R. A. Rails . . . . .	.16
781-18	Hook Bolt for 85 lb. A. S. C. E. Rail . . . . .	.16
781-19	“ “ “ “ 90 lb., 95 lb. and 100 lb. A. S. C. E., 90 lb. Type “A” and 100 lb. Type “A” and “B” A. R. A. Rails . . . . .	.16
942-16	$\frac{5}{8}$ " Standard Lock Washer . . . . .	.50
789-27	Link Only for 60 lb. A. S. C. E. Rail . . . . .	.50
789-28	“ “ “ “ 65 “ “ “ “ “ “ . . . . .	.50
789-29	“ “ “ “ 70 “ “ “ “ “ “ . . . . .	.50
789-30	“ “ “ “ 75 “ “ “ “ “ “ . . . . .	.50
789-31	“ “ “ “ 80 “ “ “ “ “ “ . . . . .	.50
789-32	“ “ “ “ 85 “ “ “ “ “ “ . . . . .	.50
789-33	“ “ “ “ 90 “ “ “ “ “ “ . . . . .	.50
789-34	“ “ “ “ 95 “ “ “ “ “ “ . . . . .	.50
789-35	“ “ “ “ 100 “ “ “ “ “ “ . . . . .	.50
779-36	“ “ “ “ 90 “ Type “A” A. R. A. Rail . . . . .	.50
789-37	“ “ “ “ 90 “ “ “B” “ “ “ “ . . . . .	.50
789-38	“ “ “ “ 100 “ “ “A” “ “ “ “ . . . . .	.50
789-39	“ “ “ “ 100 “ “ “B” “ “ “ “ . . . . .	.50
1098-5	R. S. A. Detector Bar, $\frac{3}{8}$ " x $2\frac{1}{4}$ ". Specify length . . . . .	. . . . .
1098-8	“ “ “ “ “ “ $\frac{1}{2}$ " x $2\frac{1}{4}$" “ “ “ “ . . . . .	. . . . .
1098-11	Detector Bar, $\frac{7}{8}$ " x $2\frac{1}{4}$ ". Specify length . . . . .	. . . . .

MOTION PLATES FOR DETECTOR BARS

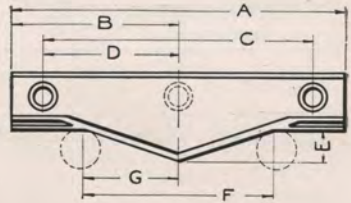
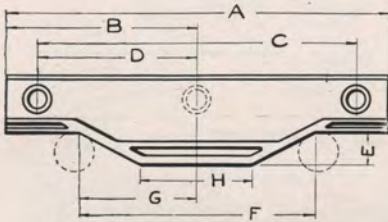


TABLE A

N ^o	A	B	C	D	E	F	G	H	J
782-1	12	6	10	5	1	6	3	3 $\frac{1}{2}$	$\frac{3}{4}$
782-2	9 $\frac{1}{2}$	4 $\frac{3}{8}$	5 $\frac{1}{2}$		1	7 $\frac{1}{8}$	3 $\frac{1}{2}$	2	$\frac{3}{4}$
782-3	12 $\frac{1}{2}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{1}{2}$	8 $\frac{1}{2}$	4 $\frac{1}{2}$	2 $\frac{3}{4}$	1 $\frac{1}{4}$

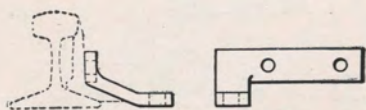


TABLE B

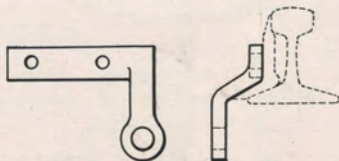
N ^o	A	B	C	D	E	F	G	J
782-4	9 $\frac{1}{2}$	4 $\frac{1}{8}$	7 $\frac{1}{8}$		1	4 $\frac{1}{2}$	2 $\frac{1}{2}$	$\frac{3}{4}$
782-5	10 $\frac{1}{2}$	5 $\frac{1}{4}$	8 $\frac{1}{2}$	4 $\frac{1}{4}$	1	6	3	$\frac{3}{4}$
782-6	10 $\frac{1}{2}$	5 $\frac{1}{4}$	8 $\frac{1}{2}$	4 $\frac{1}{4}$	1 $\frac{1}{2}$	6	3	1 $\frac{1}{4}$

Trade No.	DESCRIPTION	List Price
782-1	Long Motion Plate (See Table "A" for dimensions)	\$0.66
782-11	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.69
782-12	" " " " " " " $\frac{7}{8}$ " " " "	.69
782-13	" " " " " " " $\frac{1}{2}$ " " " "	.69
782-2	Long Motion Plate (See Table "A" for dimensions)	.66
782-21	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.68
782-22	" " " " " " " $\frac{7}{8}$ " " " "	.68
782-23	" " " " " " " $\frac{1}{2}$ " " " "	.68
782-3	Long Motion Plate (See Table "A" for dimensions)	.66
782-31	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.69
782-32	" " " " " " " $\frac{7}{8}$ " " " "	.69
782-33	" " " " " " " $\frac{1}{2}$ " " " "	.69
782-4	Short Motion Plate (See Table "B" for dimensions)	.55
782-41	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.57
782-42	" " " " " " " $\frac{7}{8}$ " " " "	.57
782-43	" " " " " " " $\frac{1}{2}$ " " " "	.57
782-5	Short Motion Plate (See Table "B" for dimensions)	.55
782-51	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.58
782-52	" " " " " " " $\frac{7}{8}$ " " " "	.58
782-53	" " " " " " " $\frac{1}{2}$ " " " "	.58
782-6	Short Motion Plate (See Table "B" for dimensions)	.55
782-61	Same as above with Rivets for $\frac{3}{8}$ " Detector Bars	.58
782-62	" " " " " " " $\frac{7}{8}$ " " " "	.58
782-63	" " " " " " " $\frac{1}{2}$ " " " "	.58
782-9	$\frac{1}{2}$ " x 1" Countersunk Head Iron Rivets for fastening Motion Plate to $\frac{3}{8}$ " or $\frac{7}{8}$ " Detector Bars	.01
782-10	$\frac{1}{2}$ " x 1 $\frac{1}{8}$ " Countersunk Head Iron Rivets for fastening Motion Plate to $\frac{1}{2}$ " Detector Bars	.01

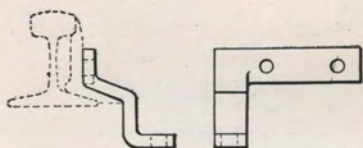
SWITCH POINT LUGS



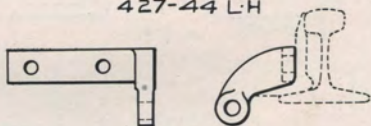
427-42 LH
427-41 RH



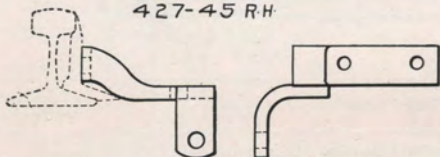
427-43 RH
427-44 LH



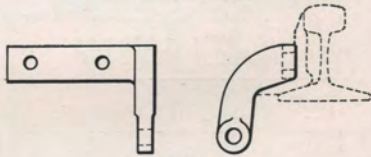
427-46 LH
427-45 RH



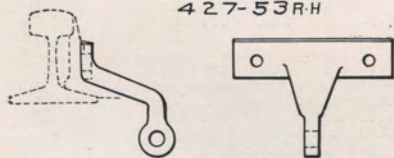
427-47 RH
427-48 LH



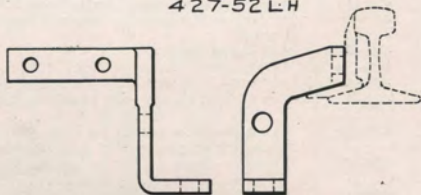
427-54 LH
427-53 RH



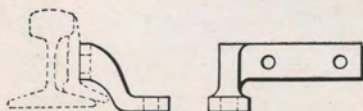
427-51 RH
427-52 LH



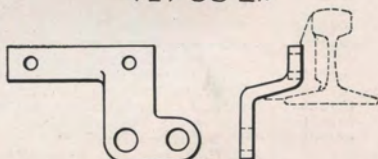
427-59



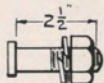
427-55 RH
427-56 LH



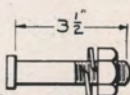
427-50 LH
427-49 RH



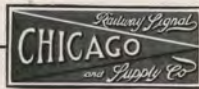
427-57 RH
427-58 LH



427-61



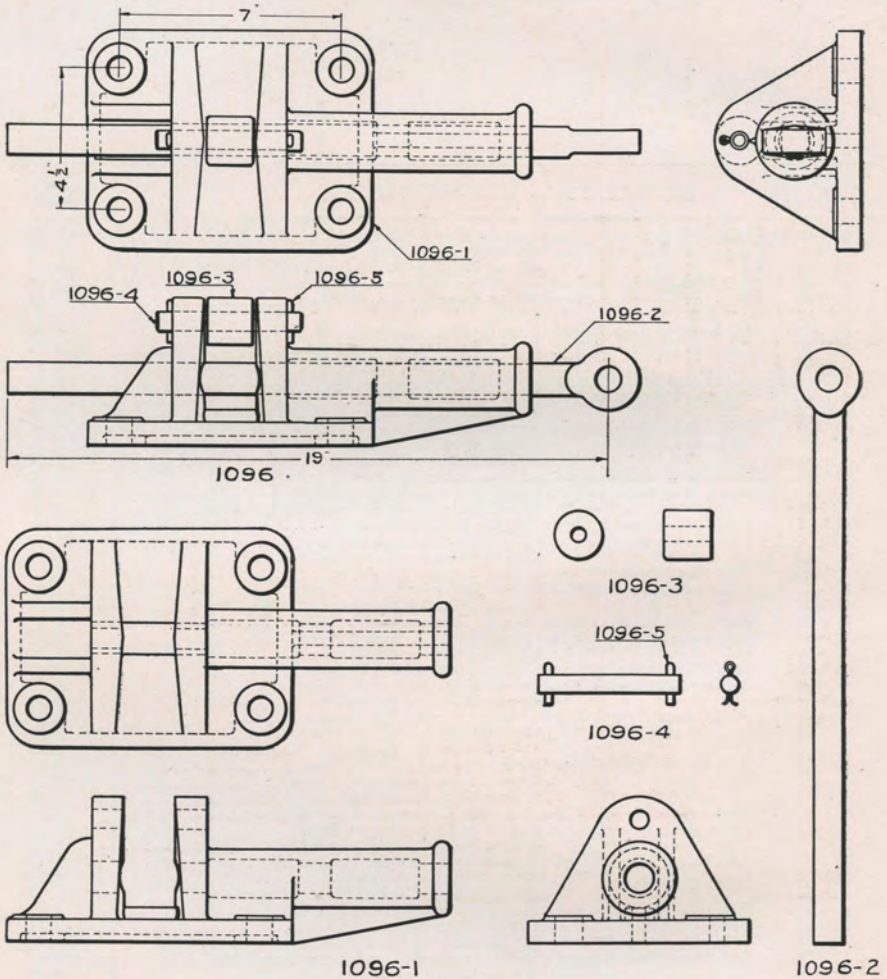
427-62



SWITCH POINT LUGS

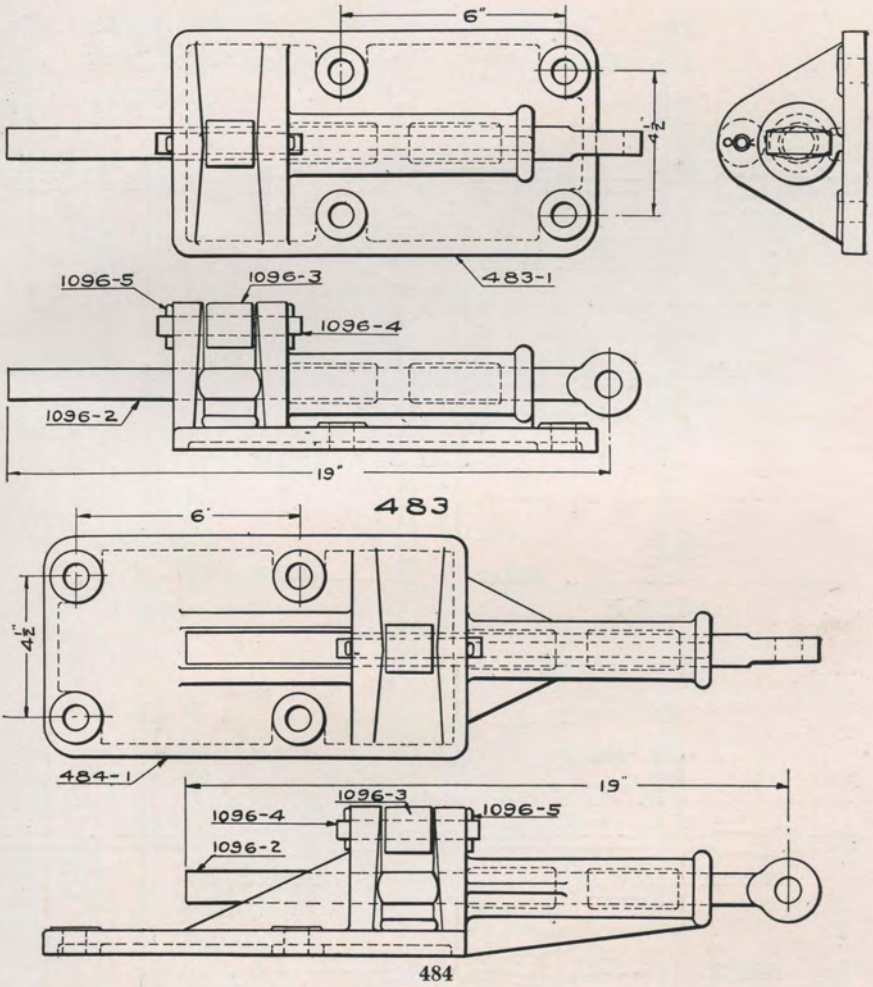
Trade No.	DESCRIPTION	List Price
427-41	Right Hand Switch Point Lug for Single Slip Switch or Derail	\$1.15
427-1	Same as above with Two 427-61 Bolts for Switch Points	1.43
427-11	" " " " 427-62 Bolts for Reinforced Switch Points	1.47
427-42	Left Hand Switch Point Lug for Single Slip Switch or Derail	1.15
427-2	Same as above with Two 427-61 Bolts for Switch Points	1.43
427-12	" " " " 427-62 " " " "	1.47
427-43	Right Hand Switch Point Lugs for Slip Switches or M. P. F.	4.78
427-3	Same as above with Two 427-61 Bolts for Switch Points	5.06
427-13	" " " " 427-62 Bolts for Reinforced Switch Point	5.10
427-44	Left Hand Switch Point Lug for Slip Switches or M. P. F.	4.78
427-4	Same as above with Two 427-61 Bolts for Switch Points	5.06
427-14	" " " " 427-62 Bolts for Reinforced Switch Point	5.10
427-45	Right Hand Switch Point Lug for Double Slip Switch or M. P. F.	2.42
427-5	Same as above with Two 427-61 Bolts for Switch Points	2.70
427-15	" " " " 427-62 Bolts for Reinforced Switch Point	2.74
427-46	Left Hand Switch Point Lug for Double Slip Switch or M. P. F.	2.42
427-6	Same as above with Two 427-61 Bolts for Switch Points	2.70
427-16	" " " " 427-62 Bolts for Reinforced Switch Point	2.74
427-47	Right Hand Switch Point Lug for Vertical Tie Rods	2.91
427-7	Same as above with Two 427-61 Bolts for Switch Points	3.19
427-17	" " " " 427-62 Bolts for Reinforced Switch Point	3.23
427-48	Left Hand Switch Point Lug for Vertical Tie Rods	2.91
427-8	Same as above with Two 427-61 Bolts for Switch Points	3.19
427-18	" " " " 427-62 Bolts for Reinforced Switch Point	3.23
427-49	Right Hand Switch Point Lug for Horizontal Tie Rods	2.47
427-9	Same as above with Two 427-61 Bolts for Switch Point	2.75
427-19	" " " " 427-62 Bolts for Reinforced Switch Point	2.79
427-50	Left Hand Switch Point Lug for Horizontal Tie Rods	2.47
427-10	Same as above with Two 427-61 Bolts for Switch Points	2.75
427-20	" " " " 427-62 Bolts for Reinforced Switch Point	2.79
427-51	Right Hand Switch Point Lugs for Vertical Tie Rods	2.91
427-21	Same as above with Two 427-61 Bolts for Switch Points	3.19
427-31	" " " " 427-62 Bolts for Reinforced Switch Point	3.23
427-52	Left Hand Switch Point Lug for Vertical Switch Points	2.91
427-22	Same as above with Two 427-61 Bolts for Switch Points	3.19
427-32	" " " " 427-62 Bolts for Reinforced Switch Point	3.23
427-53	Right Hand Switch Point Lug with Independent Lug for Bolt Lock	4.84
427-23	Same as above with Two 427-61 Bolts for Switch Points	5.12
427-33	" " " " 427-62 Bolts for Reinforced Switch Point	5.16
427-54	Left Hand Switch Point Lug with Independent Lug for Bolt Locks	4.84
427-24	Same as above with Two 427-61 Bolts for Switch Points	5.12
427-34	" " " " 427-62 Bolts for Reinforced Switch Point	5.16
427-55	Right Hand Switch Point Lug with Independent Lug for Bolt Lock	4.95
427-25	Same as above with Two 427-61 Bolts for Switch Points	5.23
427-35	" " " " 427-62 Bolts for Reinforced Switch Point	5.27
427-56	Left Hand Switch Point Lug with Independent Lug for Bolt Lock	4.95
427-26	Same as above with Two 427-61 Bolts for Switch Points	5.23
427-36	" " " " 427-62 Bolts for Reinforced Switch Point	5.27
427-59	Switch Point Lug for Derail Lock Rod	2.36
427-29	Same as above with Two 427-61 Bolts for Switch Points	2.64
427-39	" " " " 427-62 Bolts for Reinforced Switch Point	2.68
427-61	3/4" x 2 1/2" Flat Head Bolts with Hexagon Nut and Lock Washer for fasten- ing Switch Point Lug to Switch Point	.14
427-62	3/4" x 3 1/2" Flat Head Bolt with Hexagon Nut and Lock Washer for fasten- ing Switch Point Lug to Reinforced Switch Point	.16
427-57	Right Hand Switch Point Lug with Hole for Bolt Lock Rod	5.22
427-27	Same as above with Two 427-61 Bolts for Switch Point	5.50
427-37	" " " " 427-62 Bolts for Reinforced Switch Point	5.54
427-58	Left Hand Switch Point Lug with Hole for Bolt Lock Rod	5.22
427-28	Same as above with Two 427-61 Bolts for Switch Points	5.50
427-38	" " " " 427-62 Bolts for Reinforced Switch Point	5.54

R. S. A. PLUNGER LOCK



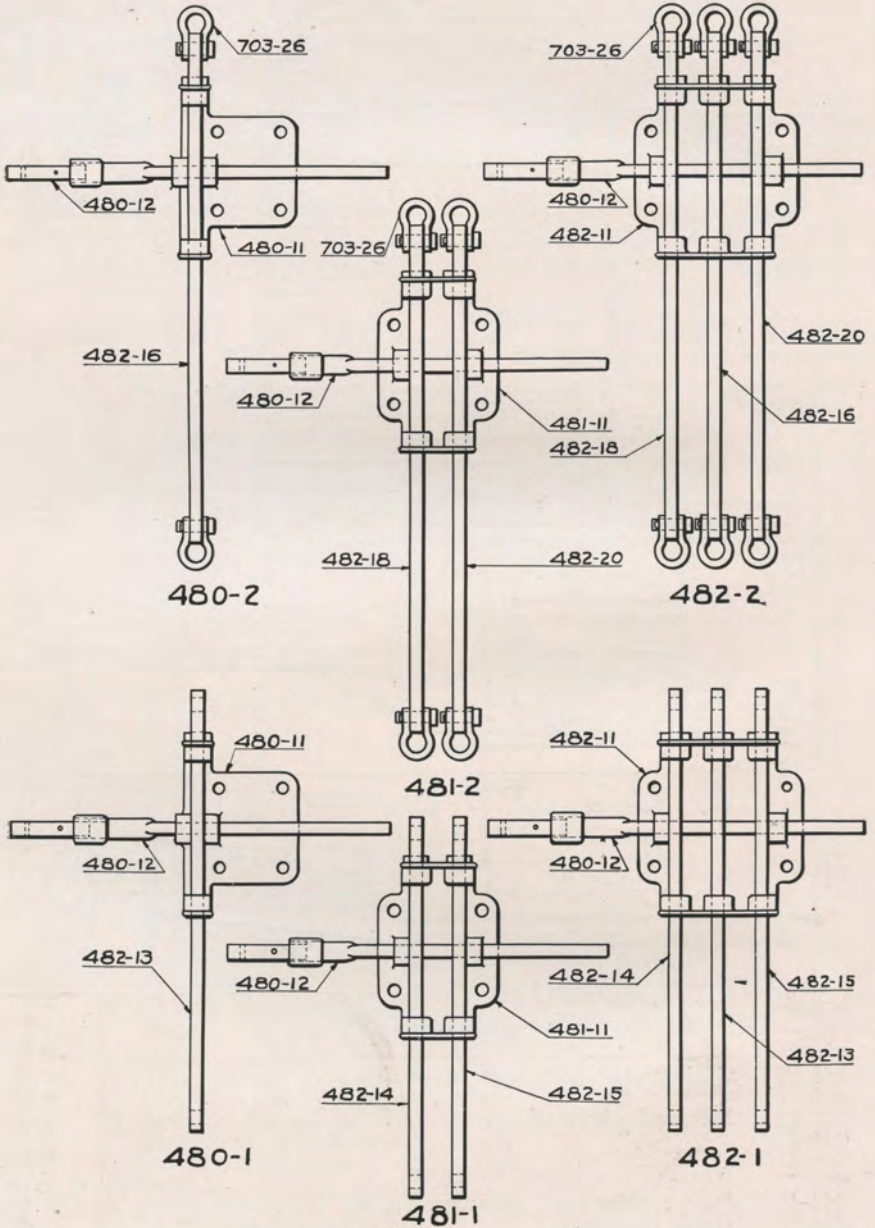
Trade No.	DESCRIPTION	List Price
1096	R. S. A. Plunger Lock, complete as shown.....	\$4.05
1096-1	Plunger Lock Stand.....	3.02
1096-2	.....	.90
1096-3	Roller.....	.23
1096-4	Pin with Two $\frac{3}{16}$ " x 1" Cotter.....	.09
1096-5	$\frac{3}{16}$ " x 1" Cotter Pins, per C.....	.90

PLUNGER LOCKS

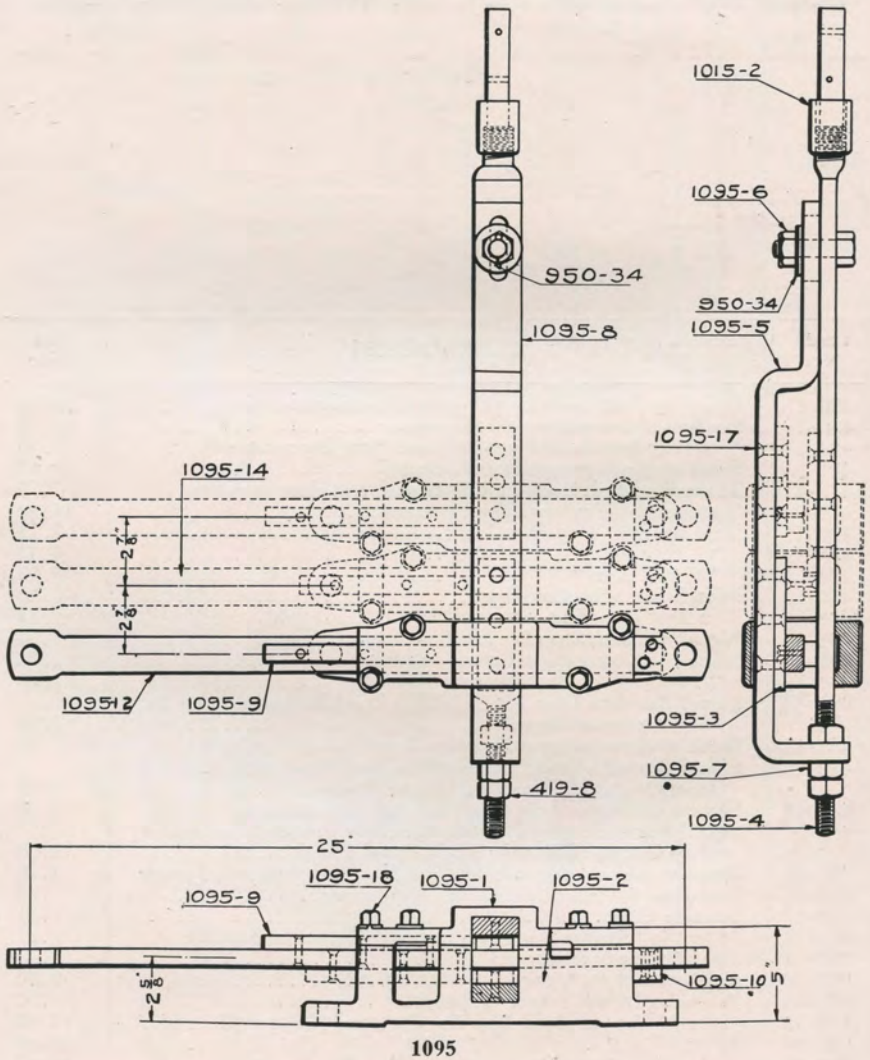


Trade No.	DESCRIPTION	List Price
483	Single Plunger Lock, complete as shown.....	\$4.05
484	Plunger Lock Stand.....	4.05
483-1	Plunger Lock.....	3.68
484-1	Plunger Lock Stand.....	3.68
1096-2	Roller.....	1.10
1096-3	Pin for Roller with Cotter Pins.....	.27
1096-4	Cotter Pins, per C.....	.11
1096-5	Roller.....	.90

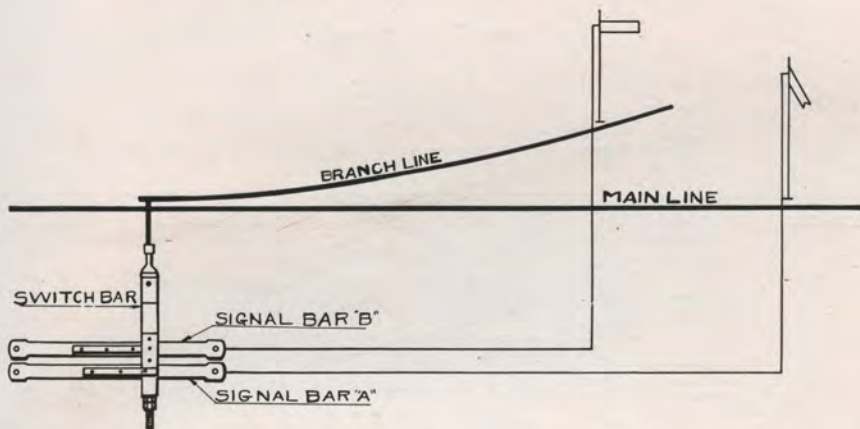
BOLT LOCKS FOR PIPE AND WIRE CONNECTIONS



R. S. A. MULTIPLE UNIT BOLT LOCKS



R. S. A. MULTIPLE UNIT BOLT LOCKS

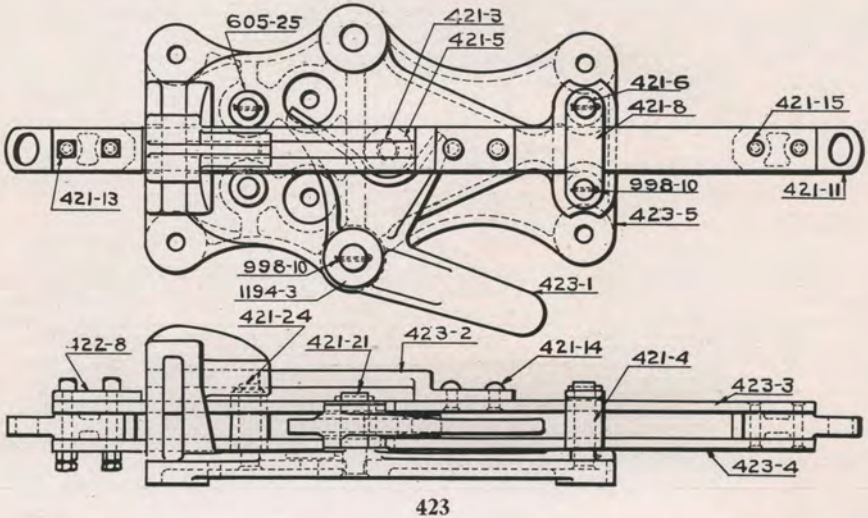


The Bolt Lock illustrated on the preceding page is in accordance with R. S. A. Drawing No. 1095, and is so arranged that any number of units may be mounted alongside of each other and spaced on 27 $\frac{1}{2}$ " Centers. The Units can be so arranged that any number of Signal Bars are locked, until switch points are moved, or switch points cannot be moved until any number of Signal Bars have been operated or any combination of the two conditions is possible. Orders for Multiple Units should be accompanied with necessary information as to what each Unit is to accomplish.

Application above shows one of the most common conditions met with in practice; a Two Unit Multiple Bolt Lock is used, it will be seen that switch cannot be thrown until after the operation of Signal Bar "A" which operation puts the Distant Signal on main line in the Stop Position, the operation of switch locks it in that position until switch is again set for main line traffic. Signal Bar "B" operates signal on branch track, and can only be operated after switch is set for branch line traffic. Switch is then locked in that position until signal on branch line is returned to stop position.

Trade No.	DESCRIPTION	List Price
1095	R. S. A. One Way Multiple Unit Bolt Lock.....	.....
1095-16	Same as above except Two Way.....	.....
1095-15	" " " " Three " .....	.....
1095-1	Cover for Bolt Lock Stand.....	.....
1095-2	Base " " " " .....	.....
1095-3	Lock Rod Locking Dog.....	.....
1095-4	Tang End Bar for Lock Rod.....	.....
1095-5	Slotted " " " " .....	.....
1095-6	Bolt complete with Washer, Cotter and Nut.....	.....
1095-7	Sleeve for Lock Rod.....	.....
1095-8	Adjustable Lock Rod complete.....	.....
1095-9	Lock Dog for Signal Bars.....	.....
1095-10	Stop Plate " " " " .....	.....
1095-11	End Signal Bar Only.....	.....
1095-12	" " " " complete with Lock Dog and Stop.....	.....
1095-13	Center Signal Bar Only.....	.....
1095-14	" " " " complete with Lock Dog and Stop.....	.....
1095-17	$\frac{1}{4}$ " x 1 $\frac{1}{2}$ " Countersunk Head Iron Rivets.....	.....
1095-18	$\frac{1}{2}$ " x 1 $\frac{3}{4}$ " Hexagon Head Cap Screws.....	.....
419-8	$\frac{3}{4}$ " Iron Hexagon Nut.....	.....
950-34	$\frac{3}{4}$ " Standard Iron Washer.....	.....
1095-19	$\frac{3}{16}$ " x 1 $\frac{1}{8}$ " Cotter Pin.....	.....

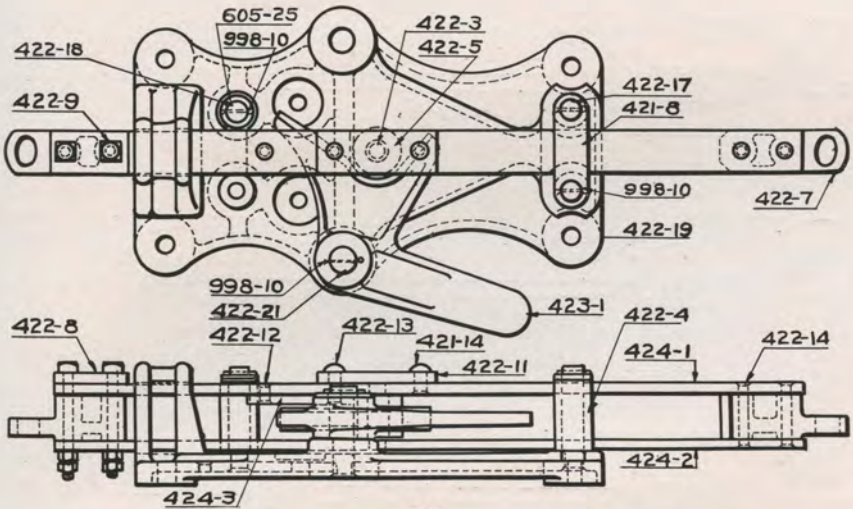
SWITCH AND LOCK MOVEMENT



This design is practically the same as our No. 421 Type except that it is designed to be used to operate a derail and lock it in the closed position only, it is of the plunger type locking arranged for Drilled Lock Rod.

Trade No.	DESCRIPTION	List Price
423	Switch and Lock Movement complete as shown for 8½" Stroke	\$20.30
423-5	Base Only	7.97
421-6	Bearing Stud for Guide Roller	.26
421-4	Guide Roller	.30
421-8	Cap for Guide Rollers	.13
998-10	¼" x 2" Cotter Pins for Roller Studs, per C.	.88
421-24	Stud for Side Thrust Roller	.23
605-25	1" Standard Iron Washer	.02
423-3	Upper Slide Bar	.96
423-4	Lower " "	.96
421-11	Lug for Slide Bars	.36
423-2	Locking Plunger	.79
422-8	End Stop for Slide Bars	.17
423-1	Escapement Crank	1.32
421-21	Pin for Escapement Crank	.30
1194-3	1¼" Standard Iron Washer	.02
421-3	Operating Roller Pin	.18
421-5	" "	.40
421-15	½" x 2¼" C. S. H. Rivets for fastening Lug to Slide Bar	.02
421-14	½" x 1⅝" R. H. I. Rivet for fastening Locking Plunger to Slide Bar	.02
421-13	½" x 3½" Square Head Machine Bolts with Two Hexagon Nuts for fastening Lug and Stop to Slide Bar	.08

SWITCH AND LOCK MOVEMENT

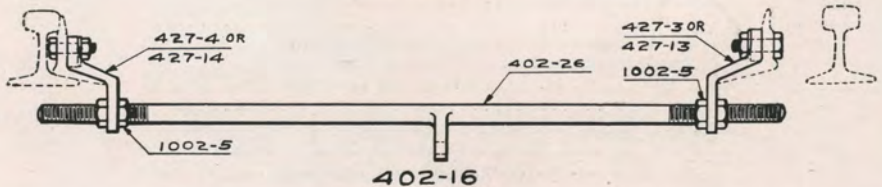
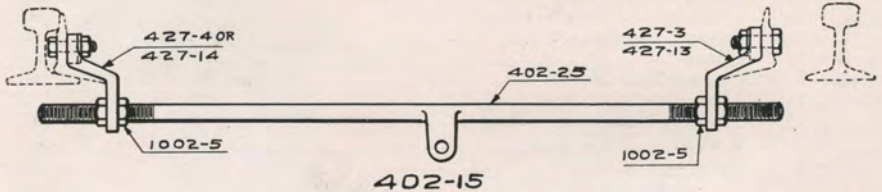
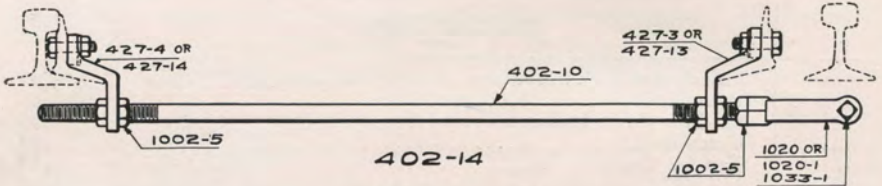
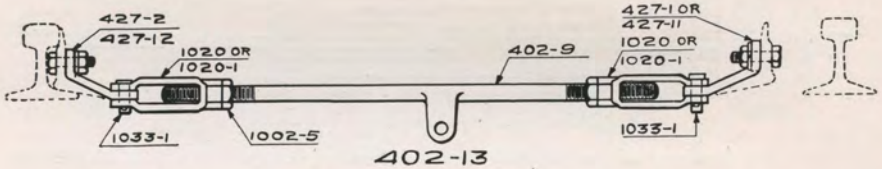
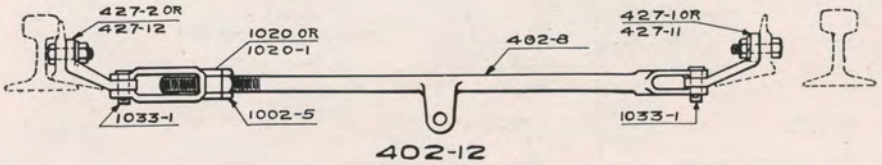
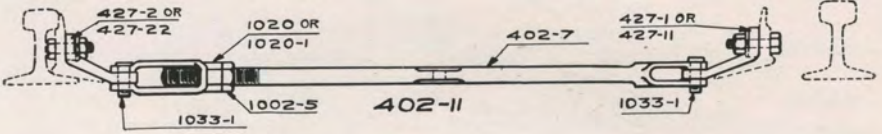


424

This is a duplicate of our No. 423 Type Movement, except that this Movement is arranged to be used with a Notched Lock Rod.

Trade No.	DESCRIPTION	List Price
424	Switch and Lock Movement complete as shown, 8½" Stroke	\$19.95
422-19	Base Only	6.65
422-17	Stud for Guide Roller	.26
422-4	Guide Roller	.30
421-8	Cap for Guide Roller	.13
998-10	¼" x 2" Cotter Pins for Roller Studs, per C.	.88
422-18	Stud for Side Thrust Roller	.23
605-25	1" Standard Iron Washer	.02
424-1	Upper Slide Bar	.96
424-2	Lower " "	.96
422-7	Lug for Slide Bars	.36
424-3	Lock Dog	.33
422-11	Stop for Slide Bar	.17
422-8	End Stop for Slide Bar	.17
423-1	Escapement Crank	1.32
422-21	Pin for Escapement Crank	.30
422-3	Operating Roller Pin	.18
422-5	" "	.40
422-9	½" x 4½" Square Head Machine Bolts with Two Hexagon Nuts for fastening Lug and Stop to Slide Bars	.08
422-12	½" x 1½" C. S. H. Iron Rivets for fastening Lock Dog to Slide Bar	.02
422-13	½" x 1⅝" R. H. I. Rivets for fastening Lock Dog to Slide Bar	.02
421-14	½" x 1⅝" R. H. I. Rivet for fastening Stop to Slide Bar	.02
422-14	½" x 3⅝" C. S. H. Iron Rivets for fastening Lug to Slide Bar	.02

FRONT RODS FOR SINGLE SLIP SWITCHES



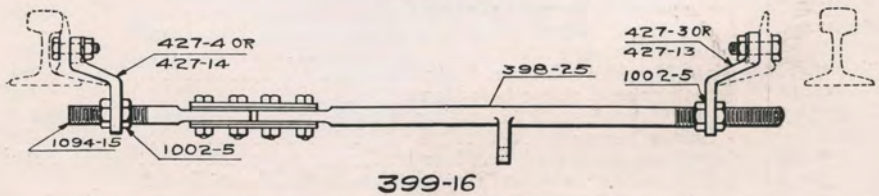
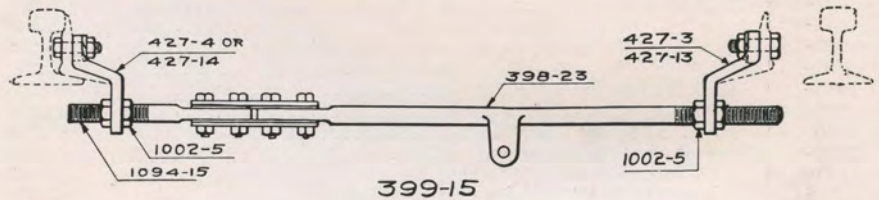
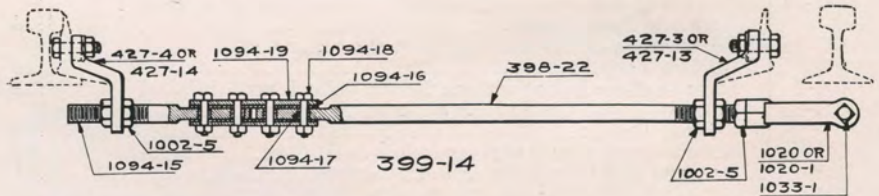
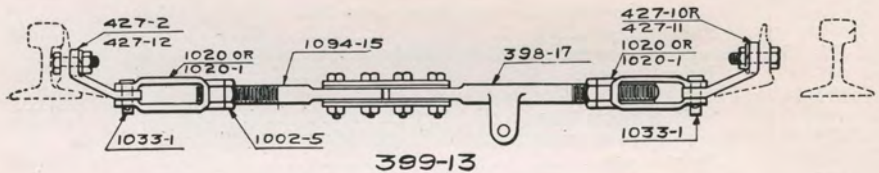
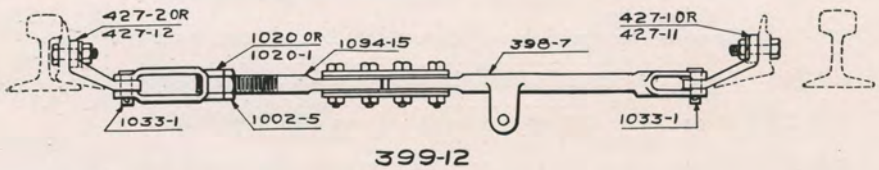
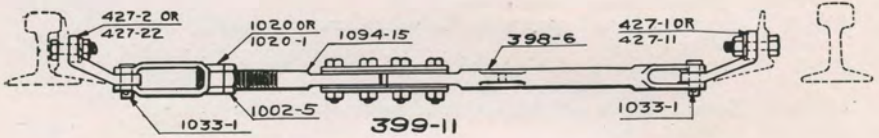


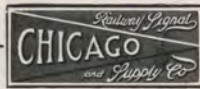
FRONT RODS FOR SINGLE SLIP SWITCHES

Trade No.	DESCRIPTION	List Price
402-11	Front Rod with Lateral Lug complete as shown with Forged Screw Jaw and Switch Point Lugs.	\$7.90
402-31	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	7.58
402-1	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.00
402-21	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	4.68
402-12	Front Rod with Vertical Lug complete as shown with Forged Screw Jaw and Switch Point Lugs.	7.90
402-32	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	7.58
402-2	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.00
402-22	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	4.68
402-13	Front Rod with Lug complete as shown with forged Screw Jaw and Switch Point Lugs.	8.39
402-33	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	7.75
402-3	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.49
402-23	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	4.85
402-14	Front Rod complete as shown with Forged Screw Jaw and Switch Point Lugs.	14.34
402-34	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	14.02
402-4	Same as above with Forged Screw Jaw but without Switch Point Lugs.	4.18
402-24	Same as above except with Malleable Screw Jaw but without Switch Point Lugs.	3.86
402-15	Front Rod with Vertical Lug complete as shown with Switch Point Lugs.	14.38
402-5	Same as above except without Switch Point Lugs.	4.22
402-16	Front Rod with Vertical Lug complete as shown with Switch Point Lugs.	17.09
402-6	Same as above except without Switch Point Lugs.	6.93
402-7	Front Rod with Lateral Lug and Solid Jaw.	3.74
402-8	“ “ Vertical “ “ “ “	3.74
402-9	Threaded Rod with Lug	3.19
402-10	“ “ Only	2.31
402-25	“ “ with Lug for Jaw	3.50
402-26	“ “ “ “ Rod	6.21
1033-1	R. S. A. Jaw Pin $\frac{3}{8}$" x $2\frac{1}{4}$" with Cotter. . . . .	.11
704-14	$\frac{3}{16}$ " x $1\frac{1}{2}$ " Cotter Pins, per C. . . . .	.90
1020	R. S. A. Screw Jaw Forging. . . . .	.86
1020-1	Screw Jaw, Malleable Iron. . . . .	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick . . . . .	.18
427-1	Right Hand Switch Point Lug with Bolts.	1.43
427-2	Same as above except Left Hand.	1.43
427-11	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points	1.47
427-3	Right Hand Switch Point Lug with Bolts.	5.06
427-4	Same as above except Left Hand.	5.06
427-13	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points	5.10
427-14	Same as above except Left Hand.	5.10
427-12	Left Hand Switch Point Lug with Bolts for Reinforced Switch Points.	1.47

FRONT RODS FOR SINGLE SLIP SWITCHES

(Insulated)



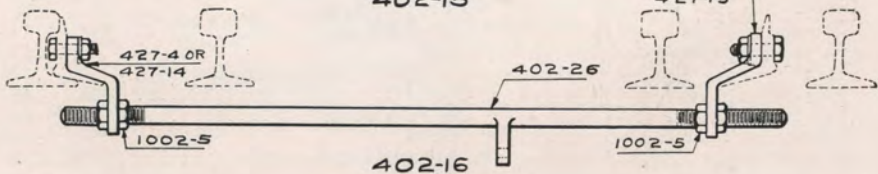
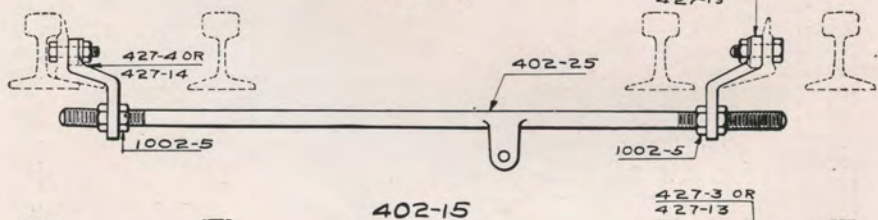
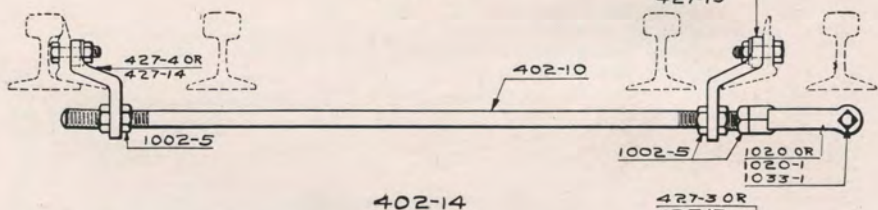
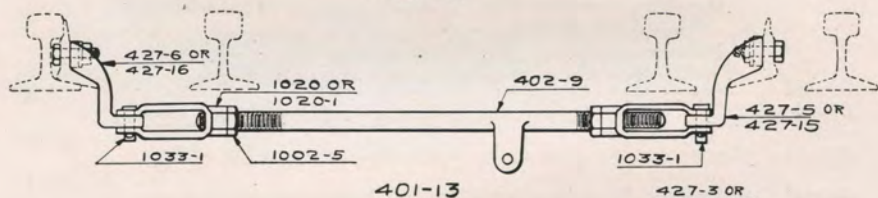
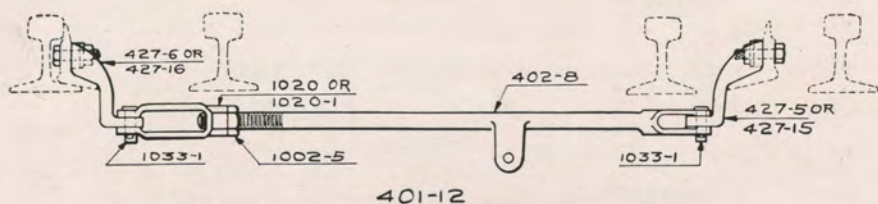
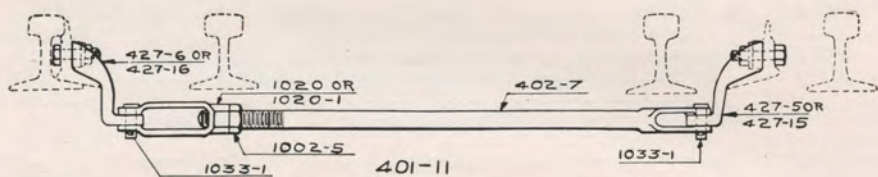


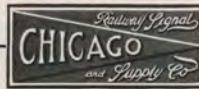
FRONT RODS FOR SINGLE SLIP SWITCHES

(Insulated)

Trade No.	DESCRIPTION	List Price
399-11	Insulated Front Rod with Lateral Lug complete as shown with Forged Screw Jaw and Switch Point Lugs	\$10.64
399-31	Same as above except with Malleable Screw Jaw	10.32
399-1	“ “ “ with Forged Screw Jaw but without Switch Point Lugs	7.74
399-21	Same as above with Malleable Screw Jaw but without Switch Point Lugs	7.42
399-12	Insulated Front Rod with Vertical Lug complete as shown with Forged Screw Jaw and Switch Point Lugs	10.64
399-32	Same as above except with Malleable Screw Jaw	10.32
399-2	“ “ “ with Forged Screw Jaw but without Switch Point Lugs	7.74
399-22	Same as above with Malleable Screw Jaw but without Switch Point Lugs	7.42
399-13	Insulated Front Rod with Vertical Lug complete as shown with Forged Screw Jaw and Switch Point Lugs	10.10
399-33	Same as above except with Malleable Screw Jaws	9.46
399-3	“ “ “ with Forged Screw Jaws but without Switch Point Lugs	7.20
399-23	Same as above except with Malleable Screw Jaws but without Switch Point Lugs	6.56
399-14	Insulated Front Rod complete as shown with Forged Screw Jaw and Switch Point Lugs	16.21
399-34	Same as above except with Malleable Screw Jaw	15.89
399-4	“ “ “ with Forged Screw Jaw but without Switch Point Lugs	6.05
399-24	Same as above except with Malleable Screw Jaw but without Switch Point Lugs	5.73
399-15	Insulated Front Rod with Vertical Lug complete as shown with Switch Point Lugs	15.51
399-5	Same as above except without Switch Point Lugs	5.35
399-16	Insulated Front Rod with Vertical Lug complete as shown with Switch Point Lugs	18.22
399-6	Same as above except without Switch Point Lugs	8.06
398-6	Half Rod with Lateral Lug and Solid Jaw	3.60
398-7	“ “ “ Vertical “ “ “ “	3.60
398-17	Threaded Half Rod with Lug	2.02
398-22	“ “ “ “ “ “ “ “	1.30
398-23	“ “ “ “ with Vertical Lug for Jaw	1.75
398-25	“ “ “ “ “ “ “ “ Rod	4.46
1094-15	“ Rod	1.12
1094-19	Splice Plate . . . . .	.36
1094-16	Fibre “ . . . . .	.18
1094-17	Fibre Bushing, per C.	5.40
1094-18	$\frac{5}{8}$ " x $2\frac{1}{2}$ " Square Head Machine Bolt and Nut . . . . .	.11
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter . . . . .	.11
704-14	$\frac{3}{16}$ " x $1\frac{1}{2}$ " Cotter Pins, per C. . . . .	.90
1020	R. S. A. Screw Jaw Forging . . . . .	.86
1020-1	Screw Jaw Malleable Iron . . . . .	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick . . . . .	.18
427-1	Right Hand Switch Point Lug with Bolts	1.43
427-2	Same as above except Left Hand	1.43
427-11	R.H. Switch Point Lug with Bolts for Reinforced Switch Point	1.47
427-12	Same as above except Left Hand	1.47
427-3	Right Hand Switch Point Lug with Bolts	5.06
427-4	Same as above except Left Hand	5.06
427-13	R.H. Switch Point Lug with Bolts for Reinforced Switch Point	5.10
427-14	Same as above except Left Hand	5.10

FRONT RODS FOR MOVABLE POINT FROGS



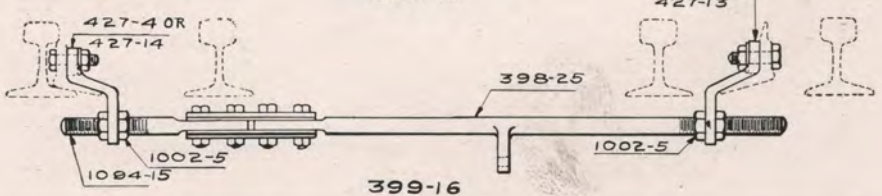
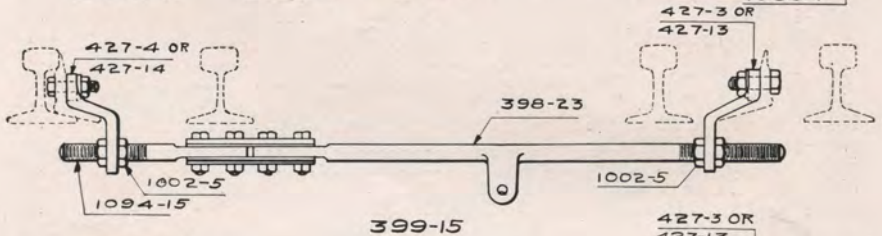
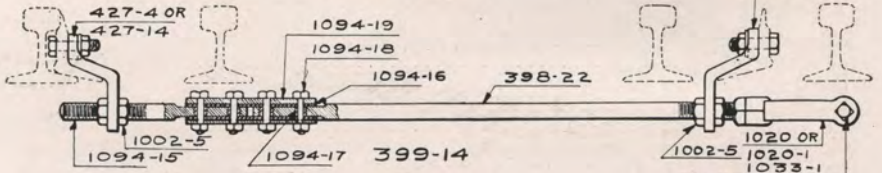
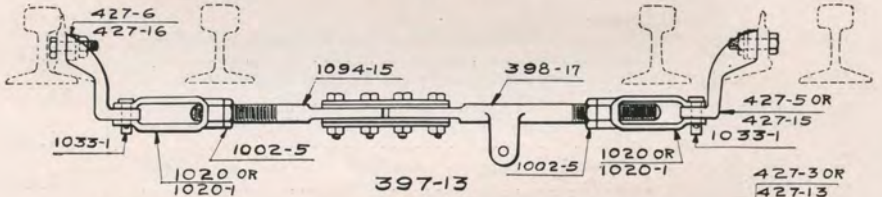
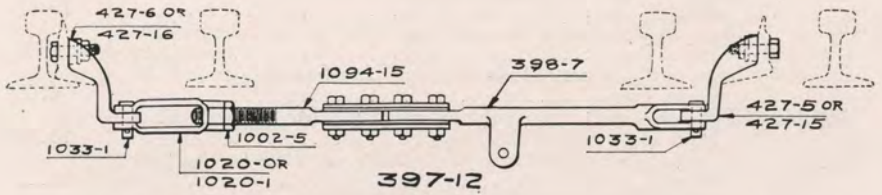
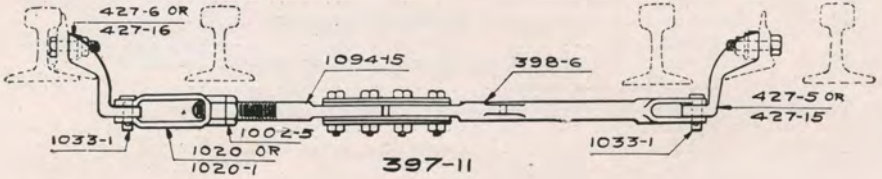


FRONT RODS FOR MOVABLE POINT FROGS

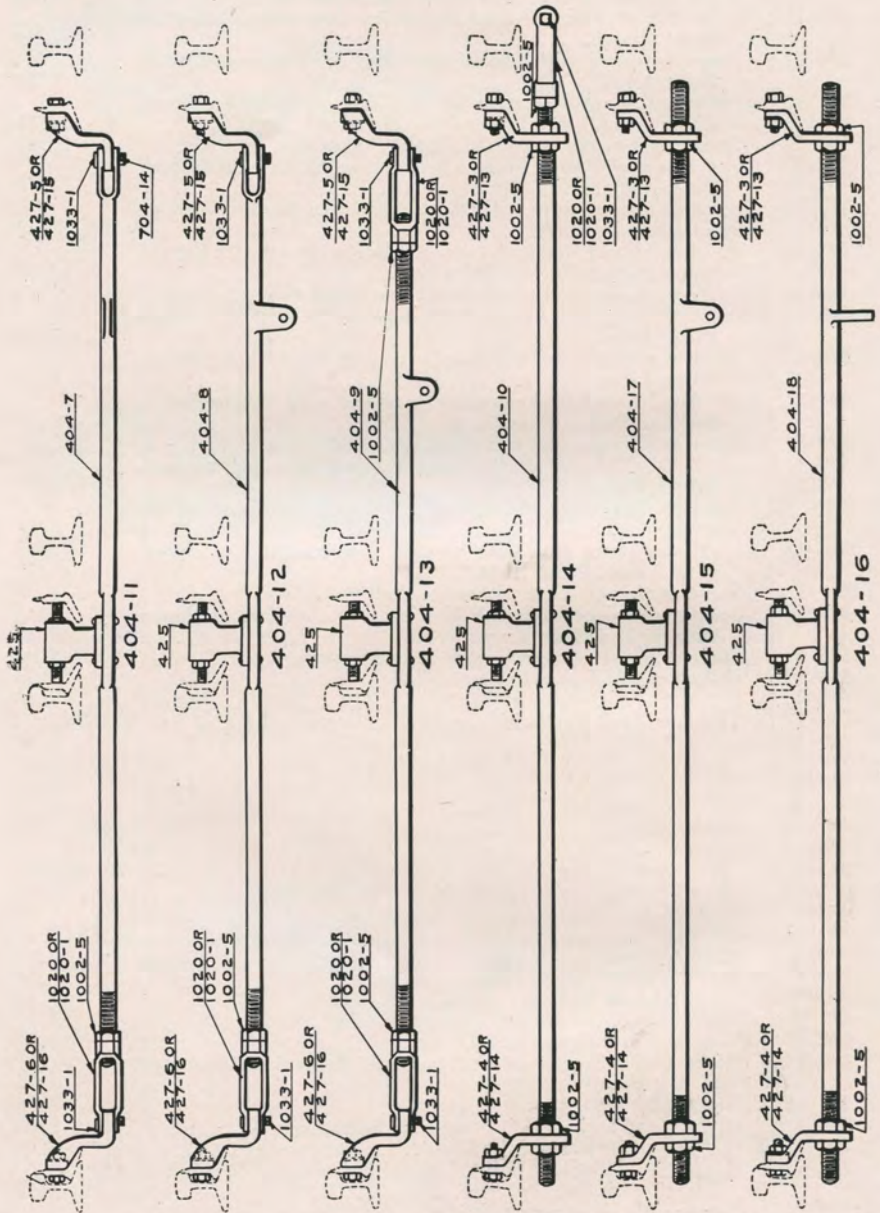
Trade No.	DESCRIPTION	List Price
401-11	Front Rod with Lateral Lug complete as shown with Forged Screw Jaw and Switch Point Lugs.	\$10.40
401-31	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	10.08
402-1	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.00
402-21	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	4.68
401-12	Front Rod with Vertical Lug complete as shown with Forged Screw Jaw and Switch Point Lugs.	10.40
401-32	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	10.08
402-2	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.00
402-22	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	4.68
401-13	Front Rod with Lug complete as shown with Forged Screw Jaws and Switch Point Lugs.	10.89
401-33	Same as above except with Malleable Screw Jaws and Switch Point Lugs.	10.25
402-3	Same as above with Forged Screw Jaw but without Switch Point Lugs.	5.49
402-23	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	5.17
402-14	Front Rod complete as shown with Forged Screw Jaw and Switch Point Lugs.	14.34
402-34	Same as above except with Malleable Screw Jaw and Switch Point Lugs.	14.02
402-4	Same as above with Forged Screw Jaw but without Switch Point Lugs.	4.18
402-24	Same as above with Malleable Screw Jaw but without Switch Point Lugs.	3.86
402-15	Front Rod with Vertical Lug complete as shown with Switch Point Lugs.	14.38
402-5	Same as above except without Switch Point Lugs.	4.22
402-16	Front Rod with Vertical Lugs complete as shown with Switch Point Lugs.	17.09
402-6	Same as above except without Switch Point Lugs.	6.93
402-7	Front Rod with Lateral Lug and Solid Jaws.	3.74
402-8	“ “ “ Vertical “ “ “ “	3.74
402-9	Threaded Rod with Lug.	3.19
402-10	“ “ “ “ “ “ “ “	2.31
402-25	“ “ with Lug for Jaw.	3.50
402-26	“ “ “ “ Rod.	6.21
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter Pin.	.11
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pins, per C.	.90
1020	R. S. A. Screw Jaw Forged.	.86
1020-1	Screw Jaw, Malleable Iron.	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nuts, $\frac{3}{4}$ " thick.	.18
427-5	Right Hand Switch Point Lug with Bolts.	2.70
427-6	Same as above except Left Hand.	2.70
427-15	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points.	2.74
427-16	Same as above except Left Hand.	2.74
427-3	Right Hand Switch Point Lug with Bolts.	5.06
427-4	Same as above except Left Hand.	5.06
427-13	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points.	5.10
427-14	Same as above except Left Hand.	5.10

FRONT RODS FOR MOVABLE POINT FROGS

(Insulated)



FRONT RODS FOR DOUBLE SLIP SWITCHES FOR ONE LOCK ROD





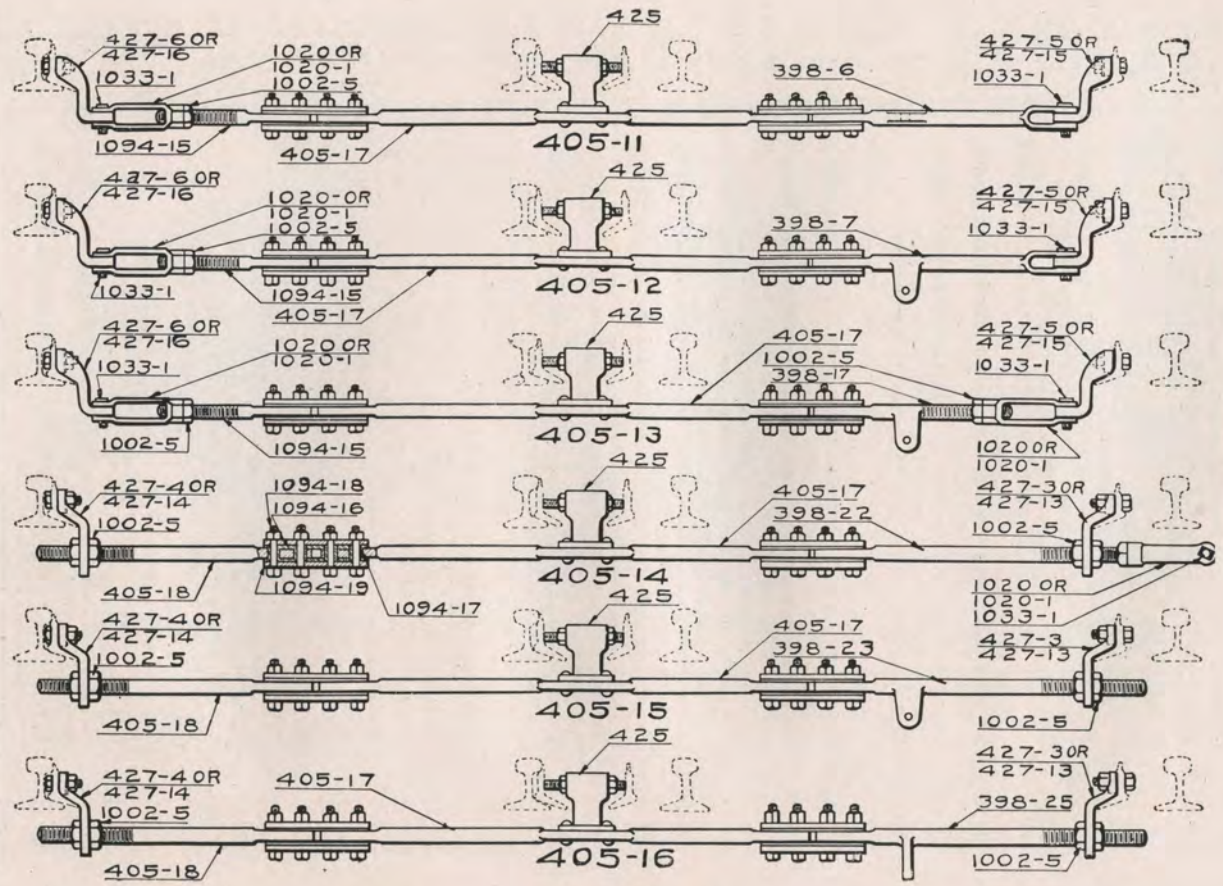
FRONT RODS FOR DOUBLE SLIP SWITCHES FOR ONE LOCK ROD

Trade No.	DESCRIPTION	List Price
404-11	Front Rod with Lateral Lug complete as shown with Forged Screw Jaw, Switch Point Lugs and Point Separator	\$16.84
404-31	Same as above except with Malleable Screw Jaw	16.52
404-1	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator	8.69
404-21	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator	8.37
404-12	Front Rod with Vertical Lug complete as shown with Forged Screw Jaw, Switch Point Lugs and Point Separator	16.84
404-32	Same as above except with Malleable Screw Jaw	16.52
404-2	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator	8.69
404-22	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator	8.37
404-13	Front Rod with Vertical Lug complete as shown with Forged Screw Jaws, Switch Point Lugs and Point Separator	16.30
404-33	Same as above except with Malleable Screw Jaws	15.66
404-3	“ “ “ with Forged Screw Jaws but without Switch Point Lugs or Point Separator	8.15
404-23	Same as above with Malleable Screw Jaws but without Switch Point Lugs or Point Separator	7.51
404-14	Front Rod complete as shown with Forged Screw Jaw, Switch Point Lugs and Point Separator	20.47
404-34	Same as above except with Malleable Screw Jaw	20.15
404-4	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator	7.56
404-24	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator	7.24
404-15	Front Rod with Vertical Lug complete as shown with Switch Point Lugs and Point Separator	19.77
404-5	Same as above except without Switch Point Lugs and Point Separator	6.86
404-16	Front Rod with Vertical Lug complete as shown with Switch Point Lugs and Point Separator	22.48
404-6	Same as above except without Switch Point Lugs or Point Separator	9.57
404-7	Rod with Lateral Lug and Solid Jaw	7.43
404-8	“ “ Vertical “ “ “ “	7.43
404-9	Threaded Rod with Vertical Lug for Jaw	5.85
404-10	“ “ Only	5.69
404-17	“ “ with Vertical Lug for Jaw	6.14
404-18	“ “ “ “ “ Rod	8.85
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter . . . . .	.11
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pin for above, per C. . . . .	.90
1020	R. S. A. Screw Jaw Forging . . . . .	.86
1020-1	Screw Jaw, Malleable Iron . . . . .	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick. . . . .	.18
427-5	Right Hand Switch Point Lug with Bolts	2.70
427-6	Same as above except Left Hand	2.70
427-15	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points	2.74
427-16	Same as above except Left Hand	2.74
427-3	Right Hand Switch Point Lug with Bolts	5.06
427-4	Same as above except Left Hand	5.06
427-13	R. H. Switch Point Lug with Bolts for Reinforced Switch Point	5.10
427-14	Same as above except Left Hand	5.10
425	Point Separator complete with Bolts for fastening Malleable Bracket	2.75
425-1	Same as above except Forged Bracket	3.50



FRONT RODS FOR DOUBLE SLIP SWITCHES FOR ONE LOCK ROD

(Insulated)



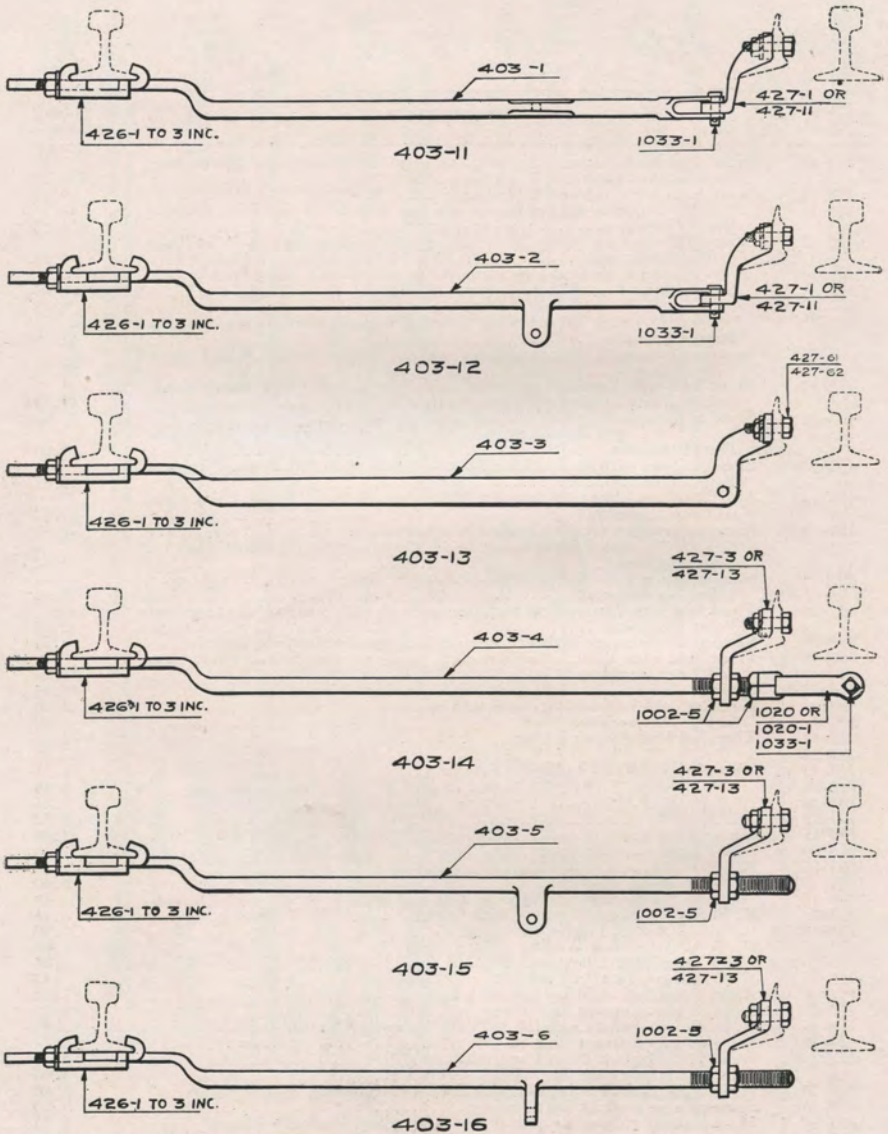


FRONT RODS FOR DOUBLE SLIP SWITCHES FOR ONE LOCK ROD

(Insulated)

Trade No.	DESCRIPTION	List Price
405-11	Front Rod with Lateral Lug complete as shown with Forged Screw Jaw, Switch Point Lugs and Point Separator.....	\$19.65
405-31	Same as above except with Malleable Screw Jaw.....	19.33
405-1	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator.....	11.50
405-21	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator.....	11.18
405-12	Front Rod with Vertical Lug complete as shown with Forged Screw Jaw, Switch Point Lugs and Point Separators.....	19.65
405-32	Same as above except with Malleable Screw Jaw.....	19.33
405-2	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator.....	11.50
402-22	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator.....	11.18
405-13	Front Rod with Vertical Lug complete as shown with Forged Screw Jaws, Switch Point Lugs and Point Separator.....	19.11
405-33	Same as above except with Malleable Screw Jaws.....	18.47
405-3	“ “ “ with Forged Screw Jaws but without Switch Point Lugs or Point Separator.....	10.96
405-23	Same as above with Malleable Screw Jaws but without Switch Point Lugs or Point Separator.....	10.32
405-14	Front Rod complete as shown with Forged Screw Jaws, Switch Point Lugs and Point Separator.....	22.85
405-34	Same as above except with Malleable Screw Jaw.....	22.53
405-4	“ “ “ with Forged Screw Jaw but without Switch Point Lugs or Point Separator.....	9.94
405-24	Same as above with Malleable Screw Jaw but without Switch Point Lugs or Point Separator.....	9.62
405-15	Front Rod with Vertical Lug complete as shown with Switch Point Lugs and Point Separator.....	22.15
405-5	Same as above except without Switch Point Lugs or Point Separator.....	9.24
405-16	Front Rod with Vertical Lug complete as shown with Switch Point Lugs and Point Separator.....	24.86
405-6	Same as above except without Switch Point Lugs or Point Separator.....	11.95
398-6	Half Rod with Lateral Lug and Solid Jaw.....	3.60
398-7	“ “ “ Vertical “ “ “.....	3.60
398-17	Threaded Half Rod with Lug.....	2.02
398-22	“ “ “ “ “ “.....	1.30
398-23	Threaded Half Rod with Lug for Jaw.....	4.75
398-25	“ “ “ “ “ “ Rod.....	4.46
405-18	“ “ Rod.....	1.25
1094-15	Center Rod.....	1.12
405-17	Splice Plate.....	2.00
1094-19	Fibre.....	.36
1094-16	“ Bushing, per C.....	.18
1094-17	“ “ “ “ “ “.....	5.40
1094-18	5/8" x 2 1/2" Square Head Machine Bolt and Nut.....	.11
1033-1	R. S. A. Jaw Pin, 7/8" x 2 1/2" with Cotter.....	.11
704-14	3/8" x 1 1/2" Cotter Pin for above, per C.....	.90
1020	R. S. A. Screw Jaw Forging.....	.86
1020-1	Screw Jaw, Malleable Iron.....	.54
1002-5	1 1/4" Hexagon Nut, 3/4" thick.....	.18
427-5	Right Hand Switch Point Lug with Bolts.....	2.70
427-6	Same as above except Left Hand.....	2.70
427-15	R. H. Switch Point Lug with Bolts for Reinforced Switch Point.....	2.74
427-16	Same as above except Left Hand.....	2.74
427-3	Right Hand Switch Point Lug with Bolts.....	5.06
427-4	Same as above except Left Hand.....	5.06
427-13	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points.....	5.10
427-14	Same as above except Left Hand.....	5.10
425	Point Separator complete with Bolts for fastening, Malleable Bracket.....	2.75
425-1	Same as above except with Forged Bracket.....	3.50

FRONT RODS FOR DERAIL



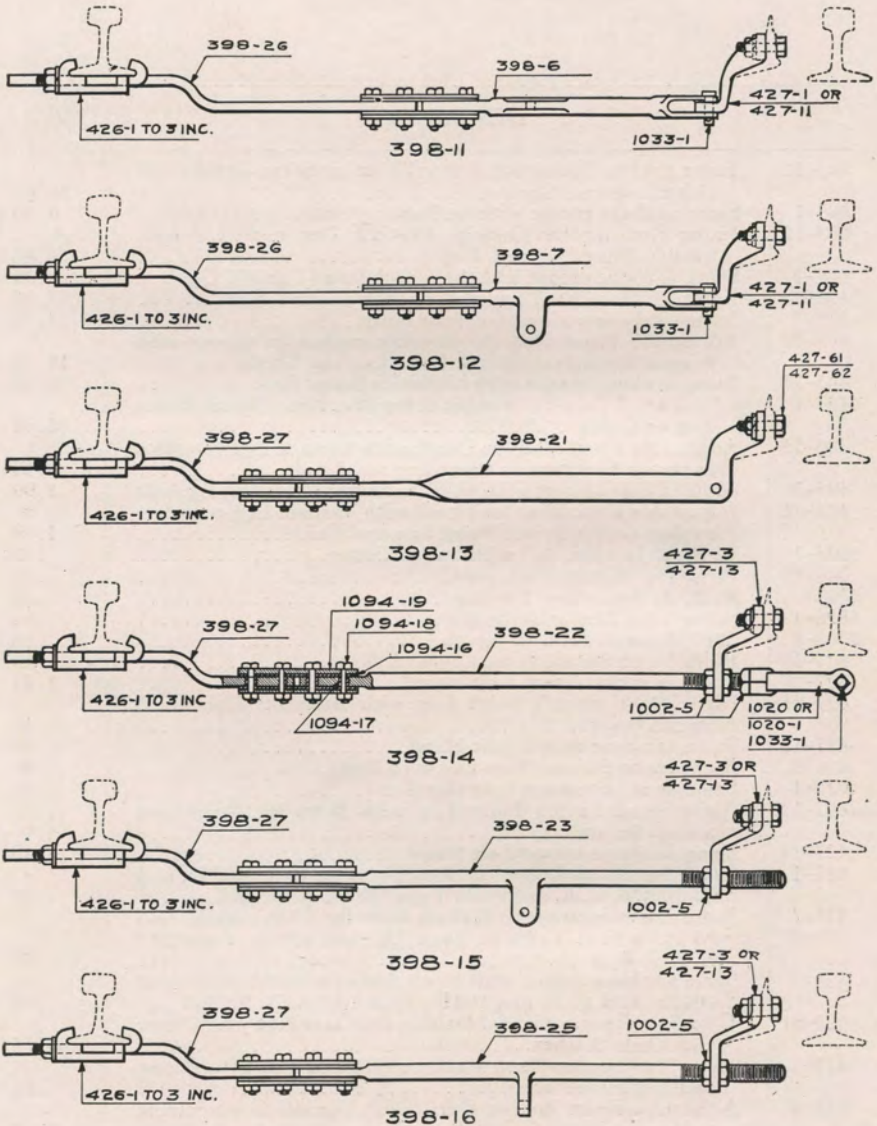


FRONT RODS FOR DERAIL

Trade No.	DESCRIPTION	List Price
403-11	Front Rod for Derail with Lateral Lug complete with Switch Point Lug and Guide.....	\$6.66
403-1	Same as above except without Switch Point Lug and Guide..	4.36
403-12	Front Rod for Derail with Vertical Lug complete with Switch Point Lug and Guide.....	6.66
403-2	Same as above except without Switch Point Lug and Guide..	4.36
403-13	Front Rod for Derail complete as shown with Guide.....	15.34
403-3	Same as above without Guide or Bolts.....	14.19
403-14	Adjustable Front Rod for Derail complete as shown with Forged Screw Jaw, Switch Point Lug and Guide.....	10.60
403-24	Same as above except with Malleable Screw Jaw.....	10.28
403-4	“ “ “ without Screw Jaw, Nuts, Switch Point, Lug or Guide.....	3.34
403-15	Adjustable Front Rod for Derail with Vertical Lug complete as shown with Switch Point Lug and Guide.....	9.28
403-5	Same as above except without Nuts, Switch Point Lug or Guide	2.99
403-16	Adjustable Front Rod for Derail with Vertical Lug complete as shown with Switch Point Lug and Guide.....	11.99
1033-1	R. S. A. Jaw Pin, $\frac{3}{8}$" x $2\frac{1}{4}$" with Cotter.....	.11
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pins, per C.....	.90
1020	R. S. A. Screw Jaw Forging.....	.86
1020-1	Screw Jaw, Malleable Iron.....	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick.....	.18
427-1	Right Hand Switch Point Lug with Bolts.....	1.43
427-2	Same as above except Left Hand.....	1.43
427-11	Right Hand Switch Point Lug with Bolts for Reinforced Switch Point.....	1.47
427-12	Same as above except Left Hand.....	1.47
427-3	Right Hand Switch Point Lug with Bolts.....	5.06
427-4	Same as above except Left Hand.....	5.06
427-13	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points.....	5.10
427-14	Same as above except Left Hand.....	5.10
426-1	Guide for Derail Rod with Hook Bolts for 60 lb., 65 lb. and 70 lb. A. S. C. E. and 90 lb. Type "B" A. R. A. Rail.....	.85
426-2	Same as above except with Hook Bolts for 75 lb., 80 lb. and 85 lb. A. S. C. E. 90 lb. Type "A" and 100 lb. Type "B" A. R. A. Rail.....	.85
426-3	Same as above except with Hook Bolts for 90 lb., 95 lb. and 100 lb. A. S. C. E. and 100 lb. Type "A" A. R. A. Rail....	.85
427-61	$\frac{3}{4}$ " x $2\frac{1}{2}$ " Square Head Machine Bolt and Nut with Cotter and Lock Washer.....	.14
427-62	$\frac{3}{4}$ " x $3\frac{1}{2}$ " Square Head Machine Bolt and Nut with Cotter and Lock Washer.....	.16
403-6	Adjustable Front Rod for Derail with Vertical Lug complete as shown without Switch Point Lug or Guide.....	5.70

FRONT RODS FOR DERAILS

(Insulated)



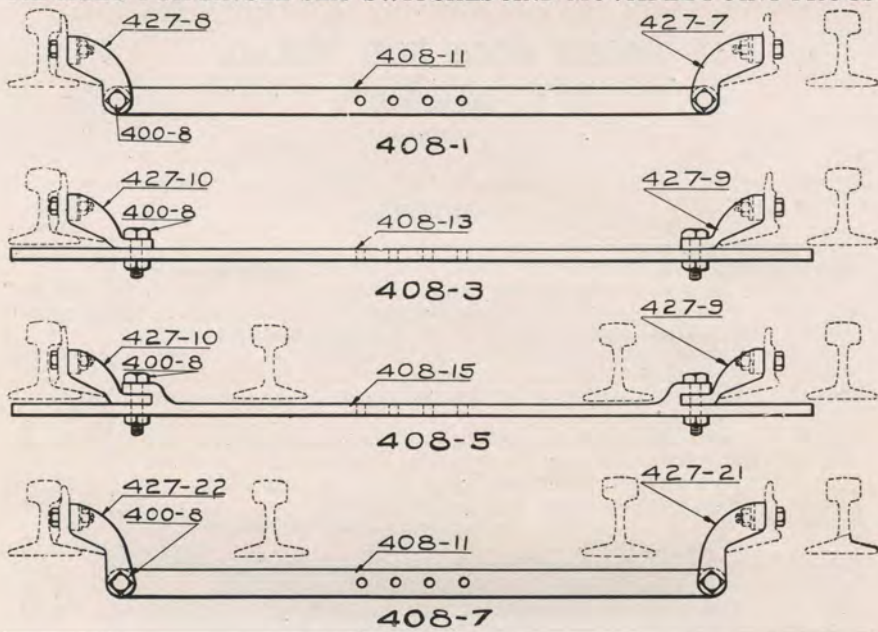


FRONT RODS FOR DERAIL

(Insulated)

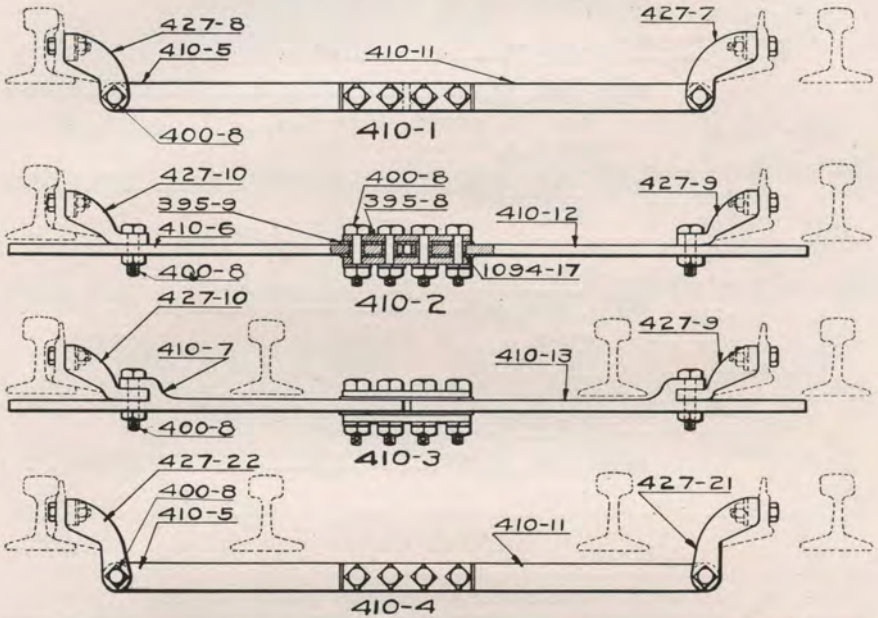
Trade No.	DESCRIPTION	List Price
398-11	Insulated Front Rod for Derail with Lateral Lug complete as shown with Switch Point Lug and Guide.	\$8.87
398-1	Same as above except without Switch Point Lug or Guide.	6.57
398-12	Insulated Front Rod for Derail with Vertical Lug complete as shown with Switch Point Lug and Guide.	8.87
398-2	Same as above except without Switch Point Lug or Guide.	6.57
398-13	Insulated Front Rod for Derail complete as shown without Guide:	17.81
398-3	Same as above except without Guide or Bolts.	16.66
398-14	Adjustable Insulated Front Rod for Derail complete as shown with Forged Screw Jaw, Switch Point Lug and Guide.	11.40
398-24	Same as above except with Malleable Screw Jaw.	11.08
398-4	“ “ “ without Screw Jaw, Nuts, Switch Point Lug or Guide.	3.96
398-15	Adjustable Insulated Front Rod for Derail with Vertical Lug complete as shown with Switch Point Lug and Guide.	10.70
398-5	Same as above except without Nuts, Switch Point Lug or Guide	4.41
398-16	Adjustable Insulated Front Rod for Derail with Vertical Lug complete as shown with Switch Point Lug and Guide.	13.41
398-10	Same as above except without Nuts, Switch Point Lug or Guide	7.12
398-6	Half Rod with Lateral Lug.	3.60
398-7	“ “ “ Vertical “	3.60
398-21	Combination Half Rod and Switch Point.	14.00
398-22	Threaded Half Rod.	1.30
398-23	“ “ “ with Vertical Lug for Jaw.	1.75
398-25	“ “ “ “ “ Rod.	4.46
398-26	Half Rod Flat Stub End.	1.10
398-27	“ “ “ “ “ . . . . .	.90
1094-19	Splice Plate. . . . .	.36
1094-16	Fibre “ . . . . .	.18
1094-17	“ Bushing, per C.	5.40
1094-18	$\frac{5}{8}$ " x $2\frac{1}{2}$ " Square Head Machine Bolts and Nuts. . . . .	.11
1033-1	R. S. A. Jaw Pin, $\frac{7}{8}$ " x $2\frac{1}{4}$ " with Cotter. . . . .	.11
704-14	$\frac{3}{8}$ " x $1\frac{1}{2}$ " Cotter Pins, per C. . . . .	.90
1020	R. S. A. Screw Jaw Forging. . . . .	.86
1020-1	Screw Jaw, Malleable Iron. . . . .	.54
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick. . . . .	.18
427-1	Right Hand Switch Point Lug with Bolts.	1.43
427-2	Same as above except Left Hand.	1.43
427-11	Right Hand Switch Point Lug with Bolts for Reinforced Points	1.47
427-12	Same as above except Left Hand.	1.47
427-3	Right Hand Switch Point Lug with Bolts.	5.06
427-4	Same as above except Left Hand.	5.06
427-13	Right Hand Switch Point Lug with Bolts for Reinforced Switch Points.	5.10
427-14	Same as above except Left Hand.	5.10
426-1	Guide for Derail Rod for 60 lb., 65 lb. and 70 lb. A. S. C. E. Rail and 90 lb. Type "A" A. R. A. Rail. . . . .	.85
426-2	Same as above except for 75 lb., 80 lb., 85 lb. A. S. C. E. and 90 lb. Type "A" and 100 lb. Type "B" A. R. A. Rail. . . . .	.85
426-3	Same as above except for 90 lb., 95 lb. and 100 lb. A. S. C. E. and 100 lb. Type "A" A. R. A. Rails. . . . .	.85

TIE RODS FOR SINGLE SLIP SWITCHES AND MOVABLE POINT FROGS



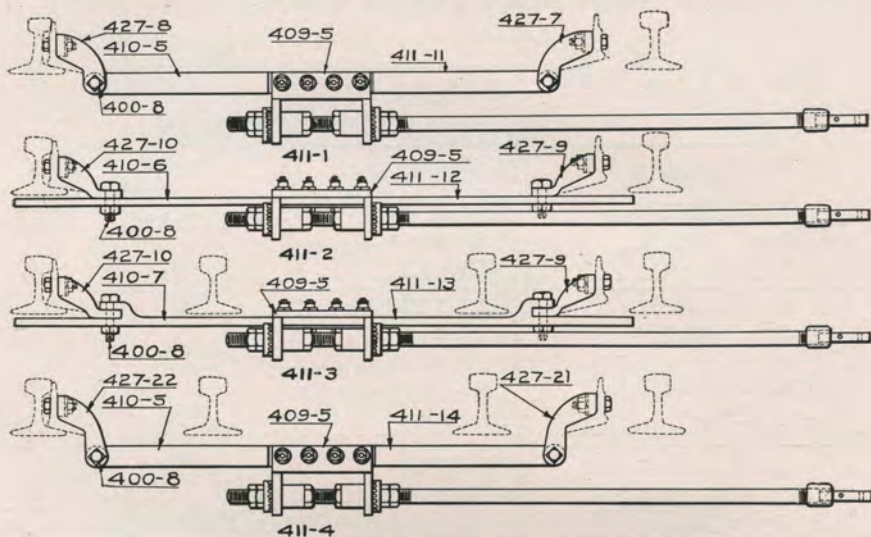
Trade No.	DESCRIPTION	List Price
408-1	Tie Rod for Single Slip Switches complete as shown with Switch Point Lugs drilled for Switch Throw Rod Adjustment	\$8.50
408-2	Same as above except not drilled for Switch Throw Adjustment	8.35
408-11	Tie Rod Only drilled for Switch Adjustment.....	1.75
408-12	Same as above but not drilled for Adjustment.....	1.60
408-3	Tie Rod for Slip Switch or Movable Point Frogs drilled for Switch Throw Rod Adjustment.....	7.60
408-4	Same as above except not drilled for Adjustment.....	7.45
408-13	Tie Rod Only drilled for Switch Adjustment.....	1.75
408-14	“ “ “ not drilled for Switch Adjustment.....	1.60
408-5	“ “ “ for Slip Switches or Movable Point Frogs complete as shown with Switch Point Lugs drilled for Switch Throw Rod Adjustment.....	8.50
408-6	Same as above except not drilled for Adjustment.....	8.35
408-15	Tie Rod Only drilled for Adjustment.....	2.65
408-16	“ “ “ not drilled for Adjustment.....	2.50
408-7	“ “ “ for Movable Point Frogs complete as shown with Switch Point Lugs drilled for Switch Throw Rod Adjustment.....	8.50
408-8	Same as above except not drilled for Adjustment.....	8.35
427-7	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod.....	3.19
427-8	Same as above except Left Hand.....	3.19
427-9	Right Hand Switch Point Lug with Bolts for fastening to Switch Points and Bolt for Tie Rod.....	2.75
427-10	Same as above except Left Hand.....	2.75
427-21	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod.....	3.19
427-22	Same as above except Left Hand.....	3.19
400-8	$\frac{5}{8}$ " x 2 $\frac{1}{2}$ " Square Head Machine Bolt and Nut with Cotter Pin and Lock Washer.....	.18

INSULATED TIE RODS FOR SINGLE SLIP AND MOVABLE POINT FROGS



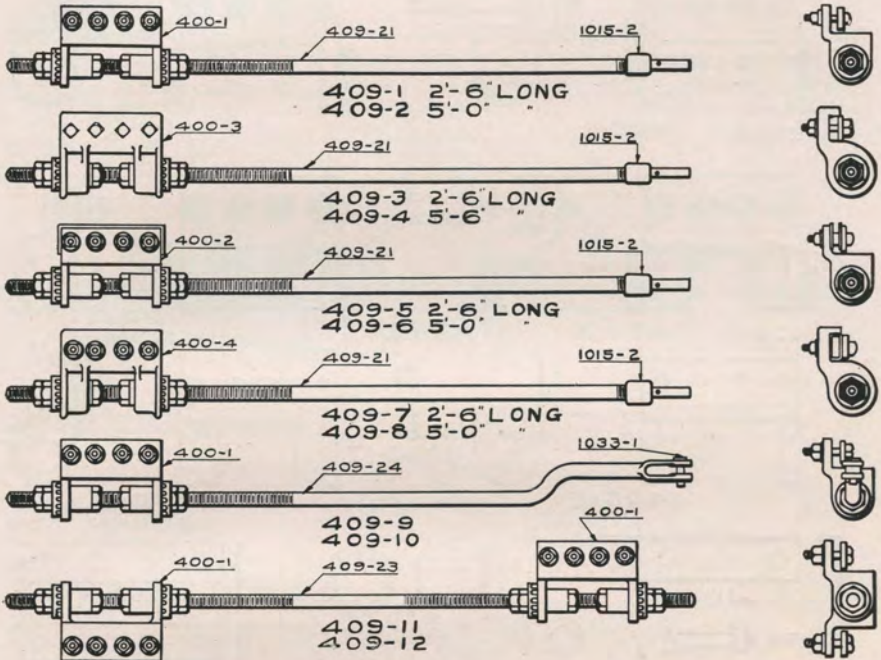
Trade No.	DESCRIPTION	List Price
410-1	Insulated Tie Rod for Single Slip Switches complete as shown with Switch Point Lugs	\$10.70
410-11	Same as above except without Switch Point Lugs	4.32
410-2	Insulated Tie Rod for Slip Switches or Movable Point Frogs complete as shown with Switch Point Lugs	9.82
410-12	Same as above except without Switch Point Lugs	4.32
410-3	R. S. A. Insulated Tie Rod for Slip Switches or Movable Point Frogs complete as shown with Switch Point Lugs	10.72
410-13	Same as above except without " " " "	5.22
410-4	Insulated Tie Rod for Movable Point Frogs complete as shown with Switch Point Lugs	10.70
410-5	Half Rod for 410-11 .....	.90
410-6	" " " 410-12 .....	.90
410-7	" " " 410-13	1.35
395-8	Splice Plate .....	.40
395-9	Fibre " .....	.20
1094-17	" Bushing, per C.	5.40
400-8	$\frac{5}{8}$ " x $3\frac{1}{2}$ " Square Head Machine Bolt and Nut with Cotter Pin and Lock Nut .....	.18
427-7	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod	3.19
427-8	Same as above except Left Hand	3.19
427-9	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod	2.75
427-10	Same as above except Left Hand	2.75
427-21	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod	3.19
427-22	Same as above except Left Hand	3.19

INSULATED TIE RODS WITH SWITCH THROW RODS



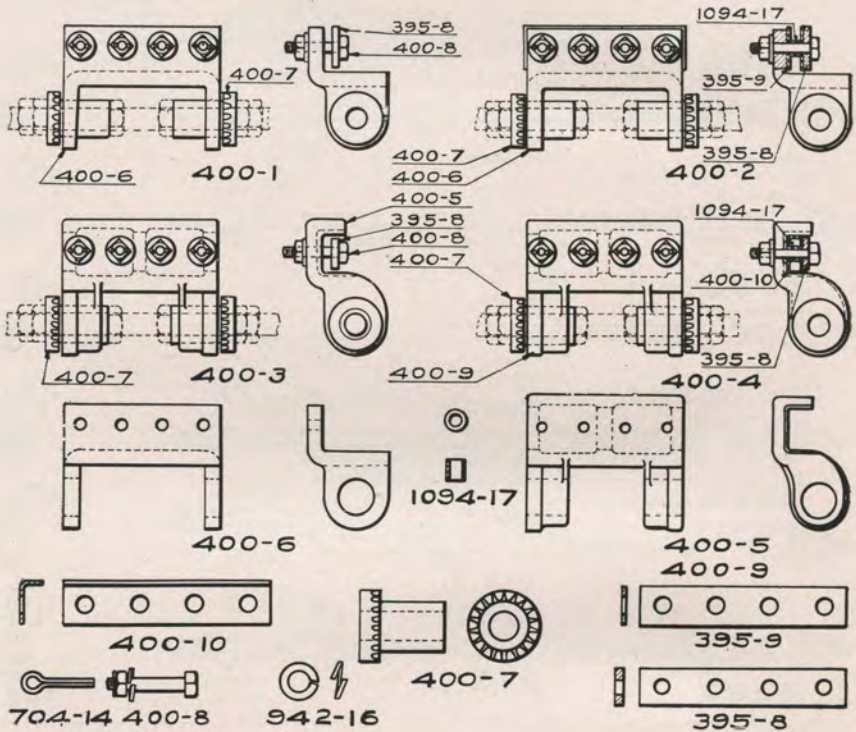
Trade No.	DESCRIPTION	List Price
411-1	Insulated Tie Rod complete as shown with Switch Point Lugs, Forged Switch Adjustment and 5' Throw Rod.....	\$17.64
411-11	Same as above without Switch Point Lugs.....	11.26
411-2	Insulated Tie Rod complete as shown with Switch Point Lugs, Forged Switch Adjustment and 5' Throw Rod.....	16.76
411-12	Same as above except without Switch Point Lugs.....	11.26
411-3	Insulated Tie Rod complete as shown with Switch Point Lugs, Forged Switch Adjustment and 5' Throw Rod.....	17.66
411-13	Same as above without Switch Point Lugs.....	12.16
411-4	Insulated Tie Rod complete as shown with Switch Point Lugs, Forged Switch Adjustment and 5' Throw Rod.....	17.64
411-14	Same as above without Switch Point Lugs.....	11.26
	When Cast Switch Adjustments are wanted, deduct from above prices.....	1.75
	When 2' 6" Throw Rod is required, deduct from above prices.....	.40
410-5	Half Rod for 411-1, 411-4, 411-11 and 411-14.....	.90
410-6	" " " 411-2 and 411-12.....	.90
410-7	" " " 411-3 " 411-13.....	1.35
409-5	Throw Rod, 2' 6" long with Insulation and Forged Adjustment	9.10
409-6	Same as above except 5' long.....	9.40
409-7	Throw Rod 2' 6" long with Insulation and Cast Adjustment..	6.98
409-8	Same as above except 5' Throw Rod.....	7.39
427-7	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod.....	3.19
427-8	Same as above except Left Hand.....	3.19
427-9	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod.....	2.75
427-10	Same as above except Left Hand.....	2.75
427-21	Right Hand Switch Point Lug with Bolts for fastening to Switch Point and Bolt for Tie Rod.....	3.19
427-22	Same as above except Left Hand.....	3.19
400-8	5/8" x 3 1/2" Square Head Machine Bolt and Nut with Cotter Pin and Lock Washer.....	.18

THROW RODS FOR SWITCHES



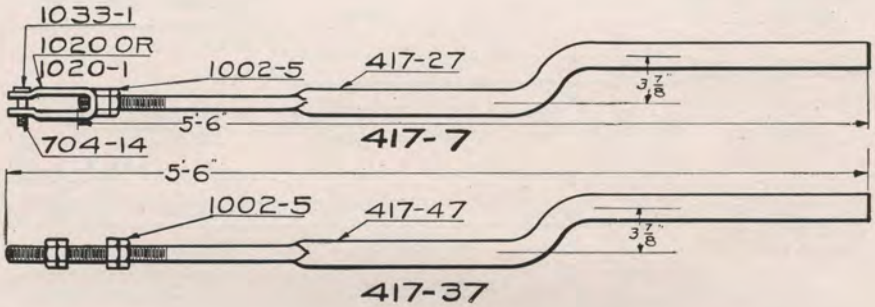
Trade No.	DESCRIPTION	List Price
409-1	Throw Rod 2' 6" long complete as shown with Forged Switch Adjustment	\$8.46
409-2	Same as above except Throw Rod 5' long	8.76
409-3	Throw Rod 2' 6" long complete as shown with Cast Switch Adjustment	6.54
409-4	Same as above except Throw Rod 5' long	6.84
409-5	Insulated Throw Rod 2' 6" long complete as shown with Forged Switch Adjustment	9.10
409-6	Same as above except Throw Rod 5' long	9.40
409-7	Insulated Throw Rod 2' 6" long complete as shown with Cast Switch Adjustment	6.98
409-8	Same as above except Throw Rod 5' long	7.39
409-9	Solid Jaw End Switch Adjustment complete as shown with Forged Adjustment	10.94
409-10	Same as above except with Cast Adjustment	9.02
409-11	Double Switch Adjustment complete as shown with Forged Adjustment	16.47
409-12	Same as above except with Cast Adjustment	12.63
409-21	Throw Rod 2' 6" long with Coupling	1.70
409-22	5' long with Coupling	2.00
409-23	1 3/4" Threaded Rod for Double Switch Adjustment	2.95
409-24	1 3/4" " " with Solid Jaw End and Jaw Pin for Double Switch Adjustment	4.18
1002-5	1 3/4" Hexagon Nut, 3/4" thick	.18
1015-2	1" x 2 3/4" Coupling	.27
1033-1	R. S. A. Jaw Pin, 3/8" x 2 3/4" with Cotter	.11
704-14	3/8" x 1 1/2" Cotter Pin for above, per C.	.90
400-1	Forged Switch Adjustment, not Insulated	5.68
400-2	Same as above except Insulated	6.32
400-3	Cast Switch Adjustment, not Insulated	3.76
400-4	Same as above except Insulated	4.50

SWITCH AND DERAIL ADJUSTMENTS



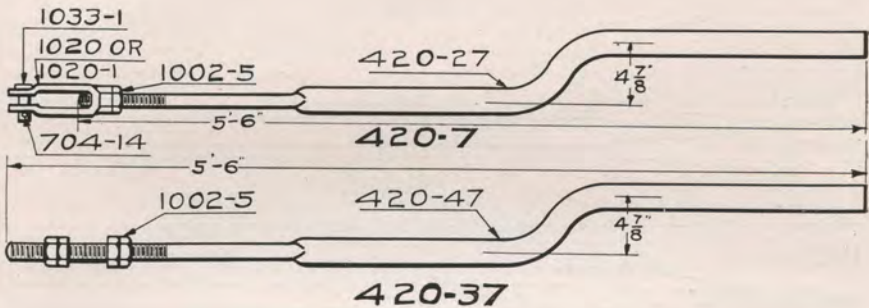
Trade No.	DESCRIPTION	List Price
400-1	Switch and Derail Adjustment complete as shown (Forged Bracket) no Nuts or Rod.	\$5.68
400-2	Same as above except Insulated.	6.32
400-3	Switch and Derail Adjustment complete as shown (Cast Bracket) no Nuts or Rod.	3.76
400-4	Same as above except Insulated.	4.50
400-6	Forged Bracket Only.	3.68
400-5	Cast Bracket for Non-Insulated Adjustment.	1.76
400-9	“ “ “ Insulated Adjustment.	1.76
400-7	Bushing for Bracket.	.44
400-8	$\frac{5}{8}$ " x $3\frac{1}{2}$ " Square Head Machine Bolt and Nut with Lock Washer and Cotter.	.18
942-16	$\frac{5}{8}$ " Lock Washer.	.02
704-14	$\frac{3}{16}$ " x $1\frac{1}{2}$ " Cotter Pin, per C.	.90
395-8	Splice Plate for Insulated Adjustment.	.40
395-9	Fibre “ “ Forged Bracket.	.20
400-10	“ “ “ Cast “	.25
1094-17	“ Bushing, per C.	5.40

LOCK RODS



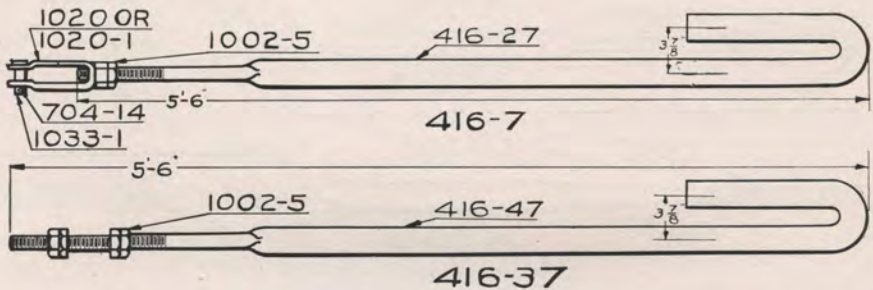
Trade No.	DESCRIPTION	List Price
417-1	Lock Rod complete, 2' 6" long with Forged Screw Jaw, Nut and Jaw Pin . . .	\$4.02
417-11	Same as above except with Malleable Screw Jaw	3.60
417-21	" " without Screw Jaw, Jaw Pins or Hexagon Nut	2.87
417-2	Lock Rod complete, 3' long with Forged Screw Jaw, Nut and Jaw Pin	4.17
417-12	Same as above except with Malleable Screw Jaw	3.85
417-22	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.02
417-3	Lock Rod complete, 3' 6" long with Forged Screw Jaw, Nut and Jaw Pin . . .	4.32
417-13	Same as above except with Malleable Screw Jaw	4.00
417-23	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.17
417-4	Lock Rod complete, 4' long with Forged Screw Jaw, Nut and Jaw Pin	4.47
417-14	Same as above except with Malleable Screw Jaw	4.15
417-24	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.32
417-5	Lock Rod complete, 4' 6" long with Forged Screw Jaw, Nut and Jaw Pin . . .	4.62
417-15	Same as above except with Malleable Screw Jaw	4.30
417-25	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.47
417-6	Lock Rod complete, 5' long with Forged Screw Jaw, Nut and Jaw Pin	4.77
417-16	Same as above except with Malleable Screw Jaw	4.45
417-26	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.62
417-7	Lock Rod complete as shown 5' 6" long with Forged Screw Jaw, Nut and Jaw Pin	4.92
417-17	Same as above except with Malleable Screw Jaw	4.60
417-27	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.77
417-31	Lock Rod Threaded with Four Hexagon Nuts complete, 2' 6" long	3.37
417-41	Same as above without Hexagon Nuts	2.65
417-32	Lock Rod Threaded complete with Four Hexagon Nuts, 3' long	3.52
417-42	Same as above without Hexagon Nuts	2.80
417-33	Lock Rod Threaded complete with Four Hexagon Nuts, 3' 6" long	3.67
417-43	Same as above without Hexagon Nuts	2.95
417-34	Lock Rod Threaded complete with Four Hexagon Nuts, 4' long	3.82
417-44	Same as above without Hexagon Nuts	3.10
417-35	Lock Rod Threaded complete with Four Hexagon Nuts, 4' 6" long	3.97
417-45	Same as above without Hexagon Nuts	3.25
417-36	Lock Rod Threaded complete with Four Hexagon Nuts, 5' long	4.12
417-46	Same as above except without Hexagon Nuts	3.40
417-37	Lock Rod complete as shown 5' 6" long	4.27
417-47	Same as above without Hexagon Nuts	3.55
1020	R. S. A. Screw Jaw, Forging . . . . .	.86
1020-1	Screw Jaw, Malleable Iron . . . . .	.54
1002-5	1 1/4" Hexagon Nut, 3/8" thick . . . . .	.18
1033-1	R. S. A. Jaw Pin, 3/8" x 2 1/4" with Cotter . . . . .	.11
704-14	3/8" x 1 1/2" Cotter Pins for above, per C. . . . .	.90

LOCK RODS



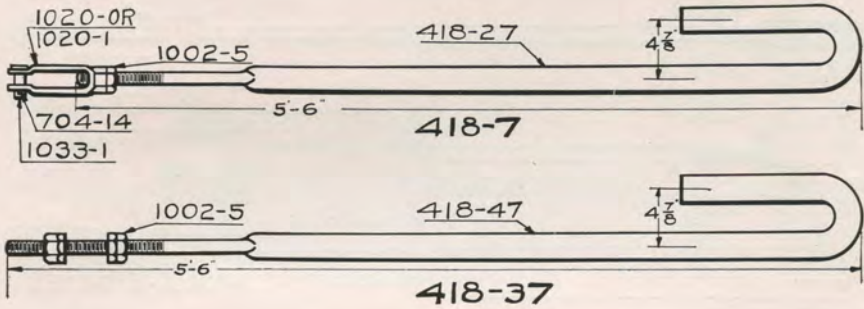
Trade No.	DESCRIPTION	List Price
420-1	Lock Rod complete, 2' 6" long with Forged Screw Jaw, Nut and Jaw Pin ..	\$3.94
420-11	Same as above except Malleable Iron Screw Jaw	3.62
420-21	" " without Screw Jaw, Jaw Pin or Hexagon Nut	2.79
420-2	Lock Rod complete, 3' long with Forged Screw Jaw, Nut and Jaw Pin. . .	4.09
420-12	Same as above with Malleable Screw Jaw	3.77
420-22	" " without Screw Jaw, Jaw Pin or Hexagon Nut	2.94
420-3	Lock Rod complete, 3' 6" long with Forged Screw Jaw, Nut and Jaw Pin..	4.24
420-13	Same as above except with Malleable Screw Jaw	3.92
420-23	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.09
420-4	Lock Rod complete, 4' long with Forged Screw Jaw, Nut and Jaw Pin. . .	4.39
420-14	Same as above except with Malleable Screw Jaw	4.07
420-24	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.24
420-5	Lock Rod complete, 4' 6" long, with Forged Screw Jaw, Nut and Jaw Pin..	4.54
420-15	Same as above with Malleable Screw Jaw	4.22
420-25	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.39
420-6	Lock Rod complete, 5' long, with Forged Screw Jaw, Nut and Jaw Pin. . .	4.69
420-16	Same as above except with Malleable Screw Jaw	4.37
420-26	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.54
420-7	Lock Rod complete, as shown, 5' 6" long, with Forged Screw Jaw, Nut and Jaw Pin	4.84
420-17	Same as above except with Malleable Screw Jaw	4.52
420-27	" " without Screw Jaw, Jaw Pin or Hexagon Nut	3.69
420-31	Lock Rod Threaded complete with Four Hexagon Nuts 2' 6" long	3.51
420-41	Same as above without Hexagon Nuts	2.79
420-32	Lock Rod Threaded complete with Four Hexagon Nuts, 3' long	3.66
420-42	Same as above without Hexagon Nuts	2.94
420-33	Lock Rod Threaded complete with Four Hexagon Nuts, 3' 6" long	3.81
420-43	Same as above without Hexagon Nuts	3.09
420-34	Lock Rod Threaded complete with Four Hexagon Nuts, 4' long	3.96
420-44	Same as above without Hexagon Nuts	3.24
420-35	Lock Rod Threaded complete with Four Hexagon Nuts, 4' 6" long	4.11
420-45	Same as above except without Hexagon Nuts	3.39
420-36	Lock Rod Threaded complete with Four Hexagon Nuts, 5' long	4.26
420-46	Same as above except without Hexagon Nuts	3.54
420-37	Lock Rod complete as shown, 5' 6" long	4.41
420-47	Same as above except without Hexagon Nuts	3.69
1020	R. S. A. Screw Jaw Forging .....	.86
1020-1	Screw Jaw, Malleable Iron .....	.54
1002-5	1 1/4" Hexagon Nuts, 3/4" thick .....	.18
1033-1	R. S. A. Jaw Pin, 3/8" x 2 1/2" .....	.11
704-14	5/16" x 1 1/2" Cotter Pin for above, per C. ....	.90

LOCK RODS



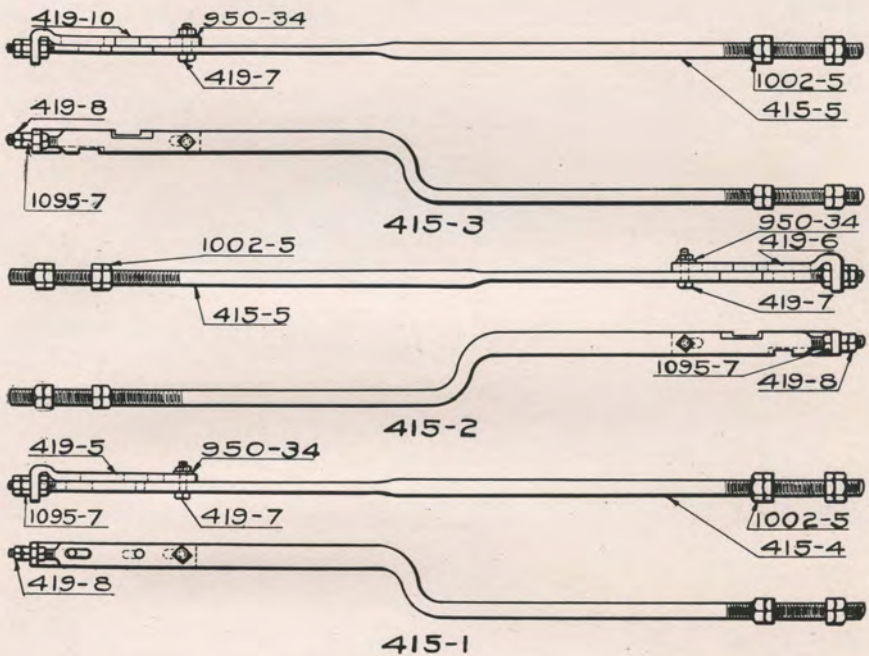
Trade No.	DESCRIPTION	List Price
416-1	Lock Rod complete, 2' 6" long with Forged Screw Jaw, Nut and Jaw Pin	\$5. 19
416-11	Same as above except with Malleable Screw Jaw	4. 87
416-21	“ “ “ without Screw Jaw, Jaw Pin or Hexagon Nut	4. 04
416-2	Lock Rod complete, 3' long with Forged Screw Jaw, Nut and Jaw Pin	5. 34
416-12	Same as above except with Malleable Screw Jaw	5. 02
416-22	“ “ “ without Screw Jaw or Hexagon Nut	4. 19
416-3	Lock Rod complete, 3' 6" long with Forged Screw Jaw, Nut and Jaw Pin	5. 49
416-13	Same as above except with Malleable Screw Jaw	5. 17
416-23	“ “ “ without Screw Jaw, Jaw Pin or Hexagon Nut	4. 34
416-4	Lock Rod complete, 4' long with Forged Screw Jaw, Nut and Jaw Pin	5. 64
416-14	Same as above except with Malleable Screw Jaw	5. 32
416-24	“ “ “ without Screw Jaw, Jaw Pin or Hexagon Nut	4. 49
416-5	Lock Rod complete, 4' 6" long with Forged Screw Jaw	5. 79
416-15	Same as above except with Malleable Screw Jaw	5. 47
416-25	“ “ “ without Screw Jaw or Hexagon Nut	4. 64
416-6	Lock Rod complete, 5' long with Forged Screw Jaw, Nut and Jaw Pin	5. 84
416-16	Same as above except with Malleable Screw Jaw	5. 62
416-26	“ “ “ without Screw Jaw, Jaw Pin or Hexagon Nut	4. 79
416-7	Lock Rod complete as shown, 5' 6" long with Forged Screw Jaw, Nut and Jaw Pin	5. 99
416-17	Same as above except with Malleable Screw Jaw	5. 77
416-27	“ “ “ without Screw Jaw, Jaw Pin or Hexagon Nut	4. 94
416-31	Lock Rod Threaded complete with Four Hexagon Nuts, 2' 6" long	4. 50
416-41	Same as above except without Hexagon Nuts	3. 78
416-32	Lock Rod Threaded complete with Four Hexagon Nuts, 3' long	4. 65
416-42	Same as above except without Hexagon Nuts	3. 93
416-33	Lock Rod Threaded complete with Four Hexagon Nuts, 3' 6" long	4. 80
416-43	Same as above except without Hexagon Nuts	4. 08
416-34	Lock Rod Threaded complete with Four Hexagon Nuts, 4' long	4. 95
416-44	Same as above except without Hexagon Nuts	4. 23
416-35	Lock Rod Threaded complete with Four Hexagon Nuts, 4' 6" long	5. 10
416-45	Same as above without Hexagon Nuts	4. 38
416-36	Lock Rod Threaded complete with Four Hexagon Nuts, 5' long	5. 25
416-46	Same as above without Hexagon Nuts	4. 53
416-37	Lock Rod complete as shown, 5' 6" long	5. 40
416-47	Same as above without Hexagon Nuts	4. 68
1020	R. S. A. Screw Jaw, Forging . . . . .	. 86
1020-1	Screw Jaw, Malleable Iron . . . . .	. 54
1002-5	1 1/4" Hexagon Nut, 3/4" thick . . . . .	. 18
1033-1	R. S. A. Jaw Pin, 3/8" x 2 1/4" with Cotter . . . . .	. 11
704-14	3/16" x 1 1/2" Cotter Pins for above, per C. . . . .	. 90

LOCK RODS



Trade No.	DESCRIPTION	List Price
418-1	Lock Rod complete, 2' 6" long with Forged Screw Jaw, Nut and Jaw Pin..	\$5.47
418-11	Same as above except with Malleable Screw Jaw.....	5.15
418-21	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.32
418-2	Lock Rod complete, 3' long with Forged Screw Jaw, Nut and Jaw Pin....	5.53
418-12	Same as above except with Malleable Screw Jaw.....	5.21
418-22	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.38
418-3	Lock Rod complete, 3' 6" long with Forged Screw Jaw, Nut and Jaw Pin..	5.59
418-13	Same as above except with Malleable Screw Jaw.....	5.27
418-23	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.44
418-4	Lock Rod complete, 4' long with Forged Screw Jaw, Nut and Jaw Pin....	5.65
418-14	Same as above except with Malleable Screw Jaw.....	5.33
418-24	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.50
418-5	Lock Rod complete, 4' 6" long with Forged Screw Jaw, Nut and Jaw Pin..	5.71
418-15	Same as above except with Malleable Screw Jaw.....	5.39
418-25	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.56
418-6	Lock Rod complete, 5' long with Forged Screw Jaw, Nut and Jaw Pin....	5.77
418-16	Same as above except with Malleable Screw Jaw.....	5.45
418-26	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.62
418-7	Lock Rod complete as shown, 5' 6" long, with Forged Screw Jaw, Nut and Jaw Pin.....	5.83
418-17	Same as above except with Malleable Screw Jaw.....	5.51
418-27	" " without Screw Jaw, Jaw Pin or Hexagon Nut.....	4.68
418-31	Lock Rod Threaded complete with Four Hexagon Nuts, 2' 6" long.....	5.04
418-41	Same as above without Hexagon Nuts.....	4.32
418-32	Lock Rod Threaded complete with Four Hexagon Nuts, 3' long.....	5.10
418-42	Same as above without Hexagon Nuts.....	4.38
418-33	Lock Rod Threaded complete with Four Hexagon Nuts, 3' 6" long.....	5.16
418-43	Same as above without Hexagon Nuts.....	4.44
418-34	Lock Rod Threaded complete with Four Hexagon Nuts, 4' long.....	5.22
418-44	Same as above without Hexagon Nuts.....	4.50
418-35	Lock Rod Threaded complete with Four Hexagon Nuts, 4' 6" long.....	5.28
418-45	Same as above without Hexagon Nuts.....	4.56
418-36	Lock Rod Threaded complete with Four Hexagon Nuts, 5' long.....	5.34
418-46	Same as above without Hexagon Nuts.....	4.62
418-37	Lock Rod complete as shown, 5' 6" long.....	5.40
418-47	Same as above without Hexagon Nuts.....	4.68
1020	R. S. A. Screw Jaw, Forging.....	.86
1020-1	Screw Jaw, Malleable Iron.....	.54
1002-5	1 3/4" Hexagon Nut, 3/4" thick.....	.18
1033-1	R. S. A. Jaw Pin, 7/8" x 2 1/4", with Cotter.....	.11
704-14	1/8" x 1 1/2" Cotter Pin for above, per C.....	.90

ADJUSTABLE LOCK RODS



Trade No.	DESCRIPTION	List Price
415-1	Adjustable Lock Rod for Facing Point Lock or Switch and Lock Movement, complete as shown.....	\$12.92
415-2	Right Hand Adjustable Lock Rod for Switch and Lock Movement, complete as shown.....	12.92
415-3	Same as above except Left Hand.....	12.92
415-4	Lock Rod Drilled and Threaded for 415-1.....	5.87
415-5	“ “ “ “ “ “ 415-2 and 415-3.....	5.87
419-5	Adjustable Lock Plate Drilled and Slotted for 415-1.....	4.35
419-6	“ “ “ “ “ “ Notched for 415-2.....	4.35
419-10	“ “ “ “ “ “ “ 415-3.....	4.35
419-7	$\frac{3}{4}$ " x $2\frac{3}{4}$ " Square Head Machine Bolt and Nut.....	.13
950-34	$\frac{3}{4}$ " Standard Iron Washer.....	.02
419-8	$\frac{3}{4}$ " " Hexagon Nut.....	.08
1002-5	$1\frac{1}{4}$ " Hexagon Nut, $\frac{3}{4}$ " thick.....	.18
1095-7	Adjusting Sleeve and Nut.....	1.65

1914

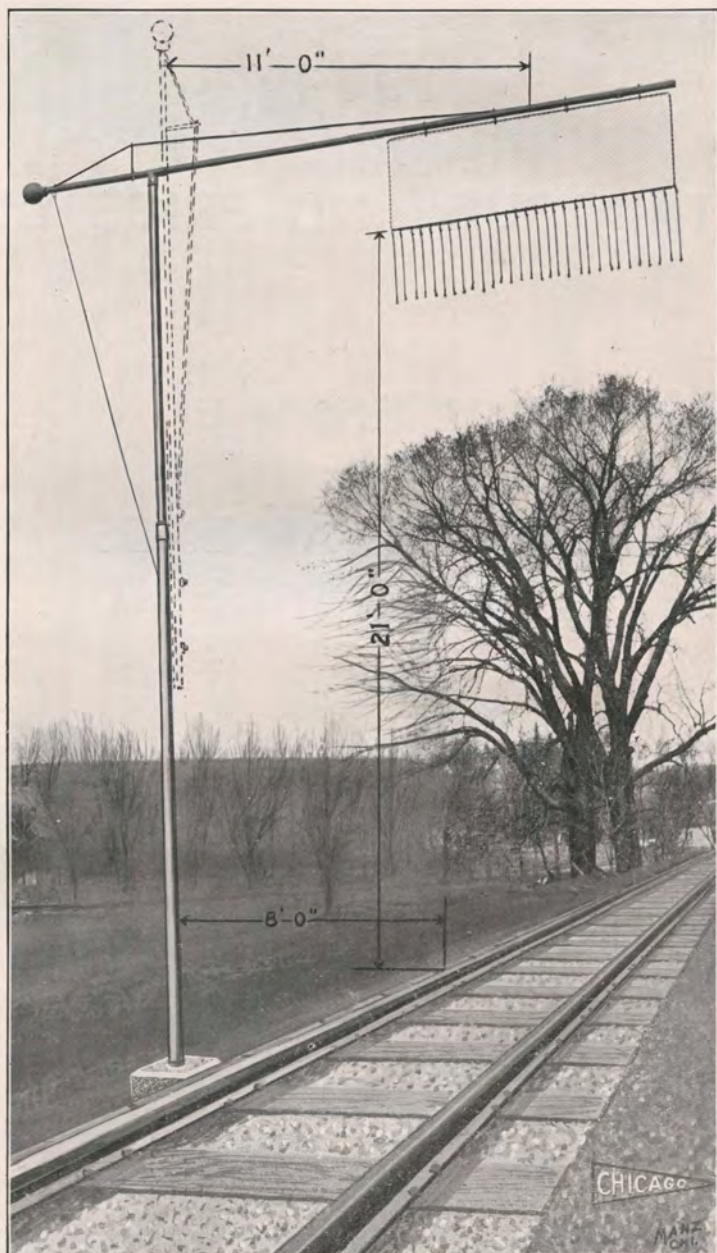
CATALOGUE AND PRICE LIST

SECTION U

BRIDGE WARNINGS

SINGLE TRACK BRIDGE WARNING SIGNAL

Style "A"



No. 301. Style "A" Single Track Bridge Warning Signal



SINGLE TRACK BRIDGE WARNING

Style "A"

This Bridge Warning is used at the approach to overhead obstructions. The Pole is of extra heavy steel pipe.

The Wire Screen is 8 feet long and 2 feet 8 inches deep and is made of extra heavy wire with one inch mesh manufactured on a heavy endless rim. The Screen serves to keep cords in position at all times regardless of weather conditions. Screen is hung on closed hook Bolts which allow the screen to be swung without danger of unhooking same. The cords are weatherproofed and are wired to screen and bottom of same is wound with marline to prevent fraying.

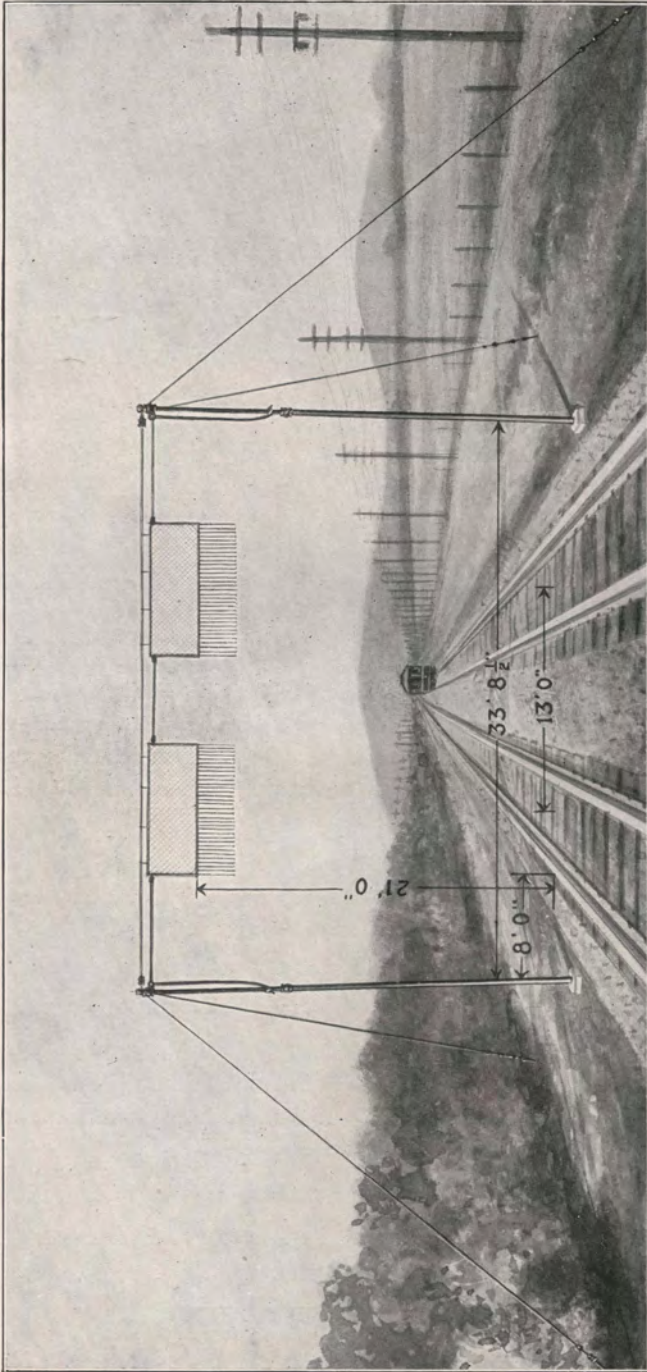
Screen is supported from the horizontal pipe which is counterweighted on one end thus allowing the screen to be tipped out of way of derrick cars, etc., or lowered for repairs when required as shown by dotted lines on illustration.

Pole and fittings on this Warning are interchangeable with Style "B" Warning and can be used as Double Track Warnings when second track is laid, by erecting one pole on opposite side.

Unless otherwise specified, Warning is furnished 21 feet from top of rail to bottom of screen and for location 8 feet from outside of rail to pole. Sufficient cord, wire and marline is furnished for 33 drop cords, each 24 inches to 36 inches long.

Repair parts or separate parts should be ordered by numbers shown on illustration.

Trade No.	DESCRIPTION	List Price
301	Style "A" Bridge Warning, complete as shown and described above, each.....	\$75.00



Style 'B' Double Track Bridge Warning No. 302



STYLE "B" DOUBLE TRACK BRIDGE WARNING

This Bridge Warning is made up of similar parts as used on our Style "A" Single Track Warning, with which all principal parts are interchangeable.

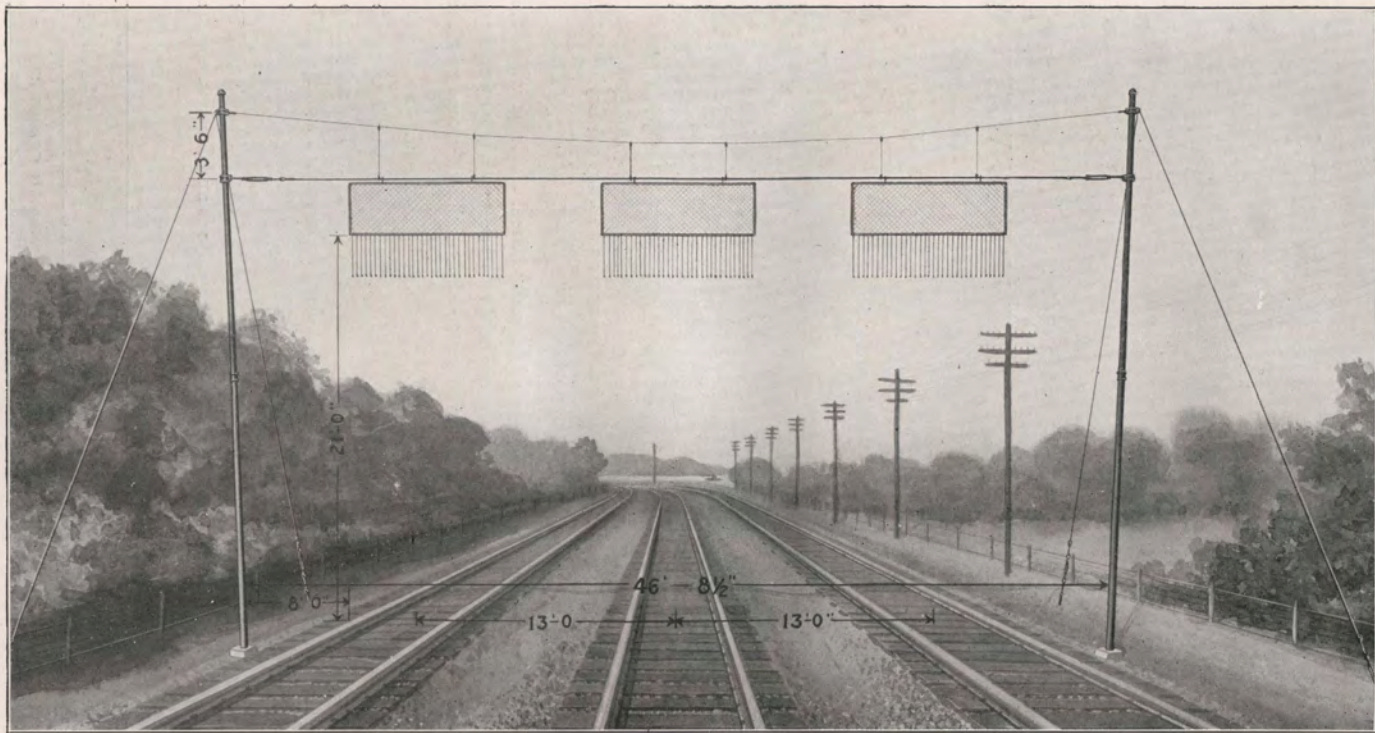
The Screens are supported on a heavy Galvanized Steel Cable on which they are hung with galvanized split links. Screens are held in place laterally by flexible galvanized wire rope the ends of which are left long to allow pulling Screens to either side without removing them from the supporting cable.

Each Pole is provided with two heavy solid steel guy rods and long turnbuckles which permit of correct adjustments and alignment of Signals. The anchor rods are especially heavy and are furnished with eye on one end for turnbuckle and anchor plate and nut on other end suitable for fastening to foundation.

Unless otherwise specified, these Signals are furnished as per Standard dimensions shown and with sufficient Cord, Cable, Standard Guy Rods and Screens, etc., to erect complete.

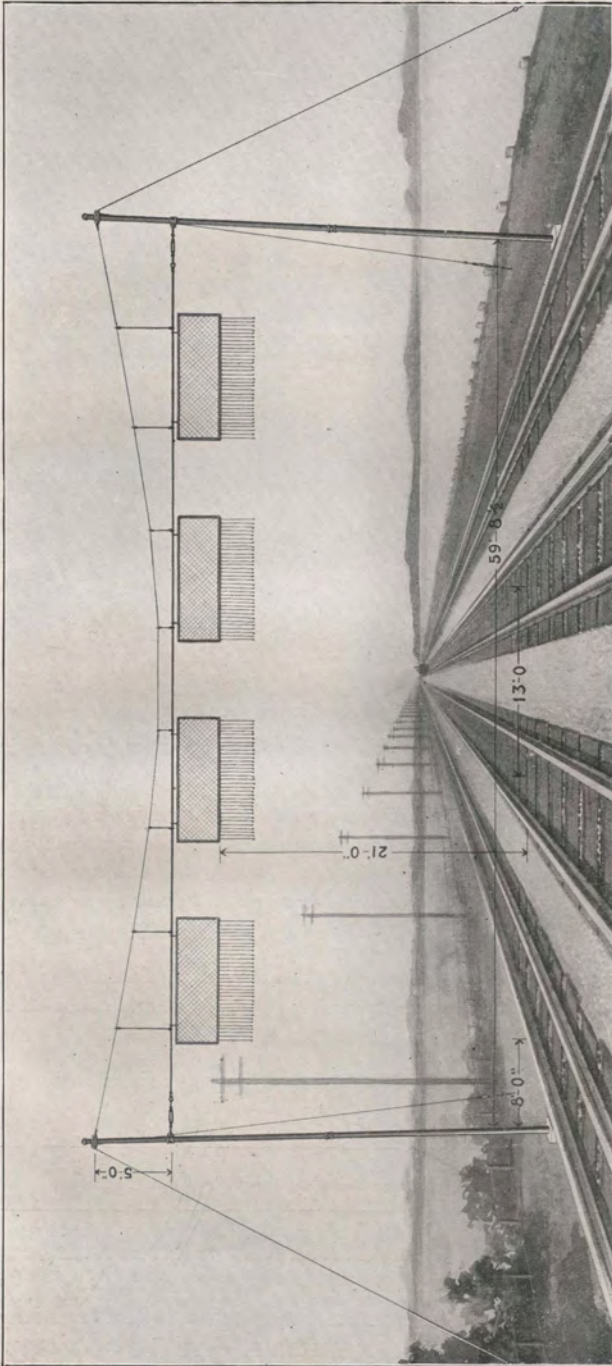
Trade No.	DESCRIPTION	List Price
302	Style "B" Double Track Bridge Warning, complete as shown and described, each.....	\$113.00

U-6



Style "C" Three Track Bridge Warning No. 303

CHICAGO
and
St. Louis
Steel
Signal
Co.



Style "C" Four Track Bridge Warning No. 304



STYLE "C" BRIDGE WARNINGS

Signals for Three, Four, Five and Six Tracks are constructed similarly to Style "B" Bridge Warning Signal except that proportionally heavier steel cables are used both to support and guide the Screens.

The Poles are heavier and longer to allow for the slack cable which supports the lower guiding cable. The Warnings have been thoroughly tested in practice for years and can be absolutely relied upon to stand up under the most severe weather conditions and to maintain a relative position between ends of cords and track under all weather conditions.

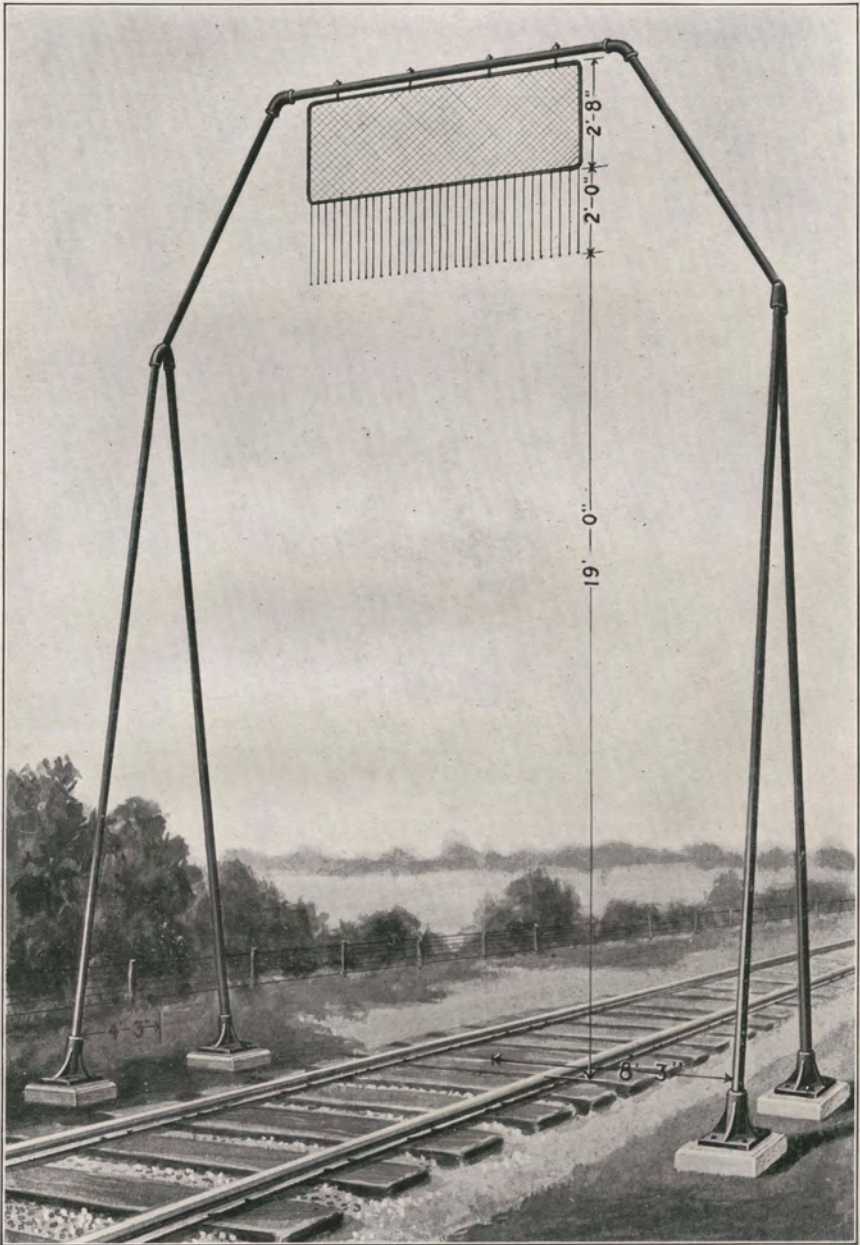
Unless otherwise specified, Warnings will be shipped per Standard dimensions shown on illustrations and with Standard Screens, Cables, Guys, and sufficient cord to allow the drop cords to be used up to 36 inches long each.

Repair or extra parts should be ordered as per catalogue numbers shown on illustrations.

Trade No.	DESCRIPTION	List Price
303	Style "C" Bridge Warning complete as shown for Three Tracks, each.....	\$166.00
304	Style "C" Bridge Warning complete as shown for Four Tracks, each.....	193.00
305	Style "C" Bridge Warning complete as shown for Five Tracks, each.....	217.00
306	Style "C" Bridge Warning complete as shown for Six Tracks, each.....	270.00

SINGLE TRACK BRIDGE WARNING

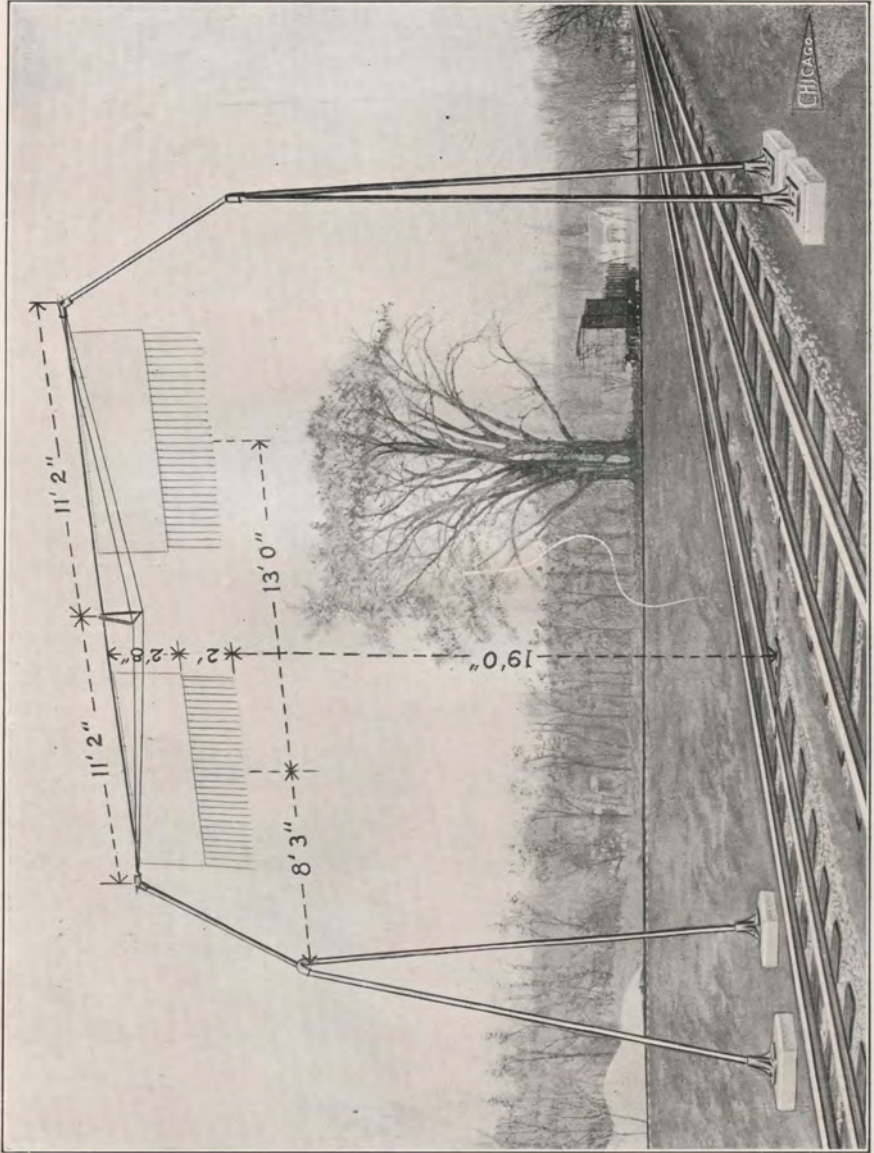
Style "D"



No. 311. Style "D" Single Track Bridge Warning

DOUBLE TRACK BRIDGE WARNING

Style "D"



Style "D" Double Track Bridge Warning No. 312



STYLE "D" BRIDGE WARNINGS

This type Bridge Warning is constructed especially rigid and strong. The Screens are hung directly on top supporting pipe by means of closed hook bolts. This allows the Screens to be swung out of way of derrick cars, etc., without removing them. The cords are usually furnished 2 feet long as shown but can be furnished any desired length. Warnings are completely assembled at the works before shipment and can be erected on the ground with very little labor. No pipe cutting or threading tools are required in the field for the erection of these Warnings. Each of the four supporting pipes is equipped with an angular base casting which is calked to pipe before shipment, and Warnings are shipped complete with anchor bolts for base castings, standard 1" wire mesh screens with endless rim, weatherproofed cord, all necessary bolts, etc.

Unless otherwise specified, Warnings will be shipped to Standard dimensions as shown on illustrations.

Trade No.	DESCRIPTION	List Price
311	Style "D" Single Track Bridge Warning complete as illustrated, each.....	.....
312	Style "D" Double Track Bridge Warning complete as illustrated, each.....	.....

1914

CATALOGUE AND PRICE LIST

SECTION X

MISCELLANEOUS

Freight House Trucks

Jacks

Wrenches

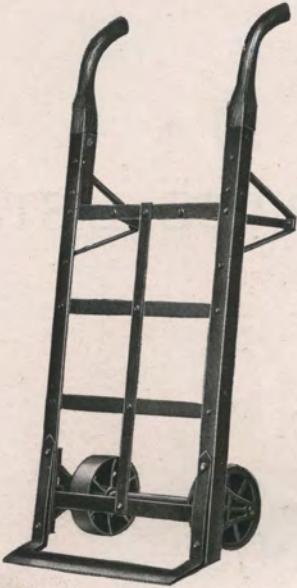
Vises

Anvils

Copying Presses

HERCULES STEEL TRUCKS

(Patented)



No. 14-1 and 14-2



No. 14-3 and 14-4



No. 14-5



No. 14-6 and 14-7



HERCULES STEEL TRUCKS

(Patented)

These Trucks have been in use several years for railway, steamship and general warehouse purposes. They have proven to be a grand success in strength, durability and easy running. "Hercules" Steel Trucks will give excellent satisfaction on heavy work where the ordinary wood frame truck fails, and the smaller sizes can also be used to good advantage on light work.

"Hercules" Steel Trucks are constructed of the very best materials. The entire frames and axles are made of steel and the wheels of Lake Superior Iron. The angular shapes used in the frames afford strength, combined with lightness. All parts are riveted and bolted together, which makes it impossible to rack the frames.

The Handles are made of first-class hickory, which makes them strong and pleasing to the hands of the operator. "Hercules" Steel Trucks are warranted against imperfections in material and workmanship and their make-up renders them practically indestructible.

Trade No.	DESCRIPTION						List Price
	Length	Width	Dia. Wheels	Dia. Axle	Wt.	Use	
14-1	4' 7"	21"	7½"	1½"	80 lb.	General Use . . .	\$12.50
14-2	5'	22"	8½"	1½"	90 lb.	Medium Heavy.	15.00
14-3	5' 5"	24"	10¾"	1½"	150 lb.	Heaviest Duty .	22.50
14-4	5' 7"	24"	10¾"	1½"	136 lb.	Large Work . . .	18.50
14-5	5' 7"	24"	10¾"	1½"	150 lb.	" " . . .	22.00

BARREL TRUCKS

	Length	Width at		Dia. Wheels	Dia. Axle	Wt.	Use	
		Nose	Handles					
14-6	5'	16"	25"	8½"	1½"	102 lb.	Ordinary Barrels	\$17.50
14-7	5' 7"	17"	25"	10¾"	1½"	144 lb.	Heavy Barrels	20.00

"CHICAGO" FREIGHT TRUCK



The Truck illustrated is provided with ball-bearing caster wheels in front. It will turn in its own length, and can be run on elevator or scales from any angle with great ease. As it requires but one man to operate, it can be readily seen that the saving in labor will soon pay for the Truck.

The platform is 3 feet by 6 feet, height 19 inches, capacity 6,000 pounds, 18 inch roller bearing wheels, 9 inch ball bearing casters. Weight, 370 pounds. A most efficient, economical and easily operated Truck for handling freight, and will quickly pay for itself in saving of labor.

Trade No.	DESCRIPTION	List Price
14-10	"Chicago" Warehouse Truck shown.....	\$50.00

We manufacture several other styles of Trucks. Prices and illustrations will be sent upon request.

COPYING PRESSES



These Presses are furnished with Wheel as shown or with Ball Levers. Only the very best materials are used in the manufacture of our Presses, and special attention is given to finish and ornamentation to make them neat and attractive.

Our Ball-and-socket joint connecting the Main Screw with Platen, has proven a grand success. It has reduced breakage to a minimum and given absolute satisfaction in every particular. All Plates are accurately planed to insure perfect copies.

Trade No.	DESCRIPTION	List Price
	FINISHED IN PLAIN BLACK	
8-4	Receives Book 10 x 12½ x 3⅛"	\$11.50
8-5	“ “ 10 x 15 x 3⅜"	13.00
8-6	“ “ 11 x 16 x 3⅞"	20.00
8-8	“ “ 12 x 18½ x 3⅞"	25.00
8-9	“ “ 14 x 18½ x 3⅞"	35.00
8-10	“ “ 15 x 20½ x 4¼"	40.00
8-11	“ “ 16 x 20½ x 4¼"	45.00
8-13	“ “ 18 x 22½ x 4⅜"	52.00
8-15	“ “ 20 x 24½ x 4½"	63.00
8-18	“ “ 20 x 30½ x 6⅜"	130.00
8-19	“ “ 24 x 30½ x 6⅜"	150.00

"VULCAN" LOCOMOTIVE JACK SCREWS



These Jacks are warranted, made from best materials, accurately machined by experienced workmen aided by special up-to-date machinery for their production. They are guaranteed to carry following loads:—

1 1/4" Screws.....10 Ton	2 1/4" Screws.....24 Ton
1 1/2" "12 "	2 1/2" "28 "
1 3/4" "16 "	3" "36 "
2" "20 "	

Trade No.	DESCRIPTION				List Price	Trade No.	DESCRIPTION				List Price
	Size	Height of Stand	Height Over All	Rise of Screw			Size	Height of Stand	Height Over All	Rise of Screw	
10-1	1 1/4"x4"	4"	6 1/2"	2 1/4"	\$2.90	10-35	2 1/4"x10"	10"	13 3/4"	6 3/4"	\$8.25
10-2	1 1/4"x6"	6"	8 1/2"	4 1/4"	3.10	10-36	2 1/4"x12"	12"	15 3/4"	8 3/4"	9.00
10-3	1 1/4"x8"	8"	10 1/2"	6 1/4"	3.40	10-37	2 1/4"x14"	14"	17 3/4"	10 3/4"	10.00
10-4	1 1/4"x10"	10"	12 1/2"	8 1/4"	3.80	10-38	2 1/4"x16"	16"	19 3/4"	12 3/4"	11.00
10-5	1 1/4"x12"	12"	14 1/2"	10 1/4"	4.20	10-39	2 1/4"x18"	18"	21 3/4"	14 3/4"	12.00
10-6	1 1/4"x14"	14"	16 1/2"	12 1/4"	4.60	10-40	2 1/4"x20"	20"	23 3/4"	16 3/4"	13.25
10-7	1 1/4"x4"	4"	6 3/4"	1 3/4"	3.25	10-41	2 1/4"x22"	22"	25 3/4"	18 3/4"	14.50
10-8	1 1/4"x5"	5"	7 3/4"	2 3/4"	3.50	10-42	2 1/4"x24"	24"	27 3/4"	20 3/4"	15.75
10-9	1 1/4"x6"	6"	8 3/4"	3 3/4"	3.75	10-43	2 1/4"x6 1/2"	6"	10"	2 1/4"	7.75
10-10	1 1/4"x8"	8"	10 3/4"	5 3/4"	4.25	10-44	2 1/4"x8 1/2"	8 1/2"	10 1/2"	2 3/4"	8.00
10-11	1 1/4"x10"	10"	12 3/4"	7 3/4"	4.75	10-45	2 1/4"x8"	8"	12"	4 1/4"	8.75
10-12	1 1/4"x12"	12"	14 3/4"	9 3/4"	5.25	10-46	2 1/4"x10"	10"	14"	6 1/4"	9.75
10-13	1 1/4"x14"	14"	16 3/4"	11 3/4"	6.00	10-47	2 1/4"x12"	12"	16"	8 3/4"	10.75
10-14	1 1/4"x16"	16"	18 3/4"	13 3/4"	6.75	10-48	2 1/4"x14"	14"	18"	10 3/4"	12.00
10-15	1 3/4"x6"	6"	9 1/4"	3 1/2"	4.50	10-49	2 1/4"x16"	16"	20"	12 3/4"	13.25
10-16	1 3/4"x8"	8"	11 1/4"	5 1/2"	5.00	10-50	2 1/4"x18"	18"	22"	14 3/4"	14.50
10-17	1 3/4"x10"	10"	13 1/4"	7 1/2"	5.75	10-51	2 1/4"x20"	20"	24"	16 3/4"	15.75
10-18	1 3/4"x12"	12"	15 1/4"	9 1/2"	6.25	10-52	2 1/4"x22"	22"	26"	18 3/4"	17.00
10-19	1 3/4"x14"	14"	17 1/4"	11 1/2"	6.75	10-53	2 1/4"x24"	24"	28"	20 3/4"	18.25
10-20	1 3/4"x16"	16"	19 1/4"	13 1/2"	7.50	10-54	2 1/4"x26"	26"	30"	22 3/4"	20.00
10-21	1 3/4"x18"	18"	21 1/4"	15 1/2"	8.50	10-55	2 1/4"x28"	28"	32"	24 3/4"	22.00
10-22	2x5"	5"	8 1/2"	2"	5.00	10-56	2 1/4"x30"	30"	34"	26 3/4"	24.00
10-23	2x6"	6"	9 1/2"	3"	5.25	10-57	2 1/4"x32"	32"	36"	28 3/4"	26.00
10-24	2x8"	8"	11 1/2"	5"	6.00	10-58	3x8"	8"	13"	3 1/2"	17.50
10-25	2x10"	10"	13 1/2"	7"	6.75	10-59	3x14"	14"	19"	9 1/2"	19.50
10-26	2x12"	12"	15 1/2"	9"	7.50	10-60	3x16"	16"	21"	11 1/2"	20.75
10-27	2x14"	14"	17 1/2"	11"	8.25	10-61	3x18"	18"	23"	13 1/2"	22.00
10-28	2x16"	16"	19 1/2"	13"	9.25	10-62	3x20"	20"	25"	15 1/2"	23.25
10-29	2x18"	18"	21 1/2"	15"	10.25	10-63	3x22"	22"	27"	17 1/2"	24.50
10-30	2x20"	20"	23 1/2"	17"	11.50	10-64	3x24"	24"	29"	19 1/2"	25.75
10-31	2x22"	22"	25 1/2"	19"	12.50	10-65	3x26"	26"	31"	21 1/2"	27.00
10-32	2x24"	24"	27 1/2"	21"	13.50	10-66	3x28"	28"	33"	23 1/2"	28.50
10-33	2 1/4"x6"	6"	9 3/4"	2 3/4"	7.00	10-67	3x30"	30"	35"	25 1/2"	30.00
10-34	2 1/4"x8"	8"	11 3/4"	4 3/4"	7.50	10-68	3x36"	36"	41"	31 1/2"	36.00

"VULCAN" BELL BASE RATCHET JACK SCREWS

This Jack has refined Wrought Iron Screw, Cast Iron Stand and Cap, and Steel Ratchet Pawl and Malleable Handle.



CAPACITY

2" Screw 24 Ton	2 3/4" Screws 36 Ton	
2 1/4" " 28 "	3" " 40 "	
2 1/2" " 32 "		

Trade No.	DESCRIPTION				List Price	Trade No.	DESCRIPTION				List Price
	Size	Height of Stand	Height Over All	Rise of Screw			Size	Height of Stand	Height Over All	Rise of Screw	
9-1	2x10"	6"	10"	3"	\$15.50	9-24	2 1/2 x 16"	10"	16"	6 1/4"	\$21.50
9-2	2x12"	8"	12 1/2"	5"	16.00	9-25	2 1/2 x 18"	12"	18"	8 1/4"	22.50
9-3	2x14"	10"	14 1/2"	7"	16.75	9-26	2 1/2 x 20"	14"	20"	10 1/4"	23.50
9-4	2x16"	12"	16 1/2"	9"	17.50	9-27	2 1/2 x 22"	16"	22"	12 1/4"	24.50
9-5	2x18"	14"	18 1/2"	11"	18.25	9-28	2 1/2 x 24"	18"	24"	14 1/4"	25.50
9-6	2x20"	16"	20 1/2"	13"	19.00	9-29	2 1/2 x 26"	20"	26"	16 1/4"	26.50
9-7	2x22"	18"	22 1/2"	15"	19.75	9-30	2 1/2 x 28"	22"	28"	18 1/4"	27.75
9-8	2x24"	20"	24 1/2"	17"	20.50	9-31	2 1/2 x 30"	24"	30"	20 1/4"	29.00
9-9	2x26"	22"	26 1/2"	19"	21.50	9-32	2 1/2 x 34"	28"	34"	24 1/4"	33.00
9-10	2x28"	24"	28 1/2"	21"	22.50	9-33	2 1/2 x 36"	30"	36"	26 1/4"	35.00
9-11	2x30"	26"	30 1/2"	23"	23.50	9-34	2 1/2 x 38"	32"	38"	28 1/4"	37.00
9-12	2 1/4 x 12"	8"	12 1/2"	4 3/4"	18.00	9-35	2 1/4 x 20"	14"	20"	10"	27.50
9-13	2 1/4 x 14"	10"	14 1/2"	6 3/4"	19.00	9-36	2 1/4 x 24"	18"	24"	14"	30.00
9-14	2 1/4 x 16"	12"	16 1/2"	8 3/4"	20.00	9-37	2 1/4 x 28"	22"	28"	18"	32.50
9-15	2 1/4 x 18"	14"	18 1/2"	10 3/4"	21.00	9-38	2 1/4 x 30"	24"	30"	20"	34.00
9-16	2 1/4 x 20"	15"	20 1/2"	12 3/4"	22.00	9-39	2 1/4 x 36"	30"	36"	26"	40.00
9-17	2 1/4 x 22"	18"	22 1/2"	14 3/4"	23.00	9-40	2 1/4 x 42"	36"	42"	32"	46.00
9-18	2 1/4 x 24"	20"	24 1/2"	16 3/4"	24.00	9-41	3x20"	14"	20"	9 1/2"	32.00
9-19	2 1/4 x 26"	22"	26 1/2"	18 3/4"	25.00	9-42	3x24"	18"	24"	13 1/2"	35.00
9-20	2 1/4 x 28"	24"	28 1/2"	20 3/4"	26.00	9-43	3x26"	20"	26"	15 1/2"	37.00
9-21	2 1/4 x 30"	26"	30 1/2"	22 3/4"	27.00	9-44	3x28"	22"	28"	17 1/2"	38.50
9-22	2 1/2 x 12"	6"	12"	2 1/4"	19.50	9-45	3x30"	24"	30"	19 1/2"	40.00
9-23	2 1/2 x 14"	8"	14"	4 1/4"	20.50	9-46	3x36"	30"	36"	25 1/2"	48.00

FRICTION AND SCREW JACKS



Jenne Friction Jack



"Vulcan" Track Jack

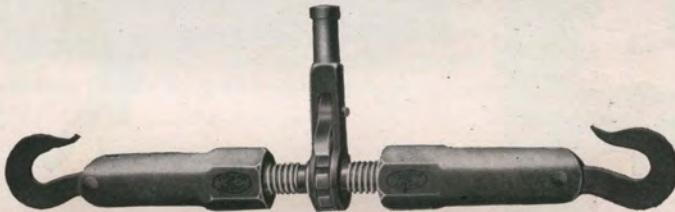
On our Jenne Friction Jacks, the Frame and Lever Sockets are of Malleable Iron. The Pivots are of Steel; the Bearings are Bronze. The Rings and Hangers are forged of Special Steel and the Round Lifting Bar is made of Refined Wrought Iron.

On the "Vulcan" Track Jack the Screw, Base and Handle are made of Refined Wrought Iron. The Lifter is welded to the Screw.

Trade No.	DESCRIPTION	List Price
11-1	Jenne Friction Jack with 1½" Bar, Five Ton Capacity 12" Rise, Total Height down 31", weight 60 lbs.	\$17.00
11-2	Jenne Friction Jack with 1¾" Bar, 10 Ton Capacity 15" Rise, Total Height down 35", weight 90 lbs.	
11-3	"Vulcan" Track Jack, Twelve Ton Capacity with 1½" x 18" Screw.	20.00
		9.50

“VULCAN” CABLE REEL AND PULLING JACK SCREWS

We warrant every Cable Reel Jack Screw to safely carry the load given as its capacity. These Jacks are carefully made and fitted, and have substantial hardwood Bases well braced to stand the heavy work they are intended for. Levers will be sent only when ordered and will be charged extra.



No. 16-1 and 16-2

This Pulling Jack is of great value where a short, powerful pull is desired to bring joints and connections together. Adapted to all classes of structural work, in pile driving for pulling piles into correct alignment, for wrecking, etc. Made in two sizes.

Vulcan Cable Reel

Trade No.	DESCRIPTION						List Price
	Dia. of Screw	Height Over All When Closed	Rise	Capacity	Wt. About	Size of Base	
15-1	2"	15"	5"	24 Tons	44 lbs.	2 x 10 x 20...	\$13.50
15-2	2"	19"	9"	24 "	50 "	2 x 10 x 20...	15.00
15-3	2"	21"	11"	24 "	55 "	2 x 10 x 22...	16.00
15-4	2"	27"	17"	24 "	72 "	2 x 11 x 30...	18.00
15-5	2½"	16"	5"	30 "	47 "	2 x 11 x 20...	16.50
15-6	2½"	22"	11"	30 "	75 "	2 x 11 x 30...	20.25
15-7	2½"	28"	17"	30 "	89 "	2 x 11 x 30...	24.00
15-8	3"	29"	15"	36 "	130 "	3 x 11 x 30...	36.00
15-9	3"	35"	21"	36 "	143 "	3 x 11 x 30...	42.00
“Vulcan” Pulling Jack Screw							
	Length Closed	Rise of Screw	Weight	Capacity			
16-1	33"	12"	50 lbs.	10 Ton.....			\$38.00
16-2	33"	12"	35 "	7 ".....			30.00

ANVILS



The face of the "Vulcan" Anvil is one solid piece of English tool steel, thoroughly welded to the body of the Anvil by a patented process. It is then accurately ground and tempered, so it will stand the most severe test. The Horn is covered with, and its extremity made entirely of tough, untempered steel.

The Body is of best Lake Superior Charcoal Iron, and being much more solid than Wrought Iron, the work being forged receives the full force of the blow. The face of the Anvil will remain perfectly true after years of service and it is warranted to be thoroughly welded and not to separate.

Trade No.	DESCRIPTION	List Price
12-00	Vulcan Anvil, weight about 5 lbs.....	\$10.00
12-0	" " " " 10 ".....	11.00
12-1	" " " " 15 ".....	12.00
12-2	" " " " 20 ".....	13.00
12-3	" " " " 30 ".....	14.50
12-4	" " " " 40 ".....	16.00
12-5	" " " " 50 ".....	18.00
12-6	" " " " 60 ".....	20.00
12-7	" " " " 70 ".....	22.00
12-8	" " " " 80 ".....	24.00
12-9	" " " " 90 ".....	26.00
12-10	" " " " 100 ".....	28.00
12-11	" " " " 110 ".....	30.00
12-12	" " " " 120 ".....	33.00
12-13	" " " " 130 ".....	36.00
12-14	" " " " 140 ".....	40.00
12-15	" " " " 150 ".....	44.00
12-16	" " " " 160 ".....	48.00
12-17 1/2	" " " " 175 ".....	52.00
12-20	" " " " 200 ".....	58.00
12-22 1/2	" " " " 225 ".....	64.00
12-25	" " " " 250 ".....	70.00
12-30	" " " " 300 ".....	80.00

INDEX

Name	Page	Name	Page
A			
Acute Cranks	S-26	Bells, Mechanical Crossing	E-27
" with Horizontal		" Tower	E-30
Crank Stands	S-21	" Motor Type	F-12
Adjustable Arm Cranks	R-38	" Time	F-14
" Lock Rods	T-70	Belts, Linemen's	G-20
Adjusting Screw, Pipe	S-15	Blade Clamps for Semaphore Blade	R-31
" Wire	S-30	Blades, Semaphore	R-30
Adjustments, Switch and Derail	T-64	Blocks, Linemen's Wood	G-19
Ammeters	I-12	Block Signals, Automatic Electric	
Anchor Bolts	S-51, R-2	Light Type	A-2
" Posts	S-50	Blue Vitriol	J-3
Annunciators	A-15	Bolt Locks	T-36
Anvils	X-11	Bolts, Anchor	S-51, R-2
Arresters, Lightning	I-2	" Cross Arm	G-12
Attachments for Changing from		" Foundation	S-51
Pipe to Wire Leads	S-45	Bond Wire Protectors	G-5
Automatic Electric Light Type		" Wires	G-4
Block Signals	A-2	Bonding Drills	G-6
Axle Insulators	H-11	" Pins	G-2
B			
Back Spectacles	R-15	Box Wheels, Horizontal	S-41
" for Dwarf Signals	O-18	Boxes, Battery	L-7
Bags, Tool	G-18	" Relay	K-2
Balance Levers for Pipe Operated		Braces, Cross Arm	G-12
Signals	R-37	Brackets, Cantilever	R-40
Balance Levers for Wire Operated		Bracket Post Cranks	R-38
Signals	R-36	" Signals	N-14
Bases for Ground, Bridge and		" Posts	R-4
Bracket Signals	R-2	" with Signals	N-3
Bases for Cable Poles and Highway		" Signals	N-14
Crossing Alarms	D-20	Brackets, Lamp	R-29
Batteries, Caustic Soda	J-9	" for Crossing Bells	K-23
" Edison B. S. Co.	J-9	" Relay Boxes and Indi-	
" Gordon	J-9	cators	K-22
" Gravity	J-3	Brass Connectors	I-6
" Storage	J-10	" Terminals	I-7
" Portable Storage	J-12	Bridge Couplers and Locks	S-46
Battery Boxes	L-7	" Signals	N-14
" Brushes	J-15	" Warnings	U-2
" Chutes	L-2	Brushes, Battery	J-15
" Chute Pipe Sockets	K-19	Bushings, Pole Insulating	K-23
" " Posts	K-21	C	
" Coppers	J-6	Cable Outlets	D-21
" Hydrometers	J-14	" Poles	D-2, D-17
" Jars	J-8	" with Indicators	D-15
" Knives	J-15	" " Relay Boxes	D-17
" Polarity Indicators	J-15	" " " and	
" Renewals	J-9	Battery Chutes	D-8
" Storometers	J-14	Cable Poles with Relay Boxes and	
" Syringes	J-14	Indicators	D-16
" Zincs	J-4	Cable Reels	X-9
Bearings, Semaphore	R-16	Cantilever Brackets	R-40
Bells, Annunciator	F-2	Chain, Signal	S-30
" Highway Crossing	F-3	Chain Wheel Foundations	S-50
" Indicator	F-2	" Wheels, Box	S-41
" Locomotive Type	F-8	" " Horizontal	S-35
		" " Tandem	S-38
		" " Vertical	S-32

Name	Page	Name	Page
Channel Pins.....	G- 2	Dummy Masts.....	R-39
" Pin Tools.....	G- 3	Dwarf Signals.....	O- 2
Chutes, Battery.....	L- 2	" Signal Spectacles.....	O-18
Clamps, Crank Stand.....	R-20		
" Guy Wire.....	S-30	E	
" Semaphore Blade.....	R-31	Edison B. S. Co. Batteries.....	J- 9
" Splicing.....	G-16	Electric Crossing Bells.....	F- 3
Climbers, Linemen's.....	G-20	" Bells, Annunciator and	
Clips, Wire Rope.....	S-30	Tower Indicator.....	F- 2
Commutators.....	C- 6	Electric Flags.....	F-16
Compensator Foundations.....	S-50	" Lever Locks.....	C-18
Compensators, Pipe.....	S-24	" Light Type Block Signals	A- 2
" Wire.....	R-44	" Table Levers.....	C-30
Connectors.....	I- 6	Elgin Wrenches.....	G-15
Contactors, Trolley Wire.....	C-29	End Posts, Fibre.....	H- 8
Coppers, Battery.....	J- 6	Escapement Cranks.....	O-18
Copying Presses.....	X- 5	Expanding Rail Jacks.....	G-22
Crank.....	S-26	Eye Rods.....	S-15
" Adjustable Arm.....	R-38		
" Escapement and Operating	O-18	F	
Crank Stand Clamps.....	R-20	Fibre End Posts.....	H- 8
" Foundations.....	S-50	" Insulations for Rail Joints..	H- 7
" " Horizontal with Acute		Figures and Letters, Steel Stencils..	I -11
Crank.....	S-21	Flags, Electric.....	F-16
Crank Stands, Horizontal with Ob-		Flag Station Signals.....	P-14
tuse Cranks.....	S-20	Floor Levers, Mechanical.....	Q- 6
Crank Stands, Horizontal with Rad-		" Pushes.....	C-25
ial Cranks.....	S-22	Foundation Bolts.....	S-51, R- 2
Crank Stands, Horizontal with		Foundations, Chain Wheel.....	S-50
Right Angle Cranks.....	S-22	" Compensator.....	S-50
Crank Stands, Horizontal with		" Crank Stand.....	S-50
Straight Arm Cranks.....	S-23	" Ladder.....	R- 2
Crank Stands, Horizontal with		" Pipe Carrier.....	S-48
Three Arm Cranks.....	S-23	" Post.....	S-50
Crank Stands, Vertical with Right		Freight House Trucks.....	X- 2
Angle Cranks.....	S- 4	Friction Jacks.....	X- 8
Crank Stands, Vertical with Straight		Front Rods for Derails, Plain.....	T-56
Arm Cranks.....	S- 5	" " " Insulated.....	T-58
Crank Stands for Signal Mast Bases	R-33	" " " Double Slip	
Cross Arms.....	G-10	Switches, Plain.....	T-52
" Arm Bolts, Braces and Pins.	G-12	Front Rods for Double Slip	
Crossing Alarms, Highway.....	E- 2	Switches, Insulated.....	T-54
" Bell Brackets.....	K-23	Front Rods for Movable Point Frogs,	
" Bells, Electric.....	F- 3	Plain.....	T-48
" " Mechanical.....	E-27	Front Rods for Movable Point Frogs,	
" Signs.....	E-33	Insulated.....	T-50
Cutting Pliers.....	G-17	Front Rods for Single Slip Switches,	
		Plain.....	T-44
D		Front Rods for Single Slip Switches,	
Deflecting Stands.....	S-10	Insulated.....	T-46
" " Waterproof Type	S- 6		
Derail Rod Guides.....	T-31	G	
Derail with Facing Point Lock, T-14,	T-15	Gain Stroke Wheels.....	S-34
Derail with Switch and Lock Move-		Gasoline Furnaces.....	G-19
ment.....	T- 4, T- 5	" Torches.....	G-18
Detector Bars.....	T-29	Glass Battery Jars.....	J- 8
" Bar Rail Clips.....	T-16	" Insulators.....	G-12
" " Guides.....	T-30	" Semaphore Roundels.....	R-32
" " Motion Plates.....	T-28	Gordon Batteries.....	J- 9
" " Stops.....	T-30	Gravity.....	J- 3
Double Jaws.....	S-14	Ground Levers.....	Q- 9
Drills, Track.....	G- 6	" Rods.....	I- 5
" Machine Shop.....	X-10	" Signals.....	M- 2
		" Tubes.....	I- 5

Name	Page	Name	Page
Guides, Derail Rod.....	T-31	Levers, Floor.....	Q- 6
“ Detector Bar.....	T-30	“ Ground.....	Q- 9
“ Pipe.....	R-20	“ Table.....	Q- 3
Guy Wire Clamps.....	S-30	“ Electric Table.....	C-30
		“ Wall.....	Q- 3
H		Lightning Arresters.....	I- 2
Highway Crossing Alarms.....	E- 2	Line Wire, Bare.....	I- 9
“ “ Bells.....	F- 3	“ Insulated.....	I- 9
“ “ Signs.....	E-33	Linemen’s Tools.....	G-16
Horizontal Box Wheels.....	S-41	Links, Solid.....	S-15
“ Chain Wheels.....	S-35	Lock Rods, Adjustable.....	T-70
“ Tandem Wheels.....	S-38	“ Bent.....	T-68
Hydrometers, Battery.....	J-14	“ “ Combination.....	T-31
		“ “ Insulated.....	T-65
I		“ “ Offset.....	T-66
Indicator Brackets.....	K-22	Locks, Bolt.....	T-36
“ Posts.....	K-20	“ Bridge.....	S-46
Indicators, Switch.....	A- 9	“ Lever.....	C-18
“ Tower.....	A- 6	“ Plunger.....	T-34
“ with Cable Pole.....	D-15	“ Signal.....	I-14
“ “ “ and.....		“ Switch.....	T-40
Relay Box.....	D-16	Locomotive Type Highway Crossing	
Indicators with Post.....	D-14	Bells.....	F- 8
Insulator, Axle.....	H-11	Lugs, Pipe Line.....	S-14
Insulated Wire.....	I- 8	“ Switch Point.....	T-32
Insulating Pole Bushings.....	K-23		
Insulations, Pipe and Rod.....	S-16	M	
“ Rail Joints.....	H- 7	Masts, Dummy.....	R-39
Insulators, Glass.....	G-12	“ Signal.....	R- 2
Interlocking Relays.....	B-2, B- 5	“ Train Order Signal.....	P-13
		Mechanical Crossing Bells.....	E-27
J		“ Slots.....	R-42
Jacks, Rail Expanding.....	G-22	“ Tower Bells.....	E-30
“ Friction.....	X- 8	Melting Pots.....	G-19
Jack Screws.....	X- 6	Motion Plates for Detector Bars..	T-28
Jacks, Locomotive.....	X- 6	Motor Driven Type Highway Cross-	
“ Pulling.....	X- 9	ing Bells.....	F-12
“ Bell Base Ratchet.....	X- 7	Movements, Switch and Lock.....	T-40
Jars, Battery.....	J- 8		
Jaws, Double.....	S-14	N	
“ Screw.....	S-13	Neutral Relays.....	B-11
“ Solid.....	S-12	“ “ High Voltage Type.....	B-30
K		O	
Keys, Padlock.....	I-14	Obtuse Cranks.....	S-26
“ Strap.....	C-33	“ “ with Horizontal.....	
Knife Switches.....	C-33	“ Crank Stands.....	S-20
Knives, Battery.....	J-15	Operating Cranks for Dwarf Signals	O-18
		“ Rods.....	R-20
L		Outlets, Cable.....	D-21
Ladder Foundations.....	R- 2		
Ladders for Signals.....	R-24, R-28	P	
Ladles, Pouring.....	G-19	Packing Boxes for Pipe or Wire	
Lag Screw Wrenches.....	G-21	Lines.....	S-44
Lamp Bracket Holders.....	R-19	Padlocks and Keys.....	I-14
“ Brackets.....	R-29	Pastes, Soldering.....	I-15
Lamps, Semaphore.....	R-46	Pinnacles.....	D-21, R- 2
Letters and Figures, Steel Stencils.	I-11	Pins, Channel.....	G- 2
Lever Locks.....	C-18	“ Cross Arm.....	G-12
Levers, Balance for Pipe Operated		Pipe Adjusting Screws.....	S-15
Signals.....	R-37	“ and Rod Insulations.....	S-16
Levers, Balance for Wire Operated		“ Carriers.....	S-27
Signals.....	R-36	“ Carrier Foundations.....	S-48

Name	Page	Name	Page
Soldering Compounds.....	I-15	Trunking and Stakes.....	G-8
“ Pastes.....	I-15	Tubes, Ground.....	I-5
Solid Jaws.....	S-12	Turnbuckles.....	S-30
“ Links.....	S-15		
Spectacles, Back.....	R-15	U	
“ Dwarf Signal.....	O-18	U Bolts for Cross Arm.....	G-12
“ Lower Quadrant.....	R-10, R-12	Units, Resistance.....	I-13
“ Train Order.....	R-10	Universal Pipe Carriers.....	S-27
“ Upper Quadrant.....	R-8, R-10	Up and Down Rods.....	R-20
Splicing Clamps.....	G-16		
Stakes, Trunking.....	G-9	V	
“ Wire Carrier.....	S-51	Ventilators, Relay Box and Signal	
Stencils.....	I-11	Case.....	D-21, K-23
Steps, Pole.....	G-14	Vertical Chain Wheels.....	S-32
Stops, Detector Bar.....	T-30	“ Cranks for Signal Mast	
Storage Batteries.....	J-10, J-12	Bases.....	R-33
Strometers, Battery.....	J-14	Vertical Crank Stand with Right	
Straight Arm Cranks.....	S-26	Angle Cranks.....	S-4
“ “ with Horizontal		Vertical Crank Stand with Straight	
Crank Stand.....	S-23	Arm Cranks.....	S-5
Straight Arm Cranks with Vertical		Vises.....	X-10
Crank Stand.....	S-5	Vitriol, Blue.....	J-3
Strap Keys.....	C-33	Voltmeters.....	I-12
“ Pipe Carriers.....	S-27		
Stuffing Boxes for Pipe or Wire		W	
Leads.....	S-44	Wall Levers, Mechanical.....	Q-3
Switch and Derail Adjustments.....	T-64	Warnings, Bridge.....	U-2
“ “ Lock Movement.....	T-2, T-3	Wedge Blocks, Switch.....	H-10
“ “ Movements.....	T-40	Wheels, Gain Stroke.....	S-34
“ Boxes.....	C-2	“ Horizontal Box.....	S-41
“ Indicators.....	A-9	“ “ Chain.....	S-35
“ Layouts.....	T-2	“ Signal.....	R-34
“ Point Lugs.....	T-32	“ Tandem.....	S-38
“ “ Separators.....	T-31	“ Vertical Chain.....	S-32
“ Throw Rods.....	T-63	“ “ “ Roller	
“ Wedge Blocks.....	H-10	Bearing.....	S-34
Switches, Knife.....	C-33	Wire, Adjusting Screws.....	S-30
“ Pole Changing.....	C-33	Wires, Bond.....	G-4
Syringes, Battery.....	J-14	Wire Carrier Stakes.....	S-51
		“ Carriers.....	S-42
T		“ Clamps, Guy.....	S-30
Table Levers, Mechanical.....	Q-3	“ Compensators.....	R-44
“ “ Electric.....	C-30	“ Grips.....	G-21
Tags.....	I-10	“ Insulated.....	I-8
Tape.....	I-15	“ Insulating Bushings.....	K-23
Terminals.....	I-7	“ Line.....	I-9
Three Arm Cranks.....	S-26	“ Packing Boxes.....	S-44
“ “ with Horizontal		“ Rope Clips.....	S-30
Crank Stands.....	S-23	“ Shackles.....	S-30
Through Bolts, Cross Arm.....	G-12	“ Steel Signal.....	I-9
Throw Rods, Switch.....	T-63	“ Tags.....	I-10
Tie Rods, Plain and Insulated.....	T-60	“ Trunking.....	G-8
Tool Bags.....	G-18	“ “ Stakes.....	G-9
Torches, Gasoline.....	G-18	Wrenches, Elgin.....	G-15
Tower Bells.....	E-30, F-2	“ Lag Screw.....	G-21
“ Indicators.....	A-6	“ Pipe.....	G-15
Track Drills.....	G-6	“ Socket for Binding Post.....	I-14
“ Instruments.....	C-26		
“ Jacks.....	X-8	Z	
Train Order Signals.....	P-3	Zincs, Round Battery.....	J-4
“ Spectacles.....	R-10	“ Crowfoot.....	J-5
Trolley Wire Contactors.....	C-29		
Trucks, Freight House.....	X-2		

