



CATALOGUE OF  
INTERLOCKING  
and SIGNALING  
DEVICES

1902

SECTION 12  
THE UNION  
ELECTRIC SEMAPHORE  
and  
THE UNION  
DISC SIGNAL



The Union Switch & Signal Co.  
Swissvale Pa.

**A CATALOGUE AND PRICE LIST**

OF

**Interlockings and  
Signaling Devices**

MADE BY

**THE  
UNION SWITCH & SIGNAL Co.  
OF PITTSBURGH, PA.**

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**Owners of the Westinghouse System of Electro-Pneumatic Block Signaling and Interlocking.**

**Also Designers, Manufacturers and Erectors of Pneumatic, Electro-Pneumatic, Electric, Electro-mechanical, and Purely Mechanical Appliances for Railway Protection.**

**Automatic, Semi-automatic and Manually Operated Block Signals.**

**Electro-Pneumatic, Electric and Mechanical Interlockings to suit conditions.**

**Frogs, Crossings, Switches and Hand Devices for controlling them.**

**Plans and Estimates on Application.**

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**General Offices and Works  
SWISSVALE, PA.**

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**New York  
Central Bldg.**

**Chicago  
Monadnock Bldg.**

**St. Louis  
Terminal Station**



Entered according to act of Congress in the year 1904

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The Union Switch & Signal Company  
Swissvale, Pa.

at the office of the Librarian of Congress at Washington

**SECTION 12.**

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**THE UNION  
ELECTRIC SEMAPHORE  
AND  
THE UNION  
DISC SIGNAL**

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**FIRST EDITION**

**1904**



## PREFACE

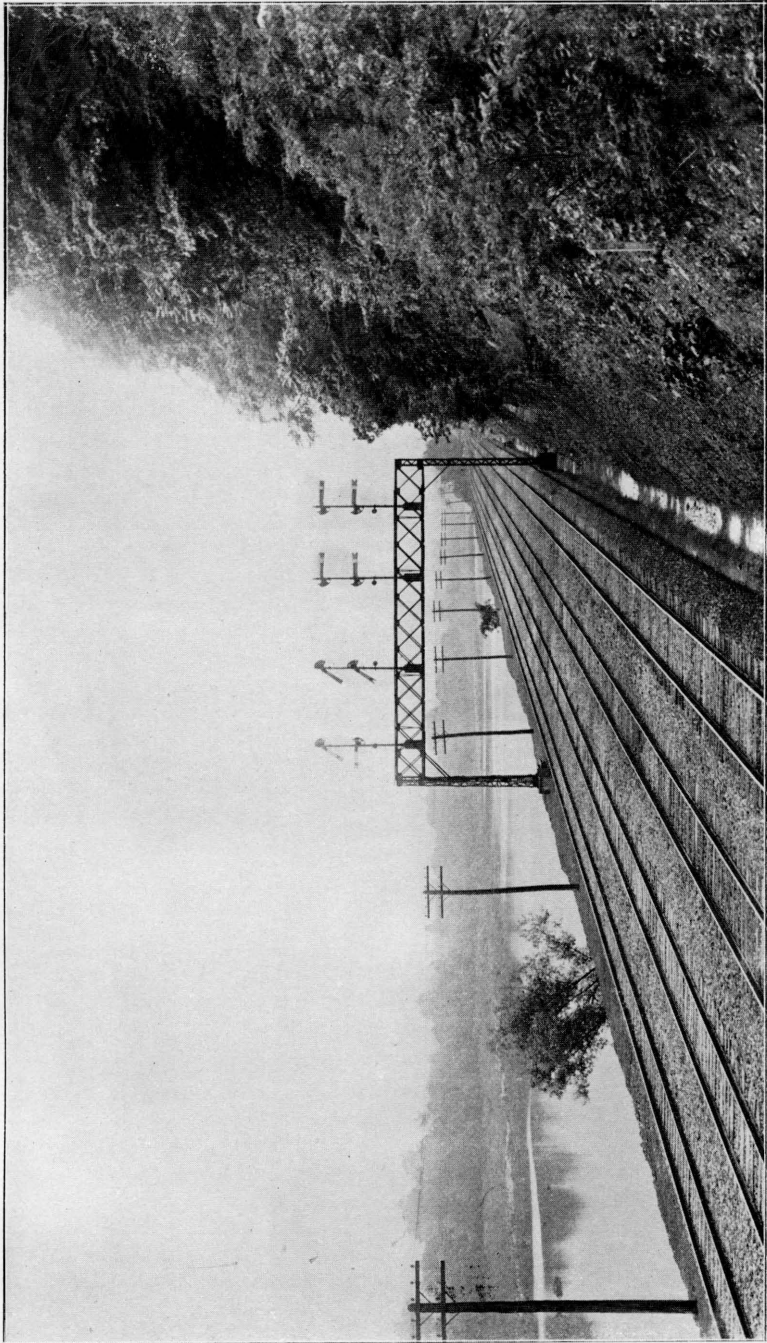
**I**N presenting this section of our new catalogue to our patrons we desire to call their attention to a few of the improvements which have been made in the Union Electric Semaphore since Bulletin No. 6 was issued in November, 1901.

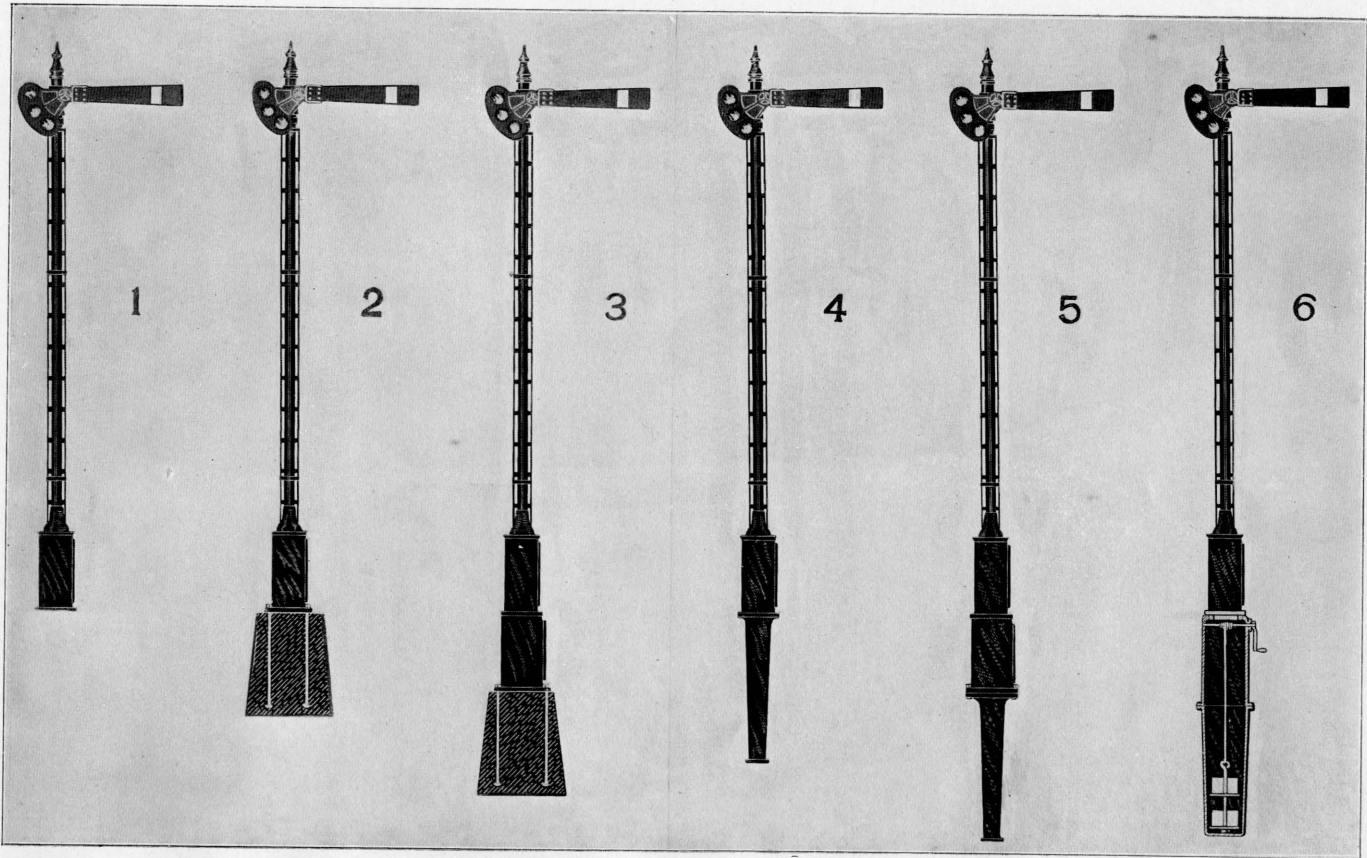
Amongst others, improvements will be noticed in the design of the latest slot arm mechanism, in the general details of the post, and in the appearance of the battery and mechanism cases. Several minor revisions have been made in the buffers, pole changers and motor, which, while apparently unimportant, have contributed their quota to the successful operation of the signal.

At the time this catalogue goes to press the number of these signals manufactured and on order by this Company amounts to 5,100, which fully testifies to their popularity throughout the country.

**The Union Switch & Signal Co.**

Swissvale, Pa., March 1, 1904.





Standard Ground Types 1-Arm Style B. Electric Semaphore



## Standard Ground Types

### 1-Arm Style B. Electric Semaphore

#### Order by Plate and Number

No.		List Price
1	One Arm Home and Distant Signal; no battery case, anchor bolts or foundations .....	\$367 00
2	One Arm Home and Distant Signal with anchor bolts; no battery case or foundation .....	373 00
3	One Arm Home or Distant Signal with battery case and anchor bolts; no foundation .....	426 00
4	One Arm Home or Distant Signal with cast iron foundation; no battery case .....	400 00
5	One Arm Home or Distant Signal with battery case and cast iron foundation .....	453 00
6	One arm Home or Distant Signal with cast iron battery well and elevators .....	598 00

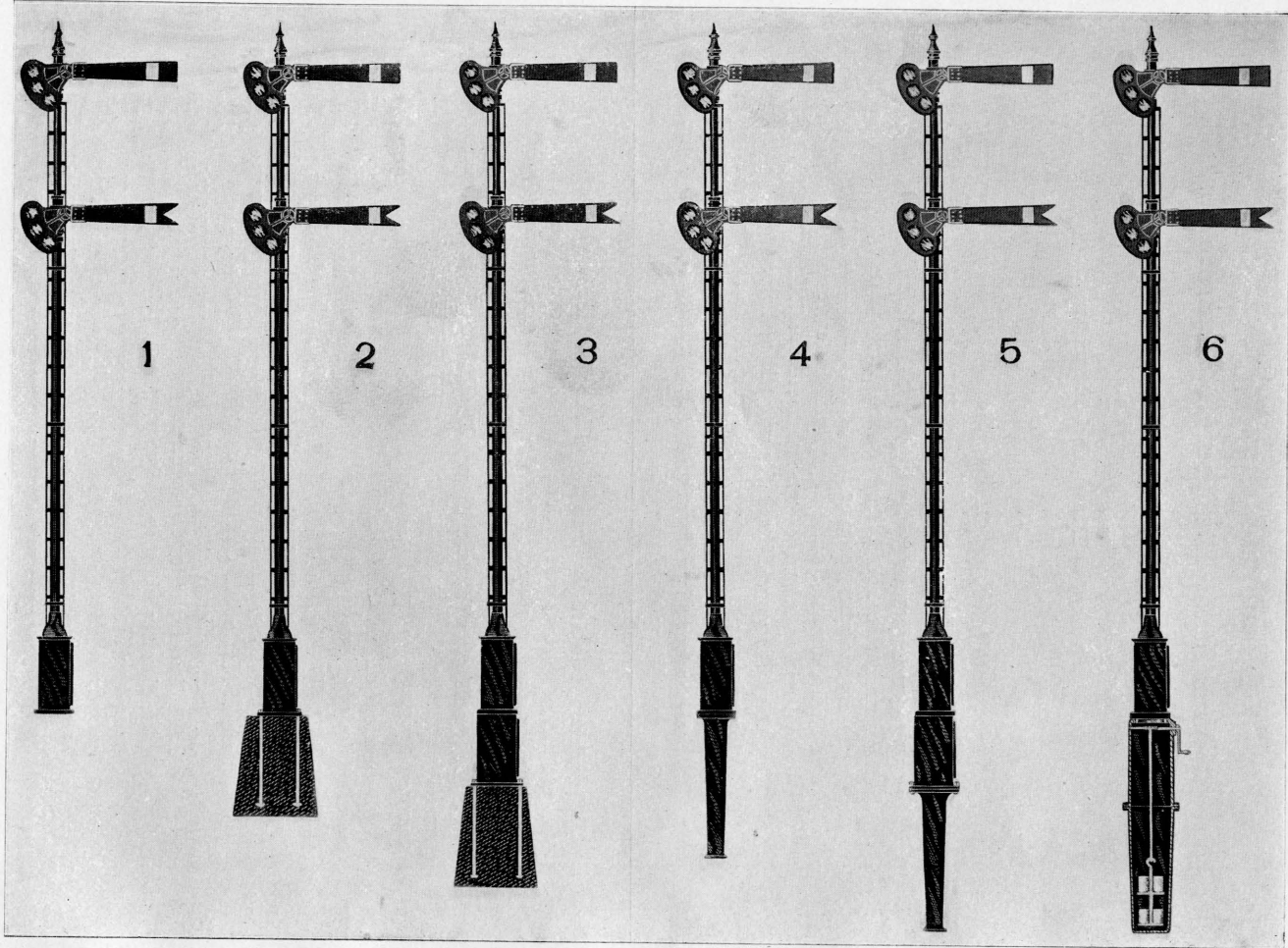
The above prices are for each Signal complete, including blades, ladders and fittings, but do not include lamps, glass, relays, pole changers, backlights, or number plates, which should be ordered separately if required.

Order should state character of each Signal desired, specifying whether home or distant on 1-arm types; and also any changes desired from the standard design.

Dimensions of posts and blades, color and number of glass discs, arc traversed by arm, design of spectacle, etc., must be clearly stated when differing from standard design.

Unless otherwise specified, Signals will be furnished as follows:

Base of Battery Case to centre of lower signal shaft .....	24'1"
Base of Mechanism Case to centre of lower signal shaft ..	21'1"
Centre of lower to centre of upper shaft .....	6'0"
Inside diameter of lower section of pipe post .....	5"
Inside diameter of upper section of pipe post .....	5"
Semaphore blades-grip .....	7"x7"
Semaphore blades-length .....	4'0"
Diameter of glasses .....	8-3/8"
Arc of Signal Arm, 60 Degrees.	



Standard Ground Types 2-Arm Style B. Electric Semaphores

## Standard Ground Types 2-Arm Style B. Electric Semaphores

### Order by Plate and Number

No.		List Price
1	Two Arm Home and Distant Signal; no battery case; anchor bolts or foundations .....	\$501 00
2	Two Arm Home or Distant Signal with anchor bolts; no battery case or foundation .....	507 00
3	Two Arm Home or Distant Signal with battery case and anchor bolts; no foundation .....	560 00
4	Two Arm Home or Distant Signal with cast iron foundation; no battery case .....	534 00
5	Two Arm Home or Distant Signal with battery case and cast iron foundation .....	587 00
6	Two Arm Home or Distant Signal with cast iron battery well and elevators .....	732 00

The above prices are for each Signal complete, including blades, ladders and fittings, but do not include lamps, glass, relays, pole changers, backlights, or number plates, which should be ordered separately if required.

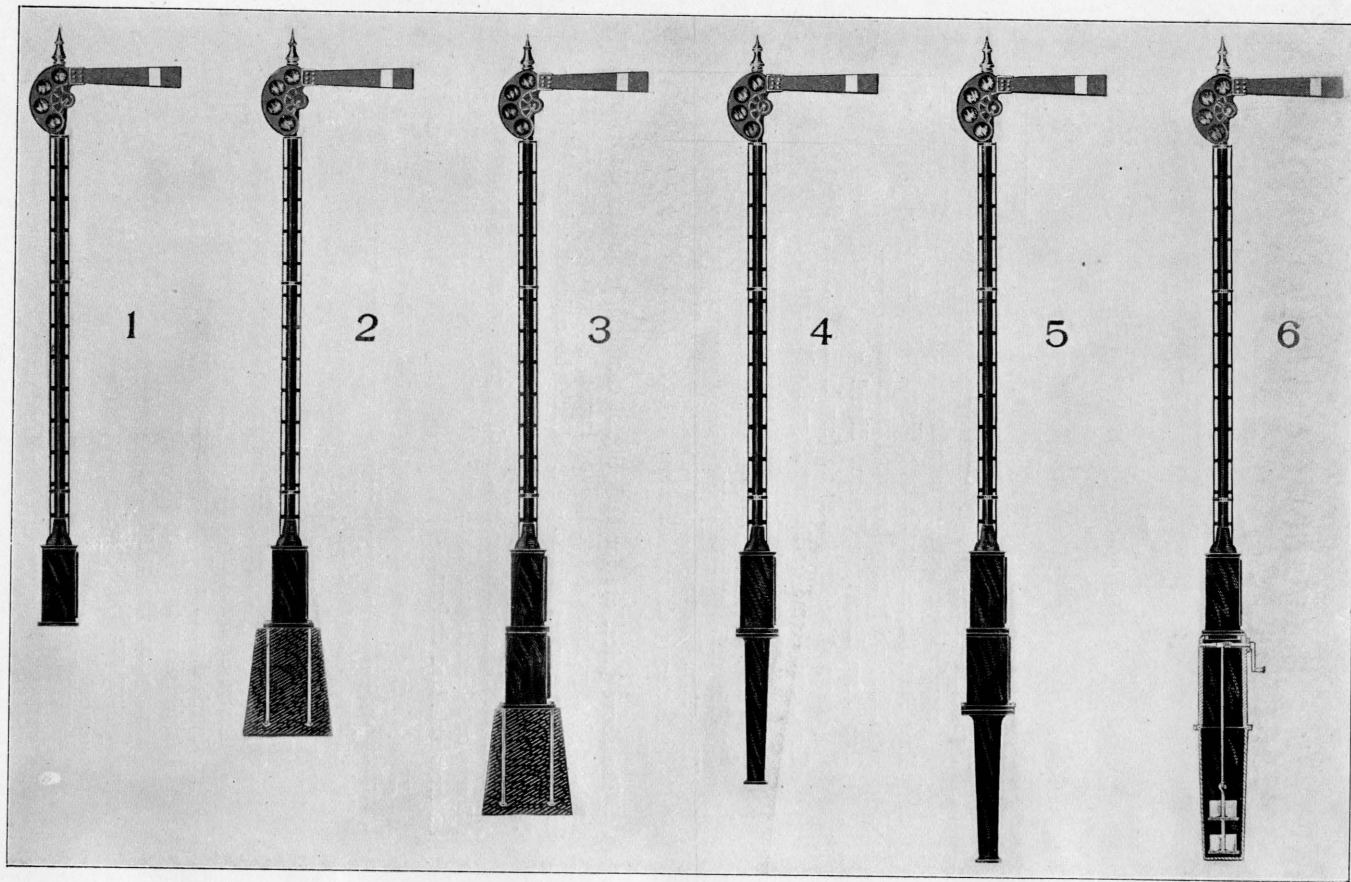
Order should state character of each Signal desired, specifying whether 2-homes or 2-distant or 1-home and 1-distant; and also any changes desired from standard designs.

Dimensions of posts and blades, color and number of glass discs, arc traversed by arm, design of spectacle, etc., must be clearly stated when differing from standard design.

Unless otherwise specified, Signals will be furnished as follows:

- Base of Battery Case to centre of lower signal shaft ..... 24'1"
- Base of Mechanism Case to centre of lower signal shaft .. 21'1"
- Centre of lower to centre of upper shaft ..... 6'0"
- Inside diameter of lower section of pipe post ..... 5"
- Inside diameter of upper section of pipe post ..... 5"
- Semaphore blades-grip ..... 7" x 7"
- Semaphore blades-length ..... 4'0"
- Diameter of glasses ..... 8-3/8"
- Arc of Signal Arm, 60 Degrees.





Standard Ground Types Style B. Electric Semaphores With 3-Position Spectacle

## Standard Ground Types

### Style B. Electric Semaphores with 3-Position Spectacle

#### Order by Plate and Number

No.		List Price
1	1-arm, three position, home and distant signal; no battery case, anchor bolts or foundation . . . . .	\$476 00
2	1-arm, three position, home or distant signal with anchor bolts; no battery case or foundation . . .	482 00
3	1-arm, three position, home or distant signal with battery case and anchor bolts; no foundation . .	535 00
4	1-arm, three position, home or distant signal with cast iron foundation; no battery case . . . . .	509 00
5	1-arm, three position, home or distant signal with battery case and cast iron foundation . . . . .	562 00
6	1-arm, three position, home or distant signal with cast iron battery well and elevators . . . . .	707 00

The above prices are for each Signal complete, including blades, ladders and fittings, but do not include lamps, glass, relays, pole changers, backlights, or number plates, which should be ordered separately if required.

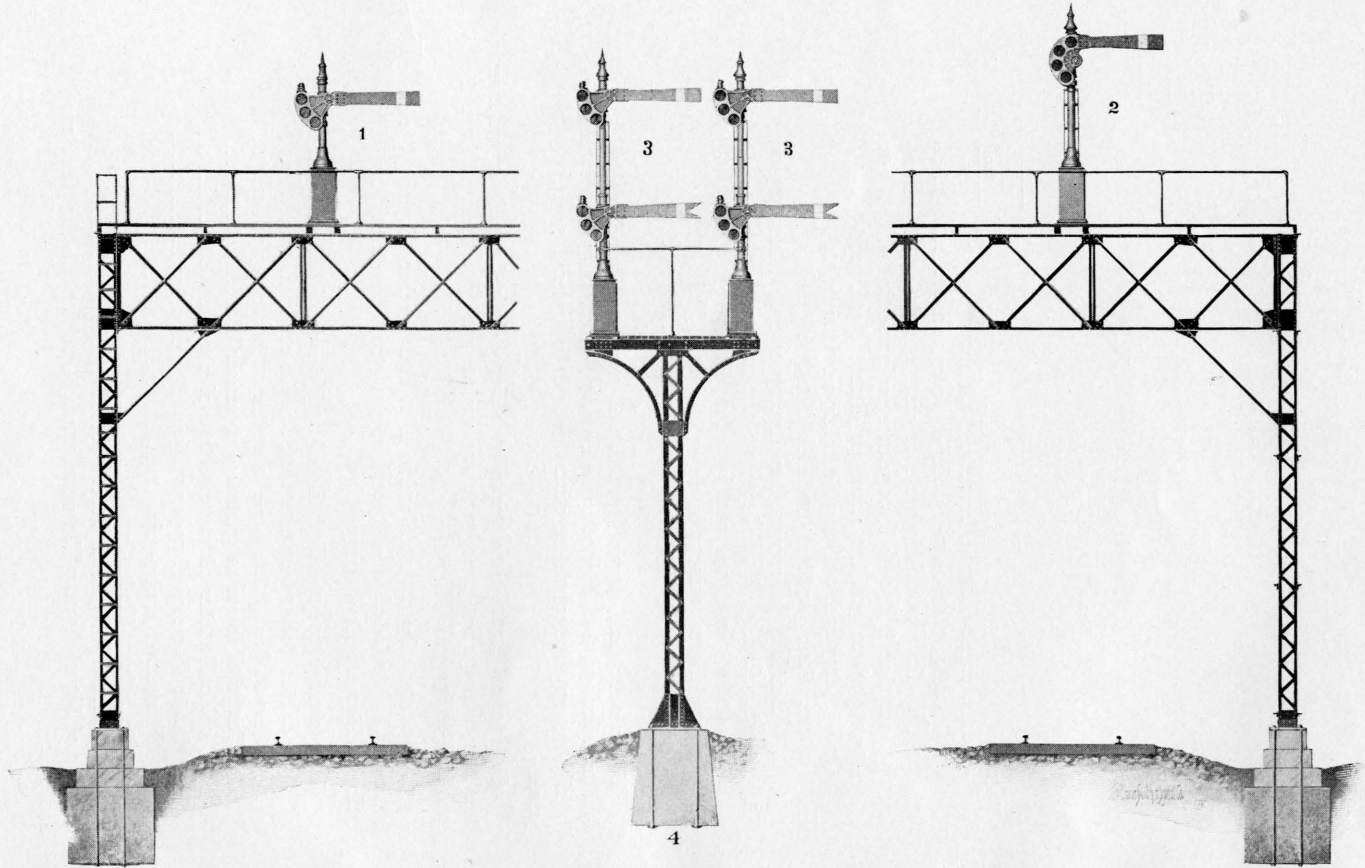
Order should state character of each Signal desired, specifying whether home or distant on 1-arm types; and also any changes desired from the standard design.

Dimensions of posts and blades, color and number of glass discs, arc traversed by arm, design of spectacle, etc., must be clearly stated when differing from standard design.

Unless otherwise specified, Signals will be furnished as follows:

Base of Battery Case to centre of lower signal shaft . . . . .	24'1"
Base of Mechanism Case to centre of lower signal shaft . .	21'1"
Centre of lower to centre of upper shaft . . . . .	6'0"
Inside diameter of lower section of pipe post . . . . .	5"
Inside diameter of upper section of pipe post . . . . .	5"
Semaphore blades-grip . . . . .	7"x7"
Semaphore blades-length . . . . .	4'0"
Diameter of glasses . . . . .	8- <sup>3</sup> / <sub>8</sub> "

Arc of Signal Arm, 45° between stop and caution and between caution and clear, total 90°.



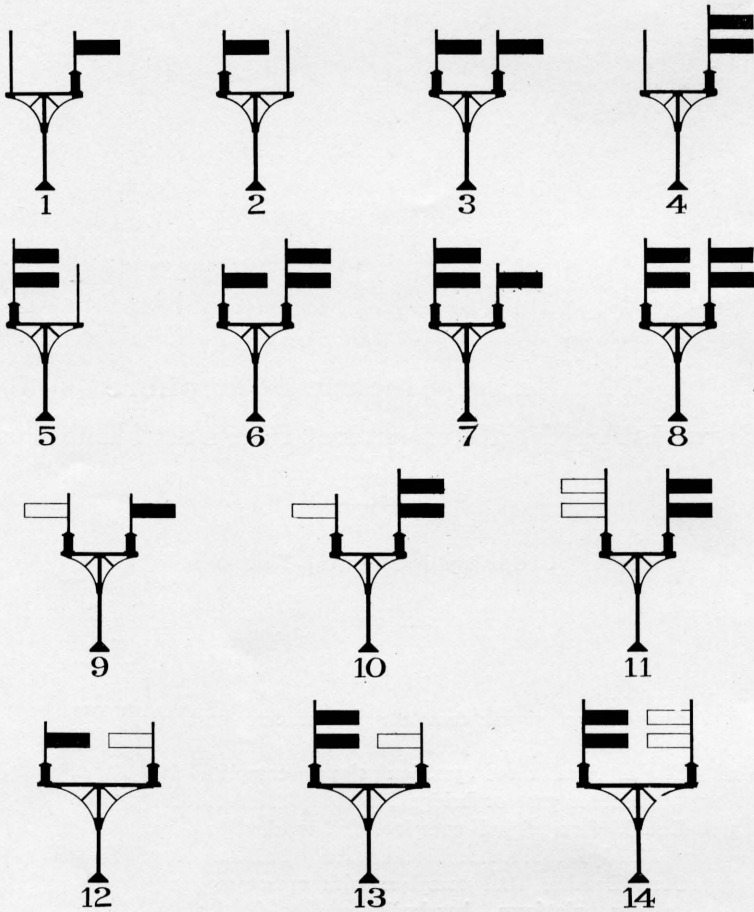
The Union Electric Semaphore Signals Applied to Bracket Posts and Bridges



## The Union Electric Semaphore Signals Applied to Bracket Posts and Bridges

Order by Plate and Number

No.		List Price
1	Single Arm signal complete for bracket post or bridge .....	\$333 00
2	Single Arm three position signal complete for bracket post or bridge .....	449 00
3	Double Arm signal complete for bracket post or bridge .....	468 00
4	Steel Bracket Post complete with crosstrees, ladder, platform, handrails, anchor bolts, and plates only .....	411 00



	No. 15	2 Track Bridge	.....
	No. 16	3 " "	.....
	No. 17	4 " "	.....
	No. 18	5 " "	.....
	No. 19	6 " "	.....
	No. 20	7 " "	.....
	No. 21	8 " "	.....
	No. 22	9 " "	.....
	No. 23	10 " "	.....
	No. 24	11 " "	.....
	No. 25	12 " "	.....

Various Arrangements of Signals on Brackets and Bridges

## Various Arrangements of Signals on Brackets and Bridges

Figures 1 to 8, inclusive, represent arrangements of bracket signals for controlling traffic in one direction only on parallel and adjacent tracks.

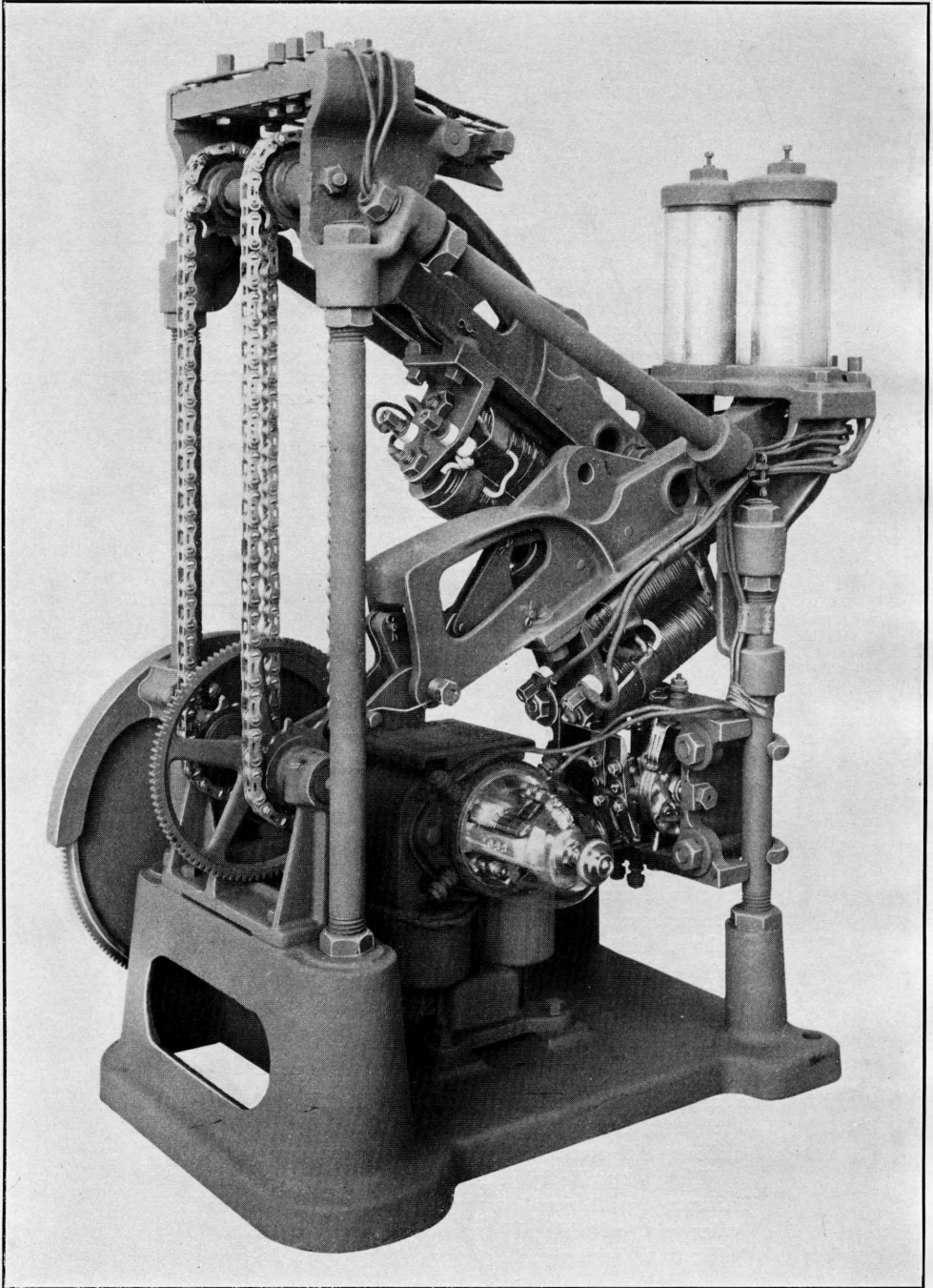
Figures 9 to 14, inclusive, represent arrangements of bracket signals for controlling traffic in opposite directions on parallel and adjacent tracks. Figures 9, 10 and 11 represent arrangements for right hand and Figures 12, 13 and 14 for left hand running.

Should three position signals (Plate 1203, No. 2) be required with any of the above combinations, the fact must be specifically stated in the order. Special prices for same furnished on application.

### Order by Plate and Number

No.		List Price
1	Steel Bracket Post, as per plate 1203, No. 4 with one single arm electric semaphore (Plate 1203, No. 1) and one stub post .....	\$ 762 00
2	As above, with signal arrangement reversed .....	762 00
3	As above, with two single arm electric semaphores (Plate 1203, No. 1) .....	1,077 00
4	As above, with one double arm electric semaphore (Plate 1203, No. 8) and one stub post .....	897 00
5	As above, with signal arrangement reversed .....	897 00
6	Above, with one single and one double arm electric semaphore (Plate 1203, Nos. 1 and 3) .....	1,212 00
7	As above, with signal arrangement reversed .....	1,212 00
8	As above, with two double arm electric semaphores (Plate 1203, No. 3) .....	1,347 00
9	Steel Bracket Post, as per Plate 1203, No. 4, with two single arm electric semaphores (Plate 1203, No. 1) .....	1,077 00
10	As above, with one single and one double arm electric semaphore (Plate 1203, Nos. 1 and 3) .....	1,212 00
11	As above, with two double arm electric semaphores (Plate 1203, No. 3) .....	1,347 00
12	Similar to 9 with signal arrangement reversed ...	1,093 00
13	Similar to 10 with signal arrangement reversed ...	1,228 00
14	Similar to 11 with signal arrangement reversed ...	1,363 00



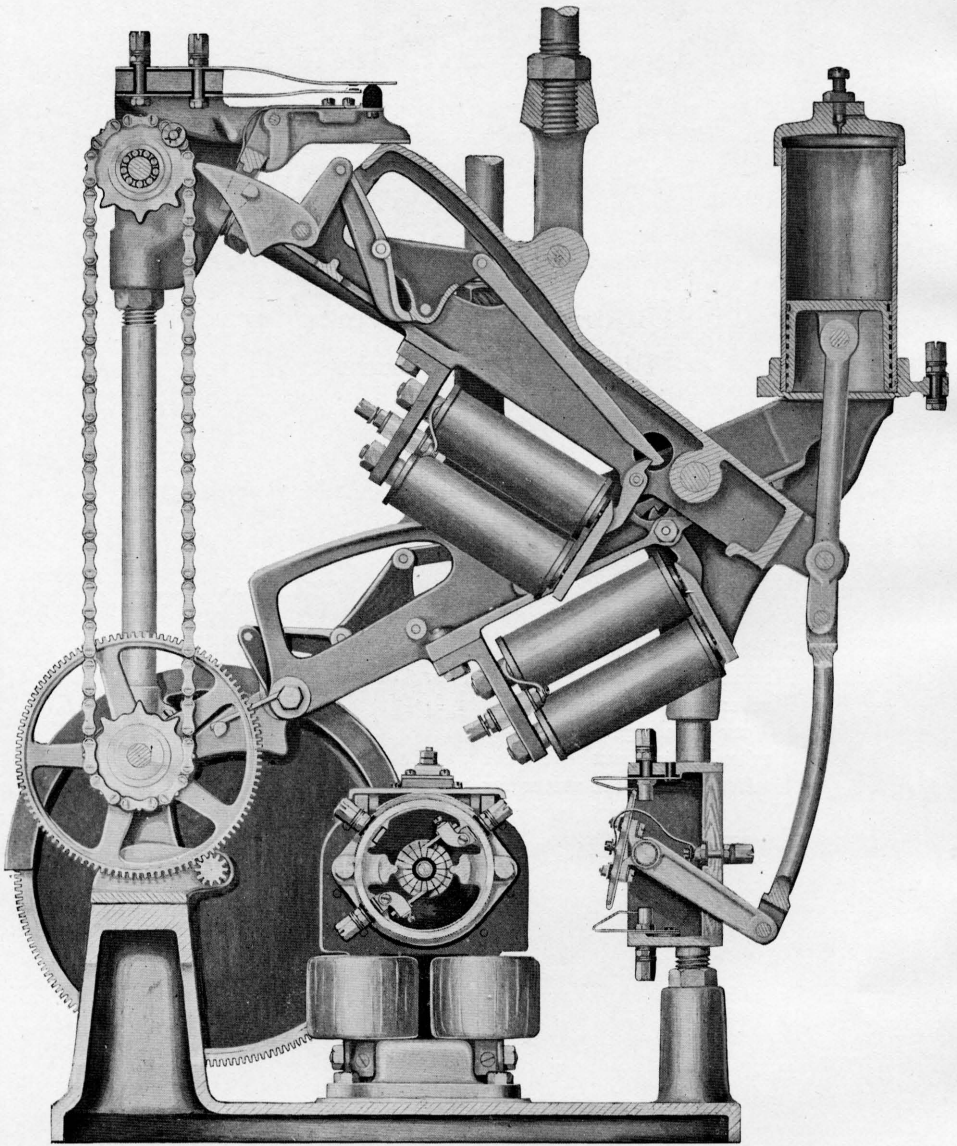


The Union Electric Semaphore Style B. Mechanism

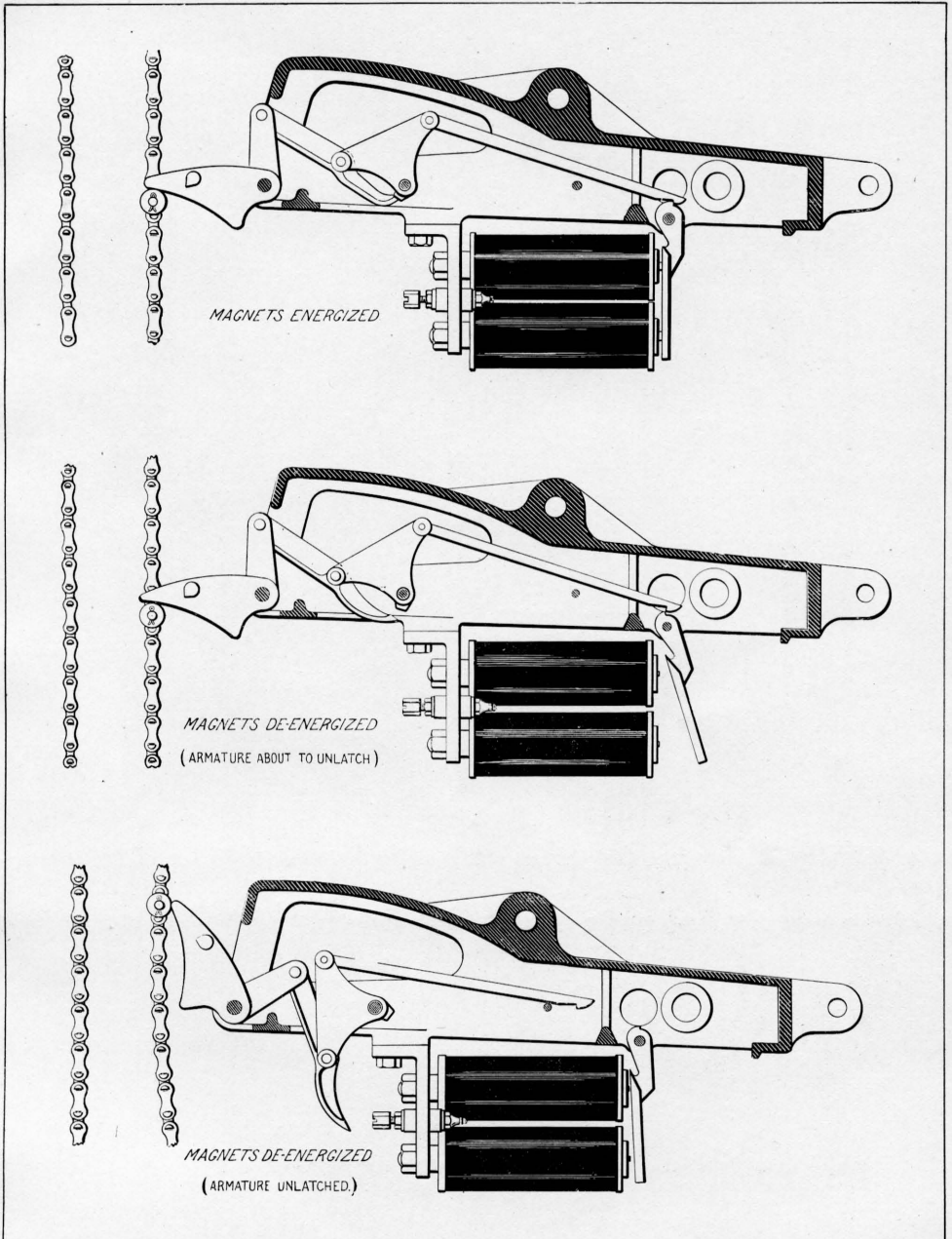
**The Union Electric Semaphore  
Style B. Mechanism**

**Order by Plate and Number**

No.		List Price
1	Mechanism and motor complete for one arm signal	\$212 00
2	Mechanism and motor complete, for two arm signal	288 00
3	Mechanism and motor complete for three position one arm signal .....	318 00
4	Mechanism without motor for one arm signal ....	150 00
5	Mechanism without motor for two arm signal ....	226 00
6	Mechanism without motor for three position one arm signal .....	256 00

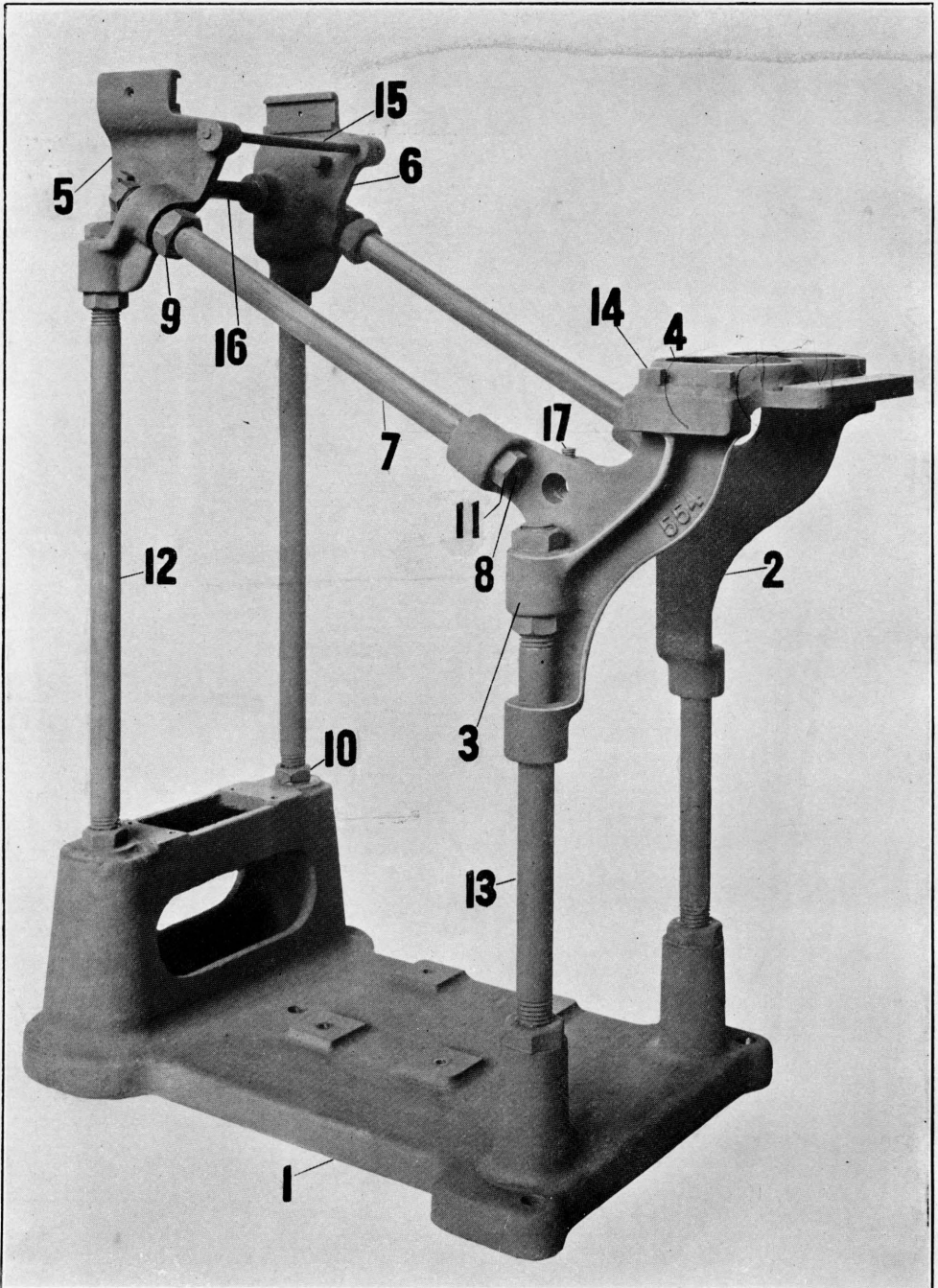


Central Vertical Section of Mechanism and Frame



Central longitudinal sections taken through Slot Arm, showing its mechanism and the successive positions the latter assumes prior to, and at the moment of, releasing the signal mechanism.



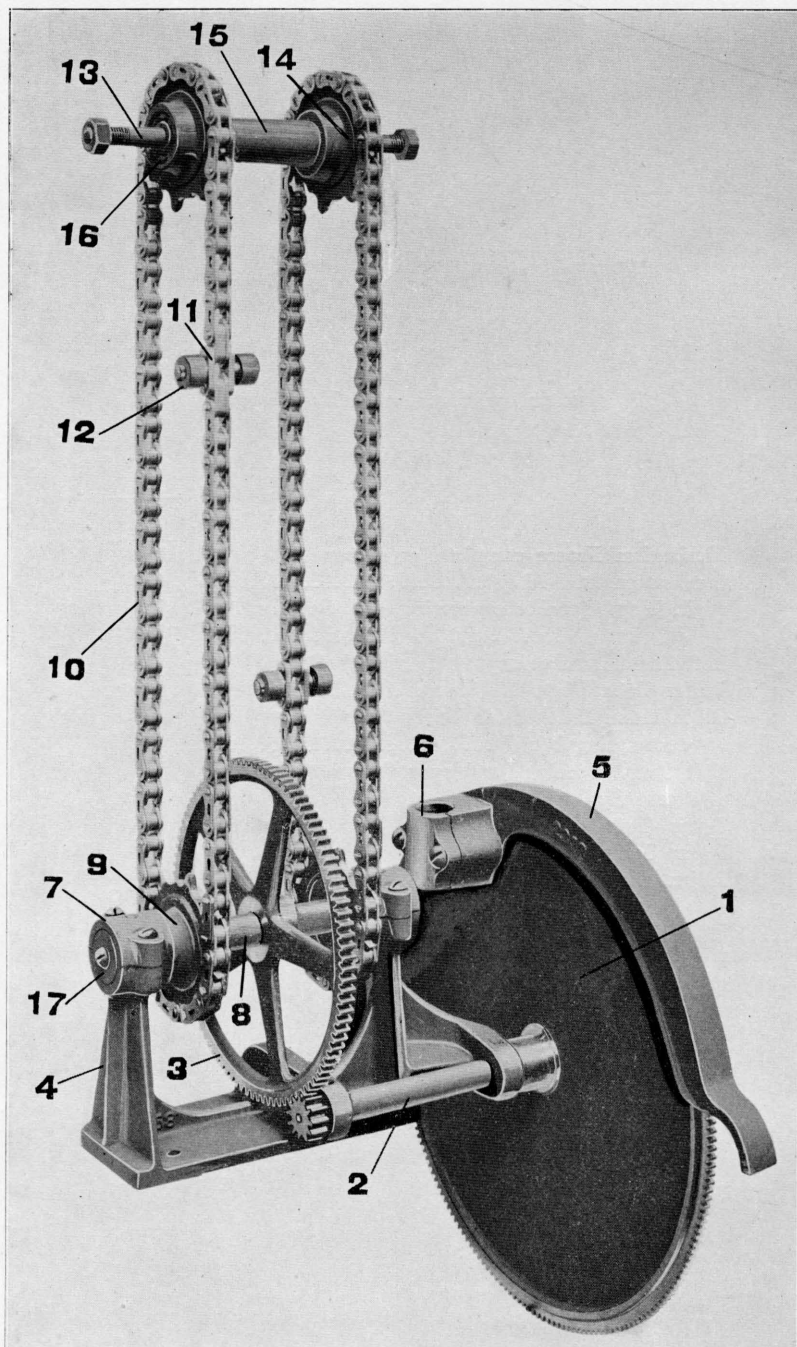


Mechanism Frame

## Mechanism Frame Details

### Order by Plate and Number

No.		List Price
	Mechanism Frame complete, as shown .....	\$24 00
1	Mechanism Bed Plate .....	4 56
2	Right Hand Bracket supporting slot shaft and buffer .....	1 20
3	Left Hand Bracket supporting slot shaft and buffer .....	1 20
4	Buffer Base Plate .....	2 40
5	Right Hand Bracket for Upper Sprockets and contact spring board .....	1 02
6	Left Hand Bracket for Upper Sprockets and contact Spring Board .....	1 02
7	Outer Tube .....	65
8	Inner Tube .....	92
9	Adjustable Bushing .....	43
10	$\frac{7}{8}$ " Hexagon Nut .....	06
11	$\frac{5}{8}$ " Hexagon Nut .....	11
12	Long Frame Upright .....	53
13	Short Frame Upright .....	42
14	Tap Bolt .....	03
15	Pawl Pivot Pin .....	04
16	Sprocket Shaft with bushing and nuts .....	34
17	Set Screw for securing Slot Arm Shaft .....	03



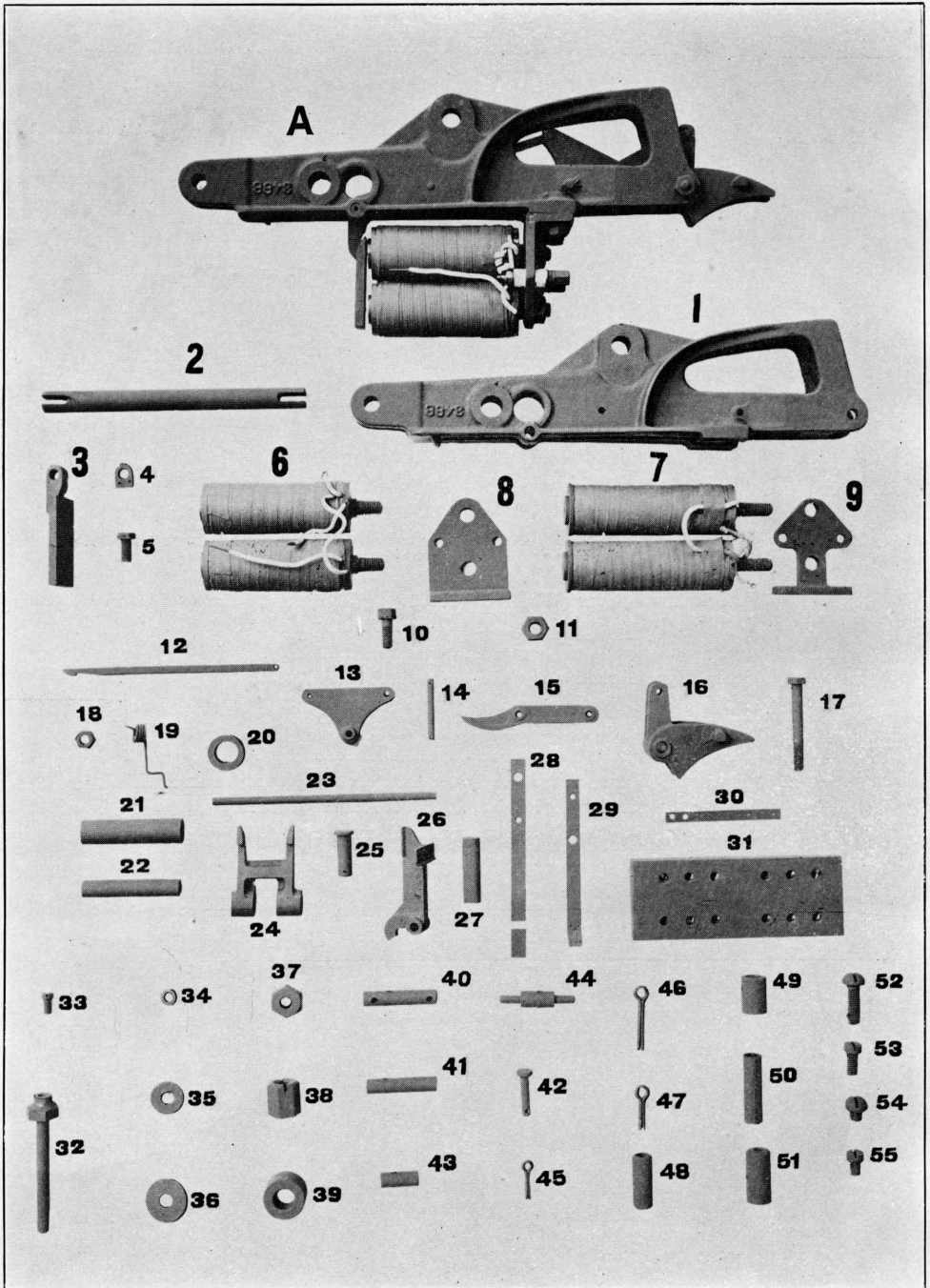
Running Gear and Shield Mechanism

## Running Gear and Shield Mechanism

Order by Plate, Number and Letter

No.		List Price
1	Main Gear Wheel .....	\$8 36
2	Counter Shaft and Pinion .....	1 77
3	Intermediate Gear Wheel .....	3 17
4	Bearing Bracket only .....	5 30
4a	Bearing Bracket with cap and screws .....	6 25
5	Main Gear Shield only .....	37
5a	Main Gear Shield with clamp cap and screws .....	63
6	Clamp Cap .....	27
7	Bearing Bracket Cap .....	35
8	Lower Sprocket Shaft .....	24
9	Lower Sprocket Wheel .....	1 40
10	Chain with trunnion link, rollers and cotters .....	5 64
11	Trunnion Link for Chain .....	26
12	Roller for Trunnion Link .....	04
13	Upper Sprocket Shaft .....	09
14	Upper Sprocket Wheel .....	1 68
15	Upper Sprocket Bushing .....	22
16	Roller Bearing for either shaft .....	58
17	Retaining washer for Roller Bearing with screws ..	05





Slot Arm and Details

## Slot Arm and Details

All orders for slot arms or slot magnets should specify resistance, and state whether or not slow releasing feature is desired.

### Order by Plate, Number and Letter

No.		List Price
A	Covered Slot Arm, complete .....	\$38 60
1	Slot Arm Casting .....	3 60
2	Main Shaft Supporting Slot Arm .....	45
3	Armature, complete, (1-3, 1-4 and 1-49) .....	1 70
4	Wearing Plate for No. 3 .....	09
5	Adjustable Bushing for Trunnion .....	07
6	Pair Distant Signal Magnets with nuts .....	13 60
7	Home Signal Magnets with nuts .....	14 65
8	Back Strap for securing distant signal magnets .....	1 30
9	Back Strap for securing home signal magnets .....	1 90
10	Tap Bolt for securing back strap to slot arm .....	03
11	Hexagon Nut for securing magnets to back strap..	03
12	Latch engaging armature .....	28
13	Three way crank .....	80
14	Shaft for No. 13 .....	03
15	Link with stop .....	29
16	Forked Head .....	65
17	Stud for Forked Head .....	13

## Slot Arm and Details

Continued

All orders for slot arms or slot magnets should specify resistance, and state whether or not slow releasing feature is desired.

### Order by Plate, Number and Letter

No.		List Price
18	Nut for Forked Head Stud .....	\$ 04
19	Coil Spring for Forked Head of Slot Arm .....	12
20	Collar with set screw for No. 23 .....	35
21	Filler Tube for No. 22 .....	21
22	Filler Tube for No. 23 .....	22
23	Pivot Pin for pawl .....	04
24	Pawl for supporting slot arm .....	53
25	Pin for Buffer Connecting Link .....	09
26	Circuit Closing Lever .....	76
27	Rubber Insulation for No. 26 .....	18
28	<b>Long Contact Spring</b> .....	<b>1 02</b>
29	<b>Short Contact Spring</b> .....	<b>48</b>
30	Spring for Circuit Closing Lever .....	13
31	Slate Base for Contact Springs .....	54
32	Binding Post .....	10
32a	Binding Post complete, with washers and nuts (1-32, 1-33, 1-34, 2-35, 2-36, 1-37 and 1-38) ....	24
33	Fillister Head Screw for Binding Post .....	01
34	Brass Washer for Binding Post .....	01
35	Brass Washer for Binding Post .....	01
36	Copper Washer for Binding Post .....	02

## Slot Arm and Details

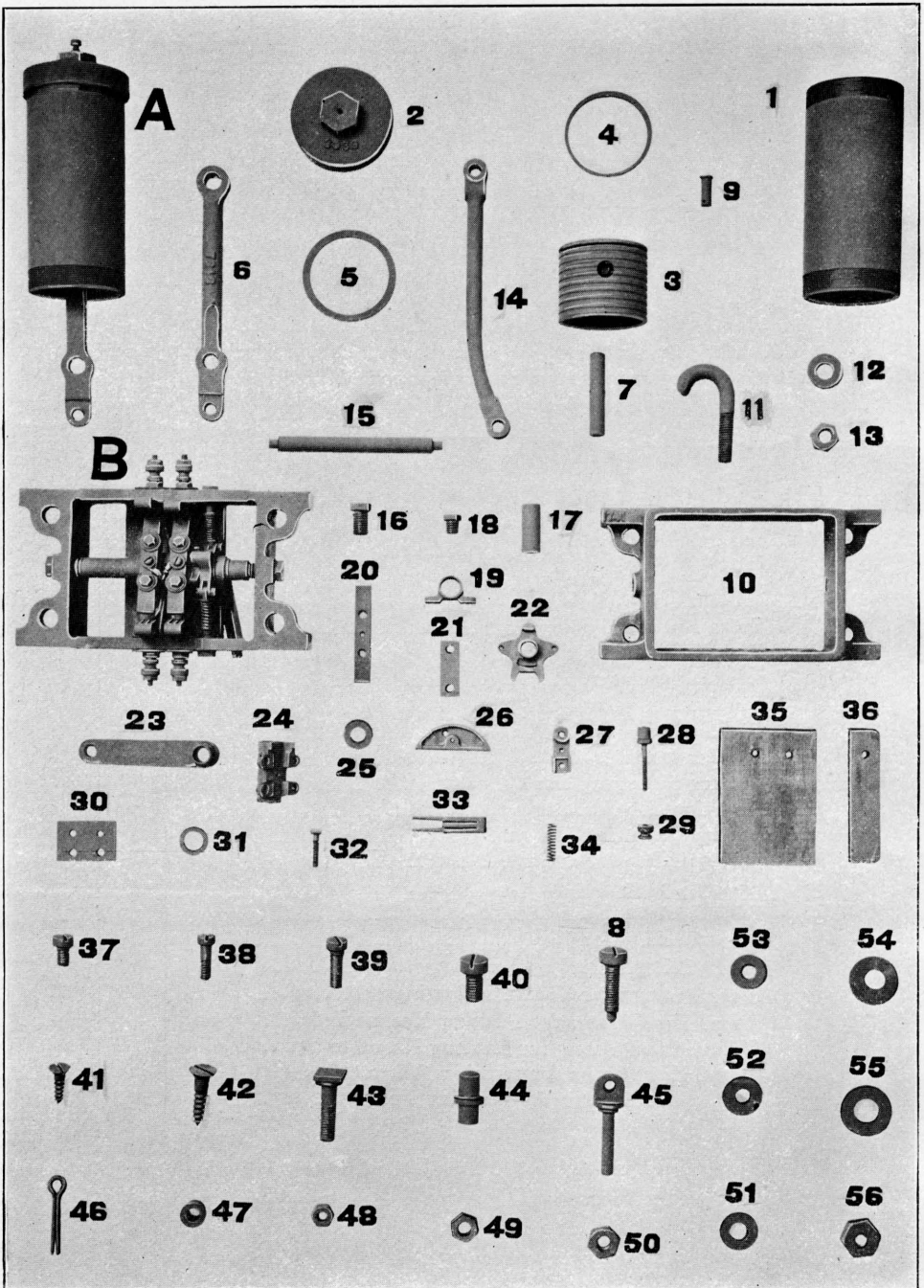
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All orders for slot arms and slot magnets should specify resistance, and state whether or not slow releasing feature is desired.

### Order by Plate, Number and Letter

No.		List Price
37	Brass Nut for Binding Post .....	\$ 03
38	Brass Lock Nut for Binding Post .....	04
39	Lavite Bushing .....	04
40	Pin for No. 15 and 16 .....	03
41	Pin for Stop for Latch .....	02
42	Pin for Latch .....	02
43	Pin for three way crank .....	02
44	Trunnion for Armature .....	04
45	Spring Cotter for No. 42 .....	01
46	Spring Cotter for No. 2 .....	01
47	Spring Cotter for No. 17 .....	01
48	Rubber Bushing for No. 31 .....	03
49	Brass Bushing for No. 3 .....	03
50	Grade C Paper Bushing for No. 32 .....	03
51	Brass Bushing for Trunnion Bearing .....	04
52	Round Head Screw for securing Nos. 23 and 31 ..	01
53	Fillister Head Screw for securing No. 26 to 27 ....	01
54	Round Head Screw for securing No. 20 to 23 .....	01
55	Fillister Head Screw for securing No. 30 .....	01





Buffer Cylinder and Pole Changer Mechanism

## Buffer Cylinder and Pole Changer Mechanism Purposes

If extra contacts are required, in addition to the four usually furnished for pole changing, the fact should be stated in the order which should also indicate at what point of the movement of the signal the contacts are to be closed or opened.

### Order by Plate, Number and Letter

No.		List Price
A	Buffer with piston link, complete, as shown .....	\$ 9 42
B	Pole Changer, complete, as shown .....	14 34
1	Buffer Cylinder .....	3 22
2	Cap for Buffer Cylinder Head .....	68
3	Buffer Piston .....	3 66
4	Eccentric Packing Ring .....	80
5	Fibre Washer .....	03
6	Buffer Piston Connecting Link .....	33
7	Wrist Pin for Piston .....	05
8	Exhaust Regulating Screw .....	05
9	Pin for Connecting Link .....	08
10	Pole Changer Box only .....	1 30
11	Hook Bolt .....	06
11a	Hook Bolt, Nut and Washer (1-11, 1-12, 1-13) ....	09
12	$\frac{5}{8}$ " Washer for Hook Bolt .....	01
13	$\frac{5}{8}$ " Nut for Hook Bolt .....	03
14	Pole Changer Connecting Link .....	28
15	Shaft for Pole Changer .....	07
16	Trunnion Screw for Shaft .....	08
17	Brass Bushing for Shaft .....	06
18	Trunnion Screw for Spring Rod Bushing .....	06

## Buffer Cylinder and Pole Changer Mechanism

Continued

Order by Plate, Number and Letter

No.		List Price
19	Bracket for Circuit Controller .....	\$ 49
20	Contact Piece for Pole Changer .....	77
21	Mica Insulation for Circuit Controller .....	10
22	Toggle .....	88
23	Arm for Pole Changer and Circuit Controller ....	66
24	Bracket for Pole Changer Contact Pieces.....	84
25	$\frac{3}{4}$ " Mica Washer for Pole Changer .....	04
26	Contact Piece for Circuit Controller .....	32
27	Terminal for Securing Binding Post .....	16
28	Binding Post and Stop for pole changer .....	10
28a	Binding Post, complete, (1-28, 1-50, 1-29, 1-51, 2-54)	20
29	Thumb Nut .....	05
30	Mica Insulation for Binding Posts .....	05
31	1/2" Brass Washer for shaft .....	02
32	Binding Post for back of pole changer .....	07
32a	Binding Post, for back of pole changer, complete, (1-32, 2-52, 1-50, 1-29 and 1-56) .....	18
33	Phosphor Bronze Spring for Pole Changer .....	19
33a	Phosphor Bronze Spring for Circuit Controller ....	17
34	Spring for Toggle .....	11
35	Center Board for Pole Changer Box .....	23
36	End Board for Pole Changer Box .....	14

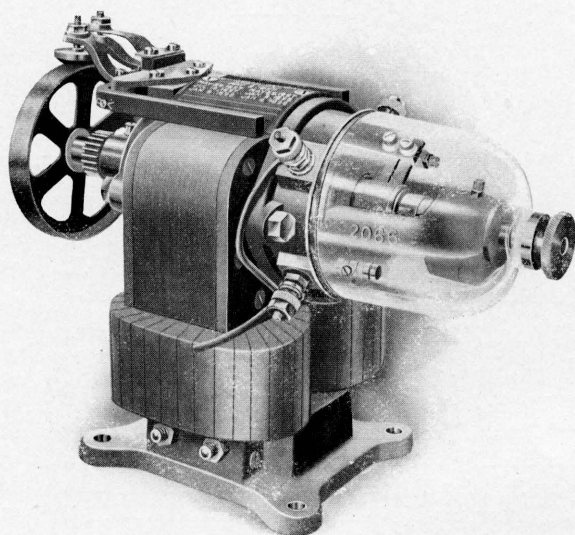
## Buffer Cylinder and Pole Changer Mechanism

Continued

Order by Plate, Number and Letter

No.		List Price
37	10/32" Fillister Head Screw for No. 20 .....	01
38	6/32" Fillister Head Screw for No. 45 .....	01
38a	6/32" Fillister Head Screw for No. 45 with nut ..	03
39	10/32" Fillister Head Screw for connecting Nos. 19 and 26 .....	01
40	12/32" Fillister Head Screw for No. 27 .....	01
41	1/2" Wood Screw for No. 27 .....	01
42	3/4" Wood Screw for 35 and 36 .....	01
43	8/32" Square Head Bolt for securing 20 to 24 .....	04
44	Brass Bushing for Trunnion Spring .....	03
45	Spring Rod for Toggle .....	10
46	3/32" Cotter for No. 9 .....	01
47	Fibre Bushing for Binding Post .....	02
48	8/32" Brass Nut for No. 38 .....	02
49	10/32" Brass Nut for No. 43 .....	02
50	10/32" Brass Nut for Nos. 28 and 32 .....	02
51	7/32" Brass Washer for No. 28 .....	01
52	3/16" Brass Washer for No. 43 .....	01
53	3/16" Copper Washer for No. 20 .....	01
54	3/16" Brass Washer for No. 40 .....	01
55	7/32" Brass Washer for Nos. 20 and 24 .....	01
56	10-32 Brass Nut for Nos. 28 and 32 .....	02





**General View of Mechanism Motor, Showing Field Actuated  
Brake and Transparent Shield Over Commutator**

NOTE.—This shield completely overcomes the serious troubles formerly experienced from frost or dust accumulating on the commutator.

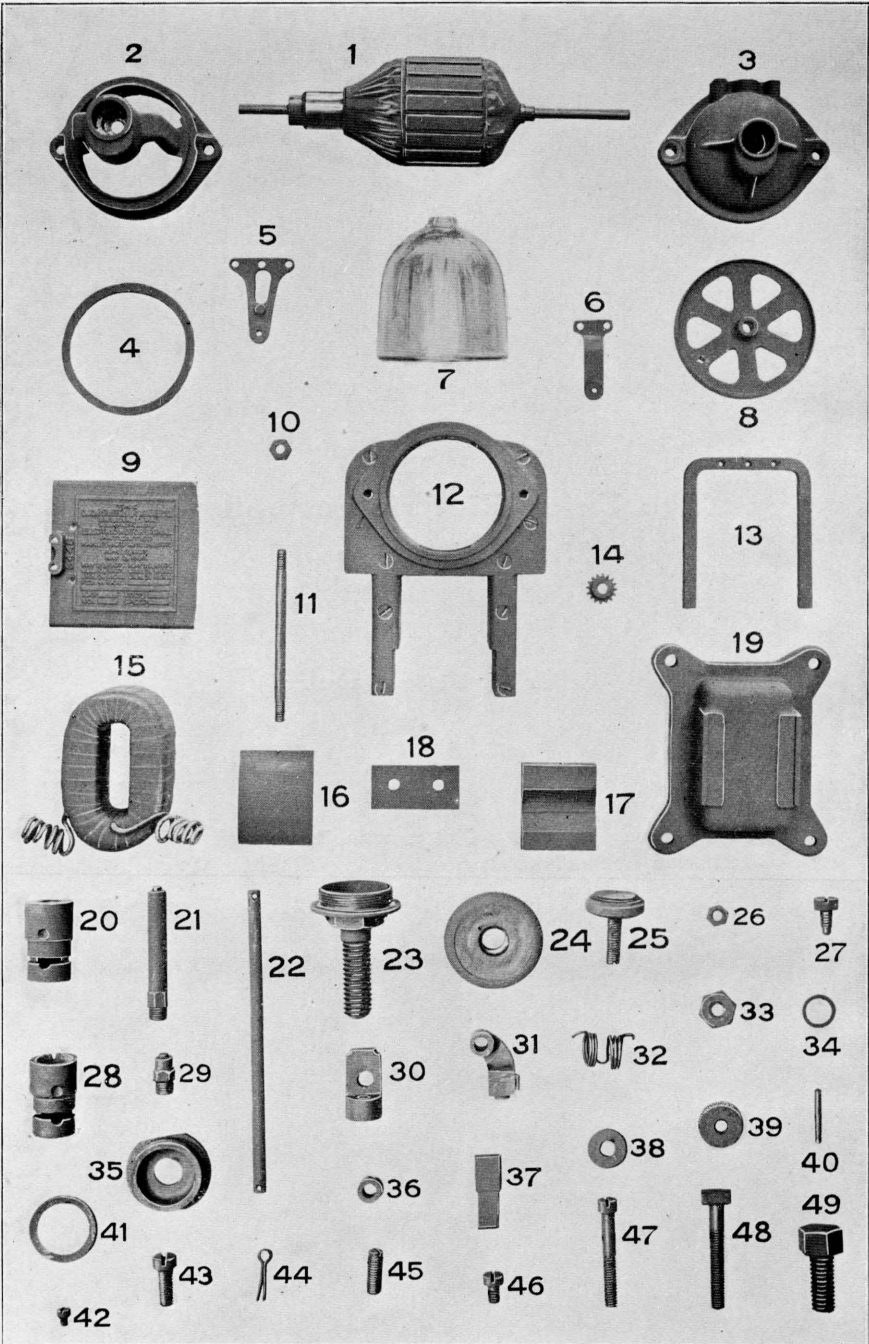
**For Details of Motor See Plate 1213**

**The Union Electric Semaphore  
Mechanism Motor**

Order by Plate Number

Electric Semaphore Signal Motor, with Brake and  
Commutator Shield as shown.....

List Price	
\$62 00	



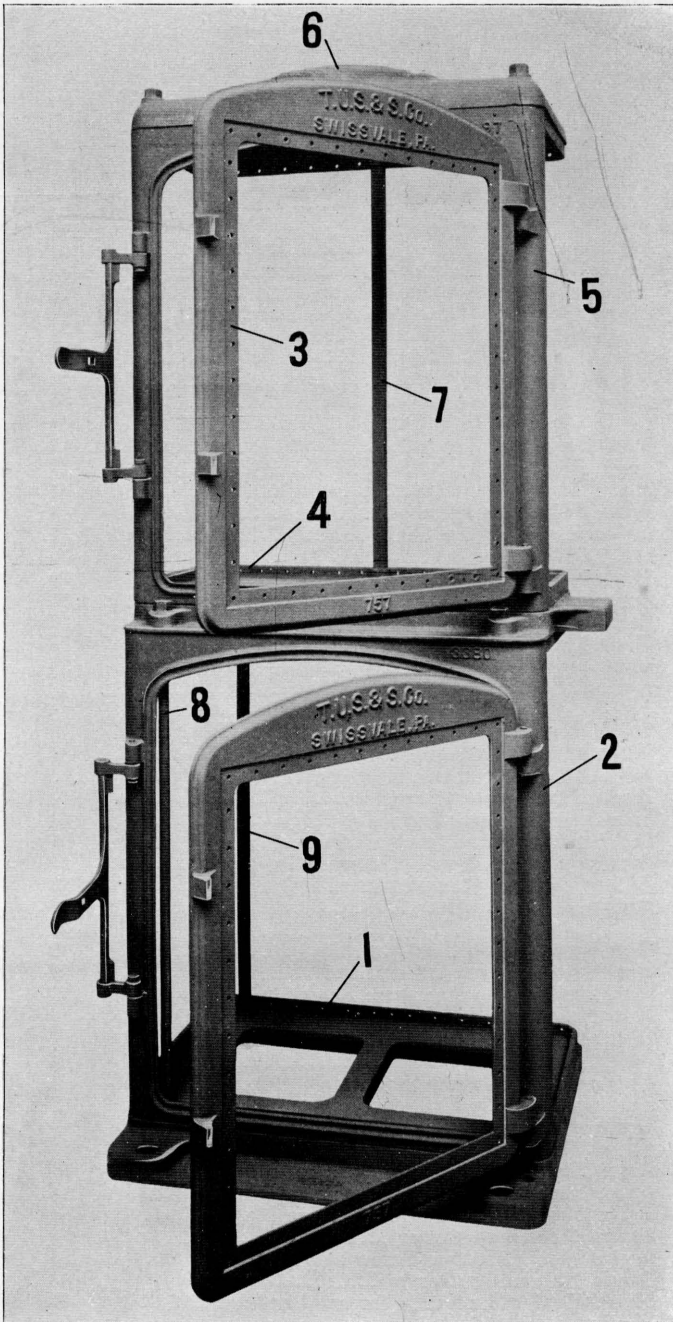
Motor Details

## Motor Details

**Order by Plate, Number and Letter**

No.		List Price
1	Armature, complete .....	\$16 60
2	Armature Shaft Bearing—(Commutator End) ....	2 95
3	Armature Shaft Bearing—(Gear End) .....	2 10
4	Leather Gasket for commutator shield .....	53
5	Brake Shoe Bracket .....	16
6	Brake Shoe Bracket Spring .....	22
7	Glass commutator shield .....	36
8	Brake Wheel on Armature Shaft .....	80
9	Brake Shoe Shield and Name Plate .....	80
10	Field Stay Bolt Nut .....	05
11	Field Stay Bolt .....	12
12	Motor Fields, complete .....	9 44
13	Brake Shoe Armature .....	42
14	Pinion on Armature Shaft .....	I 30
15	Field Coil .....	4 80
16	Top Wood Filler under Name Plate .....	10
17	Bottom Wood Filler under Armature .....	10
18	Field Stay Bolt Plate .....	17
19	Motor Base .....	I 25
20	Armature Shaft Bearing Sleeve—(Commutator End) .....	35
21	Spring Oiler Cup (Gear End) .....	34
22	Brake Shoe Shaft .....	12
23	Stud for securing Glass Commutator Shield .....	34
24	Nut with leather cushion for above .....	24
25	Brake Shoe with leather disc .....	06
26	Brush Holder Stud Lock Nut .....	02
27	Set Screw for shaft bearing sleeve .....	04
28	Armature Shaft Bearing Sleeve (Gear End) .....	34
29	Spring Oil Cup (Commutator End) .....	24
30	Brush Holder Bracket .....	04
31	Brush Holder .....	30
32	Brush Holder, Double Spiral Spring .....	09
33	Binding Post Lock Nut .....	02
34	Wearing Ring on Armature Shaft .....	02
35	Armature Shaft Bearing End Nut (Gear end) ....	24
36	Brush Holder Stud Collar .....	02
37	Brush .....	45
38	Binding Post Washer for No. 48 .....	01
39	Binding Post Thumb Nut for No. 48 .....	05
40	Dowel Pin for securing Nos. 8 and 14 .....	01
41	Ring Oiler .....	03
42	Brush Holder Stud Collar Set Screw .....	01
43	Brake Shoe Tap Screw for securing No. 5 to 13 ..	04
43a	Brake Shoe Tap Screw for securing No. 6 to 9 ....	04
44	Brake Shoe Shaft Cotter .....	01
45	Brake Shoe Adjusting Screw and Nut .....	05
46	Brush Holder Set Screw .....	01
47	Brush Holder Stud with threaded end .....	05
48	Binding Post .....	05
49	Tap Bolt for securing Armature Shaft Bearings ...	07



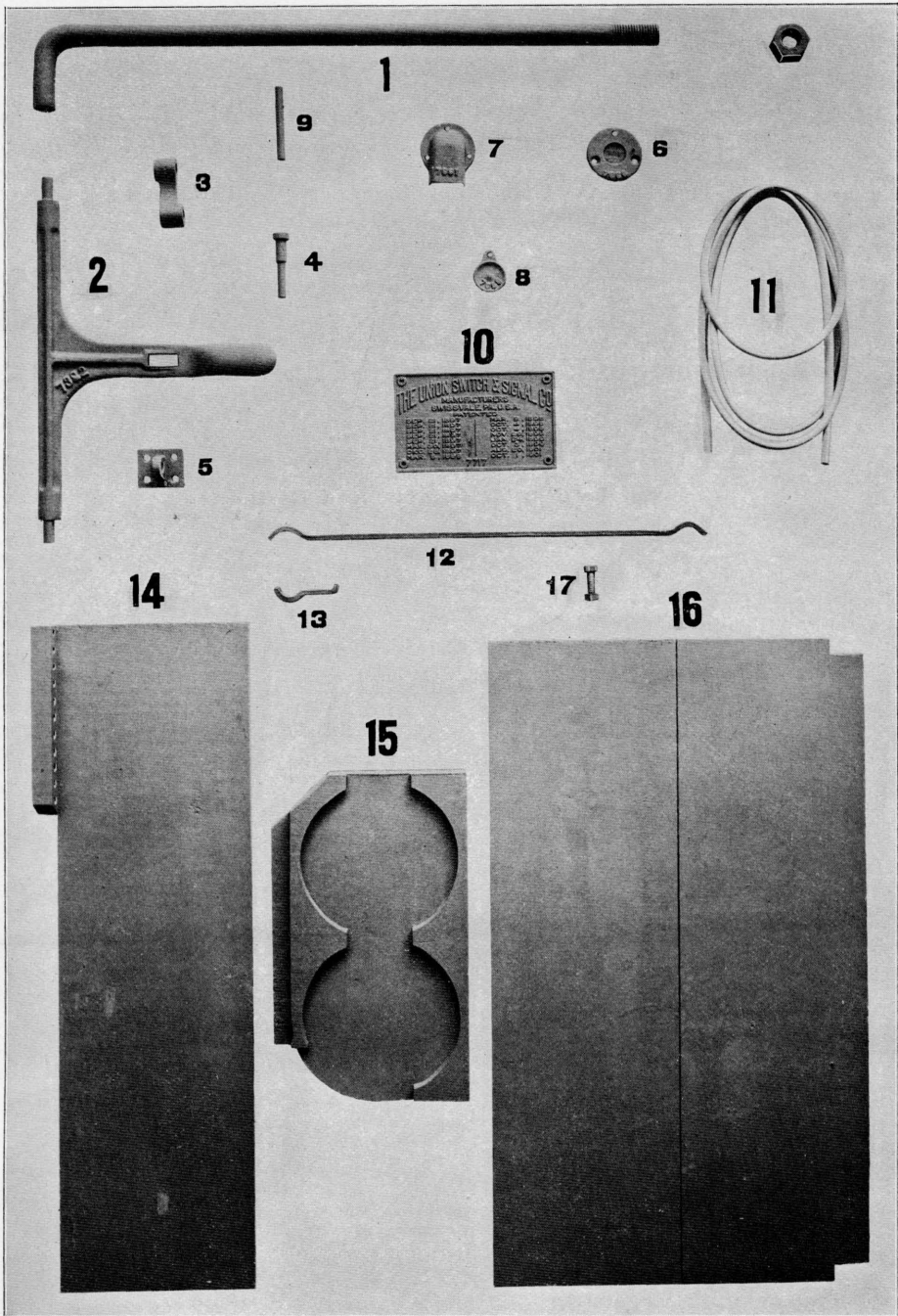


Combination Mechanism and Battery Case

## Combination Mechanism and Battery Case

Order by Plate, Number and Letter

No.		List Price
A	Combination Mechanism and Battery Case, complete	\$112 00
B	Mechanism Case only .....	60 30
1	Base Casting for Battery Case .....	11 70
2	Door Frame with hinge pin for Battery Case .....	6 72
3	Door Casting for Either Case .....	3 50
3a	Door Casting with sheet iron for either Case .....	11 86
4	Base Casting for Mechanism Case .....	10 60
5	Door Frame Casting with hinge pin, for Mechanism Case .....	6 72
6	Dome Casting .....	8 05
7	Square Bolt with threaded ends .....	1 34
8	Stay Bolt for either case .....	80
9	Thimble over stay bolt at rear of Battery Case .....	28



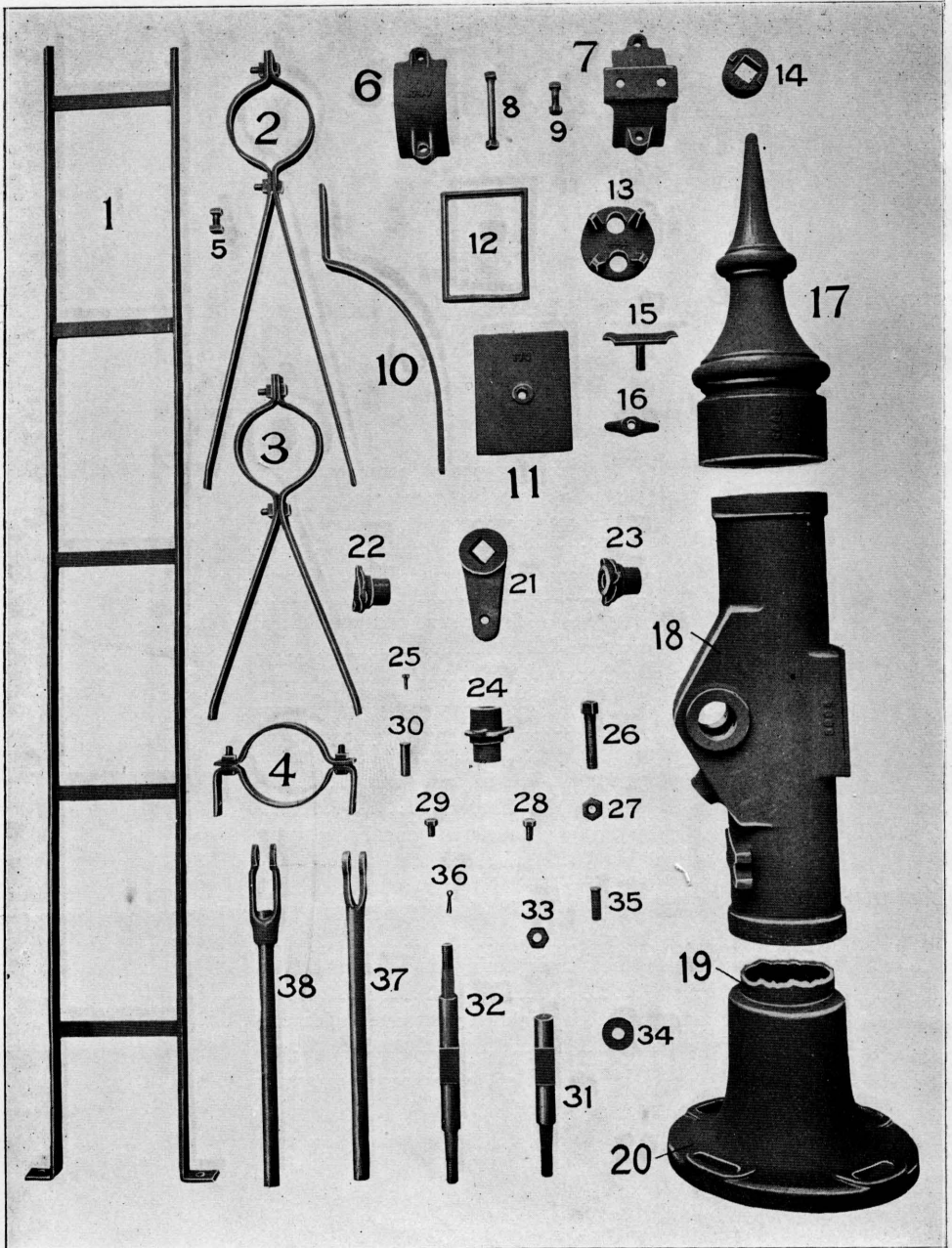
Mechanism and Battery Case Fittings

## Mechanism and Battery Case Fittings

Order by Plate, Number and Letter

No.		List Price
1	Anchor Bolt and Nut .....	\$1 14
2	Hasp .....	48
3	Link for Fastener .....	17
4	Pin for Fastener .....	17
5	Staple with rivets .....	12
6	Ventilator .....	23
6a	Ventilator, complete, with screws, escutcheon and ventilator apron .....	43
7	Ventilator Apron .....	15
8	Escutcheon for Ventilator .....	03
9	Hinge Pin .....	03
10	Name Plate with rivets .....	18
11	Rubber Tubing for Gaskets in both cases .....	14
12	Wrought Iron Strap for Shelving .....	20
12a	Wrought Iron Strap with clamps and bolts (1-12, 2-13 and 2-17) .....	35
13	Wrought Iron Clamp for No. 12 .....	05
14	Board and Cleat for Lightning Arrester and Terminals .....	84
15	Relay Base Board .....	45
16	Shelving for Battery Case .....	1 10
	riage bolts .....	90
17	Bolt and Nut for No. 12 ..	03





Post, Ladder and Fittings

## Post, Ladder and Fittings

Order by Plate, Number and Letter

No		List Price
1	Ladder 22'7" long for one arm pole .....	\$10 15
1a	Ladder 22'7" long with stays and bolts .....	14 45
1b	Ladder 28'8" long for two arm pole .....	12 85
1c	Ladder 28'8" long with stays and bolts .....	18 95
2	Bottom ladder brace with bolts .....	1 74
3	Intermediate Ladder Brace with bolts .....	1 68
4	Top Ladder Brace Clamp with bolts .....	85
5	1/2"x1" bolt for securing braces to ladder .....	05
5a	1/2"x1 1/2" bolt for ladder clamps .....	06
6	Half Clamp for Lamp Bracket .....	35
7	Half Clamp for Lamp Bracket .....	55
7a	Clamp for Lamp Bracket with bolts (1-6, 1-7 and 2-8) for 5" pipe .....	1 02
8	1/2"x4 1/2" Bolt for clamping No. 6 and 7 .....	09
9	1/2"x1 1/4" Bolt for securing No. 7 to 10 .....	06
10	Lamp Bracket .....	63
11	Hand Hole Plate .....	50
11a	Hand Hole Plate with gasket (1-11, 1-12) .....	1 35
12	Gasket for No. 11 .....	86
13	Guide for up and down rod .....	60

## Post, Ladder and Fittings

Continued

Order by Plate, Number and Letter

No.		List Price
14	Filler for shaft on one arm signal .....	\$ 14
15	Clamp for hand hole plate .....	15
15a	Clamp and nut for hand hole plate (1-15, 1-16) ....	28
16	Nut for No. 15 .....	13
17	Pinnacle .....	2 22
18	Universal Semaphore Bearing .....	6 20
19	5" section pipe post 17'3" long for one arm signal ..	20 17
19a	5" section pipe post 4'10 1/2" long for upper section	6 70
20	Base of Post .....	4 50
21	Arm for semaphore shaft .....	1 15
22	Rear shaft bushing (used when no backlight is re- quired) .....	2 26
23	Shaft Bushing .....	2 54
24	Special Shaft Bushing (when wide lamps are used)	2 54
25	1/4"x3/4" Cap Screw for Shaft Bushing .....	05
26	3/4"x4 1/2" adjustable screw for shaft arm .....	18
26a	Adjustable screw for shaft arm with lock nut ....	24
27	Lock Nut for No. 26 .....	06

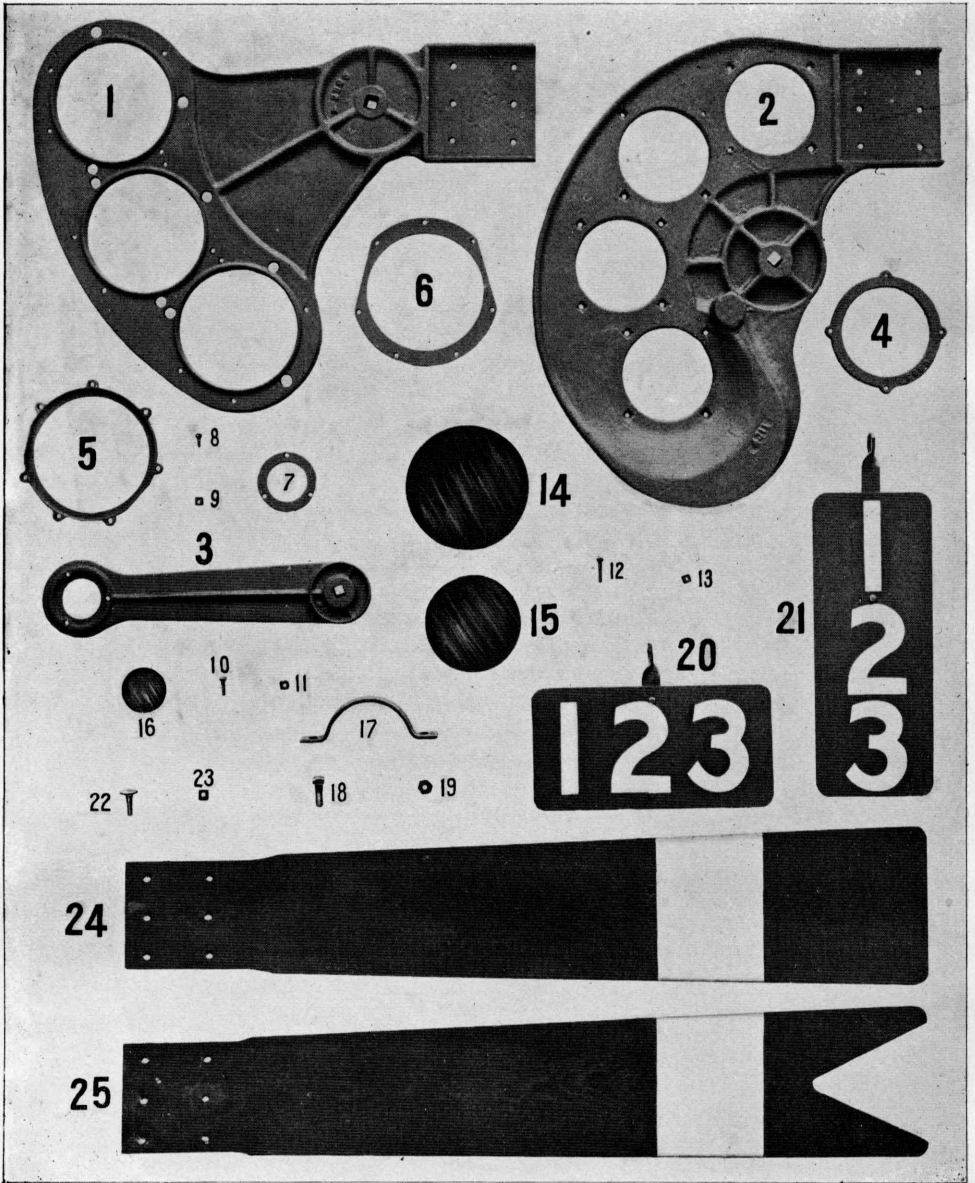
## Post, Ladder and Fittings

Continued

Order by Plate, Number and Letter

No.		List Price
28	1/2"x7/8" Binding Screw for fastening No. 18 to 19	\$ 05
29	1/2"x5/8" Top Bolt for Pipe Guide .....	03
30	5/8"x1 7/8" Pin for No. 37 .....	09
31	Spectacle Shaft (where no backlight is used) .....	2 70
31a	Spectacle Shaft with nut washer and cotter (where no backlight is used) .....	2 78
32	Spectacle Shaft (used with backlight) .....	4 00
32a	Spectacle Shaft with nuts, washers and cotters (used with backlight) .....	4 16
33	Nut for Nos. 31 or 32 .....	06
34	Washer for Nos. 31 or 32 ..	02
35	5/8"x2" Pin for No. 38 .....	09
36	Spring Cotter for Nos. 30, 31, 32 or 35 .....	01
37	Solid Jaw for up and down rod .....	75
38	Screw Jaw for Up and Down Rod .....	1 10
38a	Up and Down Rod (for 1-arm signal) 19'1" long with jaw, screw jaw, pins and cotters .....	6 48
38b	Up and Down Rod (for 2-arm signal) 25'1" long with jaw, screw jaw, pins and cotters .....	7 80





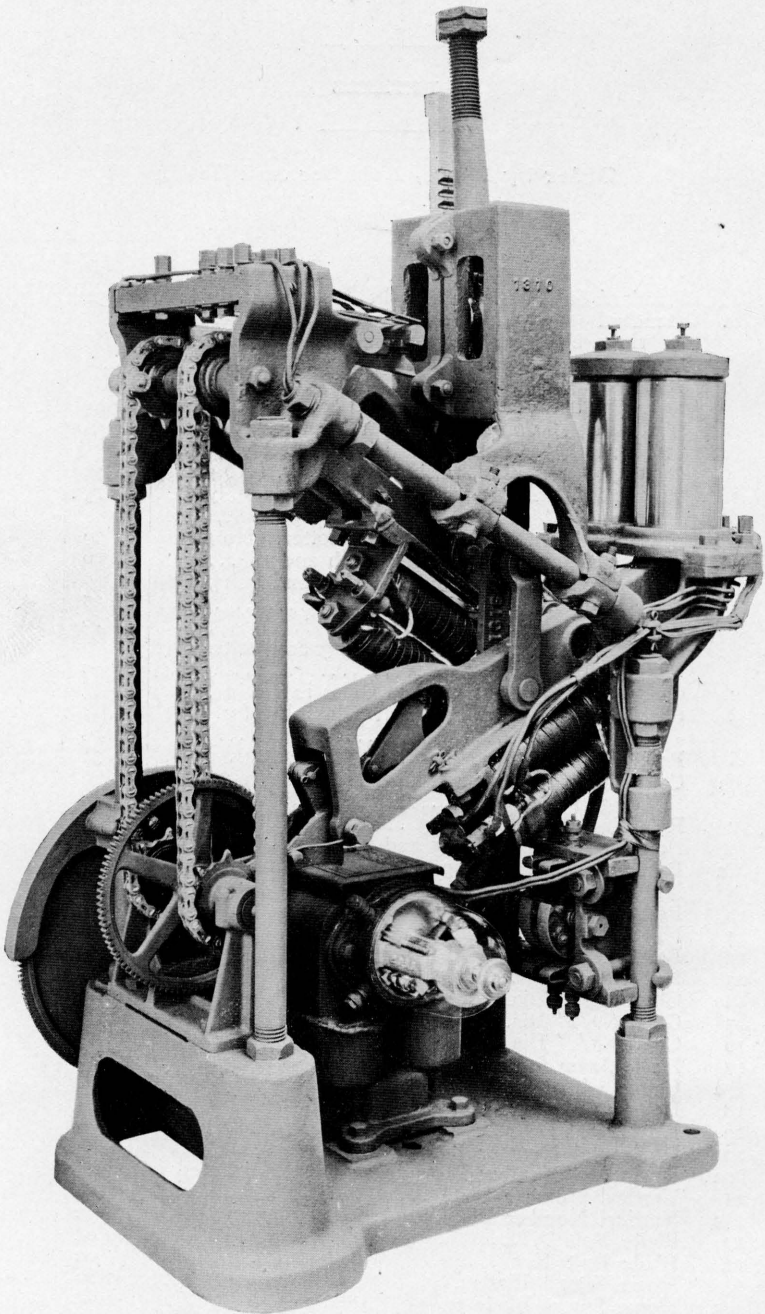
Standard Spectacles, Blades and Number Plates

# Standard Spectacles, Blades and Number Plates

## DETAILS

### Order by Plate, Number and Letter

No.		List Price
1	Standard 60° Continuous Light Spectacle, only . . .	\$ 4 56
1a	Standard 60° Continuous Light Spectacle, with rings, bolts, stud, washer and cotter. (No glass)	6 95
1b	Standard 70° Continuous Light Spectacle, only . . .	4 56
1c	Standard 70° Continuous Light Spectacle, with rings, bolts, stud, washer and cotter. (No glass)	6 95
1d	Standard 75° Continuous Light Spectacle, only . . .	4 56
1e	Standard 75° Continuous Light Spectacle, with rings, bolts, stud, washer and cotter. (No glass)	6 95
2	Standard 90° Continuous Light Spectacle, only . . .	9 15
2a	Standard 90° Continuous Light Spectacle, with rings, bolts, stud, washer and cotter. (No glass)	10 50
3	Back Spectacle only for Nos. 1, 1b and 1d . . . . .	1 10
3a	Back Spectacle as above with ring and bolts, (No glass) . . . . .	1 35
3b	Back Spectacle only, for No. 2 . . . . .	1 10
3c	Back Spectacle as above with ring and bolts. (No glass) . . . . .	1 35
4	Cast Iron Ring for Spectacle Glass in No. 2 . . . . .	14
5	Cast Iron Ring for Spectacle Glass in Nos. 1, 1b and 1d . . . . .	19
6	Retaining Ring for No. 5 . . . . .	36
6a	Combined Retaining and Cast Iron Ring with bolts (1-5, 1-6) . . . . .	76
7	Retaining Ring for No. 3 . . . . .	06
8	Bolt for securing Nos. 5 and 6 . . . . .	01
8a	Bolt for securing No. 5 to Nos. 1, 1b and 1d . . . . .	01
9	Nut for above . . . . .	01
10	Bolt for securing Nos. 3 and 7 . . . . .	01
11	Nut for above . . . . .	01
12	Bolt for securing Nos. 2 to 5 . . . . .	01
13	Nut for above . . . . .	01
14	Glass 8-3/8" Dia. (See Plate 481) { Section 4, }	..
15	Glass 6-1/2" Dia. (See Plate 481) { Page 117 }	..
16	Glass 3-1/2" Dia. (See Plate 481) { }	..
17	Half Clamp for number plate . . . . .	32
17a	Clamp with bolts (1-17, 2-18 and 2-19) . . . . .	71
18	Bolt for clamp . . . . .	03
19	Nut for above . . . . .	02
20	Horizontal Number Plate . . . . .	1 44
20a	Horizontal Number Plate painted and numbered . .	2 32
21	Vertical Number Plate . . . . .	1 44
21a	Vertical Number Plate painted and numbered . . .	2 32
22	Blade Bolt . . . . .	04
23	Blade Bolt Nut . . . . .	02
24	Home Signal Blade . . . . .	2 20
24a	Home Signal Blade painted . . . . .	2 85
25	Distant Signal Blade . . . . .	2 20
25a	Distant Signal Blade painted . . . . .	2 85



The Union Electric Semaphore Three Position Signal

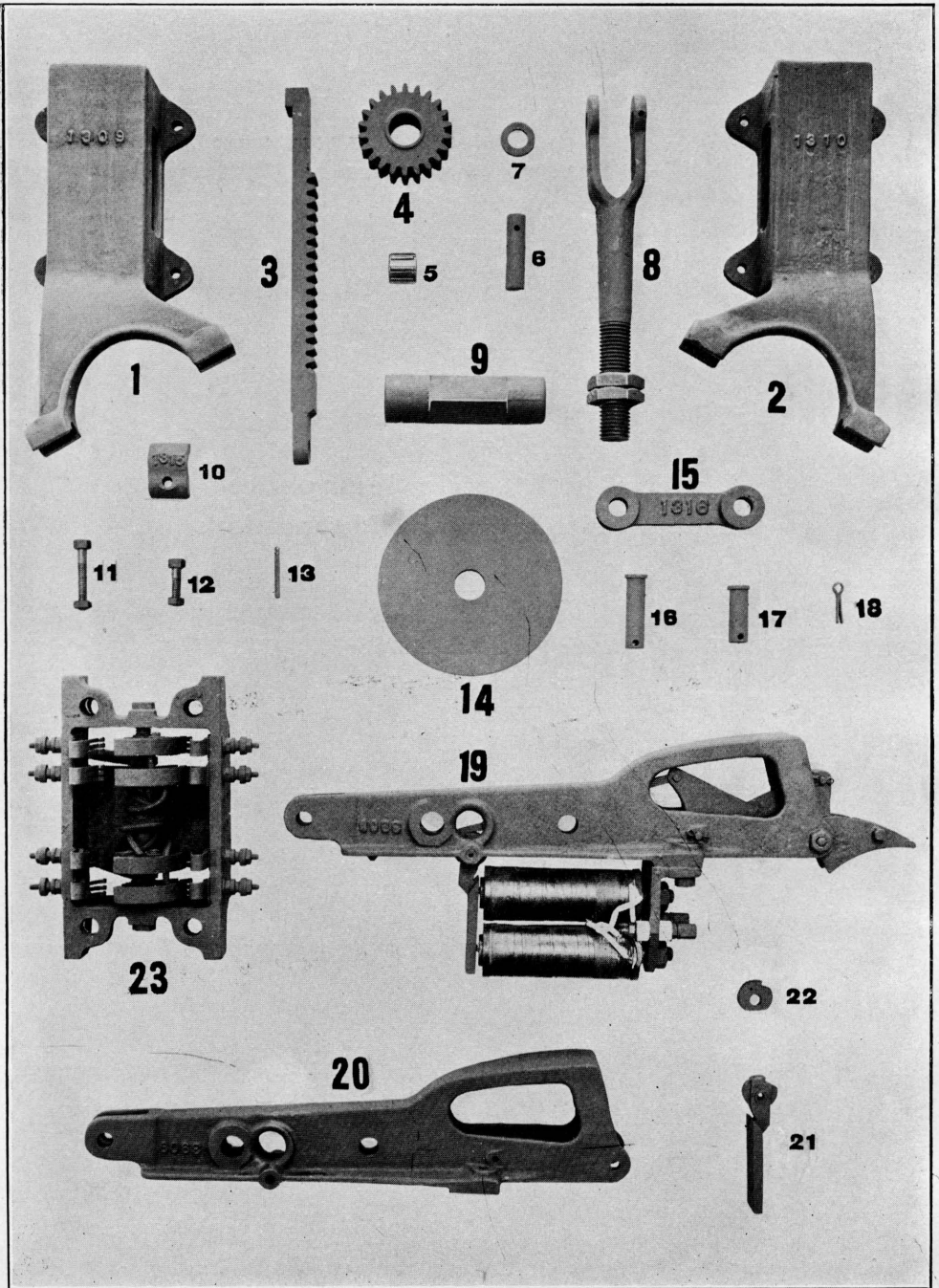
**The Union Electric Semaphore  
Three Position Signal Mechanism**

Order by Plate Number

Mechanism, complete, as shown, for 3-position signal

List Price	
\$318 00	





Slot Arm, Circuit Controller, and Special Attachment for Three Position (Style B.) Signal

## Slot Arm, Circuit Controller, and Special Attachment for Three Position (Style B) Signal

### DETAILS

**For Additional Details of Slot Arm and Circuit Controller, see Plate No. 1210**

All orders for slot arms or slot magnets should specify resistance, and state whether or not slow releasing features are desired.

### Order by Plate, Number and Letter

No.		List Price
	Special Attachment, complete (1-2a, 1-3, 1-3a, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-13, 1-14, 4-15, 2-16, 2-17, 2-18)	\$30 00
1	Right Hand Half-Case .....	3 32
2	Left Hand Half-Case .....	3 32
2a	Case Complete (1-1, 1-2, 4-11, 4-12 and 4-10) .....	7 15
3	Rack for Home Signal .....	5 22
3a	Rack for Distant Signal .....	5 22
4	Spur Gear .....	2 10
5	Roller Bearing for No. 4 .....	28
6	Pin for No. 4 .....	09
7	Brass Washer for No. 6 .....	04
8	Special jaw with jam nuts .....	1 12
9	Turnbuckle .....	1 05
10	Cap for Nos. 1 and 2 .....	08
11	Bolt 3/8"x2" for fastening Nos. 1, 2 and 10 together	03
12	Bolts 3/8"x1 1/4" for fastening Nos. 1 and 2 together	03
13	Dowel Pin for No. 8 .....	02
14	Disc Shield on No. 8 .....	30
15	Link Connecting Slot Arm and Rack .....	24
16	Pin for Lower end of link .....	09
17	Pin for Upper end of link .....	09
18	3/16" Cotter for Nos. 16 or 17 .....	01
19	Slot Arm, complete .....	38 60
20	Slot Arm Casting only .....	3 60
21	Armature, complete .....	1 70
22	Armature Wearing Plate only .....	09
23	Circuit Controller, complete .....	19 40

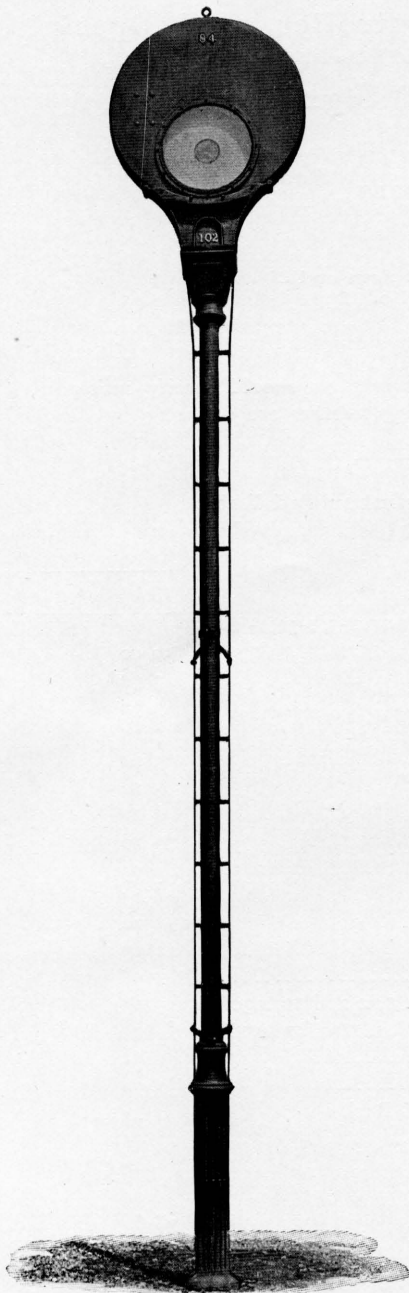


Fig. 1  
FRONT VIEW SIGNAL CLEAR

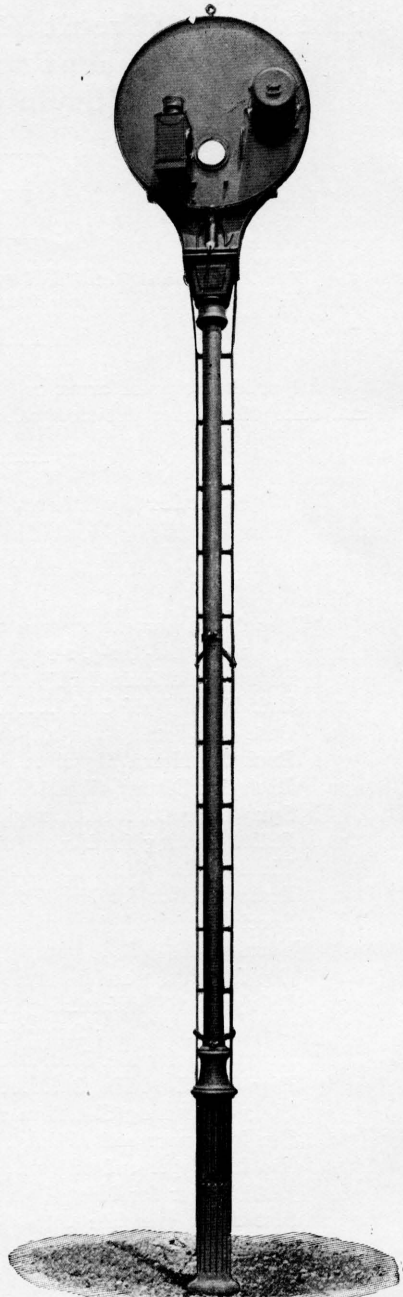


Fig. 2  
REAR VIEW OF CASE

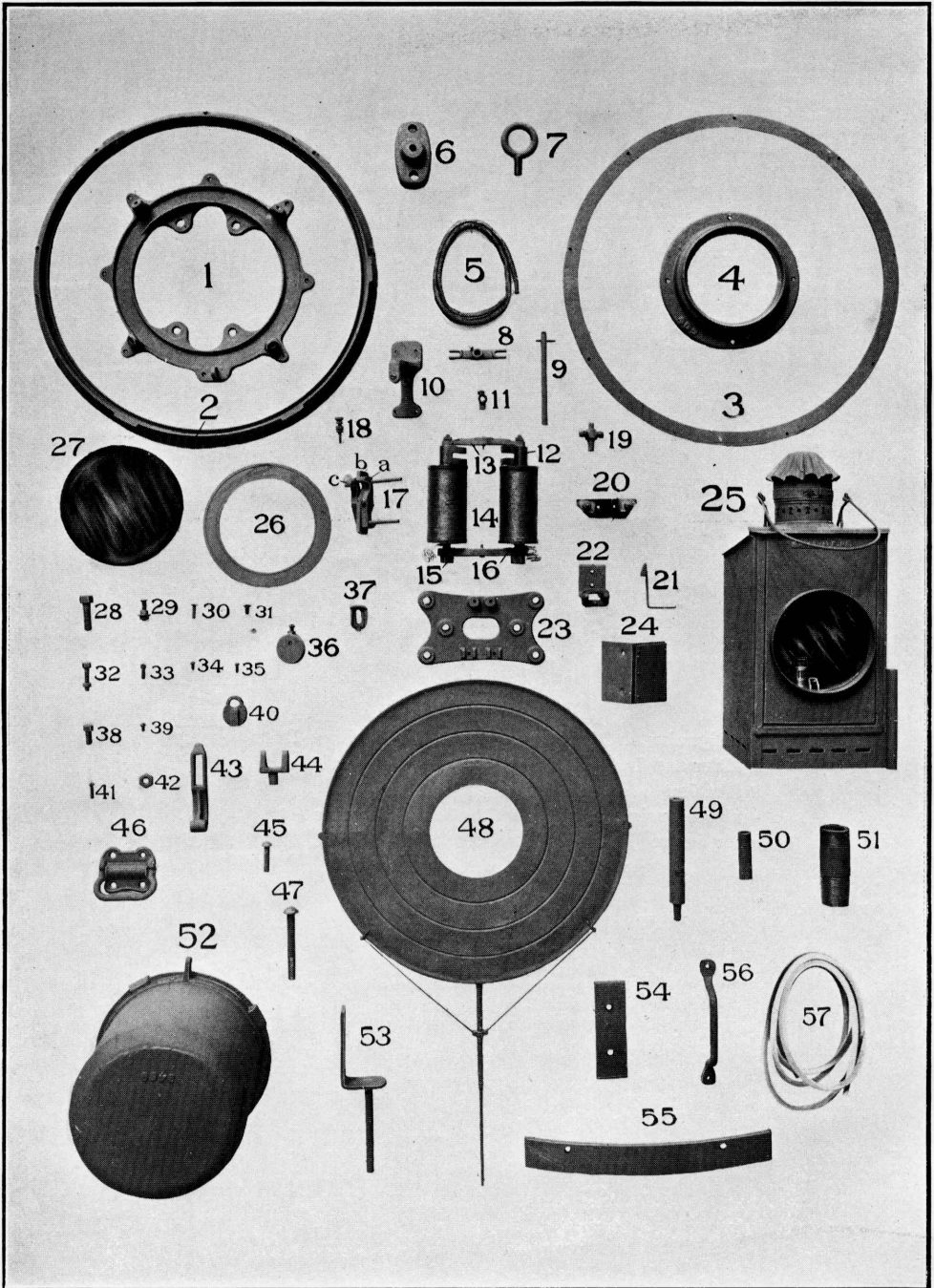
**The Union Disc Signal**

## The Union Disc Signal

Order by Plate, Number and Letter

No.		List Price	
A	Disc Signal with Mechanism Case ; Mechanism ; Post; Ladder and Lamp, complete, with white as the clear indication .....	\$278 00	
A-1	As above, using a color as the clear indication (state color desired) .....	283 00	





The Union Disc Signal  
(Details)

## The Union Disc Signal

### DETAILS

#### Order by Plate, Number and Letter

No.		List Price
1	Inside Ring for Magnet Hood .....	\$1 32
2	Inside Ring for Front Light .....	1 90
3	Outside Ring for Front Light .....	2 00
4	Outside Ring for Back Light .....	30
5	Felt Gasket for No. 1 .....	12
6	Socket for Eye Bolt .....	36
7	Eye Bolt .....	30
8	Fork for Armature Stem .....	44
9	Armature Shaft with Dowel Pin .....	24
10	Bearing with Trunnion for Banner Shaft .....	2 12
11	Circuit Breaker Clamp .....	2 02
12	Pole Piece .....	3 22
13	Stay for Magnet with trunnion screw .....	1 24
14	Magnet .....	14 04
15	1/2"x1 5/8" Cap Screw (blued) for Magnet .....	12
16	Back Strap with Trunnion Screw .....	1 16
17	Armature, complete, with stems and set screws .....	4 05
17a	Armature Top Plate .....	1 40
17b	Armature Middle Plate .....	1 20
17c	Armature Bottom Plate .....	1 35
17d	Armature Stem .....	04
18	Binding Post with nuts and washers for No. 23 .....	24
19	Banner Shaft with clamp and set screws .....	64
20	Hard Rubber Plate with contact springs .....	1 40

## The Union Disc Signal

Continued

### DETAILS

Order by Plate, Number and Letter

No.		List Price
20a	Contact Spring (long) .....	\$ 35
20b	Contact Spring (short) .....	33
20c	Binding Post .....	18
21	Spring for Lamp Catch .....	70
22	Lamp Catch .....	17
23	Base for Magnets .....	4 44
24	Bracket with felt Cushion for Banner .....	76
25	Lamp, complete .....	11 00
26	Aluminum Ring for Banner .....	62
26a	Aluminum Ring for Banner with special glass ....	3 80
26b	Aluminum Ring for Banner with Lucreted Paper Disc (State color of paper desired) .....	1 06
27	Special Glass Disc for Banner (State color desired)	3 18
28	1/2"x1 3/4" Cap Screw for securing Nos. 6, 54 and 55 to case holder .....	09
29	5/16"x1 1/4" R. H. Screw with two nuts and wash- er for No. 37 .....	05
30	1/4"x7/8" R. H. Screw for securing Nos. 1, 4, 22, 53 and 56 to case .....	03
31	1/4"x1 1/2" No. 20 F. H. Screw for securing Nos. 24, 46 and 52 .....	02
32	5/16"x1 1/2" Cap Screw with lock nut for securing No. 1 to 52 .....	08
33	12/32"x3/4" Fillister Head Screw for securing Nos. 20 to 23 .....	02
34	10/32"x3/8" R. H. Screw for securing Number Plate	01
35	8/32"x1/2" R. H. Screw for securing Nos. 2 to 3	01
36	Counterweight with set screws for Banner Arm ..	90

# The Union Disc Signal

Continued

## DETAILS

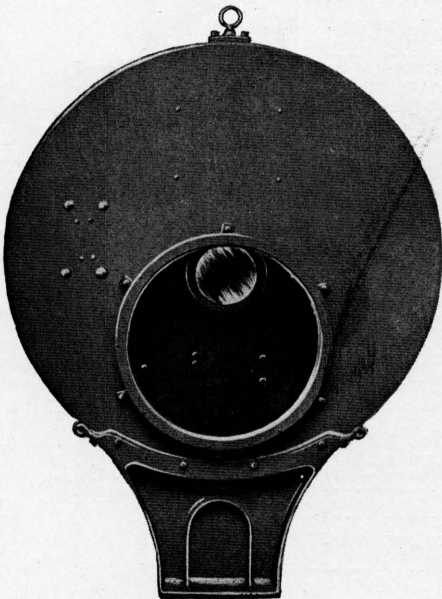
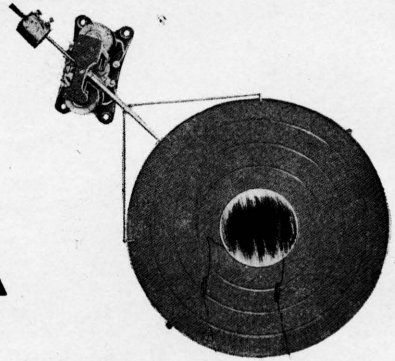
Order by Plate, Number and Letter

No.		List Price
37	Clamp for securing No. 2 to case .....	\$ 14
38	3/8"x7/8" Cap Screw for securing case to case holder .....	04
39	12/32"x3/8" R. H. Screw for securing No. 10 to case .....	01
40	Pad Lock .....	2 48
41	10/32"x7/8" R. H. Screw for Counterweight .....	01
42	1/2" Nut for No. 49 .....	03
43	Hasp .....	22
44	Hasp Bracket .....	20
45	3/8"x2" Rivet for securing Nos. 43 and 44 .....	02
46	Chest Handle .....	44
47	Round Head Stud Bolt .....	07
48	Banner with arm and braces (no glass) .....	10 65
48a	Banner for color indication (no glasses) with arm and braces .....	11 85
49	Stud for securing mechanism .....	56
50	Thimble for No. 47 .....	05
51	Nipple between case holder and cap .....	1 80
52	Magnet Cover with ring .....	4 98
53	Lamp Bracket .....	98
54	Top reinforcing plate .....	45
55	Bottom reinforcing plate .....	65
56	Handle back of case .....	50
57	Rubber Gasket for No. 2 .....	78
58	Glass Disc for No. 2 .....	1 56
58a	Glass Disc for No. 2 with Rubber Band .....	2 66
58b	Rubber Band for No. 58 .....	1 10
59	Glass Disc for No. 4 .....	15
59a	Glass Disc for No. 4 with rubber cushion .....	50
59b	Rubber Band for No. 59 .....	35

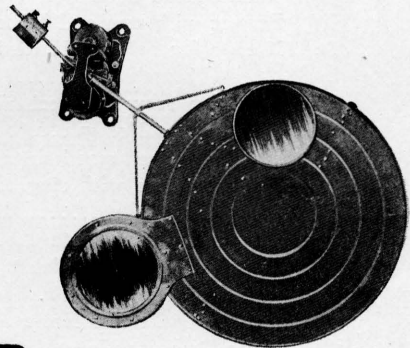




A



B

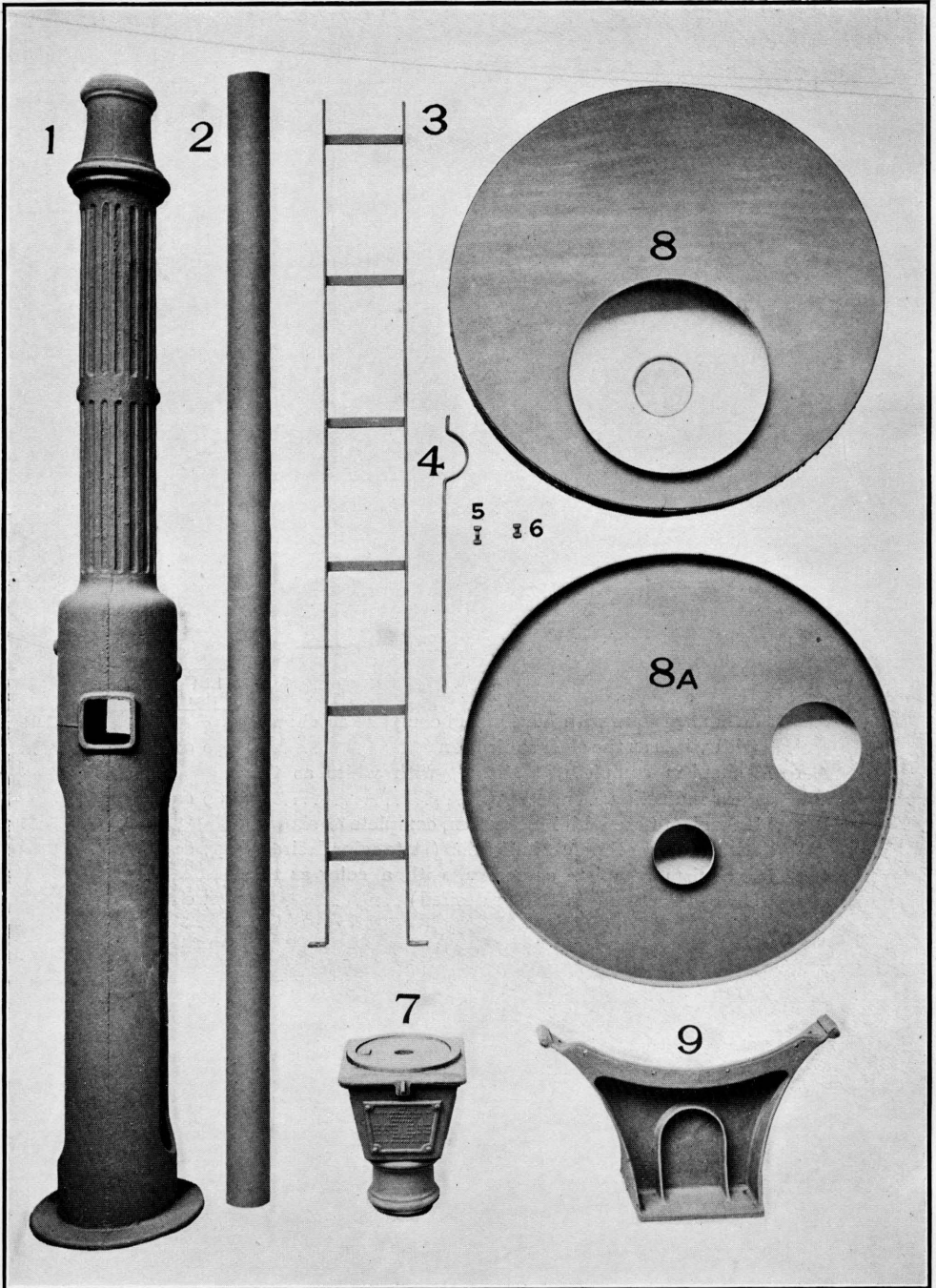


**The Union Disc Signal Mechanism  
With Color Changing Attachment**

**The Union Disc Signal  
Mechanism Cases and Mechanisms**

**Order by Plate, Number and Letter**

No.		List Price
A	Mechanism Case with Mechanism complete as shown, with white as the clear indication .....	\$190 00
A-1	Mechanism complete as shown, with white as the clear indication .....	69 00
B	Mechanism Case with Mechanism, complete as shown, with a color as the clear indication (state color desired)	195 00
B-1	Mechanism complete as shown, with a color as the clear indication (state color desired) .....	74 00



The Union Disc Signal  
Details of Post, Ladder and Mechanism Case

## The Union Disc Signal

### Details of Post, Ladder and Mechanism Case

Unless otherwise specified this signal will be furnished 23'3" long, base to center Mechanism Case. If other dimensions are desired, specify when ordering.

### Order by Plate, Number and Letter

No.		List Price
1	Lower Cast Iron Section, 9'2 1/4" long .....	\$37 00
1a	Lower Cast Iron Section with pipe and cap (1-2-7) Leaded .....	58 00
2	Upper Wrought Iron Section 11'0" long .....	9 50
3	Ladder only 16'6" long .....	7 45
3a	Ladder with stays and bolts .....	9 25
4	Ladder Stay 29" long, Half Clamp .....	80
4a	Ladder Stay 29" long complete with bolts .....	1 80
5	1/2"x1 1/2" Bolt for ladder stay .....	06
6	1/2"x1" Bolt for securing stay to ladder .....	05
7	Cap for No. 2 .....	14 00
8	Mechanism Case "Front View" with rings and fittings, complete, no mechanism .....	112 00
8a	Mechanism Case "Back View" .....	
9	Mechanism Case Holder with Hasp and Stud ....	17 00
9a	Mechanism Case Holder with mechanism case, complete, no mechanism .....	119 00



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