

Part Catalogue No. 6196

August, 1923

For Prices Refer to Catalogue 10-A or Apply to Nearest District Office

PARTS OF

Westinghouse

Type F-33 Oil Circuit-Breakers

400, 600 and 800 Amperes, 15,000 Volts
One, Two and Three Pole, Single Throw

INDEX TO PARTS

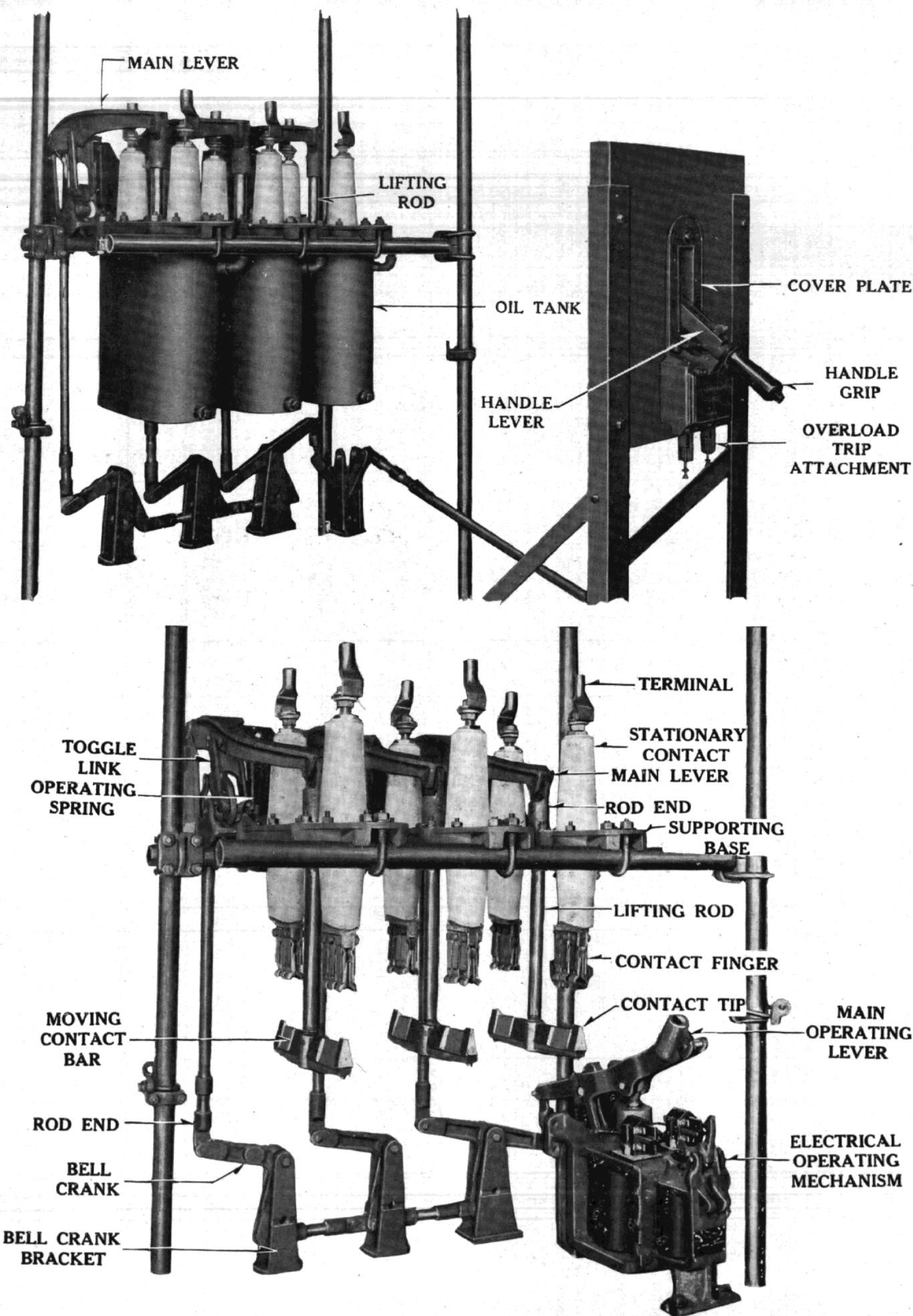
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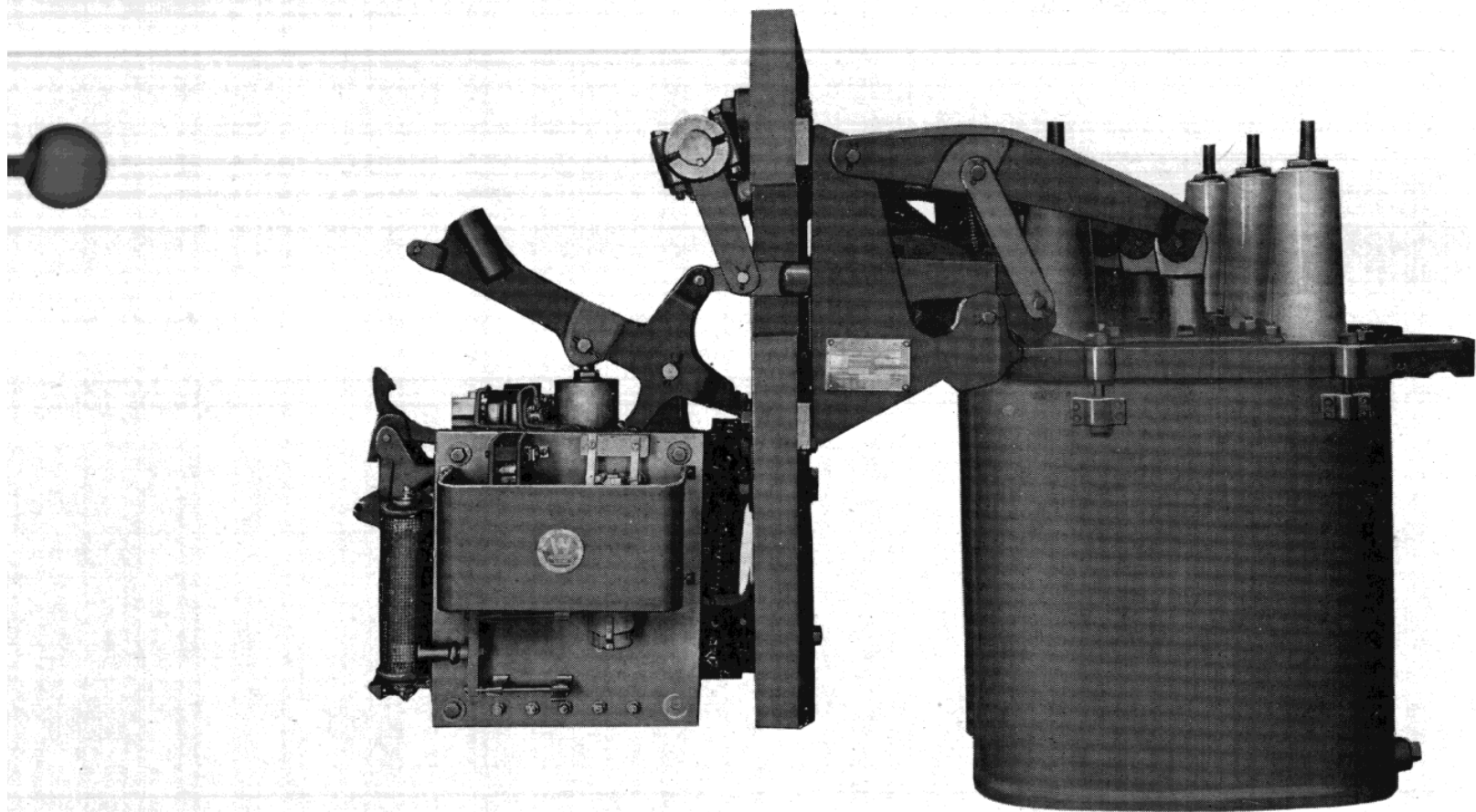


WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
East Pittsburgh, Pa.

Printed in U. S. A.



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TYPE F-33 OIL CIRCUIT BREAKER, ELECTRICALLY OPERATED

RATINGS AND CHARACTERISTICS

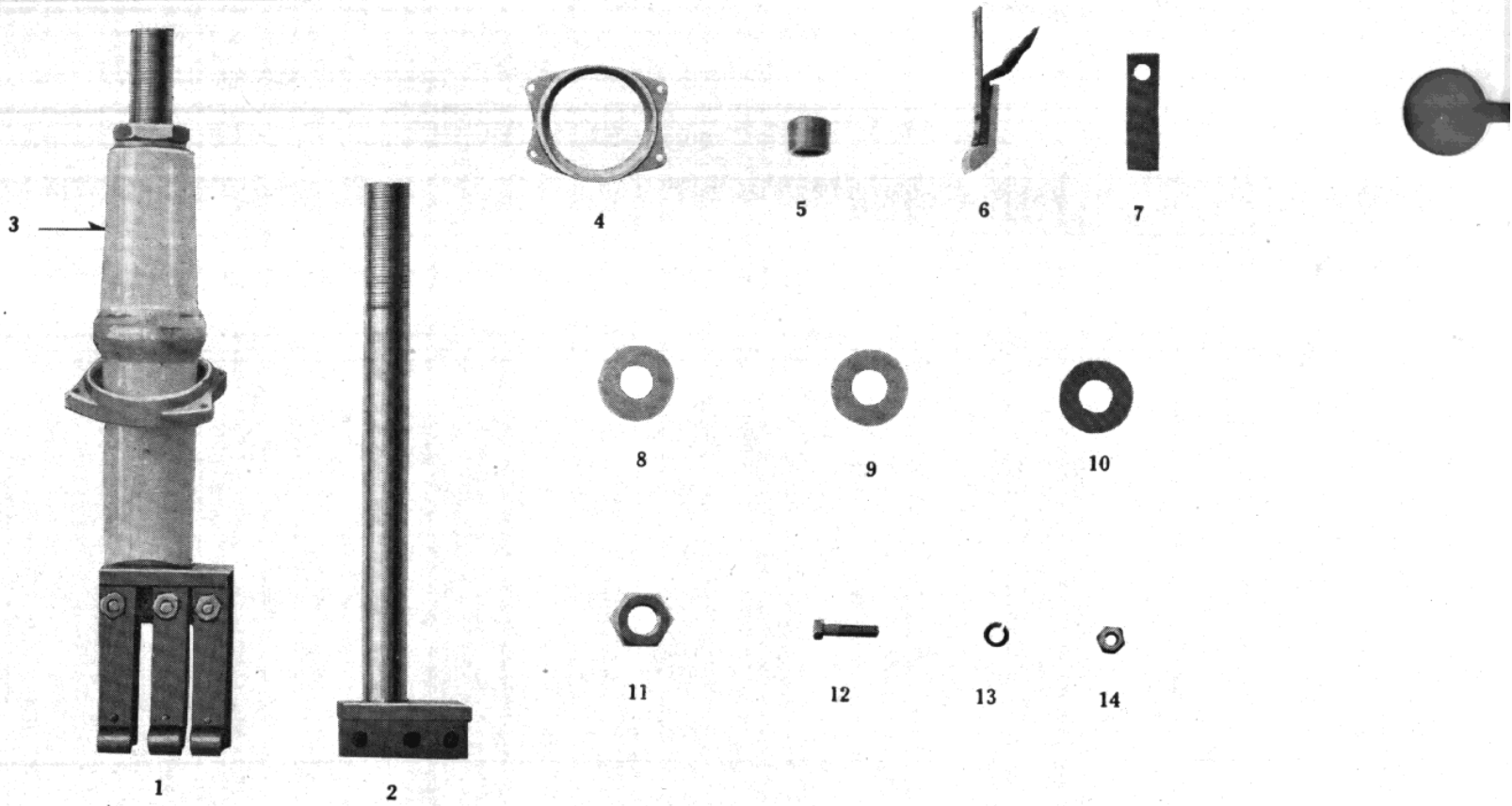
15,000 Volts, Single Throw, Hand Operated and Electrically Operated,
Automatic and Non-Automatic

Method of Tripping	Amps.	Poles	Hand Operated		Electrically Operated	
			Wall Mounting Style No.	Pipe Mounting Style No.	Wall Mounting Style No.	Pipe Mounting Style No.
Non-automatic.....	400	1	357114	.....	357120	.....
Non-automatic.....	400	2	332873	332891	332909	332927
Non-automatic.....	400	3	332874	332892	332910	332928
Non-automatic.....	400	4	332875	332893	332911	332929
Non-automatic.....	600	1	357115	.....	357121	.....
Non-automatic.....	600	2	332876	332894	332912	332930
Non-automatic.....	600	3	332877	332895	332913	332931
Non-automatic.....	600	4	332878	332896	332914	332932
Non-automatic.....	800	1	357116	.....	357122	.....
Non-automatic.....	800	2	332879	332897	332915	332933
Non-automatic.....	800	3	332880	332898	332916	332934
Non-automatic.....	800	4	332881	332899	332917	332935

Automatic

Single Coil.....	400	1	357117	.....	.....	.....
Single Coil.....	400	2	332882	332900	332918	332936
Double Coil.....	400	3	332883	332901	332919	332937
Double Coil.....	400	4	332884	332902	332920	332938
Single Coil.....	600	1	357118	.....	.....	.....
Single Coil.....	600	2	332885	332903	332921	332939
Double Coil.....	600	3	332886	332904	332922	332940
Double Coil.....	600	4	332887	332905	332923	332941
Single Coil.....	800	1	357119	.....	.....	.....
Single Coil.....	800	2	332888	332906	332924	332942
Double Coil.....	800	3	332889	332907	332925	332943
Double Coil.....	800	4	332890	332908	332926	332944

STATIONARY CONTACTS AND DETAILS



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Stationary Contacts and Details, for 400 Amperes

Ref. No.	Style No.	No. per Pole	Description
1	332834	2	Stationary contact complete
2	332846	2	Contact stud and block
3	332833	2	Porcelain insulator
4	332841	2	Clamp ring, to support insulator, used on under side of base
5	332864	4	Micarta bushing, for insulator
6	328455	12	Contact finger
7	328478	12	Pressure spring, for contact finger
8	332830	2	Lower fullerbord washer, for insulator
9	332863	2	Upper fullerbord washer, for insulator
10	332791	2	Zinc washer, for insulator
11	12951	2	Clamping nut, for contact stud
12	.....	6	Tap bolt, $\frac{5}{16}$ " x $1\frac{3}{8}$ " (standard hardware), to fasten contact fingers to contact block
13	.....	6	Lock washer, $\frac{5}{16}$ " (standard hardware), for contact finger bolt
14	.....	6	Hexagon nut, $\frac{5}{16}$ " (standard hardware), for contact finger bolt

Stationary Contacts and Details, for 600 Amperes

1	332835	2	Stationary contact complete
2	332847	2	Contact stud and block
3	332833	2	Porcelain insulator
4	332841	2	Clamp ring, to support insulator, used on under side of base
5	332865	4	Micarta bushing, for insulator
6	328455	12	Contact finger
7	328478	12	Pressure spring, for contact finger
8	332831	2	Lower fullerbord washer, for insulator
9	332850	2	Upper fullerbord washer, for insulator
10	332792	2	Zinc washer, for insulator
11	296801	2	Clamping nut, for contact stud
12	.....	6	Tap bolt, $\frac{5}{16}$ " x $1\frac{3}{8}$ " (standard hardware), to fasten contact fingers to contact block
13	.....	6	Lock washer, $\frac{5}{16}$ " (standard hardware), for contact finger bolt
14	.....	6	Hexagon nut, $\frac{5}{16}$ " (standard hardware), for contact finger bolt

STATIONARY CONTACTS AND DETAILS—Continued

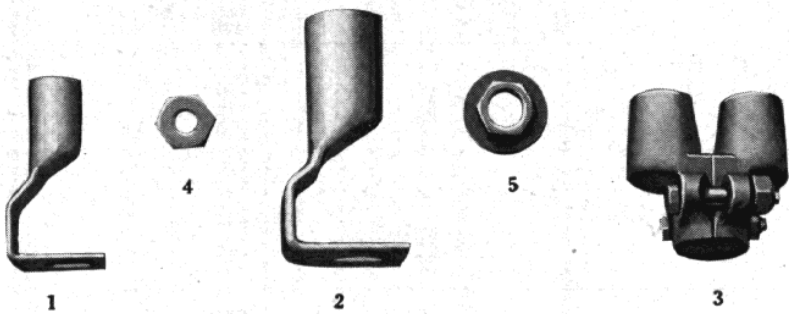
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Stationary Contacts and Details, for 800 Amperes

Illustrated on Page 4

Ref. No.	Style No.	No. per Pole	Description
1	332836	2	Stationary contact complete
2	332848	2	Contact stud and block
3	332833	2	Porcelain insulator
4	332841	2	Clamp ring, to support insulator, used on under side of base
5	.....	..	Not used
6	328455	16	Contact finger
7	328478	16	Pressure spring, for contact finger
8	332832	2	Lower fullerboard washer, for insulator
9	332850	2	Upper fullerboard washer, for insulator
10	332792	2	Zinc washer, for insulator
11	296801	2	Clamping nut, for contact stud
12	.....	6	Tap bolt, $\frac{5}{16}$ " x $1\frac{3}{8}$ " (standard hardware), to fasten contact fingers to contact stud
13	.....	6	Lock washer, $\frac{5}{16}$ " (standard hardware), for contact finger bolt
14	.....	6	Hexagon nut, $\frac{5}{16}$ " (standard hardware), for contact finger bolt

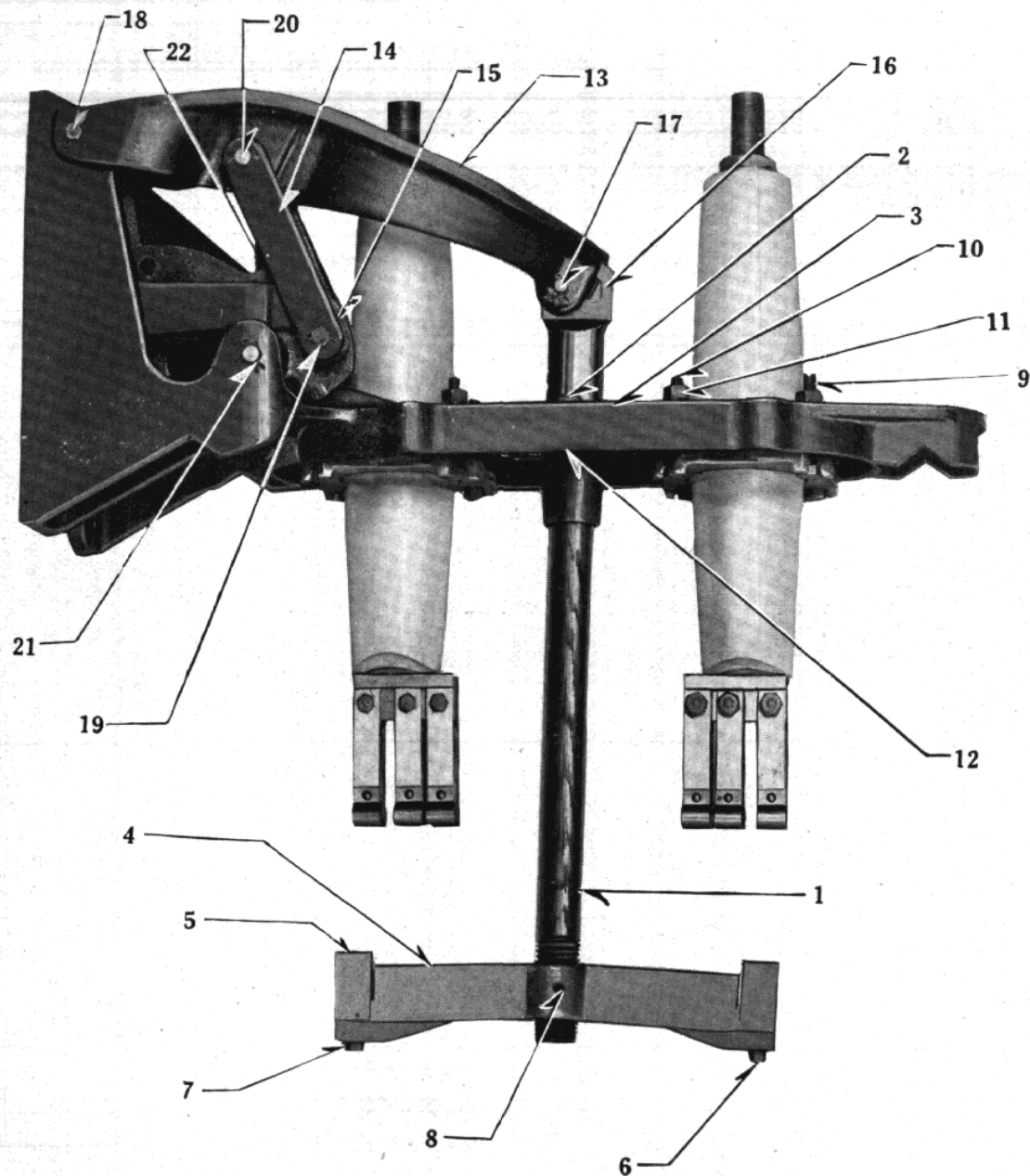
Terminals and Details



Ref. No.	Style No.	No. per Pole	Description
1	300758	2	Copper terminal, for 400 amperes, one, two, three and four pole breakers
2	301852	2	Copper terminal, for 600 amperes, one, two, three and four pole breakers
3	230309	2	Copper terminal, for 800 amperes, one, two, three and four pole breakers
4	232428	4	Contact nut for terminal, for 400 amperes, one, two, three and four pole breakers
5	230388	4	Contact nut for terminal, for 600 amperes, and 800 amperes, 2500 volts, for one, two, three and four pole breakers

MOVING CONTACTS AND OPERATING DETAILS

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole

**ORDER PARTS BY STYLE NUMBER AND DESCRIPTION**

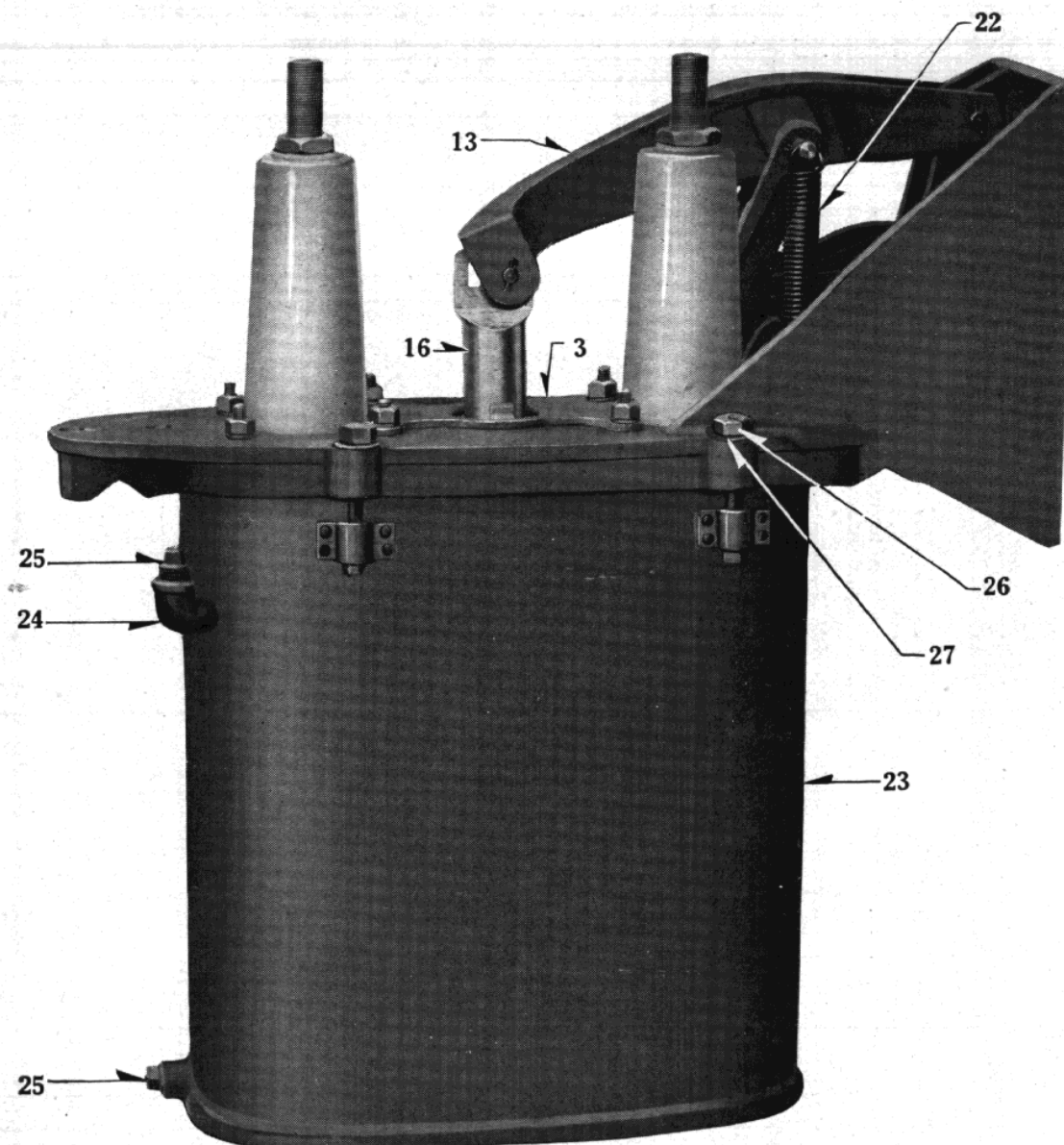
All Parts are Interchangeable Unless Otherwise Specified

Ref. No.	Style No.	No. per Contact	Description
1	385285	1	Moving contact lifting rod with rod end
2	315915	1	Bumper, for lifting rod
3	332843	1	Covering plate, for base
4	332838	1	Moving contact bar, for 400 and 600 amperes
4	332839	1	Moving contact bar, for 800 amperes
5	328470	2	Moving contact tip
6	.....	2	Tap bolt, $\frac{5}{16}$ " x $1\frac{1}{8}$ " (standard hardware), to fasten moving contact tip to contact bar
7	.....	2	Lock washer, $\frac{5}{16}$ " (standard hardware), for contact tip bolt
8	.....	1	Flat head wood screw, No. 10—32 x $\frac{3}{4}$ " (standard hardware), to fasten lifting rod to moving contact bar
9	.....	4	Machine bolt, $\frac{3}{8}$ " x $2\frac{1}{4}$ " (standard hardware), to fasten clamp ring, supporting insulator, to base
10	.....	4	Machine bolt, $\frac{3}{8}$ " x $2\frac{1}{2}$ " (standard hardware), to fasten clamp ring and cover plate to base
*	.....	8	Wrought iron washer, $\frac{3}{8}$ " (standard hardware), for clamp ring bolts
11	.....	8	Lock washer, $\frac{3}{8}$ " (standard hardware), for clamp ring bolts
12	332842	1	Supporting base
*	.....	1	Felt gasket, $\frac{3}{8}$ " x 42" x $\frac{1}{8}$ " thick, for base
13	332858	1	Cast iron main lever
14	332859	1	Cast iron toggle link, connecting main lever to toggle lever
15	332860	1	Cast iron toggle lever, connecting toggle link and rod end

*Not illustrated.

MOVING CONTACTS AND OPERATING DETAILS—Continued

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole

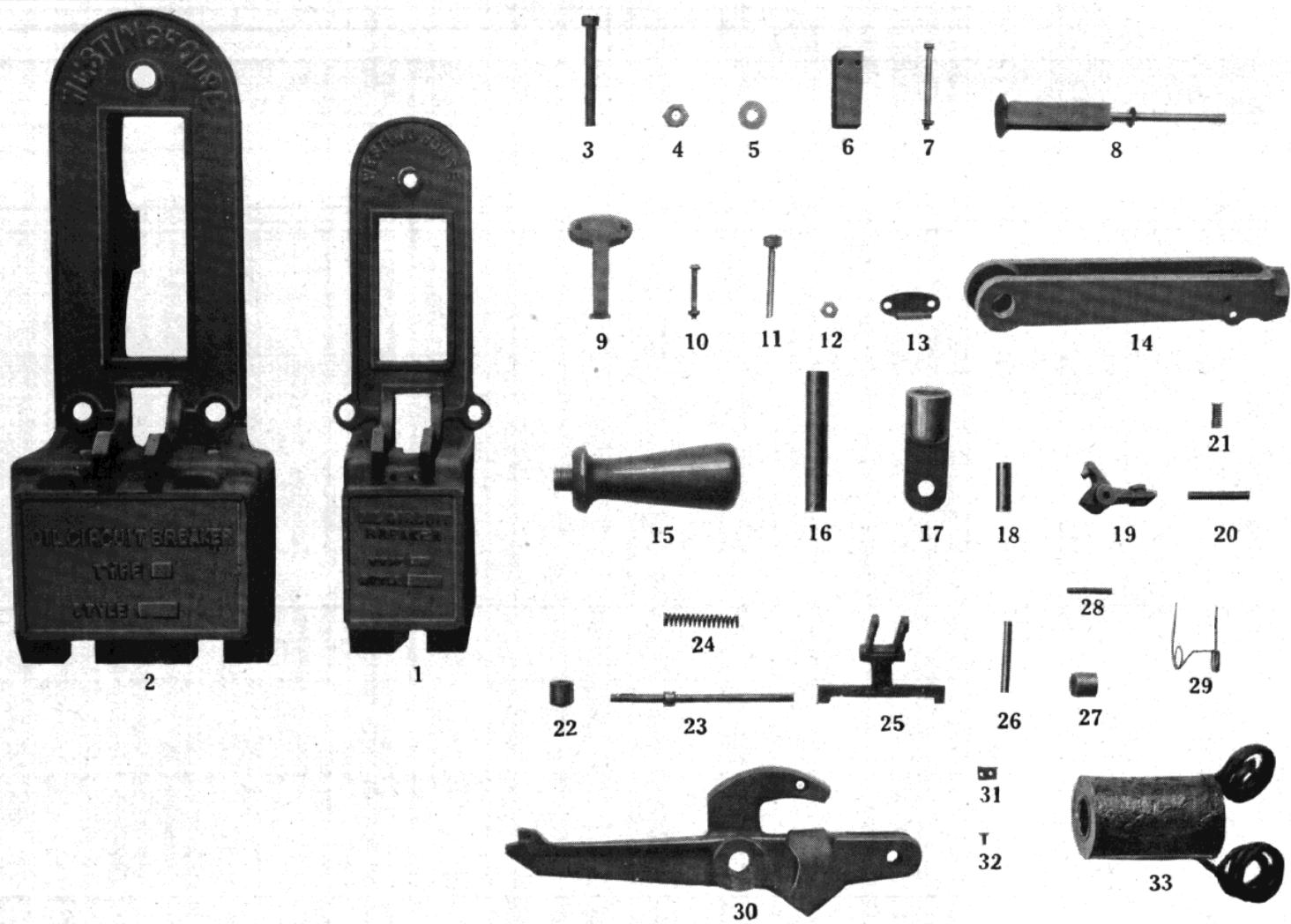
**ORDER PARTS BY STYLE NUMBER AND DESCRIPTION**

Ref. No.	Style No.	No. per Breaker	Description
16	332861	1	Rod end, for joining lifting rod and main lever
17	4161	1	Pin, to fasten lifting rod to main lever
*	63612	1	Pin, to fasten rod end to toggle lever
18	63618	1	Pin, to fasten main lever to frame
19	332862	1	Pin, to fasten toggle lever to toggle link
20	332851	1	Pin, to hold spring to main lever
21	332852	1	Pin, to hold spring to toggle lever
*	.....	1	Set screw stop, for toggle lever
*	.....	1	Lock nut, $\frac{3}{8}$ " (standard hardware), for set screw
*	300747	1	Rod end, attached to toggle lever
22	332866	1	Operating spring, for main lever
23	332845	1	Oil tank complete
24	.....	1	Malleable iron, street elbow, $\frac{1}{2}$ " (standard hardware)
25	.....	2	Pipe plug, $\frac{1}{2}$ " (standard hardware)
26	.....	4	Machine bolt, $\frac{1}{2}$ " x $3\frac{1}{2}$ " (standard hardware), to fasten tank to frame
27	3223	4	Washer for bolt
*	385284	1	Tank lining

*Not illustrated.

COVER PLATES AND DETAILS

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

All Parts are Interchangeable Unless Otherwise Specified

Parts for Automatic Single and Double Coil Trip Circuit-Breakers

Ref. No.	Style No.	No. per Single Trip	No. per Double Trip	Description
*	208917	1	..	Cover plate complete, for single coil trip
*	208918	..	1	Cover plate complete, for double coil trip
1	226548	1	..	Cast iron cover plate, for single coil trip
2	226547	..	1	Cast iron cover plate, for double coil trip
3	.....	3	3	Tap bolt, 1/2" x 3" (standard hardware), for mounting cover plate to frame
4	.....	3	3	Hexagon nut, 1/2" (standard hardware), for tap bolt
5	2892	3	3	Washer for tap bolt
6	214136	1	2	Stationary core for tripping mechanism
7	.....	2	4	Round head stove bolt, 3/16" x 2 1/4" (standard hardware), to fasten stationary core to trip rod
8	126283	1	2	Moving core, for tripping mechanism
9	219614	1	2	Core guide
10	.....	2	4	Round head stove bolt, 3/16" x 1 1/2" (standard hardware), to fasten core guide and brackets to cover plate
11	88829	1	2	Brass calibration screw, for moving trip core

*Not illustrated.

COVER PLATES AND DETAILS—Continued

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Parts for Automatic Single and Double Coil Trip Circuit-Breakers—Continued

Ref. No.	Style No.	No. per Breaker		Description
		Single Trip	Double Trip	
12	.....	1	2	Hexagon nut, No. 14—24 (standard hardware), for calibration screw
13	88828	1	2	Bracket, for core guide
14	201506	1	1	Cast iron handle lever
15	277131	1	1	Handle grip
16	215198	1	1	Shaft, to hold handle lever to cover plate
17	83129	1	1	Rod end, for handle lever
18	65150	1	1	Shaft, to hold rod end to handle lever
19	276768	1	1	Cast steel handle trigger
20	87560	1	1	Shaft, for handle trigger
21	72065	1	1	Spring, for handle trigger
22	75971	1	1	Push button, for handle
23	286353	1	1	Push rod, to operate handle trigger
24	100500	1	1	Spring, for push rod
25	333497	1	..	Malleable iron atuomatic trigger, for single coil trip
25	333498	..	1	Malleable iron automatic trigger, for double coil trip
26	97988	1	1	Shaft, to hold automatic trigger to handle lever
27	226532	1	1	Roller, for automatic trigger
28	63590	1	1	Shaft, for roller
29	128073	1	1	Spring, for automatic trigger
30	380231	1	1	Cast iron tripping lever
31	229312	1	1	Case hardened steel tip, for tripping lever
32	.....	2	2	Flat head iron machine screw, No. 6—32 x 3/8" (standard hardware). to fasten tip to tripping lever
33	224185	1	2	Tripping coil

Parts for Non-Automatic Trip Circuit-Breakers

Not Illustrated

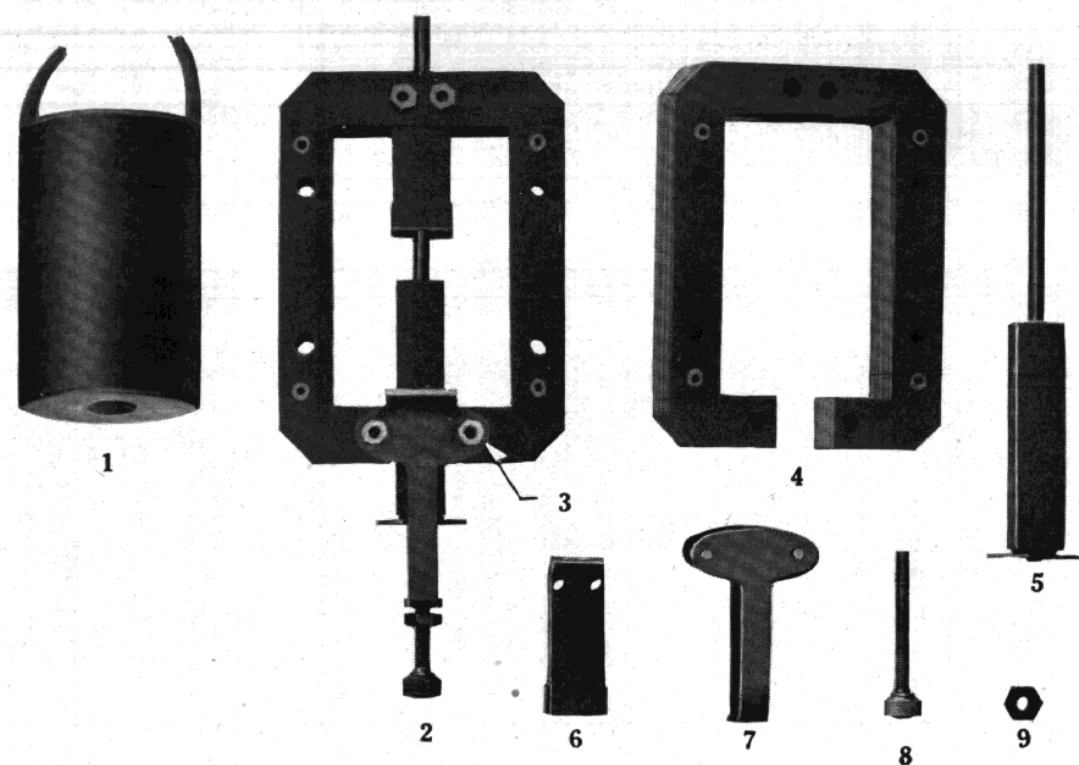
Style No.	No. per Breaker	Description
233249	1	Cover plate complete, for non-automatic trip
385283	1	Cast iron cover plate
.....	3	Tap bolt, 1/2" x 3" (standard hardware), for mounting cover plate to frame
.....	3	Hexagon nut, 1/2" (standard hardware), for tap bolt
2892	3	Washer, for tap bolt
333501	1	Cast iron handle lever
44929	1	Handle grip
215198	1	Shaft, to hold handle lever to cover
83129	1	Rod end, for handle lever
65150	1	Shaft, to hold rod end to handle lever

Mounting Bolts

(For Pipe-Mounting Breakers Only)

323749	2	J-Bolt, for mounting breaker
.....	2	Hexagon nut, 1/2", for mounting bolt
2892	2	Washer, for mounting bolt

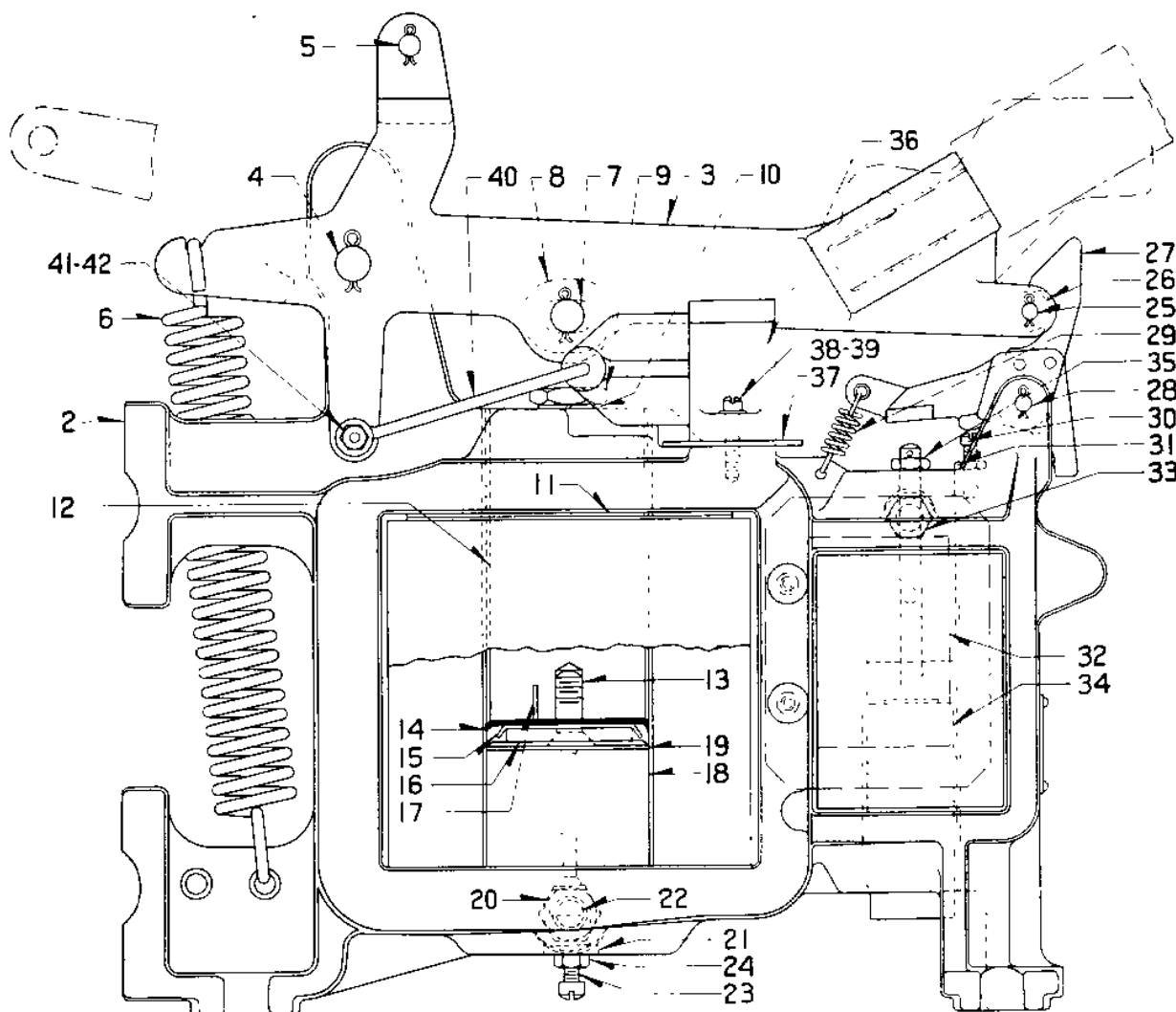
OVERLOAD TRIP ATTACHMENT AND MOUNTING DETAILS
For Two, Three and Four Pole Automatic Trip Circuit-Breakers



Ref. No.	Style No.	No. per Attachment		Description
		2 Pole	3 & 4 Pole	
1	224185	1	2	Overload trip coil
2	150614	1	2	Magnet circuit assembled complete but without coil
3	88828	1	2	Sheet steel bracket
4	116759	1	2	Magnet frame
5	126283	1	2	Moving core
6	116760	1	2	Stationary core
7	88827	1	2	Sheet copper guide
8	88829	1	2	Brass adjusting screw
9	46868	1	2	Hexagon brass nut for adjusting screw
*	.....	2	4	Tap bolt, 1/4"-20 x 1 5/8" (standard hardware), for mounting magnet circuit on operating mechanism
*	.....	2	4	Lock washer, 1/4" (standard hardware), for tap bolt
*	.....	2	2	Round head stove bolt, 3/16" x 1 3/4" (standard hardware), for magnet frame
*	.....	2	2	Round head stove bolt, 3/16" x 1 3/4" (standard hardware), to fasten core guide to bracket

*Not illustrated.

ELECTRICAL OPERATING MECHANISM AND DETAILS For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Breaker	Description
1	332872	1	Operating mechanism complete
2	333459	1	Cast iron magnet frame
3	258967	1	Malleable iron main operating lever
4	127688	1	Shaft, for main lever
5	85531	1	Shaft, for rod end, for horizontal pull
*	72281	1	Malleable iron rod end, for one pole breakers
*	241492	1	Cast steel rod end, for 2, 3 and 4 pole breakers
*	210526	1	Bell crank assembly, for 2, 3 and 4 pole breakers. Illustrated on Page 13
*	315559	1	Bell crank assembly, for 2, 3 and 4 pole breakers. Illustrated on Page 13
*	240513	1	Bell crank assembly, for 3 pole breakers. Illustrated on Page 13
*	240513	2	Bell crank assembly, for 4 pole breakers. Illustrated on Page 13
6	272176	1	Main operating spring, for main lever
7	63623	1	Shaft, for eye bolt
8	271527	1	Eye bolt, for moving core
9	199315	1	Nut, to fasten eye bolt in moving core
10	88907	1	Lock washer, for eye bolt
11	377713	3	Fullerboard liner, used between magnet frame and operating coil
12	265704	1	Steel moving core, used as piston
13	83391	1	Cap screw, to fasten piston leather, expander, and washer to moving core
14	112503	1	Piston leather, attached to bottom of moving core
15	184886	1	Piston leather, expander
16	194556	1	Piston washer
17	158209	1	Pin, to prevent piston leather, expander and washer from turning
*	256166	1	Steel stationary core complete, with brass sleeve and assembling details
18	377711	1	Stationary core
*	377710	1	Brass sleeve, for stationary core
*	.....	2	Flat head iron machine screw, No. 10—32 x 3/8" (standard hardware), to fasten brass sleeve to stationary core
19	377712	1	Flax packing, 3/16" square x 10" long, for joint between sleeve and core
20	.....	1	Tap bolt, 5/8"—11 x 2 3/4", (standard hardware), for mounting stationary core
21	185454	1	Brass plug, for stationary core
22	184519	1	Brass ball, for plug
23	277826	1	Brass adjusting screw, No. 20—18 x 1"
24	113844	1	Hexagon iron nut, No. 20—18, for adjusting screw

*Not illustrated.

ELECTRICAL OPERATING MECHANISM AND DETAILS—Continued

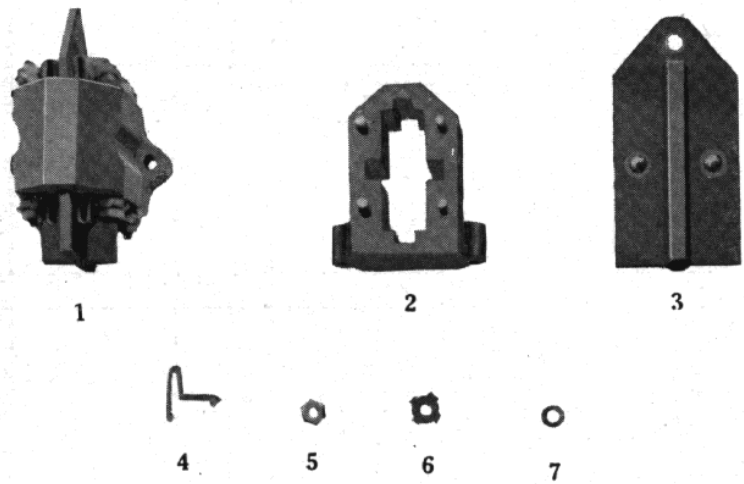
For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Tripping Magnet and Details, Illustrated on Page 8

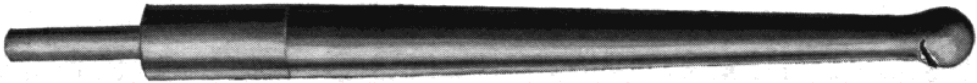
Ref. No.	Style No.	No. per Breaker	Description
25	63601	1	Shaft, for steel roller
26	145393	1	Steel roller, on main lever to engage trigger
27	257692	1	Steel trigger, including brass latch lever and rivet, non-automatic
27	257693	1	Steel trigger, including brass latch lever and rivet, automatic
28	117213	1	Shaft, for steel trigger
29	281785	1	Trigger spring
30	.....	1	Fillister head iron machine screw, No. 14—24 x $\frac{7}{8}$ " (standard hardware), for adjusting steel trigger.
31	.....	1	Hexagon iron nut, No. 14—24 (standard hardware), for machine screw
32	333124	1	Stationary trip core
33	.....	1	Tap bolt, $\frac{1}{2}$ "—13 x $1\frac{1}{2}$ " (standard hardware), for mounting stationary core to frame
*	333123	1	Sleeve, for stationary trip core
*	.....	2	Flat head iron machine screw, No. 10—32 x $\frac{3}{8}$ " (standard hardware), to fasten brass sleeve to stationary core
34	385286	1	Moving trip core
*	40646	1	Washer, for moving trip rod
35	46870	1	Nut, for trip rod
36	216071	1	Signal switch complete
37	263046	1	Fullerboard shield, used between magnet frame and signal switch
38	.....	2	Fillister head iron machine screw, No. 14—24 x $1\frac{1}{4}$ " (standard hardware), for mounting signal switch to magnet frame
39	7443	2	Washer, for machine screw
40	323746	1	Signal switch link
41	323744	1	Stud, for signal switch link
42	3272	1	Washer, for stud

Signal Switch and Details



Ref. No.	Style No.	No. per Switch	Description
1	216071	..	Signal switch complete
2	377723	1	Moulded Composition, switch body and studs
3	220996	1	Moulded Composition plunger with contact piece
4	220999	8	Phosphor bronze contact finger
5	40662	16	Hexagon brass contact nuts
6	148425	8	Crimped washer, used with nut, Ref. No. 4
7		8	Lock washer, $\frac{1}{8}$ " (standard hardware), used with nut, Ref. No. 4

HAND CLOSING LEVER



REFERENCE NO. 1

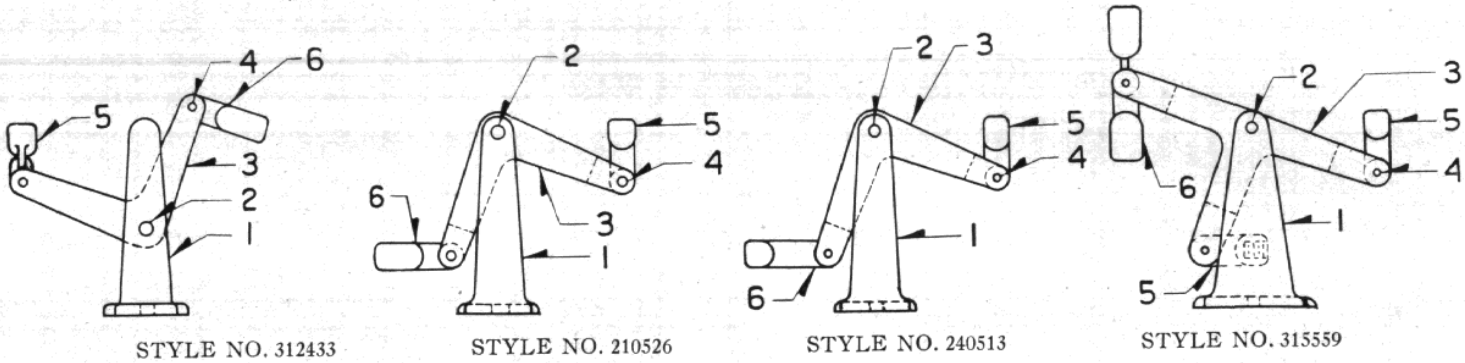
1	229280	1	Hand closing lever
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*Not illustrated.

BELL CRANKS AND DETAILS

FOR DIRECT OR REMOTE CONTROL

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole Breakers

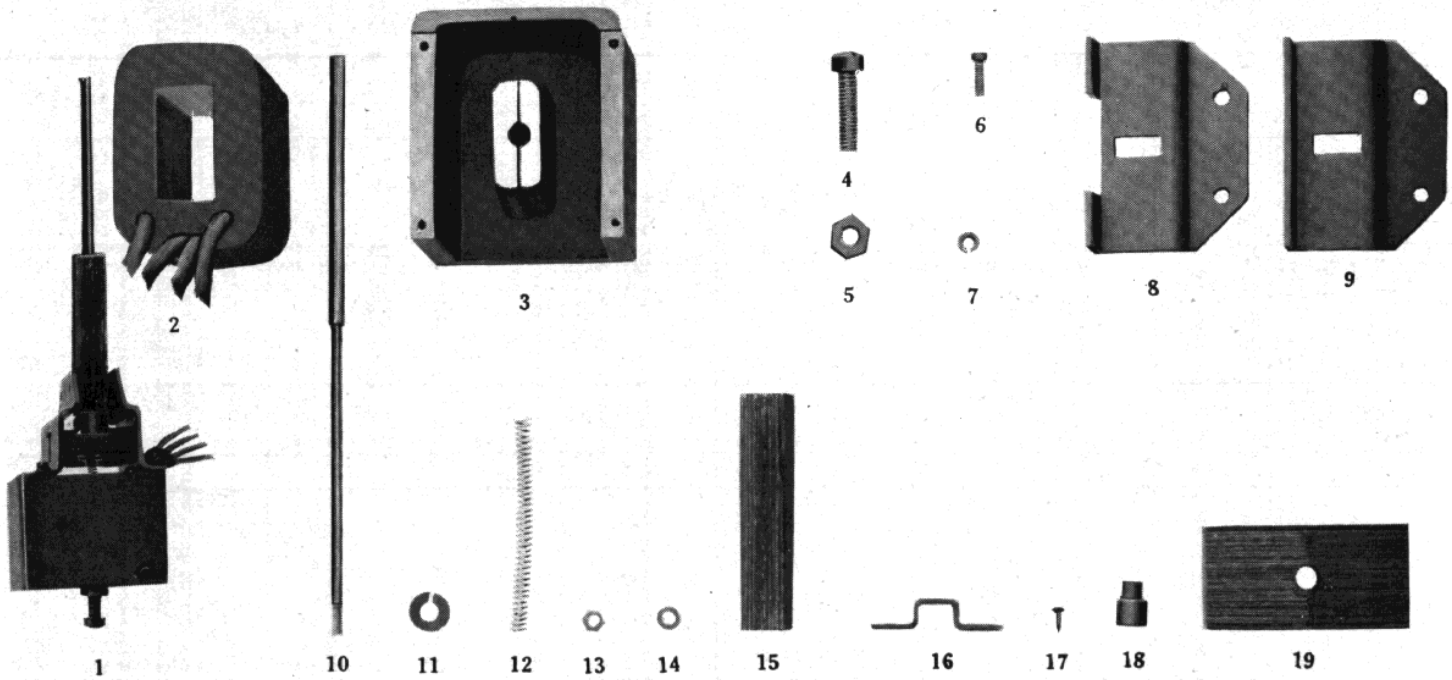


ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Bell Crank Assembly Style No.	Brackets		Bracket Shafts		Bell Cranks		Rod End Shafts		Rod Ends		Rod Ends	
	No. per Breaker	Ref. No. 1 Style No.	No. per Breaker	Ref. No. 2 Style No.	No. per Breaker	Ref. No. 3 Style No.	No. per Breaker	Ref. No. 4 Style No.	No. per Breaker	Ref. No. 5 Style No.	No. per Breaker	Ref. No. 6 Style No.
312433	1	272859	1	125685	1	272856	2	83813	1	241492	1	72281
210526	1	272859	1	125685	1	272856	2	83813	1	83129	1	72281
240513	1	272859	1	125685	1	272856	2	83813	1	83129	1	235962
315559	1	272857	1	125685	1	333502	3	83813	2	83129	1	72281

DIRECT TRIP ATTACHMENT AND DETAILS

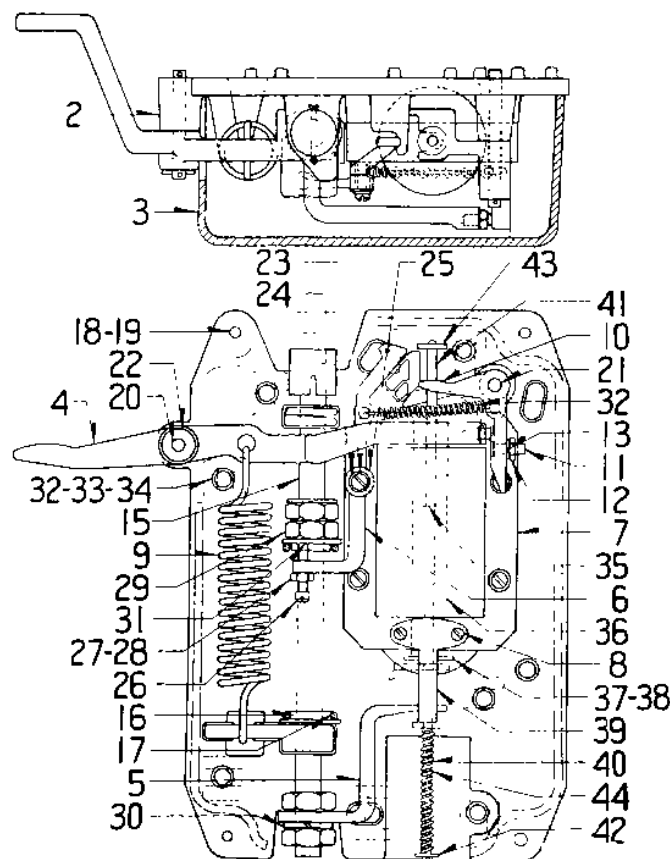
For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole Breakers



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mech- anism	Description
1	304494	1	Direct trip attachment complete
2	318147	1	Coil complete
3	318139	1	Magnet yoke
4	.....	1	Fillister head iron machine screw, No. 20—18 x 7/8" (standard hardware), adjusting screw for trip rod spring
5	46869	1	Hexagon brass nut, for machine screw
6	.....	4	Fillister head iron machine screw, No. 8—32 x 1 1/2" (standard hardware), to fasten brackets to magnet yoke
7	125680	4	Iron lock washer, for machine screw
8	318145	1	Brass bracket, enclosing moving core, rear
9	318142	1	Brass bracket, enclosing moving core, front
10	318144	1	Trip rod, for moving core
11	233098	1	Lock washer, for top of moving core
12	318143	1	Spring, for moving core
13	119326	1	Brass nut, for bottom of moving core trip rod
14	3218	1	Brass washer, used with nut on trip rod
15	116761	1	Moving core
16	318140	1	Moving core guide
17	380249	1	Dowel, to fasten moving core guide to moving core
18	318141	1	Brass bushing, for bottom of trip rod
19	318146	1	Magnet armature

UNDER-VOLTAGE RELEASE MECHANISM
For Solenoid Operated Mechanism



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mech-anism	Description
1	287131	1	Under-Voltage release mechanism complete
2	380260	1	Cast iron base
3	380258	1	Cast iron cover
4	380259	1	Cast steel tripping lever
5	301716	1	Malleable iron retrieving lever
6	380256	1	Malleable iron locking lever
7	116759	1	Magnet frame complete
*	88828	2	Guide bracket
8	.....	2	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{3}{4}$ " (standard hardware), to fasten guide bracket to magnet
*	.....	2	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{1}{4}$ " (standard hardware), to fasten stationary core to magnet
9	283059	1	Tension spring, for trip lever
10	380262	1	Malleable iron trigger
11	220349	2	Square head screw, for trigger and latch
12	.....	2	Lock nut, $\frac{1}{4}$ " (standard hardware), for square head screw
13	.....	1	Lock washer, $\frac{1}{4}$ " (standard hardware), for square head screw
14	107323	1	Tension spring, for trigger
15	380263	1	Retrieving plunger
16	283057	1	Cold rolled steel cap, for retrieving plunger
17	283058	1	Pressure spring, for retrieving plunger
*	333476	2	Malleable iron seat, for pressure spring
*	380255	1	Cold rolled steel trip pin, to bear on plunger cap
18	.....	4	Fillister head iron machine screw, No. 14—24 x $\frac{5}{8}$ " (standard hardware), to fasten cover to base
19	.....	4	Hexagon iron nut, No. 14—24 (standard hardware), for cover screws
20	63605	1	Shaft, to hold tripping lever to frame
21	63606	1	Shaft, to hold trigger to frame
22	3272	1	Washer, for tripping lever shaft
*	380257	1	Brass tube, used as bearing for locking lever

*Not illustrated.

UNDER-VOLTAGE RELEASE MECHANISM—Continued

For Solenoid Operated Mechanism

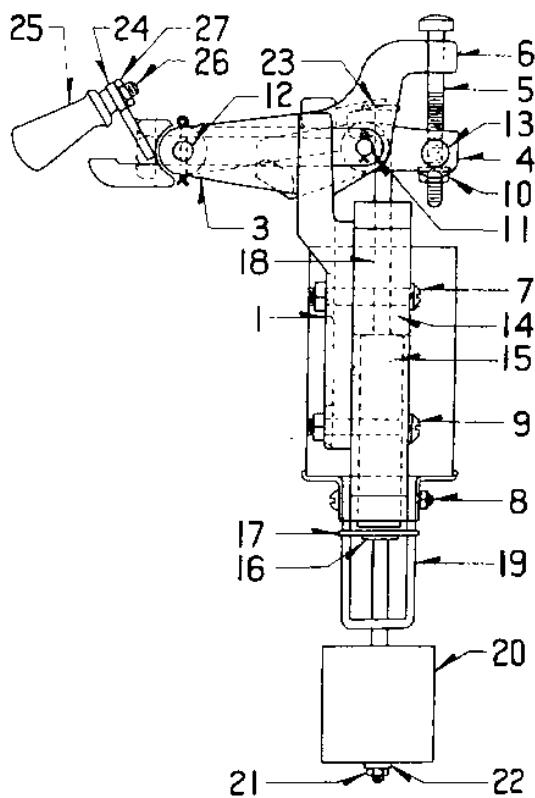
Illustrated on Page 14

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mech- anism	Description
23	.....	1	Fillister head iron machine screw, No. 14—24 x 2" (standard hardware), to fasten locking lever and magnet to base
24	7443	1	Washer, for locking lever screw
25	.....	1	Lock washer, 1/4" (standard hardware), for locking lever screw
*	.....	3	Fillister head iron machine screw, No. 14—24 x 1 3/8" (standard hardware), to fasten magnet to base
*	7443	3	Washer, for magnet screw
*	.....	3	Lock washer, 1/4" (standard hardware), for magnet screw
26	.....	1	Fillister head iron machine screw, No. 14—24 x 1 1/8" (standard hardware), used to adjust locking lever
27	.....	1	Hexagon iron nut, No. 14—24 (standard hardware), for locking lever adjusting screw
28	7443	1	Washer, for locking lever adjusting screw
29	.....	4	Lock nut, 5/8" (standard hardware), used to adjust retrieving plunger
30	100516	1	Lock washer, used with lock nut on retrieving plunger
31	3429	1	Washer, used on retrieving plunger
32	.....	3	Tap bolt, 3/8" x 1" (standard hardware), for mounting under-voltage release mechanism
33	3428	3	Washer, for mounting bolt
34	.....	3	Lock washer, 3/8" (standard hardware), for mounting bolt
*	289883	1	Iron cores complete
35	116760	1	Stationary core
36	116761	1	Moving core
*	.....	1	Dowel, ".085 x 1/8", for moving core
37	3423	2	Iron washer, for base of moving core
38	116763	1	Sheet copper washer, for base of moving core
39	219396	1	Core guide
40	385288	1	Stem complete, with lower brass sleeve
41	219397	1	Upper brass sleeve, for stem
42	7444	1	Washer, for bottom end of stem
43	325113	1	Washer, for tap end of stem
44	294567	1	Spring, for stem

*Not illustrated

UNDER-VOLTAGE RELEASE MECHANISM—Continued
For Hand Operated, Remote Control Cover Plate



REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Mech-anism	Description
1	214082	1	Under-voltage release mechanism complete
2	225733	1	Under-voltage release mechanism bracket
3	273816	1	Tripping lever
4	273815	1	Retrieving lever
5	273812	1	Retrieving rod
*	116759	1	Magnet frame complete
6	88828	2	Guide bracket, for core
7	.....	3	Round head stove bolt, 1/4" x 1 3/4" (standard hardware), to hold stationary core to under-voltage bracket
8	.....	2	Round head stove bolt, 3/16" x 1 1/4" (standard hardware), to fasten guide bracket
9	.....	2	Round head stove bolt, 3/16" x 1 3/4" (standard hardware), to hold magnet to under-voltage bracket
*	.....	3	Lock washer, 1/4" (standard hardware), for under-voltage bracket bolt
10	.....	1	Lock nut, 1/4" (standard hardware), for retrieving rod
*	.....	1	Lock washer, 1/4" (standard hardware), used with lock nut on retrieving rod
11	63593	2	Bearing pin, for retrieving lever
12	225732	1	Bearing pin, for trip lever
13	273817	1	Pin, to hold retrieving rod in retrieving lever
*	240469	1	Iron cores complete
14	116760	1	Stationary core
15	116761	1	Moving core
*	.....	1	Dowel, .085 x 7/16", for moving core
16	3423	2	Iron washer, for base of moving core
17	116763	1	Sheet copper washer, for base of moving core
18	219399	1	Phosphor bronze stem, for core trip rod
19	219396	1	Core guide
20	219400	1	Weight
21	40662	2	Weight nut
22	3422	2	Weight washer
*	219397	1	Upper brass sleeve, for stem
*	219398	1	Lower brass sleeve, for stem
23	325113	1	Trip washer, for top of stem

Hand Reset Attachment

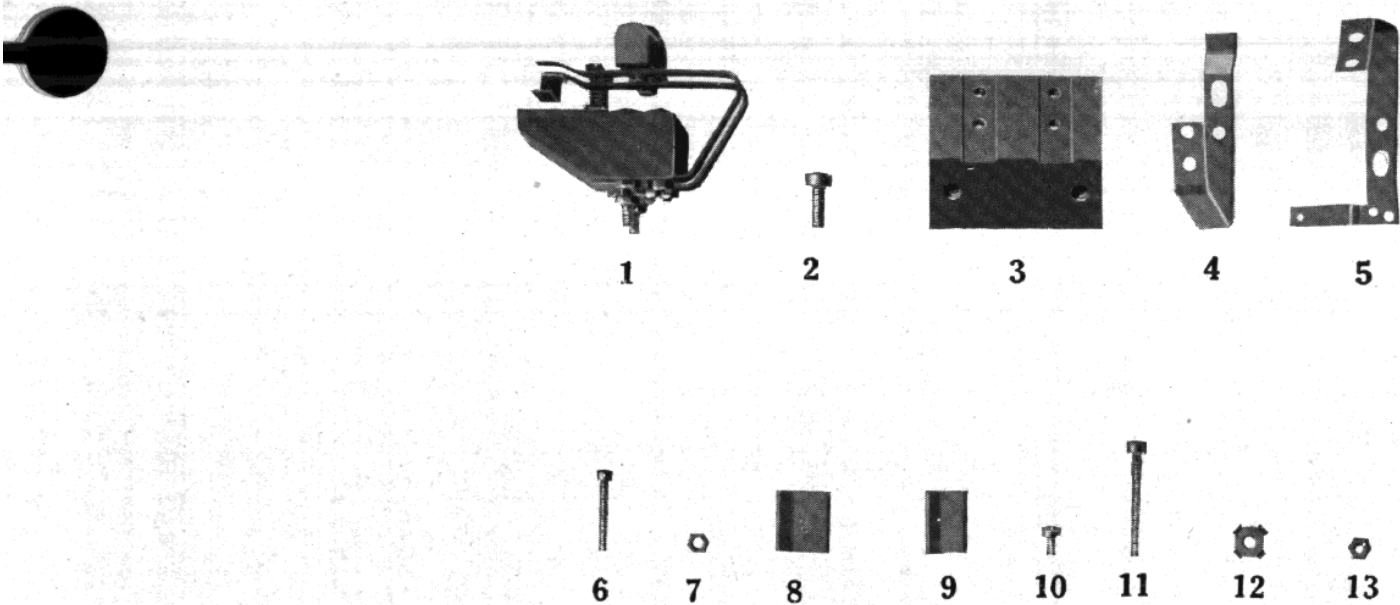
This attachment is used with Manually Operated Breakers, when the Coil is Connected to the dead side of the Breaker.

24	380334	1	Handle bracket, for single coil breaker
24	385287	1	Handle bracket, for double coil breaker
25	189762	1	Handle
26	.....	1	Fillister head iron machine screw, No. 10—32 x 1 1/4" (standard hardware), to fasten handle to handle breaker
27	.....	1	Hexagon iron nut, No. 10—32 (standard hardware), for handle screw
*	.....	2	Flat head iron machine screw, No. 8—32 x 3/8" (standard hardware), to fasten handle bracket to tripping lever

*Not illustrated.

BELL ALARM ATTACHMENT AND DETAILS

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole Breakers

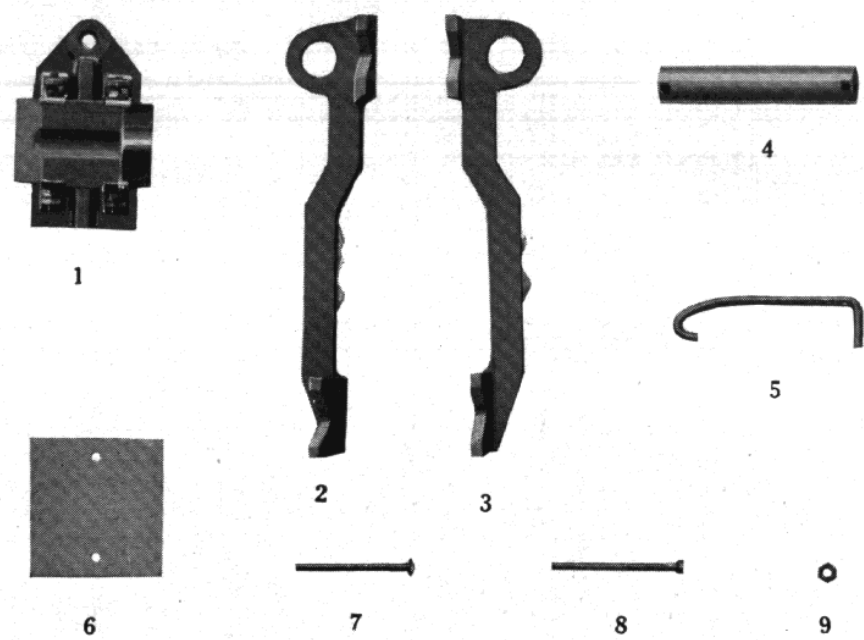


REFERENCE NO. 1

ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Attachment	Description
1	214182	..	Bell alarm attachment complete, with contact spring, contact blocks and details
2	.....	2	Flat head iron machine screw, No. 10—32 x 1/2" (standard hardware), to fasten bell alarm to cover plate
3	380247	1	Moulded base
4	220356	1	Bronze contact spring
5	315898	1	Bronze spring, with contact piece
6	.....	4	Fillister head iron machine screw, No. 6—32 x 7/8" (standard hardware), to fasten contact spring to fibre base
7	46867	4	Hexagon brass nut, for machine screw
8	315900	1	Fibre contact plug
9	315901	1	Fibre contact plug
10	.....	2	Fillister head iron machine screw, No. 6—32 x 3/16" (standard hardware), to fasten contact blocks to contact spring
11	.....	2	Fillister head iron machine screw, No. 6—32 x 1 1/4" (standard hardware), used as a terminal stud
12	136326	4	Crimp washer, for terminal stud
13	46867	4	Hexagon brass nut, to fasten terminal clip washer on terminal stud

Signal Switch and Mounting Details for Manually Operated Breakers



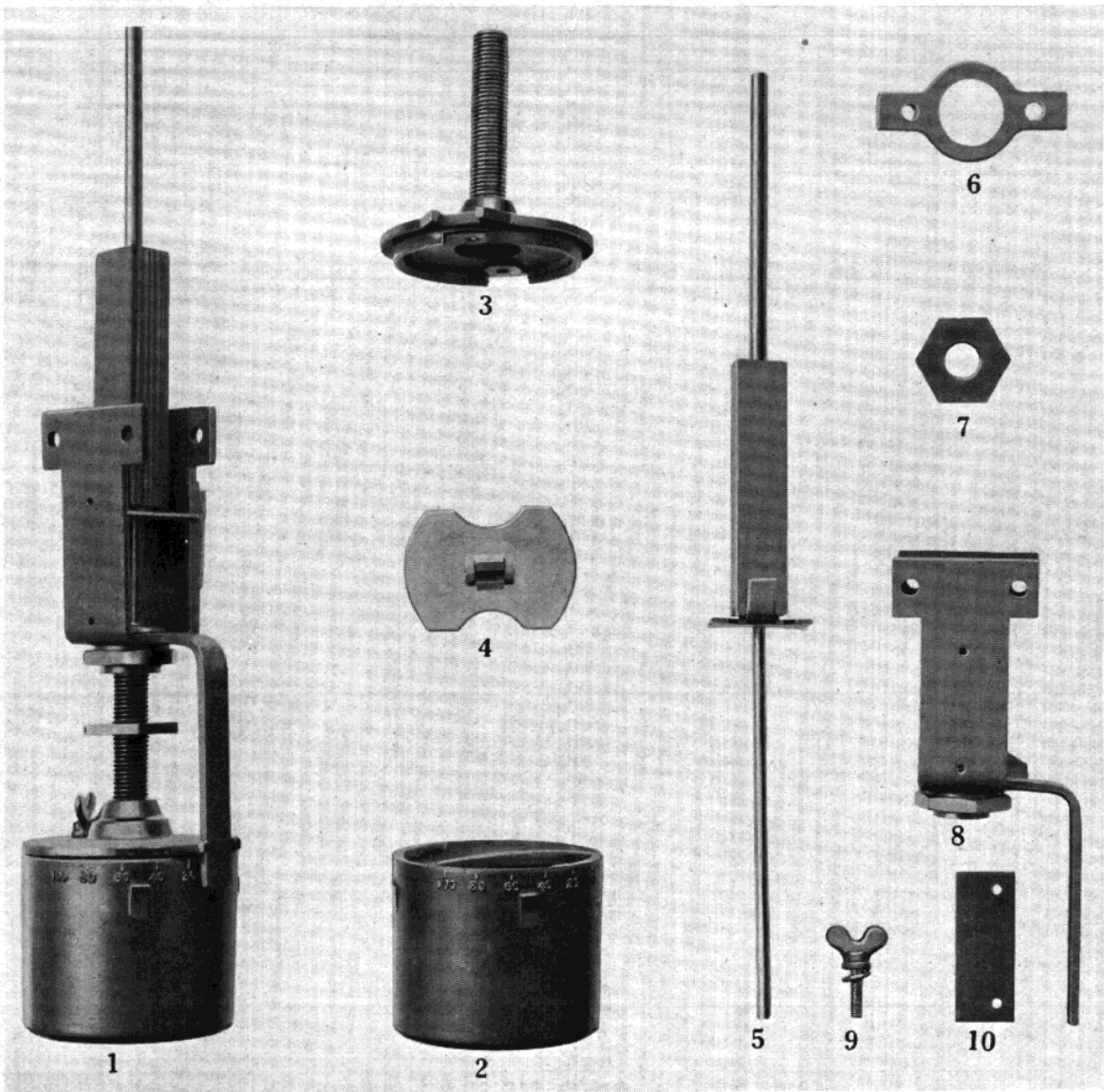
ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Breaker	Description
*	214857	1	Signal switch complete, with mounting details
1	216071	1	Signal switch complete, for details see page 12
2	219410	1	Bracket, for mounting switch, right hand
3	219411	1	Bracket, for mounting switch, left hand
4	88354	1	Shaft, to fasten lever and mounting brackets to frame
5	219413	1	Link, to join lever to switch
6	263046	1	Fullerboard shield, used between switch and mounting bracket
7	.....	2	Round head stove bolt, $\frac{3}{16}$ " x $1\frac{1}{4}$ " (standard hardware), for mounting switch to bracket
8	.....	2	Fillister head iron machine screw, No. 10—32 x $\frac{1}{2}$ " (standard hardware), for fastening bracket
9	.....	2	Hexagon iron nut, No. 10—32 (standard hardware), for bracket screw

*Not illustrated.

INVERSE TIME ELEMENT AND DETAILS

For 400, 600 and 800 Amperes, 15,000 Volts, One, Two, Three and Four Pole Breakers



ORDER PARTS BY STYLE NUMBER AND DESCRIPTION

Ref. No.	Style No.	No. per Element	Description
1	214143	..	Inverse time element complete
2	285169	1	Dash pot
3	380023	1	Dash pot cover complete, with threaded brass tube
4	318415	1	Plunger complete, with brass link
*	285171	1	Plunger only
*	233996	1	Link, to fasten trip rod to plunger
*	.....	1	Pin, 1/16" (standard hardware), to connect plunger and link
5	233435	1	Magnet core complete, with trip rod
6	285172	1	Clamp, for attaching cover
*	.....	1	Fillister head iron machine screw, No. 10—32 x 3/4" (standard hardware), to fasten clamp to cover
7	233999	1	Lock nut, for brass tube
8	380024	1	Core guide complete, with adjusting nut and washer
9	287272	1	Thumb screw
10	227439	1	Scale plate
*		2	Fillister head iron machine screw, No. 4—40 x 3/16" (standard hardware), to fasten scale plate to guide

*Not illustrated.

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