

# KELLOGG SWITCHBOARD AND SUPPLY COMPANY

## TELEPHONE APPARATUS CIRCA 1910

Printed in booklet form, 8 X 10 inches, gutter bound 72 pages on 20 pound coated stock by letterpress method. Cover is on 60 pound grey green stock by letterpress. Typical of some Kellogg printed material this catalog contains no Logos on the covers or title page. This piece was two hole punched on the left side, but it is not believed that this was done by the printer. The printing date of this piece is estimated at 1910 based on the contents. A 1908 or later desk set is shown but the 1901 style cathedral top wood magneto phones are also still offered. Help in dating this piece would be appreciated.

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# TELEPHONE APPARATUS

MANUFACTURED BY

**KELLOGG SWITCHBOARD & SUPPLY CO.**

GENERAL OFFICES AND FACTORY

CHICAGO

BRANCH OFFICES

KANSAS CITY, MO.

SAN FRANCISCO, CALIF.

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#### BRANCH OFFICES:

KANSAS CITY, MO.  
1413 Main Street

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88 First Street



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TELEPHONES—MAGNETO

WALL TYPE

Series.

CODE NUMBERS		Posts		Type	Generator	Ringer
Concealed Oak	Walnut	Exposed Oak	Walnut			
2485	2486	2614	2615	Compact	3-bar	80-ohm
		2709	2710	Com'n Bat. Type	3-bar	80-ohm
		2032	2033	Hotel. No. 26—Arm	3-bar	80-ohm
		2042	2043	Single Bat. Box	3-bar	80-ohm

STANDARD BRIDGING

2536	2537	2606	2607	Compact	3-bar	80-ohm
2465	2466	2550	2551	Compact	4-bar	1000-ohm
2521	2522	2594	2595	Compact	4-bar	1600-ohm
2523	2524	2596	2597	Compact	5-bar	1000-ohm
2499	2500	2576	2577	Compact	5-bar	1600-ohm
2529	2530	2602	2603	Compact	5-bar	2000-ohm
2658	2659	2660	2661	Compact	3-bar	1000-ohm
2686	2687	2688	2689	Special* Compact	5-bar	1000-ohm
2694	2695	2696	2697	Special* Compact	5-bar	1600-ohm
		2649	2650	Hotel. No. 26—Arm	3-bar	1000-ohm
		2651	2652	Hotel. No. 26—Arm	4-bar	1000-ohm
		2653	2654	Hotel. No. 26—Arm	4-bar	1600-ohm
		2715	2716	Com'n Bat. Type	4-bar	1000-ohm
		2717	2718	Com'n Bat. Type	4-bar	1600-ohm
		2719	2720	Com'n Bat. Type	5-bar	1600-ohm
		2076	2077	Double Bat. Box	4-bar	1000-ohm
		2078	2079	Double Bat. Box	4-bar	1600-ohm
		2084	2085	Double Bat. Box	5-bar	1000-ohm
		2086	2087	Double Bat. Box	5-bar	1600-ohm
		2060	2061	Single Bat. Box	4-bar	1000-ohm
		2062	2063	Single Bat. Box	4-bar	1600-ohm

\* See note, bottom page 2.

BRIDGING

No. 28 Condenser in Secondary.

2467	2468	2552	2553	Compact	4-bar	1000-ohm
2525	2526	2598	2599	Compact	4-bar	1600-ohm
2501	2502	2578	2579	Compact	5-bar	1600-ohm
2690	2691	2692	2693	Compact	5-bar special*	1000-ohm
2698	2699	2700	2701	Compact	5-bar special*	1600-ohm

BRIDGING

With Grounding Key.

2479	2480	2564	2565	Compact	4-bar	1000-ohm
2527	2528	2600	2601	Compact	4-bar	1600-ohm
2511	2512	2588	2589	Compact	5-bar	1600-ohm
		2705	2706	Com'n Bat. Type	5-bar special*	1600-ohm
		2711	2712	Com'n Bat. Type	4-bar special*	1600-ohm

BRIDGING \*

With Grounding Key for Ringing Over Both Sides of Line.

2724	2725	2621	2622	Compact	4-bar	1000-ohm
		2726	2727	Compact	5-bar Special*	1600-ohm

BRIDGING

With No. 28 Condenser in Secondary and Grounding Key.

2481	2482	2566	2567	Compact	4-bar	1000-ohm
2543	2544	2612	2613	Compact	4-bar	1600-ohm
2513	2514	2590	2591	Compact	5-bar special*	1600-ohm
		2707	2708	Compact	5-bar special*	1600-ohm



Fig. 1



Fig. 2



Fig. 3



Fig. 4

TELEPHONES—MAGNETO—Continued



Standard Telephone with Code No. 6 Push Button. Fig. 5

BRIDGING  
Pulsating Current Generator.

CODE NUMBERS				Type	Generator	Ringer
Concealed Oak	Posts Walnut	Exposed Oak	Posts Walnut			
2471	2472	2556	2557	Compact	4-bar	1000-ohm
		2628	2629	Compact	4-bar	1600-ohm
2503	2504	2580	2581	Compact	5-bar	1600-ohm

BRIDGING

With Pulsating Current Generator and No. 28 Condenser in Secondary.

2473	2474	2558	2559	Compact	4-bar	1000-ohm
2505	2506	2582	2583	Compact	5-bar	1600-ohm
2669	2670	2671	2672	Compact	4-bar	1600-ohm

BRIDGING

With Pulsating and Alternating Current Generator and Key.

2546	2547	2548	2549	Compact	4-bar	1000-ohm
------	------	------	------	---------	-------	----------

BRIDGING

With Pulsating and Alternating Current Generator and Key, with No. 28 Condenser in Secondary.

2483	2484	2568	2569	Compact	4-bar	1000-ohm
2531	2532	2604	2605	Compact	4-bar	1600-ohm
2515	2516	2592	2593	Compact	5-bar	1600-ohm
		2702	2703	Compact	5-bar special*	1600-ohm

TWO PARTY

With Alternating Current Generator.

2538	2539	2608	2609	Compact	3-bar	1000-ohm
2475	2476	2560	2561	Compact	4-bar	1000-ohm
2507	2508	2584	2585	Compact	5-bar	1600-ohm

TWO PARTY

With Pulsating Current Generator.

2477	2478	2562	2563	Compact	4-bar	1000-ohm
2509	2510	2586	2587	Compact	5-bar	1600-ohm

FOUR PARTY

Pulsating, with Biased Ringer.

2541	2542	2610	2611	Compact	3-bar	1000-ohm
2489	2490	2572	2573	Compact	3-bar	2500-ohm
2616	2617	2618	2619	Compact	4-bar	2500-ohm
		2683	2684	Hotel	3-bar	2500-ohm
		2713	2714	Com'n Bat. Type	4-bar	2500-ohm

FOUR PARTY

Pulsating, with Biased Ringer.

		2174	2175	Double Bat. Box	4-bar	2500-ohm
		2168	2169	Single Bat. Box	4-bar	2500-ohm

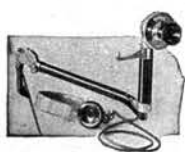
FOUR PARTY

Pulsating, with Biased Ringer, No. 28 Condenser in Secondary.

2493	2494	2574	2575	Compact	3-bar	2500-ohm
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FOUR AND EIGHT PARTY HARMONIC.

2673	2674	2675	2676	Compact	1-bar	4-party
		2677	2678	Hotel	1-bar	4-party
		2721	2722	Com'n Bat. Type	1-bar	4-party



Flexiphone. Fig. 7

\*"Special" bridging telephones are equipped with more compact generator than regular sets. Efficiency is equal but size of set is reduced.



Standard Kellogg Desk Stand  
Fig. 8

Local Battery. Code No. 28  
Common Battery. Code No. 39

STANDS—DESK

Code No.	Transmitter	HOOK SWITCH		CON- NECT'G RACK		Condenser	Retardation Coil	CORD		REMARKS
		Down	Up	Points				Code	No. of Cond.	
				S	D					
18	22-L	1	2	7				128	4	Adjustaphone. S. E. for roll top desk. (Fig. 10.)
19	grounded 22-L	1	2	7				128	4	Adjustaphone. D. E. for roll top desk.
20	grounded 22-L	1	2	7				128	4	Adjustaphone. S. E. for vertical surface. (Fig. 11.)
21	grounded 22-L	1	2	7				128	4	Adjustaphone. D. E. for vertical surface. (Fig. 12.)
22	grounded 22-L	1	2	7				128	4	Adjustaphone. S. E. for flat top desk.
23	grounded 22-L	1	2	7				128	4	Adjustaphone. D. E. for flat top desk.
28	64-L	1	2	4	1			102	4	Standard. Local battery.
32	64-C	2	2	6		10	16-A	81	4	Intercommunicating set. Cord type.
33	64-C	2	2	6				81	4	Intercommunicating set. Cord type.
37	64-C	2	2	6				102	4	
38	64-L	1	2	4	1			102	4	
39	64-C	2	1	4		10	16-A	100	2	Standard. Common battery. (Piece parts, page 65.)
43	grounded 22-C	2	2					128	4	Adjustaphone. S. E. Mounting per specification. Page 4.
47	64-C		2	3	1		16-A	101	3	
48	64-C	1	2	4		10	16-A	100	2	
50	No. 1 microphone		1	6		10	16-A	100	2	Microphone. Common battery. (Fig. 6.)
54	64-C	1	1	3	1			101	3	
55	No. 2 microphone	1	2	6				102	4	Microphone. Local battery.
58	64-L	1	2	4	1			102	4	No. 15 push button in base.
59	22-L	1	3	5				127	4	Flexiphone. (Fig. 7.)
60	22-C	1	3	5				127	4	Flexiphone.
61	22-C		2	5				91	3	Flexiphone.
62	22-L		3	5				91	3	Flexiphone.
63	64-L		2	4	1			102	4	
64	64-C	2	2	6		10	16-A	102	4	Intercommunicating sets. Key type. (Fig. 33.)
66	64-C	2	2	4	2			95	6	
74	grounded 22-C	2	2					128	4	Adjustaphone. D. E. Mounting per specifications.
75	64-C		1	4				100	2	Transmitter and receiver in series.
76	64-L	1	2	6				106	4	Induction coil in base.

S—Single. D—Double.



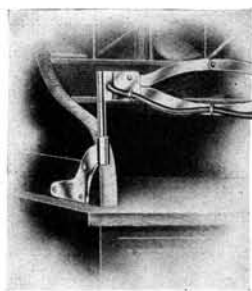


Fig. 10  
Roll Top Desk Adjustaphone



Fig. 11  
Flat Top Desk Adjustaphone—Single



Fig. 12  
Flat Top Desk Adjustaphone—Double

For Equipoise and Burns  
Desk Set Holder see  
page 14.

## BOXES—DESK SET

### MAGNETO

In the following list we have covered the standard magneto sets. Each set is equipped with a No. 28-A ind. coil and No. 3 arrester, besides the items mentioned in lists.



Fig. 13

CODE NUMBERS		GENERATOR		RINGERS	
Oak	Walnut	Code No.	Bars	Code No.	Resistance
2201	2202	15	3	1-B	80
BRIDGING					
2195		15	3	45-A	1000
2207	2208	22	4	45-A	1000
2209	2210	22	4	45-D	1600
2234	2235	29	5	45-D	1600
2239	2240	53	5	45-A	1000
2241	2242	53	5	45-D	1600

Special\* generator  
Special\* generator

### BRIDGING

With No. 28 Condenser in Secondary.

2211	2212	15	3	45-A	1000
2213	2214	22	4	45-A	1000
2215	2216	22	4	45-D	1600
2232	2233	29	5	45-D	1600
2243	2244	53	5	45-A	1000
2245	2246	53	5	45-D	1600

Special\* generator  
Special\* generator

### BRIDGING

With Grounding Key.

2198	2199	29	5	45-D	1600
2203	2204	22	4	45-A	1000
2205	2206	22	4	45-D	1600

### BRIDGING

With 4 Party Biased Ringer.

2217	2218	15	3	2-B	1000
2219	2220	15	3	2-A	2500

### BRIDGING

With 4 and 8 Party Harmonic.

2230	2231	52	1	26-A	4-party	Specify party wanted
------	------	----	---	------	---------	----------------------

\*Special generator. See page 2.



Fig. 14



Code No. 2498  
Fig. 15

## IRON TELEPHONE SET

FOR RAILROADS OR MINES

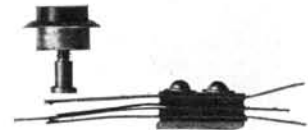
Code No.	GENERATOR		RINGER Code No.	Resistance
	Code	Bars		
2498	22	4	36-A	1000
2655	29	5	36-A	1000

The malleable iron outer case is 16 in. high, 12¾ in. broad by 12½ in. deep.

### PUSH BUTTONS

Code No.	CONTACTS			Sets of Springs	Mounting Plate	Springs on Mount Direct	Mounts on	Remarks
	Make	Break	Make and Break					
3	1			1	B		3/8" wood	
5			1	1	B		1/2" wood	
6			1	1	B		1/2" wood	
8		1		1		A	1/2" wood	Similar to No. 5 mounted on oak block, 3x5. (Fig. 5.)
9		1		1		A	1/8" wood	Similar to No. 5
14	1		1	2	B		1/2" wood	Similar to No. 8
17		1		1				Similar to No. 5
18	2			1	B		1/8" wood	Mounted on oak base 3"x5
19			1	1	B		3/8" wood	

A—Springs mount direct. B—Springs mount on plate.



Code No. 5  
Fig. 17



Code No. 3  
Fig. 16

### SETS—TEST

CODE NUMBER			Style	GENERATOR		RINGER		Switch	Transmitter	BINDING POSTS		Induction Coil	Oval Dry Cells	Cabinet Locks	Push Buttons
Oak	Walnut	Spec.		Code No.	Bars	Code No.	Resistance			Code No.	Amt.				
1001			B	22	4	18-B	1000	47	47-L	25	2	1-A	2	15	
1002			S	15	3	18-A	80	47	47-L	13	2	1-A	2	15	
		1007	B	15	3	15-B	1000			25	2				
		1008	S	15	3	15-A	80			13	2				
1016			B	22	4	18-C	1600	47	47-L	19	3				1 No. 7
										25	2	1-A	2	15	1 No. 7
										13	2				

B—Bridging. S—Series.

### SETS—PORTABLE RAILWAY

#### POLE CHANGER TEST SET

No. 1  
16 1/2  
33 1/2  
50  
66 2/3  
26A ringer  
4—No. 12 condensers

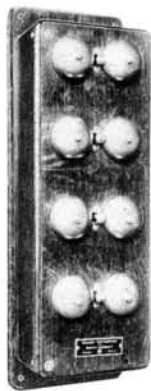
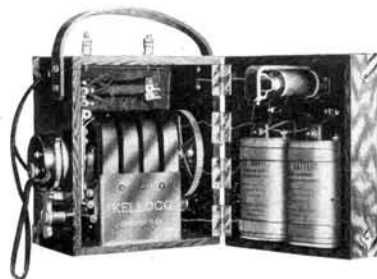


Fig. 20  
Code No. 1—Test Set—  
Pole Changer  
Used for testing and adjusting pole changers



Code No. 1016  
Fig. 18



Code No. 1008  
Fig. 19

Code No. 2731—Very light—weighs 6 lbs., 5 oz.—wood box.  
Code No. 2681—Pressed steel case—has hand microphone.  
Code No. 2656—Used on Interurbans—compact and convenient.



Code No. 2656



Code No. 2681



Code No. 2731

**COMMON BATTERY  
WALL TYPE.**



Code No. 340  
Fig. 21  
Wall space occupied,  
8½" by 24½"

CODE NUMBERS		RINGER		CONDENSER	
Oak	Walnut	Code	Resistance	Code	Capacity
334	335	1-C	500 ohms	12	1 M.F.
336	337	1-A	1000 ohms	12	1 M.F.
338	339	1-C	500 ohms	16	2 M.F.
340	341	1-A	1000 ohms	16	2 M.F.
379	380	26-A	4-party	12	1 M.F.
641		28-A No. 1	20-cycle	12	1 M.F.
642		28-A No. 2	60-cycle	12	1 M.F.
672	673	26-A	4-party	12	1 M.F.

(672 has transmitter and receiver in series.)

CODE NUMBERS		RINGER		CONDENSER	
Oak	Walnut	Code	Resistance	Code	Capacity
428	617	1-A	1000 ohms	16	2 M.F.
664		1-C	500 ohms	16	2 M.F.
665		1-A	1000 ohms	12	1 M.F.
666		1-C	500 ohms	12	1 M.F.
667		26-A	4-party	12	1 M.F.

CODE NUMBERS		RINGER		CONDENSER	
Oak	Walnut	Code	Resistance	Code	Capacity
30	31	1-A	1000 ohms	5	2 M.F.
193	194	1-C	500 ohms	5	2 M.F.
195	196	1-A	1000 ohms	6	1 M.F.
377	378	26-A	4-party	12	1 M.F.
383	384	28-A No. 1	20-cycle	12	1 M.F.
385	386	28-A No. 2	60-cycle	12	1 M.F.

**STEEL HOTEL**

Dimensions: 7" high, 5¼" wide by 2⅞" deep.



Code No. 340  
Fig. 22

Code No.	Code	Resistance	Code	Capacity
533	26-A	4-party	12	1 M.F.
631	14-A	1000 ohms	12	1 M.F.
632	14-A	1000 ohms	16	2 M.F.
633	14-C	500 ohms	12	1 M.F.
634	14-C	500 ohms	16	2 M.F.
668	26-A	4-party	12	1 M.F.
		(668 has transmitter and receiver in series.)		
669	14-A	1000 ohms	12	1 M.F.
		(669 has transmitter and receiver in series.)		

**WOOD HOTEL SETS**



Code No. 377  
Fig. 23  
Wall space occupied,  
8½" by 24½"

CODE NUMBER		RINGER		CONDENSER			
With Arm	Less Arm	Code	Resistance	Code	Capacity		
Oak 186	Walnut 187	Oak 323	Walnut 324	1-A	1000 ohms	5	2 M.F.
254	255			1-C	500 ohms	5	2 M.F.
399	400			26-A	4-party	12	1 M.F.
670	671			26-A	4-party	12	1 M.F.

(670 has transmitter and receiver in series.)



Code No. 377  
Fig. 24



(Open View)



(Closed)

Code No. 428—Short Backboard  
Fig. 25

Wall space occupied, 8½" by 19"



Code No. 533  
Fig. 26



Code No. 186  
Fig. 27



## BOXES—DESK SET

### COMMON BATTERY

Our Standard steel set, size 5x7½x3 in., for all purposes except harmonic party line. Binding posts concealed.

Code No.	RINGER		CONDENSER		RETARDATION COIL	
	Code No.	Resistance	Code No.	Capacity	Code No.	Resistance
75	13-A	1000	12	1		
80	13-A	1000	16	2		
81	13-C	500	12	1		
82	13-C	500	16	2		
229	13-A	1000	12	1	18-A	25

Code No.	RINGER		CONDENSER		
	Code No.	Resistance	Code No.	Capacity	
130	1-A	1000	16	2	(7¼ x 7½ in.)
131	1-C	500	16	2	
132	1-A	1000	12	1	
133	1-C	500	12	1	
134	26-A	4-party	12	1	

(All apparatus mounted on steel plate for either regular or party line use. Binding posts exposed.)

Code No.	RINGER		CONDENSER		
	Code No.	Resistance	Code No.	Capacity	
135	1-A	1000	16	2	(6½ x 8½ in.)
136	1-C	500	16	2	
137	1-A	1000	12	1	
138	1-C	500	12	1	
139	26-A	4-party	12	1	

(All wood box for either regular or party line use. Binding posts exposed.)

Code No.	RINGER		CONDENSER		
	Code No.	Resistance	Code No.	Capacity	
140	14-A	1000	16	2	(5¾ x 7 in.)
141	14-C	500	16	2	
142	14-A	1000	12	1	
143	14-C	500	12	1	
144	31-A	4-party	12	1	

(Enameled steel box for either regular or party line use. Binding posts concealed.)

## MICRO-TELEPHONES

Code No.	Type	Handle	Switch	Transmitter	Receiver	Cord
1	C	H.R.		50-C	16-A	62
2	L	H.R.		50-L	16-A	74
3	C	H.R.	In handle	58-C	16-A	78
4	C	H.R.		50-C	16-A	62
No. 1 with eye for hanging on hook.						
5	L	H.R.		50-L	16-A	74
No. 2 with eye, same as No. 4.						
6	L	H.R.	In handle	58-L	16-A	78

C—Common Battery. L—Local Battery.

## INTERCOMMUNICATING SETS

The key type of intercommunicating sets is made in both desk and wall types per the list below:

### CODE NUMBERS OF INTERCOMMUNICATING SETS

#### SETS USED AT REGULAR STATIONS

- Code 100. Wall Set for 11 stations.
- Code 104. Desk Set for 11 stations.
- Code 102. Wall Set for 23 stations.
- Code 106. Desk Set for 23 stations.



Pressed Steel Box  
Code No. 75  
Fig. 28



Wood Box  
Code No. 135  
Fig. 29



Steel Box  
Code No. 140  
Fig. 30



Fig. 31



Code No. 102  
Fig. 32

## INTERCOMMUNICATING SETS—*Continued*

### SETS USED AT ATTENDANT'S STATIONS



Code No. 104  
Fig. 33

- Code 101. Wall Set for 10 stations and 1 Common Battery Trunk Line.  
9 stations and 2 Common Battery Trunk Lines.
- Code 105. Desk Set for 10 stations and 1 Common Battery Trunk Line.  
9 stations and 2 Common Battery Trunk Lines.
- Code 103. Wall Set for 22 stations and 1 Common Battery Trunk Line.  
21 stations and 2 Common Battery Trunk Lines.  
20 stations and 3 Common Battery Trunk Lines.  
19 stations and 4 Common Battery Trunk Lines.
- Code 107. Desk Set for 22 stations and 1 Common Battery Trunk Line.  
21 stations and 2 Common Battery Trunk Lines.  
20 stations and 3 Common Battery Trunk Lines.  
19 stations and 4 Common Battery Trunk Lines.



Fig. 34

## BOARDS—Wall Type

### SWITCHBOARD WITH AND WITHOUT KEYS IN CORD CIRCUIT

This type is designed to be used with a regular phone as a switching station. The box is made of quarter sawed oak and is hinged at the back to allow easy access to all parts. Capacity 20 lines and 5 pairs of cords. (Fig. 35, with keys.)

Switchboard with jacks instead of keys for listening in. Same cabinet as the key type. Capacity 20 lines and 5 pairs of cords. (Fig. 36.)

Fig. 34 illustrates ten line switchbox for grounded lines. Used with ordinary wall telephone and extension bells. Affords double supervision.

Combination switchboard and telephone equipped with batteries, arresters and night alarm switch, with buzzer. (Fig. 37.)

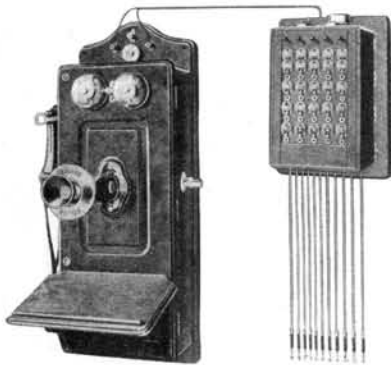


Fig. 35

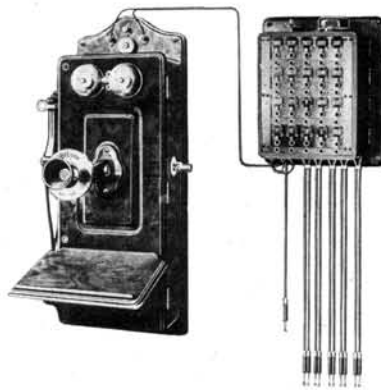


Fig. 36



Fig. 37

## BOARDS—Express Type

All of these boards are made of the best quarter sawed oak and finished as requested. They are all arranged for double or single drop supervision, as requested. Besides the following equipment each board is arranged with operators' sets complete, hand generator, necessary switching keys and a night alarm circuit.

Cabinet	Line Capacity	Number of Panels	Cord Capacity Per Position	Number of Operator's Positions	Transfer Capacity
12332	50	2	10	1	10
12061	100	2	10	1	10
12053	150	3	15	1	15
12194	200	4	10	2	20
12194	250	5	1-13	2	25
			1-12		
12293	300	6	15	2	30
12303	350	7	1-17	2	35
			1-18		
12313	450	9	15	3	45



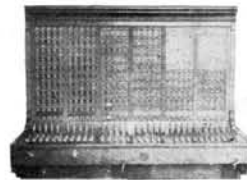
Cabinet No. 12332  
Fig. 38



Cabinet No. 12061  
Fig. 39



Cabinet No. 12053  
Fig. 40



Cabinet No. 12293  
Fig. 41



Cabinet No. 12313 (6404)  
Fig. 42

## BOARDS—Private Branch Exchanges

### COMMON BATTERY.

This cabinet is made of quarter sawed oak and can be arranged to take the following equipment: (Fig. 43.)

No. 1  
100 lines (without relays).  
7 pairs of cords (major relays).  
5 trunks (plug ended, major relays).  
1 operator's set complete.

No. 2  
60 lines (minor relays).  
7 pairs of cords (major relays).  
5 trunks (plug ended, major relays).  
1 operator's set complete.



Cabinet No. 8232  
Fig. 43

This cabinet is made in either mahogany or quarter sawed oak and can be arranged to take the following equipment: (Fig. 44.)

No. 1  
60 lines (without relays).  
7 pairs of cords (major relays).  
5 trunks (plug ended, major relays).  
1 operator's set complete.

No. 2  
30 lines (minor relays).  
7 pairs of cords (major relays).  
5 trunks (plug ended, major relays).  
1 operator's set complete.

Different styles are made to suit requirements.

Cabinet 12332, Fig. 46A, is a very popular P. B. X. cabinet with following equipment:

No. 1  
100 lines (without relays).  
7 pair cords.  
3 trunks (plug ended).  
1 operator's set.

No. 2  
20 lines (minor relays).  
7 pair cords.  
3 trunks.

Any combination of cords and trunks so that total is not more than 10.



Cabinet No. 11888  
Fig. 44





Cabinet No. 3295  
Fig. 45

## BOARD—Non-Multiple

### COMMON BATTERY AND MAGNETO.

This cabinet can be equipped with the following apparatus: (Fig. 45.)

Ultimate Capacity.

- 200 Lines (minor relays) common battery.
- 50 Lines (magneto).
- 10 Transfers (jacks and lamp ended).
- 10 Cord circuits (major relays) common battery.
- 5 Cord circuits combination (major relays).
- Magneto to magneto and magneto to common battery.
- 1 Operator's set complete.

## BOARD—Non-Multiple

### COMMON BATTERY.

Ultimate Capacity. Cabinet No. 7404.

- 400 Lines (minor relays). (Fig. 46.)
- 40 Transfers (jack and lamp ended).
- 30 Cord circuits (major relays).
- 2 Operator's sets complete.

600 Lines (minor relays). Cabinet 6404.

- 60 Transfers (jack and lamp ended).
- 45 Cord circuits (major relays).
- 3 Operator's sets complete.

Woodwork of this cabinet same as Fig. 42.



Cabinet No. 7404  
Fig. 46



Cabinet No. 12332  
Fig. 46A  
P. B. X. Equipment  
See page 9

## BOARDS—Multiple

### COMMON BATTERY.

Standard 3000 line section.

Woodwork is mahogany (standard). (Fig. 47.)

Each section has ultimate capacity as follows:

- 3000 multiple jacks.
- 540 answering jacks and lamps.
- 3 operator's positions (15 cord circuits each).
- 6 panel section.

Woodwork is oak (standard).

Ultimate Capacity.

800 LINES.

- 800 multiple jacks. (Fig. 46 illustrates woodwork.)
- 400 answering jacks and lamps.
- 2 operator's positions (15 cord circuits each).
- 4 panel section.

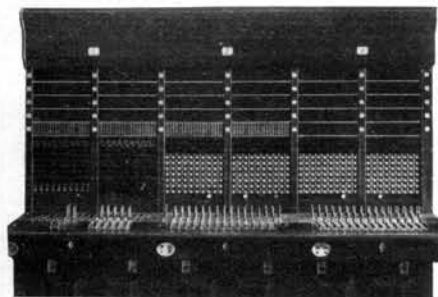
Woodwork is oak (standard).

Ultimate Capacity.

1200 LINES.

- 1200 multiple jacks. (Fig. 42 illustrates woodwork.)
- 600 answering jacks.
- 3 operator's positions (15 cord circuits each).
- 6 panel section.

Besides the above we build boards any size wanted up to 18000 lines.

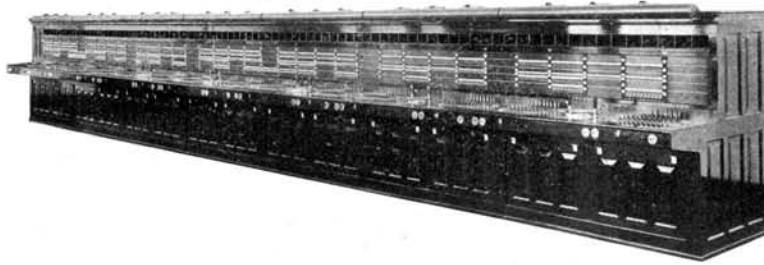


Kellogg Standard Multiple Section Cabinet No. 9853.  
Fig. 47

## BOARDS—Toll

This is our regular toll section, arranged for either multiple or non-multiple as needed. The first and third panels are arranged for line signals and jacks, also the clearing out signals. The middle panel is arranged for multiple or trunks. Each position has an ultimate capacity of 10 pairs of cords. A calculagraph can be placed between positions. (Fig. 49.)

This is used for large toll multiple boards. It is arranged with 5 panels and two operators' positions. The cord capacity is ten per position. A calculagraph can be placed between positions. (Fig. 48.)



(7 sections.) Cabinet No. 6908  
Fig. 48



Cabinet No. 4547  
Fig. 49

## DESKS—Chief Operators'

Standard cord equipped desk, single position.  
Standard cord equipped desk, double position.  
Standard key equipped desk, single position.



Cord Equipped Single Position  
Chief Operator's Desk  
Fig. 50



Double Position Chief Operator's Desk  
Fig. 51

## DESKS—Wire Chiefs'

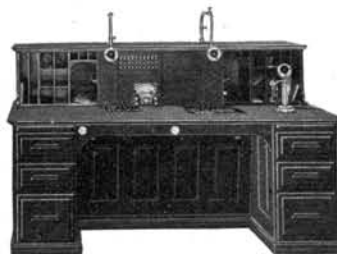
Standard cord equipped desk, single position.  
Standard cord equipped desk, double position.  
Standard key equipped desk, single position.

## Wire Chief's Turret

Key type to be placed on table. (Fig. 54.)



Single Position Wire Chief's Desk  
Fig. 52



Double Position Wire Chief's Desk  
Fig. 53



Fig. 54

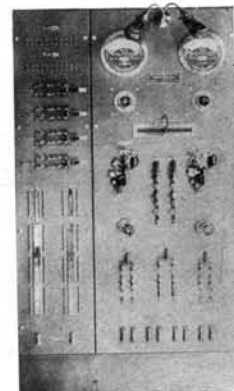


Fig. 55

## BOARDS—Power

Power boards are furnished to meet any conditions. Prices upon request.

## TELEPHONE SOUND-PROOF BOOTHS

We handle sound proof booths from the simplest and most inexpensive designs to the most elegant required by fine hotels and office buildings. Write us for special catalogue of telephone booths.



Fig. 56

### DESCRIPTION OF BOOTH HERE ILLUSTRATED. (Fig. 56.)

The doors are made to swing either to right or left, as ordered. This booth is double throughout with air spaces between inside and outside walls, which are fastened together and to the floor of booth with felt blocks between. The floor is on rubber cushions. Durable varnish finish without gloss. Outside floor space 31x37 inches; inside floor space 26x32 inches. Best quality American glass is used.

Finish	Glass
Oak	In door only.
Oak	In door and one side.
Oak	In door and two sides.

(See Supply Bulletin No. 17.)

## THE CALCULAGRAPH

Its function is to calculate and record by mechanical means the time, in minutes and quarter minutes, which elapses during a toll conversation. It definitely fixes the charge for the same and effectively stops a serious leak in the revenue of the telephone employing it.

It is operated by pulling a lever and makes no clerical errors.

It is interesting to note the increase in the number of "overtime" messages in an exchange where a calculagraph is installed during the first month it is in use. In a busy exchange, or one where through messages are handled, the increase in receipts from tolls due to such elimination of errors in timing, is sufficient to repay the cost of the calculagraph in a short time.

The timing of messages at the receiving end of the line may be dispensed with and both operators relieved of the work, thus allowing them this time for other purposes.

The calculagraph is noiseless in its operation and may be mounted directly upon the switchboard or upon a pedestal standing on the floor alongside the operator. (Fig. 57.)



Fig. 57

### DIAGRAM OF TIME RECORD.

List No. 631. Model 6. Calculates and prints elapsed time in minutes and quarter minutes, has visible dial, and records the time of day.

List No. 632. Model 7. Calculates and prints elapsed time in minutes and quarter minutes, has visible dial, but does not print the time of day.

List No. 633. Model 9. Calculates and prints elapsed time in hours and minutes, has visible dial, and records the time of day.

See Supply Bulletin No. 17.



Fig. 58  
Flush mounting.



Fig. 59

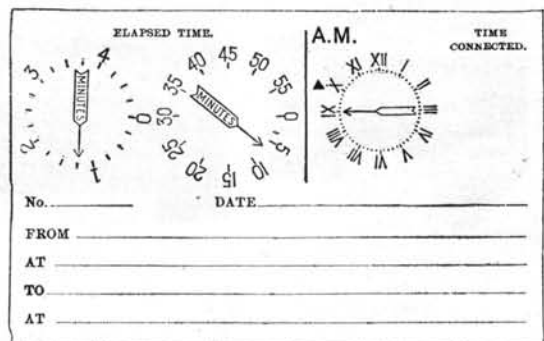


Fig. 60  
Diagram of Time Record

## TOLL TEST PANELS

Our standard types are arranged per Figures 61 and 62.  
Additional banks of jacks can be added if more lines are desired.

## MACHINES

Information covering all kinds of charging and ringing machines furnished on application.

## AMMETER

Full information on ammeters furnished on request.

## VOLTMETER

Full information on voltmeters furnished on request.  
See Supply Bulletin No. 17.

## RECTIFIERS

Information concerning rectifiers for charging furnished upon application.

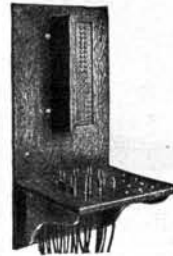
## POLE CHANGERS

Code No.	Vibrators				Res. No.	Coils Code	Primary Power	Remarks
	A	B	C	D				
6-A	16 $\frac{2}{3}$	33 $\frac{1}{3}$	50	66 $\frac{2}{3}$	4	5-A	24	
8-A	33 $\frac{1}{3}$				1	5-A	24	
9-A	Special				1	5-A	24	Pulsating and alternating current.
13-A	20				1	5-A	24	
15-A	30	42	54	66	4	5-A	24	2 sets dry cells. Rings direct.
16-A	20				1	5-A	24	Direct harmonic.
17-A	30	42	54	66	4	5-A	24	Same as No. 6-A, except frequency.

## SETS—Transformer

Code No.	Type	Transformer				Spec.	Retardation Coil	Conden-ser	Dry Cells Furnished	Remarks
		16%	33 $\frac{1}{2}$	50	66%					
2-B	C	1-C	2-A	3-A	4-A		23-A	5	16	Single set.
4-B	C	1-C	2-A	3-A	4-A		23-A	5	32	Double set.
9-A	C					5-B	23-A	5	16	Single frequency. 20 cycles.

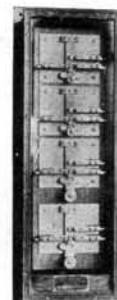
C—Storage Battery. D—Dry Cell.



Ten-Line Test Panel  
Fig. 61



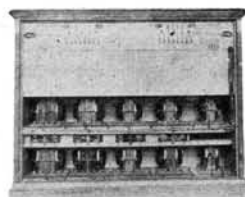
Twenty-Line Test Panel  
Fig. 62



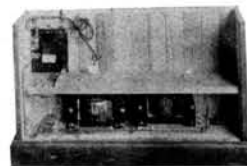
6-A Pole Changer  
Fig. 63



2-B Transformer Set  
Fig. 67



4-B Transformer Set  
Fig. 66



9-A Transformer Set  
Fig. 65  
(Top and front removed)



9-A Pole Changer  
Fig. 64

## TRANSFORMERS

These are used with pole changers. For code numbers see transformer sets.

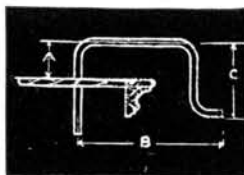
## ARMS—TRANSMITTER



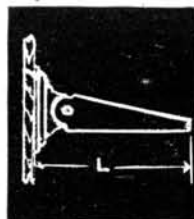
Code No. 20  
Used on magneto or C. B.  
instruments  
Fig. 68



Code No. 26-35  
Used on hotel type telephones  
Fig. 69



Type O  
Used on switchboards  
and desks  
Fig. 70



Type S  
Used on instruments  
Fig. 71



Code No. 21  
Used on magneto instruments  
Fig. 72

Code No.	Type	Dimensions				Material	Finish
		A	B	C	L		
7	0	4 3/4" x 12"	24" x 33"	8"	Brass Tube	Nickel Plated	
9	0	4 3/4" x 12"	19" x 28"	14"	Brass Tube	Nickel Plated	
12	0		3/4" x 10 1/2"	Cord	Brass Rod	Nickel Plated	
18	0	4 3/4" x 12"	12 1/2" x 16 1/2"	8"	Brass Tube	Nickel Plated	
20	S				Punched Steel	Enameled	
21	S				Punched Steel	Enameled	
24	0	6"	1 1/4" x 23"	Cord	Brass Rod	Nickel Plated	
25	0		1" x 15"	Cord	Brass Rod	Nickel Plated	
26	S				Composition Metal	Oxidized and Lacquered	
27	0	5" x 9"	13" x 15 3/4"	8 1/2"	Brass Tube	Nickel Plated	
28	0	4 3/4" x 12"	16" x 22 3/4"	8"	Brass Tube	Nickel Plated	
29	0	4 3/4" x 16"	19" x 28"	30"	Brass Tube	Mottled Oxidized	
30	0	4 3/4" x 15"	13" x 14"	26"	Brass Tube	Nickel Plated	
33	0	4 3/4" x 12"	16" x 22"	18"	Brass Tube	Nickel Plated	
35	S				Composition Metal	Oxidized and Lacquered	

Code Nos. 7-9-18-27-28-29-30-33—Used on desks and small boards.  
Code Nos. 12-25—Used on large switchboards.  
Code No. 24—Used on desks and small boards.  
Code Nos. 26-35—Used on Hotel type telephones.  
Code No. 21—Used on Magneto instruments.  
Code No. 20—Used on Magneto or common battery instruments.



Code No. 24  
Used on desks and small boards  
Fig. 73



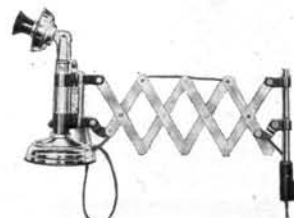
Code No. 12-25  
Used on large switchboards  
Fig. 74



Code No. 7-9-18-27-28-29-30-33  
Used on desks and small boards  
Fig. 75



Equipoise desk set  
holder  
Fig. 76



Burns desk set holder  
Fig. 76A

## ADJUSTAPHONES

Desk Stands.

These can be furnished in single or double extension, and arranged to mount on flat or roll top desk, according to the bracket. (See Figs. 10, 11 and 12, page 4.)

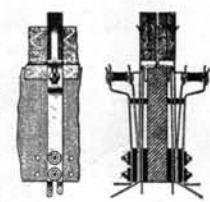
## EQUIPOISE AND BURNS HOLDERS

Standard size is 23" and can be arranged to fit either flat or roll top desk, according to the bracket. (Fig. 76)  
Burns Holders: List No. 1557 for flat top desk; No. 1558 for roll top desk. (Fig. 76A.)

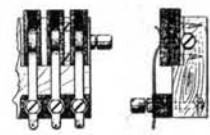


### ARRESTERS

Code	Type	Mtg. Ctrs.	Carbons	Kind	No. of Prs.
1*	Exchange	$\frac{7}{8}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Arrester and S. C. P.	1
2	Exchange	$\frac{1}{2}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Arrester	10
3	Instruments		$1\frac{3}{8}$ " diameter	Arrester ( Piece parts, page 52.)	1
6	Exchange	$\frac{5}{8}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Fuse, arrester and cross connecting rack rings or switchboard terminal.)	25
7	Exchange. (Similar to No. 6. No jumper				
8	Exchange	$\frac{5}{8}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Fuse arrester	25
	(Same as No. 6, but 5 pairs.)			Fuse arrester and connecting rack	5
9	Exchange	$\frac{5}{8}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Fuse arrester and connecting rack	10
	(Same as No. 6, but 10 pairs.)				
12	Exchange	$\frac{5}{8}$ "	$1\frac{1}{4}$ " x $\frac{3}{8}$ " x $\frac{1}{4}$ "	Fuse and arrester	10
	(Same as No. 7, but 10 pairs.)				



Code No. 1  
Fig. 77



Code No. 2  
Fig. 78

S. C. P.—Sneak current protector.  
 \*Mounted on steel bars in groups of 20 pairs.  
 Code No. 1—Used on large exchanges.  
 Code No. 2—Used on small wall type switchboards.  
 Code Nos. 6-8-9—Used on small boards. Arranged for jumpering lines.  
 Heat Coils used on No. 1 Arresters.  
 Code Nos. 7-12—Arrester. Used on small exchanges.  
 Code No. 3—Used on instruments.

### CARBONS

Pc No. 2459 Used on all above Arresters but No. 3.  
 Pc No. 2615 Used on No. 3 Arrester.

### MICAS

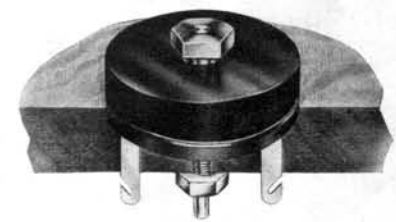
Pc No. 6799 Used on No. 1 Arrester.  
 Pc No. 2460 Used on Nos. 2-6-7-8-9 and 12 Arresters.  
 Pc No. 2616 Used on No. 3 Arrester.



Code 6-8-9  
Fig. 79



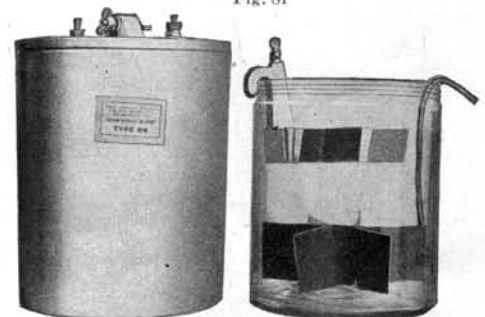
K 1 Coil      K 5 Coil  
Fig. 80



Code No. 3  
Fig. 81

### BATTERIES—DRY

List No.	Size
628	No. 6 Regular
628-A	No. 6 Ignition
628-B	No. 4 Oval (Test Set Battery)



### BATTERIES—STORAGE

Complete information on storage batteries furnished upon request.

### BATTERIES—PRIMARY-WET

Complete information on different styles of wet primary batteries furnished upon request.

### BELLS

For direct current. A high grade bell for switchboard work.



Switchboard Bell. List 1555.  
Fig. 82

### BUZZERS

For direct current.



Kellogg Buzzer  
Fig. 83

**BARS—DISTRIBUTING**

Code No.	No. of Points	No. of Rows	Centers Spaced	Dimensions	Remarks
3	1	1		1 1/8" x 1/4" x 1/4"	Fig. 84
4	3	1	1/2"	2 1/2" x 1/4" x 1/4"	
5	4	1	1/2"	2 7/8" x 3/8" x 1/4"	Fig. 86 Staggered
10	5	1	1/2"	3 1/8" x 3/8" x 1/4"	
12	6	1	1/2"	3 1/8" x 3/8" x 1/4"	
13	12	2	3/4"	6 3/8" x 1/2" x 1/4"	
15	8	1	1/2"	4 1/8" x 3/8" x 1/4"	
16	9	1	1/2"	5 1/8" x 3/8" x 1/4"	
17	10	1	1/2"	7" x 3/8" x 1/4"	
18	10	1	1/2"	5 1/8" x 3/8" x 1/4"	
19	12	1	1/2"	6 1/8" x 3/8" x 1/4"	
20	15	1	1/2"	9 1/2" x 3/8" x 1/4"	
21	30	2	1/2"	9 1/2" x 1/2" x 1/4"	Staggered Fig. 85
23	15	1	1/2"	8 1/8" x 3/8" x 1/4"	
25	18	1	1/2"	9 3/8" x 3/8" x 1/4"	
26	20	1	1/2"	12" x 3/8" x 1/4"	
28	22	1	1/2"	11 1/8" x 3/8" x 1/4"	
29	30	1	1/2"	17" x 3/8" x 1/4"	
30	34	1	1/2"	19" x 3/8" x 1/4"	
31	60	1	1/2"	32" x 3/8" x 1/4"	
33	60	1	1/2"	32 1/4" x 3/8" x 1/4"	
36	1	1		1 5/8" x 1/2" x 1/4"	
37	4	1	1"	4 1/8" x 1/2" x 1/4"	
39	27	1	1/2"	14 1/8" x 3/8" x 1/4"	
40	6	1	1"	6 1/8" x 1/2" x 1/4"	
41	3	1	1"	3 1/8" x 1/2" x 1/4"	
42	16	1	1/2"	8 1/8" x 3/8" x 1/4"	
43	24	1	1/2"	12 1/8" x 3/8" x 1/4"	
44	1	1		1 1/8" x 1/2" x 1/4"	
45	15	1	1"	15 1/8" x 1/2" x 1/4"	
46	16	1	3/8"	6 1/8" x 3/8" x 1/4"	
47	5	1	1 3/4"	8 3/4" x 3/8" x 1/4"	
48	100	1	5/8"	66 1/8" x 3/8" x 1/4"	2-Groups
49	100	1	3/8"	39 3/8" x 3/4" x 1/4"	



Fig. 84



Fig. 85



Fig. 86

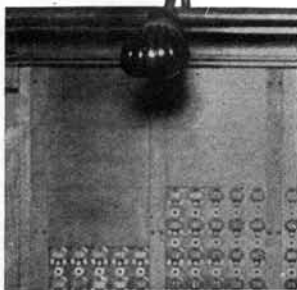


Fig. 87

All distributing bars are made of brass rod and equipped with screws and washers for making connections.

**BEESWAX**

All switchboard cable forms should be beeswaxed. This protects the form from moisture.

This beeswax is specially prepared for this special work.

**BRACKETS—LAMP**

Used on switchboards. (Large and small). (Fig. 87.)  
This comprises the bracket, shade (1/2 Green), lamp, socket and holder.  
Used on power boards. (Fig. 88.)

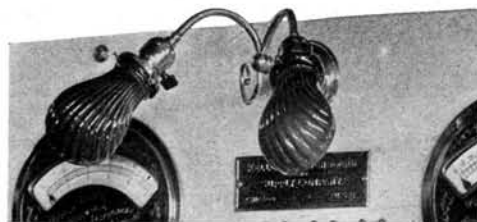


Fig. 88

### CABLE—SWITCHBOARD

In the following table, we have given descriptions of the various cables manufactured by us and which are suitable for all switchboard or exchange work.

The insulation on each wire consists of one or two layers of silk and one or two layers of cotton. The wires are twisted into pairs, and then the pairs are twisted spirally into a cable. This is then covered with two reverse wrappings of heavy Manila paper and a heavy braiding of red and white cotton. After this the cable is baked to get all the moisture out of it. It is then saturated with beeswax and polished. The beeswax will protect the cables from moisture under all ordinary circumstances.

Any of these cables can be lead covered if desired.

For special cables not found in lists, please send specifications and prices will be quoted.

### CONDUCTORS

Code No.	Size of Wire B and S	No. of Pairs	No. of Singles	Insulation	Shape and Size	
					Round Diameter	Oval or Flat Dimensions
1	24	11		1S—1C	$\frac{1}{16}$ "	
2	22	11		1S—1C	$\frac{3}{32}$ "	
3	24	13		1S—1C	$\frac{3}{32}$ "	
4	24	16		1S—1C	$\frac{3}{16}$ "	
5	24	21		1S—1C	$\frac{1}{8}$ "	
6	22	21		1S—1C	$\frac{3}{32}$ "	
7	24	21		1S—1C	$\frac{1}{8}$ "	$\frac{5}{16}$ " x $\frac{1}{32}$ "
8	22	26		1S—1C	$\frac{3}{32}$ "	
9	24	41		1S—1C	$\frac{3}{32}$ "	
10	24	41		1S—1C		
15	24	21	21	1S—1C		$\frac{1}{8}$ " x $\frac{3}{8}$ "
21	24	21	21	1S—1C		$\frac{3}{8}$ " x $\frac{3}{32}$ "
22	22	21	21	1S—1C	$\frac{7}{16}$ "	
23	22	21	21	2S—1C	$\frac{1}{8}$ "	
24	22	21		2S—1C	$\frac{3}{32}$ "	
26	24	26		1S—1C	$\frac{7}{16}$ "	
28	24	21		1S—1C		$\frac{1}{2}$ " x $\frac{1}{32}$ "
29	22	51		1S—1C	$\frac{5}{16}$ "	
30	24	11	11	1S—1C	$\frac{3}{32}$ "	
31	19	11		1S—2C	$\frac{3}{32}$ "	
32	19	21		1S—2C	$\frac{3}{32}$ "	
37	24	51		1S—1C	$\frac{3}{32}$ "	
44	24	21		1S—1C		$\frac{3}{2}$ " x $\frac{3}{32}$ "
53	22	102		1S—1C	$\frac{1}{16}$ "	
54	24	102		1S—1C	$\frac{3}{4}$ "	
55	22	13		1S—1C	$\frac{3}{8}$ "	
56	22	7		1S—1C	$\frac{1}{16}$ "	
58	22	41		1S—1C	$\frac{1}{16}$ "	
59	18		5	Rubber and braid	$\frac{3}{32}$ "	
60	20	51 triples		1S—1C	$\frac{3}{32}$ "	
62	22	102		2S—1C	$\frac{7}{8}$ "	
63	22	51		2S—1C	$\frac{5}{8}$ "	
65	22	11		2S—1C	$\frac{3}{32}$ "	
66	18		9	Rubber and braid	$\frac{3}{32}$ "	
70	22	21		1S—1C		$\frac{3}{8}$ " x $\frac{3}{32}$ "
71	22		5	2S—1C	$\frac{7}{16}$ "	
72	22		9	2S—1C	$\frac{5}{16}$ "	
73	24	6		1S—1C	$\frac{7}{16}$ "	
74	24		21	1S—1C	$\frac{3}{32}$ "	
75	24		26	1S—1C	$\frac{3}{32}$ "	
77	24	51		1S—1C	$\frac{3}{32}$ "	
79	24	26		1S—1C		$\frac{5}{16}$ " x $\frac{7}{16}$ "
80	18	21		2S—2C	$\frac{3}{16}$ "	
81	19	16		2S—1C	$\frac{3}{16}$ "	
82	18	16		2S—2C	$\frac{1}{16}$ "	
83	22	14		1S—1C	$\frac{3}{8}$ "	
84	20	11		2S—1C	$\frac{3}{16}$ "	
85	19	21		2S—1C	$\frac{5}{16}$ "	
88	24	31		1S—1C	$\frac{1}{16}$ "	
91	24	21 triples		1S—1C		$\frac{3}{8}$ " x $\frac{1}{32}$ "
92	18	11		1S—1C	$\frac{7}{16}$ "	

All cables have a color code similar to the following:

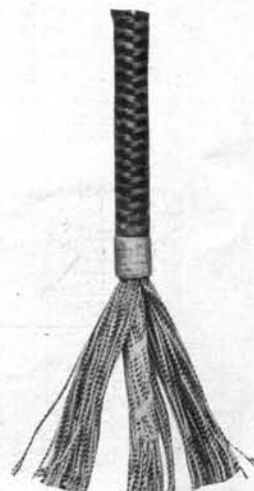
- |          |               |                 |                 |
|----------|---------------|-----------------|-----------------|
| 1—Blue   | 6—Blue-white  | 11—Orange-white | 16—Green-black  |
| 2—Orange | 7—Blue-orange | 12—Orange-green | 17—Green-slate  |
| 3—Green  | 8—Blue-green  | 13—Orange-black | 18—Black-white  |
| 4—Black  | 9—Blue-black  | 14—Orange-slate | 19—Black-slate  |
| 5—Slate  | 10—Blue-slate | 15—Green-white  | 20—Slate-white. |



11 Pair Fig. 89



21 Pair Fig. 90



102 Pair Fig. 91

### BELLS—EXTENSION

Standard Wood Box Extension Box.



Code No. 2  
Fig. 92

Code No.	B. Posts		Ringer	Resistance of Ringer								
	Oak	Walnut		Exposed	A	B	C	D	E	F	G	H
2		5	2	45	80	100		1000	1600		250	2500
11		12	2	2	250	2500						
43			2	24	4							

Enamelled steel box. Very compact. Used for all purposes but harmonic party line.



Code No. 14  
Fig. 93

Code No.	Steel	B. Posts		Ringer	Resistance of Ringer				Cow Bell Gongs.
		Condenser	Concealed		A	B	C	D	
14		12	2	13	1000	500			
15		16	2	13	1000	500			
20		12	2	19	1000	80	500	1600	
22			4	13	100				

Code No.	B. Posts		Ringer	Resistance of Ringer							
	Oak	Walnut		Exposed	A	B	C	D	E	F	G
37	39	2	45	80	100	1000	1600	250	2500	500	2000
38	40	2	2	250	2500	1000	Biased bell.				

Special loud ringing Extension Bells.



Code No. 37  
Fig. 94



Fig. 95

Code No.	Resistance	Code No.	Resistance
1—201-A	80	6—201-A	1200
2—201-A	160	7—201-A	1600
3—201-A	300	8—201-A	2000
4—201-A	500	9—201-A	2400
5—201-A	1000	10—201-A	2500

These are arranged so a No. 5 condenser can be used.

### CAPS—LAMP

Code No.	Type	Color	Shape of Lens	Where Used Lamp Jacks	Remarks
4	Pilot	Red	Diamond	6—1.425" hole	
6	Line	White	Convex	15-18-19-21-22-24-25-26-27-28-31	
7	Pilot	White	Diamond	6—1.425" hole	Same as No. 4 except color
8	Pilot	Red	Diamond	6—1.425" hole	
9	Pilot	White	Diamond	6—1.425" hole	Same as No. 8 except color
13	Line	Red	Convex	1-3-4-5-8-9-11-12-20-23	
14	Line	Green	Convex	1-3-4-5-8-9-11-12-20-23	Same as No. 13 except color
22	Line	Red	Discs	1-3-4-5-8-9-11-12-20-23	
24	Line	White	Discs	1-3-4-5-8-9-11-12-20-23	Same as No. 22 except color
25	Line	Red	Discs	15-18-19-21-22-24-25-26-27-28-31	Arranged for holding numbered paper
27	Line	White	Discs	15-18-19-21-22-24-25-26-27-28-31	Same as No. 25 except color
28	Pilot	Green	Diamond	6—1.425" hole	Same as No. 8 except color
29	Line	Green	Discs	1-3-4-5-8-9-11-12-20-23	Same as No. 22 except color
30	Supervisory	White	Convex	6—1.425" hole	Has guard
31	Supervisory	Red	Convex	6—1.425" hole	Same as No. 30 except color
32	Line	Red	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 except color
33	Supervisory	Green	Convex	6—1.425" hole	Same as No. 30 except color
35	Line	Green	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 except color
36	Line	White	Convex	1-3-4-5-8-9-11-12-20-23	Same as No. 13 except color
37	Supervisory	White	Convex	6—1.425" hole	German Silver protector screws on
38	Pilot	White	Convex	6—1.425" hole	German Silver protector screws on
39	Pilot	Red	Convex	6—1.425" hole	German Silver protector screws on
40	Pilot	Green	Convex	6—1.425" hole	German Silver protector screws on
41	Line	Spec. White	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 special mark opal
42	Line	Spec. White	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 special mark opal
43	Line	Spec. White	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 special mark opal
44	Line	Spec. White	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 special mark opal
45	Line	Spec. White	Convex	15-18-19-21-22-24-25-26-27-28-31	Same as No. 6 special mark opal



Code No. 8  
Fig. 96



Code No. 30  
Fig. 97



Code No. 25  
Fig. 98



Code No. 6  
Fig. 99



Code No. 41  
A



Code No. 42  
B



Code No. 43  
C



Code No. 44  
D



Code No. 44  
E



Code No. 37  
F

### CHAIRS

Fig. 100 is our regular desk or toll board chair. Wood seat is furnished unless otherwise specified. Code 228-S-23. Perforated leather seat, Code 228-S-24.

Fig. 101 is our regular switchboard operator's chair. It is made in three sizes according to height: 18" to 24", 24" to 28" and 28" to 32". Cane seat, Code 231-S-24. Wood Seat, Code 231-S-23. Perforated leather seat, 231-SP-24.



Fig. 100

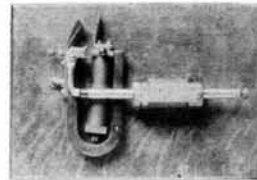


Fig. 101

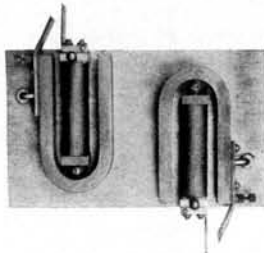
### CIRCUIT BREAKERS

Specially built to meet the needs of telephone companies.

- 1-A Underload and Reverse Current.  
Current .5 to 10 amperes.  
Voltage 0 to 250 Volts.
- 1-B Underload and Reverse Current.  
Current 4.5 to 12½ amperes.  
Voltage 0 to 250 Volts.
- 2-A Overload, Underload and Reverse Current.  
Same as No. 1-A except with the addition of the overload arrangement.
- 2-B Overload, Underload and Reverse Current.  
Same as No. 1-B except with the addition of the overload arrangement.



No. 2 Circuit Breaker  
Fig. 102



No. 1 Circuit Breaker  
Fig. 103



4 Repeating Coil  
Fig. 104



8 Repeating Coil  
Fig. 105



5 Repeating Coil  
Fig. 106



9 Repeating Coil  
Fig. 107

### COILS—REPEATING

- No. 4 Talk Through Type.
- No. 5 Talk and Ring Through Type.
- No. 8 No. 4 with mounting plate.
- No. 9 For composite work.

### COILS—RESISTANCE

Code No.	Winding No.	Core	Terminals	Resistance			
				A	B	C	D
1	1	Wood	2	1000 GS	500 GS	100 GS	700 GS
3*	1	Iron	2	25	500	300	1000
4	1	Wood	2	500 GS	400 GS	300 GS	50 GS
E	F	G	H	J	K	L	
30	200	3000	10	120	50	1	
GS	GS	GS	GS	GS	GS	GS	
100	1100	2500	10000	2000	11000	1400	
	GS	GS	GS	GS	GS	GS	
100	200	1500	160	5000			
GS	GS	GS	GS	GS			
M	N	P	Q	R	S	T	
2000	10000	5000	250	10000	300	450	
GS	GS	GS	GS	GS	GS	GS	
				Paraffine			
3000	4000	600	250	1200	750	200	
GS	GS			GS			

\*Regular major relay spool used.  
G. S.—German silver wire.



Code No. 3  
Resistance Coil  
Fig. 108



Code No. 4  
Fig. 109



Code No. 1  
Resistance Coil  
Fig. 110.



COILS—RETARDATION



Code No. 16  
Retardation Coil  
Fig. 111



Code No. 9  
Fig. 112



Code No. 8  
Fig. 113



Code No. 10  
Fig. 114

Code No.	Type	Terminals	Windings	RESISTANCE										
				A	B	C	D	E	F	G	H	J	K	
8	Open	2	Single	100	200	350	30	500	400	200-C 800-G. S.				
9	Open	2	Single	25										
10	C. Iron Encased	2	Single	500	100	200	1000	300	1800-C 700-G. S.	30	40	1800-C 200-G. S.	50	
11	Closed	4	2-parallel on 1 spool	60										
12	Closed	4	2-on two spools	15	25									
14	C. Iron Encased	4	Concentric 2-coils	250	100	25	10	500	50	50				
15	Open	2	Single	25										
16	Open	2	Single	33										
18	Open	2	Single	25	80									
20	Open	2	Single	1000	500	50	100	200	300					
21	Closed	2	Single	350	100	30	2000	500	.32	50	1000			
22	Closed	4	2-tandem	75	100	150	250							
				75	100	150	250							
23	Closed	2	Single	.125										
28	Closed	2	Single	1500	1000									
30	Open	2	Single	1.9	50	100	7.5	25	3.5	150				

- Code No. 9—Standard for regular common battery subscriber sets.
- Code No. 10—Mounted on cast iron mounting No. 85.
- Code No. 11—Used on duplex circuits.
- Code No. 12—Core makes continuous magnetic circuit. Used on composite work.
- Code No. 14—Mounts in cast iron mounting.
- Code No. 15—Used on common battery subscriber sets.
- Code No. 16—Used on common battery desk stands.
- Code No. 18—Used on common battery wall phones.
- Code No. 20—Made of regular major relay coils.
- Code No. 21—Made of regular major relay coils.
- Code No. 22—Made of regular major relay coils.
- Code No. 23—Used on pole changers.
- Code No. 30—Adjustable core so inductive effect can be varied.

COILS—INDUCTION



Code No. 28  
Fig. 115



Code No. 7  
Fig. 116



Code No. 11  
Fig. 117



Code No. 5  
Fig. 118

### COILS—INDUCTION—Continued

- No. 5-A. Operators. C. B. boards. 2 windings.
  - No. 7-A. Operators. C. B. boards. 3 windings.
  - No. 7-B. Operators. Magneto boards. 3 windings.
  - No. 7-D. Operators. Magneto boards. 3 windings. Used with 3 dry cells.
  - No. 11-A. Special. Used for busy back signalling.
  - No. 14-A. Operators. Magneto boards. 2 windings.
  - No. 14-C. Operators. Magneto boards. 2 windings. Used with 3 dry cells.
  - No. 16-A. Special. Howler attachment. 2 windings.
  - No. 17-A. Operators. C. B. multiple boards. 4 windings.
  - No. 28-A. Subscriber sets. Standard for magneto subscriber sets.
  - No. 32-A. Operators. C. B. multiple boards. Split secondary. 3 windings.
  - No. 33-A. Operators. Magneto boards. Split secondary. 2 windings.
- The No. 28 can be furnished mounted on connecting racks with 4-6-7 or 10 binding posts.

### CONDENSERS



Code No. 37  
Fig. 119



Code No. 10  
Fig. 120



Code No. 5  
Fig. 121



Code No. 25  
Fig. 122

All of our condensers are designed and built to meet the requirements of the telephone business.

Code No.	Capacity in M. F.	Shape	Height	DIMENSIONS		REMARKS
				Width	Thickness	
5	2.	Rectangular	8 $\frac{3}{8}$ "	4 $\frac{3}{4}$ "	1 $\frac{1}{8}$ "	For talking and ringing circuits.
10	$\frac{1}{2}$	Rectangular	2 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{3}{4}$ "	For talking circuits.
12	1	Rectangular	4 $\frac{1}{8}$ "	2"	$\frac{3}{8}$ "	For talking and ringing circuits.
15	$\frac{1}{2}$	Rectangular	4 $\frac{3}{8}$ "	2"	$\frac{3}{8}$ "	For talking circuits.
16	2	Rectangular	4 $\frac{1}{8}$ "	2 $\frac{7}{8}$ "	1 $\frac{1}{8}$ "	For talking and ringing circuits.
20	2/10 to 3/10	Rectangular	2 $\frac{1}{8}$ "	1 $\frac{1}{4}$ "	$\frac{3}{4}$ "	For killing sparks.
24	$\frac{1}{2}$	Round	2 $\frac{3}{4}$ "	2 $\frac{1}{8}$ "		For power circuit for killing sparks.
25	1	Round	2 $\frac{3}{4}$ "	2 $\frac{1}{8}$ "		For power circuit for killing sparks.
28	$\frac{1}{2}$	Rectangular	2 $\frac{3}{4}$ "	1 $\frac{1}{4}$ "	$\frac{3}{4}$ "	For talking circuits.
32	$\frac{1}{2}$	Rectangular	2 $\frac{1}{8}$ "	3"	$\frac{5}{8}$ "	For talking circuits.
34	2	Rectangular	4 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	For talking and ringing circuits.
36	2	Rectangular	5 $\frac{1}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{8}$ "	For talking and ringing circuits.
37	1	Rectangular	2 $\frac{3}{4}$ "	3"	1"	For talking and ringing circuits.

KELLOGG SWITCHBOARD AND SUPPLY COMPANY, CHICAGO

**CORDS**

In ordering cords specify the length and give the code number of plugs they are to fit. Prices vary with the length.

**DESK STAND**

Code No.	No. of Conductors	Conductors	Braid Overall	Length	Remarks	
91	3	Tinsel and copper wire	Green silk	72"	Used on Flexiphone.	
100	2	Tinsel and copper wire	Green silk	72"		
101	3	Tinsel and copper wire	Green silk	72"		
102	4	Tinsel and copper wire	Green silk	72"		
103	5	Tinsel and copper wire	Green silk	72"		
104	6	Tinsel and copper wire	Green silk	72"		
105	7	Tinsel and copper wire	Green silk	72"		
106	4	Tinsel and copper wire	72"	Conductors twisted. Used on Flexiphone. Used on Adjustaphone.		
127	4	Tinsel and copper wire	Green silk			72"
128	4	Tinsel and copper wire	Green silk			72"

**RECEIVER**

Code No.	No. of Conductors	Conductors	Braid Overall	Where Used	Length
79	2	Tinsel and copper wire	Green silk	Adjustaphone	33"
84	2	Tinsel and copper wire	Green silk	Receiver No. 15	72"
90	2	Tinsel and copper wire	Green silk	Flexiphone	36"
96	2	Tinsel and copper wire	Maroon and black worsted	Receivers 17-18-19-20-22-23-26-27-28-29-30-32	36"
97	2	Tinsel and copper wire	Maroon and black worsted	Receivers 8-12-13	36"
98	2	Tinsel and copper wire	Green silk	Receivers 17-18-19-20-22-23-26-27-28-29-30-32	36"
99	2	Tinsel and copper wire	Green silk	Receivers 8-12-13	36"
109	2	Tinsel and copper wire	Green silk	Receiver No. 14. Plug No. 75	72"
110	2	Tinsel and copper wire	Green silk	Receiver No. 14. Plug No. 76	72"
114	2	Tinsel and round steel	Green silk	Receiver No. 14. Plug No. 75	72"

**SWITCHBOARD**

Code No.	No. of Conductors	Size of Plug Hole	Conductors	Overall Braid	Where Used	Remarks	Length
9	2	12-24 Whitworth tap	Tinsel and copper wire	White linen	No. 26 plug		72"
15	3	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and round steel	White linen	No. 12-13-34-74 plugs	Extra heavy	Per specifications
18	2	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and round steel	White linen	No. 3-15-17-55 plugs		Per specifications
19	2	12-24 Whitworth tap	Tinsel and flat steel	White linen	No. 26 plug		72"
94	2	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and round steel	White linen	No. 3-15-17-55 plugs	Plugs at both ends	37½"
107	2	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and round steel	White linen	No. 3-15-17-55 plugs		Per specifications
112	3	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and copper wire	White linen	No. 12-13-34-74 plugs		72"
113	3	$\frac{5}{16}$ -18 Whitworth tap	Tinsel and copper wire	White linen	No. 12-13-34-74 plugs		72"
116	2	$\frac{3}{32}$ -24 Whitworth tap	Tinsel and round steel	White linen	No. 43-78 plugs		Per specifications

**CORDS—Continued.**

**TRANSMITTER**

Code No.	No. of Conductors	Conductors	Where Used	Remarks	Length
35	1	Tinsel and copper wire	All switchboard transmitters	Green silk braid overall	72"

**MISCELLANEOUS**

Code No.	No. of Conductors	Conductors	Braid Overall	Where Used	Length
48	2	Tinsel and copper wire	Green silk	Intercommunicating sets with No. 26 plug	15"
49	2	Tinsel and copper wire	Green silk	Intercommunicating sets with No. 26 plug	15"
62	4	Tinsel and copper wire		Nos. 1-4 microphone	48"
67	4	Tinsel and copper wire		No. 76-77 transmitters and No. 25 plug	68"
74	4	Tinsel and copper wire		No. 2 microphone	48½"
78	3	Tinsel and copper wire	Green silk	Nos. 3-6 microphone	72"
85	4	Lamp cord	Green cotton	Testing shoes at arresters	Per specifications.
86	6	Lamp cord	Green cotton	Testing shoes at arresters	Per specifications.
87	2	Lamp cord	Green cotton	Testing or resoldering shoes at arresters	Per specifications.
111	4	Tinsel and copper wire		Nos. 76-77 transmitters and No. 20 plug	68"

**FASTENERS—CORD**

These are for use on connecting racks.

Code No.	Finish
1	Brass
2	Brass
4	Dull nickel. Otherwise same as No.2.



No. 2 Cord Fastener  
Fig. 124



No. 1 Cord Fastener  
Fig. 125



No. 1 Cord Hook

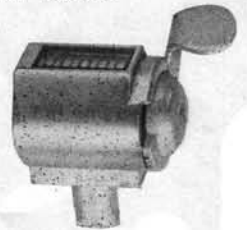
Fig. 126



No. 2 Cord Hook  
"Pig Tail" Hook

Fig. 127

We recommend No. 2 Hook



**COUNTER**

This type is so arranged that sockets are permanently set in keyshelf and counter can be removed when not needed.

**HOOKS—CORD**

**DROPS**



Code No. 8  
Fig. 128



Code No. 9  
Fig. 129



Code No. 22  
Fig. 130

All drops are provided with an iron shell, which makes them cross talk proof. They are all provided with night bell contacts. The drops are all insulated from the mounting plate.

Code No.	Mounting Centers	No. of Terminals	Windings	RESISTANCES									
				A	B	C	D	E	F	G	H	J	
8	1"	2	S	350	100	500	1000	1100-Cop. 500-G.S.	5	800	Page	61	
9	1"	2	S	650	1200	1000	500	1600	100	250	80	350	
10	1"	4	C	390 260	500 500								
11	1"	4	T	325 325									
13	1"	2	S	1600	500	1000							
14	1"	3	C	500 500									
15	1"	2	S	500									
16	1"	4	P	500 500	350 350								
17	1"	2	S	500	300								
18	1"	4	P	100 100	500 500								
20	1"	4	P	500 500									
22	1"	2	S	100	350	500	800	1000	1100-Cop. 500-G.S.				

S—Single. T—Tandem. C—Concentric. P—Parallel.

## DROPS AND JACKS—Combined

The combined drops and jacks listed below are the ones used in all our magneto boards. The coils are enclosed in an iron shell, which makes them cross talk proof. They are so arranged that the shutter is restored mechanically when plug is inserted. All are provided with N. A. springs. They are also insulated from the mounting plate. The resistances given are standard, but special resistances can be furnished if required. (Spring arrangements of jacks of Combined Drops and Jacks.) (See page 47.)



Code No. 33  
Fig. 131

Code No.	Terminals	Mounting Centers	Windings	JACKS		Plug Used
				Conductors	Conductor Contacts	
3	2	1 1/8"	S	2	1	42
4	2	1 1/8"	S	3	1	74
5	2	1"	S	2	1	42
6	2	1"	S	3	1	74
7	2	1 1/8"	S	3	2	74
8	2	1 1/8"	S	2	2	42
10	2	1 1/8"	S	2	1	42
11	3	1 1/8"	C	2	2	42
12	2	1"	S	2	1	42
13	2	1"	S	3	2	74
14	2	1 1/8"	S	2	2	42
15	2	1"	S	3	1	74
18	2	1"	S	2	2	42
27	4	1"	P	2	2	42
28	4	1"	T	2	2	42
29	2	1"	S	2	1	42
30	3	1"	S	3	1	74
31	3	1"	S	3	2	74
32	2	1"	S	2	2	42
33	2	1"	S	2	1	42
34	2	1"	S	2	2	42
35	3	1"	S	3	1	74



Code No. 29  
Fig. 132

Code No.	RESISTANCES												
	A	B	C	D	E	F	G	H	J	K	L	M	
* 3	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
4	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
5	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
6	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
7	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
8	1000	1200	350	1100-Cop. 500-G. S.	500	100	300						
10	500	1000	800	1100-Cop. 500-G. S.	100								
11	500												
12	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
13	100	800	1000	1100-Cop. 500-G. S.	500	1200	350						
14	1000												
15	500												
18	500	1000	100	200	1100-Cop. 500-G. S.								
27	500												
28	500												
29	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
30	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
31	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
32	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
33	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
34	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	
35	100	800	1000	1100-Cop. 500-G. S.	500	1200	350	480	200	150	300	80	

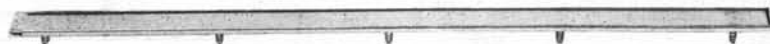


Code No. 3  
Fig. 133

S—Single. C—Concentrate. P—Parallel. T—Tandem. \*Page 61.



DESIGNATION STRIPS



Code No. 14  
Fig. 134



Code No. 20  
Fig. 135

Code No.	MATERIAL			Finish	Width	Length	Remarks
	Frame	Card	Cover				
7	D.B.	White	Celluloid	Oxidized and lacquered	$\frac{1}{2}$ "	19 $\frac{1}{2}$ "	
8	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	21 $\frac{1}{8}$ "	
9	D.B.	White	Celluloid	Oxidized and lacquered	$\frac{1}{2}$ "	20 $\frac{1}{8}$ "	
10	D.B.	White	Celluloid	Oxidized and lacquered	$\frac{1}{2}$ "	10 $\frac{1}{4}$ "	
11	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	28 $\frac{3}{8}$ "	
12	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	23 $\frac{1}{2}$ "	
14	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	9 $\frac{3}{8}$ "	
15	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	10"	
16	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	9 $\frac{1}{2}$ "	
17	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	5 $\frac{1}{2}$ "	
18	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	5"	
19	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	13 $\frac{7}{8}$ "	
20	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	9 $\frac{3}{8}$ "	Mounted on $\frac{7}{16}$ " maple panel.
21	D.B.	White	Celluloid	Nickel plated	$\frac{1}{4}$ "	9 $\frac{3}{8}$ "	Mounted on $\frac{1}{4}$ " maple panel.
22	D.B.	White	Celluloid	Nickel plated	$\frac{1}{8}$ "	1 $\frac{7}{16}$ "	
23	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	7 $\frac{1}{8}$ "	Mounted on $\frac{3}{8}$ " maple panel.
24	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	4 $\frac{1}{8}$ "	
25	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	1 $\frac{1}{2}$ "	
26	D.B.	White	Celluloid	Nickel plated	$\frac{1}{2}$ "	15 $\frac{1}{2}$ "	
27	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	1 $\frac{1}{2}$ "	
28	D.B.	White	Celluloid	Nickel plated	$\frac{1}{2}$ "	8 $\frac{1}{8}$ "	
29	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	9 $\frac{3}{8}$ "	Mounted on $\frac{1}{2}$ " maple panel.
30	D.B.	White	Celluloid	Black lacquered	$\frac{1}{2}$ "	17"	
31	D.B.	White	Celluloid	Nickel plated	$\frac{7}{16}$ "	7 $\frac{9}{16}$ "	Mounted on $\frac{1}{2}$ " maple panel.

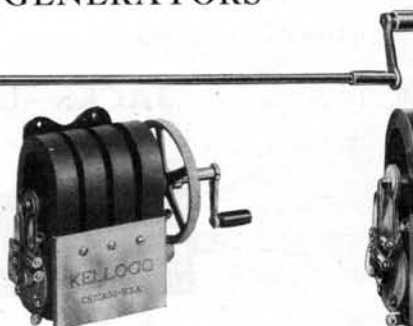
D.B.—Drawn Brass.

FUSES AND FUSE WIRE—SPECIAL PAMPHLET ON FUSES AND FUSE WIRE FURNISHED ON REQUEST.

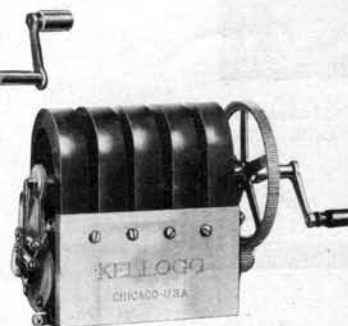
GENERATORS



Code No. 12  
Fig. 136



Code No. 22  
Fig. 137



Code No. 29  
Fig. 138

**GENERATORS—Continued**

Code No.	Type	Current	No. of Bars	SPRING CONTACTS			No. of Terminals
				Break	Make	Sets of Springs	
7	Operators	+&—P.&A	4				4
10	Operators	+&—P.&A.	5				4
11	Operators	Alternating	4				2
12	Operators	Alternating	5				2
15	Subscribers	Alternating	3	1	1	1	3
19	Subscribers	Pulsating	3	1	1	1	3
22	Subscribers	Alternating	4	1	1	1	3
23	Subscribers	Pulsating	4	1	1	1	3
26	Subscribers	P. & A.	4	1	1	1	4
28	Operators	+&—P.&A.	3				4
29	Subscribers	Alternating	5	1	1	1	3
30	Subscribers	P. & A.	5	1	1	1	4
31	Subscribers	P. & A.	3	1	1	1	4
44	Subscribers	P. & A.	4	1	1	1	4
45	Subscribers	Pulsating	5	1	1	1	3
50	Operators	Alternating	3				2
51	Operators	+&—P.&A.	5	1	1	1	5
52	Subscribers	Pulsating	1		1	1	2
53	Subscribers	Alternating	5 Special*	1	1	1	3
54	Subscribers	P. & A.	5 Special*		1	1	3
55	Subscribers	Pulsating	5 Special*	1	1	1	3

P—Pulsating. A—Alternating. \*See note, page 2.



Pc. 6331  
Fig. 139



Pc. 2450  
Fig. 140



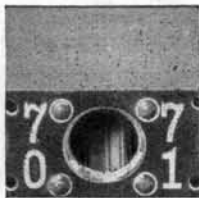
Pc. 4102  
Fig. 141



Pc. 4100  
Fig. 142



Pc. 4104  
Fig. 143

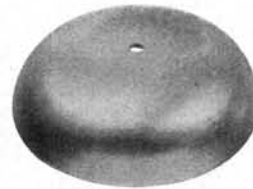


Party Line Indicators  
Fig. 146

**GONGS FOR RINGERS**



Pc. 4562  
Fig. 144



Pc. 4292  
Fig. 145

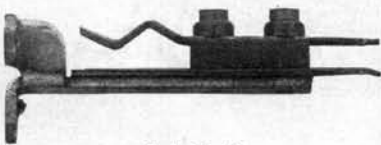
**INDICATORS—PARTY LINE**

These indicators are used on multiple jacks to indicate equipped stations on party lines. In ordering, specify color wanted, as they are made in four (4) colors—red, white, green and blue. Made to fit drillings in face of spring jack.

**INSTRUMENTS—TESTING**

Prices and information on all types of testing instruments furnished upon application.

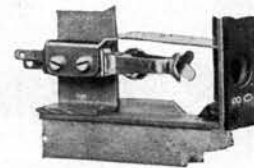
**JACKS—LAMP**



Code No. 17  
Fig. 147



Code No. 23  
Fig. 148



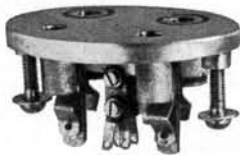
Code No. 26  
Fig. 149

**JACKS—LAMP—Continued**

Code No.	Type	Per Strip	Mounting Centers	Face of Strip	Mounting Pin Centers
9	Transfer	5	1 $\frac{3}{8}$ "	5 $\frac{3}{4}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
10	Line	20	$\frac{3}{8}$ "	7 $\frac{3}{4}$ " x $\frac{1}{2}$ "	8 $\frac{3}{4}$ "
15	Line	10	0 $\frac{5}{8}$ "	6 $\frac{1}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
17	Super and Pilot	1	$\frac{5}{8}$ "		
23	Transfer	10	$\frac{1}{2}$ "	5 $\frac{3}{4}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
25	Line	20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "
26	Line	10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "
27	Line	5	2"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "
31	Line	10	$\frac{3}{4}$ "	7 $\frac{3}{4}$ " x $\frac{1}{2}$ "	8 $\frac{3}{4}$ "



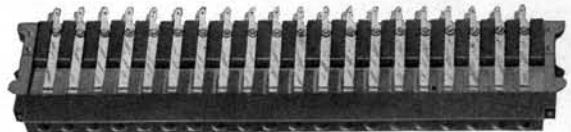
Fig. 150  
Cross-section view of Lamp Jack mounting.



Code No. 210  
Fig. 151



Code No. 83  
Fig. 152

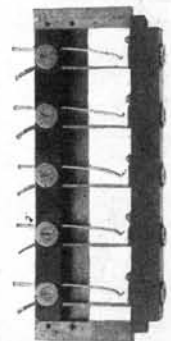


Code No. 116  
Fig. 153

**JACKS—SPRING**

Code No.	No. of Conductors	Conductor Contacts	Local Break	Contacts Make	No. Per Strip	Spacing Centers	Face of Strip	Mounting Pin Centers	Plugs Used
22	2		1		20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
30	2			1	20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
33	2		1	1	20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
45	2				20	$\frac{3}{8}$ "	7 $\frac{3}{4}$ " x $\frac{3}{8}$ "	8 $\frac{3}{4}$ "	78
52	3	2			5	2"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
53	2		1	1	1	$\frac{3}{8}$ "			17-44-74
55	2				20	.3"	6 $\frac{1}{8}$ " x .3"	6 $\frac{3}{4}$ "	26
57	4			1	Twin	$\frac{3}{4}$ "	2" diameter	2 $\frac{1}{2}$ "	25
58	2				10	.6"	6 $\frac{1}{8}$ " x .3"	6 $\frac{3}{4}$ "	26
59	3			1	20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
75	3				5	1 $\frac{3}{8}$ "	5 $\frac{3}{4}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	17-44-74
83	2				1	$\frac{3}{8}$ "			26
85	2				1	$\frac{5}{8}$ "			55
87	2		1	1	1	$\frac{5}{8}$ "			55
92	3			1	1	$\frac{5}{8}$ "			17-44-74
94	3				1	$\frac{5}{8}$ "			17-44-74
96	3	2			1	$\frac{5}{8}$ "			17-44-74
97	2				1		1 $\frac{7}{8}$ " diameter		31
98	2	2			1	$\frac{5}{8}$ "			55
99	2		1		1	$\frac{1}{2}$ "			26
116	2				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{7}{8}$ "	11 $\frac{5}{8}$ "	55
126	2	2			20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
129	2	2			10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
132	2		1	1	10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55
134	3	2			20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
141	3				10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
146	3				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
147	3	2			10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
148	3		1		20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
149	3		1		10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	17-44-74
151	2		1		10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	55

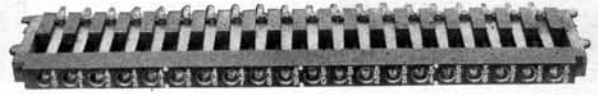
Spring arrangement of Jacks with code numbers, page 46.



Code No. 227  
Fig. 156



Code No. 211  
Fig. 154  
Showing indicators on strip



Code No. 116  
Fig. 155  
Showing number plates

JACKS—SPRING—Continued

Code No.	No. of Conductors	Conductor Contacts	Local Break	Contacts Make	No. Per Strip	Spacing Centers	Face of Strip	Mounting Pin Centers	Plugs Used
163	2				10	1"	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55
191	3			1	10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74
195	2				10	1"	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55
201	2				10	$\frac{3}{4}$ "	7 $\frac{3}{8}$ " x $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	78
203	2	2			10	$\frac{1}{2}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	55
204	3	2			10	.6"	6 $\frac{1}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	17-44-74
205	3		1		5	2"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74
206	3			1	1		1 $\frac{7}{8}$ " diameter		17-44-74
208	2				1	$\frac{5}{8}$ "			78
209	2	2			1	$\frac{5}{8}$ "			17-44-74
210	{ 4			1	1				
	{ 4			1	1		Oblong 2 $\frac{3}{4}$ " x 2"		25
211	2				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55 { No. 116 except arranged for party line indicators
212	{ 4			1	1				
	{ 4			1	1		Oblong 2 $\frac{3}{4}$ " x 2"		25
213	2				10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	55
215	2		1	1	5	1 $\frac{1}{8}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	42-55
217	3	2			10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74 { Slotted for number plates
218	3		1	1	10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74
223	3		1	1	5	1 $\frac{1}{8}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	17-44-74
224	4				Twin	$\frac{3}{4}$ "	2" diameter	2 $\frac{1}{8}$ "	25
225	2	2			5	1 $\frac{1}{8}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	42-55
226	2	2		1	10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	55
227	2				5	1 $\frac{1}{8}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	42-55
229	3		1	1	1	$\frac{5}{8}$ "			17-44-74
230	3				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	17-44-74
231	3				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	17-44-74 { Arranged for party line indicators
232	3				10	1"	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	17-44-74
235	2	2		1	5	1 $\frac{3}{4}$ "	5 $\frac{3}{8}$ " x $\frac{1}{2}$ "	6 $\frac{3}{4}$ "	55
237	2	2			1	1"			42
239	3				20	$\frac{3}{8}$ "	7 $\frac{3}{8}$ " x $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	77
240	2				10	$\frac{3}{4}$ "	7 $\frac{3}{8}$ " x $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	78 { No. 201 except slotted for number plates
241	2			1	10	$\frac{3}{4}$ "	7 $\frac{3}{8}$ " x $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	78
243	2				20	$\frac{3}{8}$ "	7 $\frac{3}{8}$ " x $\frac{3}{8}$ "	8 $\frac{3}{8}$ "	78 Special tip spring
247	2				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55
248	2				10	1"	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55 Special tip spring
249	2				10	1"	10 $\frac{1}{4}$ " x $\frac{7}{16}$ "	11 $\frac{3}{8}$ "	55 { No. 248 except not slotted for number plates
250	3				20	$\frac{1}{2}$ "	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74 { Arranged for party line indicators
251	3				10	1"	10 $\frac{1}{4}$ " x $\frac{1}{2}$ "	11 $\frac{3}{8}$ "	17-44-74

KEYS—CAM



Code No. 28  
Fig. 157



Code No. 29  
Fig. 158



Code No. 30  
Fig. 159

KEYS—CAM—Continued

Code No.	TYPE			CONTACTS							
	Single Locking	Single Restoring	Double Movement	Rollers Towards Frame				Rollers Away From Frame			
				Movement	Break	Make	Sets of Springs	Movement	Break	Make	Sets of Springs
*28	L			L	2	2	2				
29			R-L	R	2	2	2	L	2	2	2
30			L-L	L	2	2	2	L	2	2	2
32			R-L	R	2	2	2	L	2	3	3
†33		R		R	2	2	2				
35	L							L	2	3	3
36			L-L	L	2	2	2	L	2	3	3
39			R-L	R	2	2	2	L	2	3	3
†41			R-L	R	2	2	2	L		2	2
42	L			R		3	3				
43			R-L	R	2	2	2	L		3	3
49			L-L	L	2	3	3	L	2	3	3
50			R-R	R	2	3	3	R	2	3	3
51	L			L	3	2	3				
52			L-L	L	3	2	3	L	2	3	3
55			R-L	R	2	2	2	L	1	2	3
56			R-L	R	2	2	2	L	1	3	4
59			L-L	L	2	2	2	L	2		2
67			R-L	R	2	2	2	L		4	4
70		R						R	2	3	3
71	L			L		4	4				
72	L			L	4		4				
74			L-L	L		2	2	L	1	2	3
75			R-R	R	2	2	2	R	2	2	2
76			R-L	R	2	3	3	L	2	2	2
78			R-L	R		2	2	L		2	2
83			L-L	L	3	2	3	L	3	2	3
85	L			L	4	4	4				
90			L-L	L	4		4	L	4		4
96			R-L	R	2	3	2	L		3	3
97		R		R	2	3	2				
98			R-L	R	2	3	2	L		2	2
99			L-L	L	3	2	3	L		2	2
101	L							L		3	3
102			R-R	R	2	3	2	R	2	3	2
104			L-L	L	2	2	2	L		2	2
106	L							L	2	2	2
111			R-L	R	2	2	2	L	3	2	3
126	L			L		2	2				
131			L-L	R		2	2	L	2	3	3
132		R		R		2	2				
136			R-R	R	2	3	2	R	2	3	2
137			L-L	L	2	3	3	L		2	2
144			R-L	R	2	3	2	L	1	2	3
145			L-L	L		2	2	L		4	4
158			R-L	R	2	2	2	L	4	2	4
160	L							L	1	3	4
161			R-L	R	2	2	2	L	2	2	4
166			R-L	R	2	3	2	L	2	2	2
168			L-L	L	2	2	2	L	1	3	4
170	L							L		2	2
171	L							L		4	4
175			R-L	R	2	3	3	L		3	3
176			L-L	L	1	3	4	L	1	2	3
177			R-R	R	3	2	3	R	2	2	2
185			L-L	L	2		2	L	2	2	2
186		R						R	2	3	3
187			L-L	L	3	3	3	L	3	3	3
189	L			L		4	4				
194			L-L	L	2	2	2	L	2	3	2
195			L-R	L	2	2	2	R	3	2	3



Code No. 33  
Fig. 160



Code No. 75  
Fig. 161

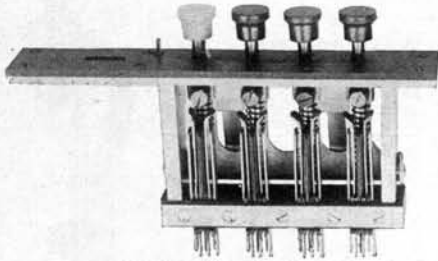


Code No. 85  
Fig. 162

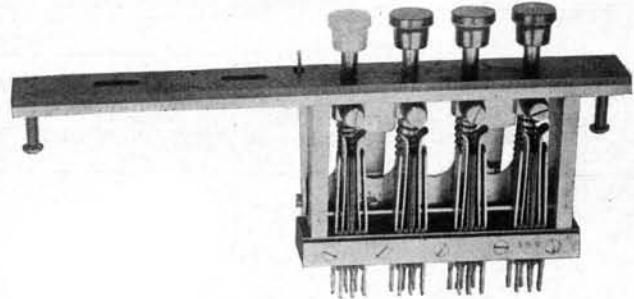
L—Locking. R—Restoring. \*Page 53. †Page 55. ‡Page 54.



KEYS—FOUR PARTY LINE



Code No. 150—Four Party Ringing Key  
Fig. 163

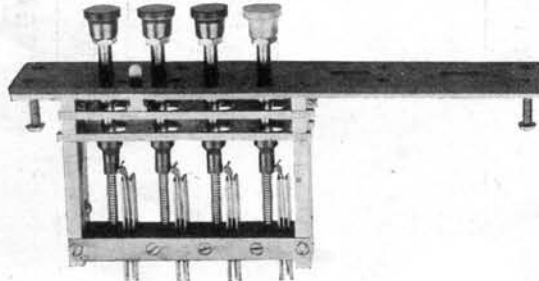


Code No. 152—Four Party Ringing Key  
Fig. 164

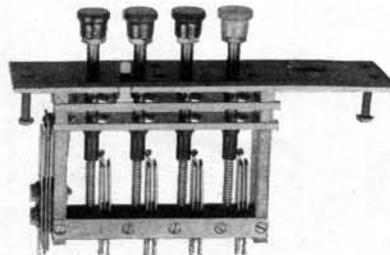
Note:—When cam keys are wanted they must be ordered separate.

Code No.	Length Overall	Movement	Party Keys		Sets of Springs	End Spring Combination	Remarks
			Break	Make			
150	5½"	R	2	2	2		Arranged to mount 1 cam key.
151	5½"	L	2	2	2		Arranged to mount 1 cam key.
152	6¼"	R	2	2	2		Arranged to mount 2 cam keys.
153	6¼"	L	2	2	2		Arranged to mount 2 cam keys.
154	5½"	R	2	3	2		Arranged to mount 1 cam key.
155	5½"	L	2	3	2		Arranged to mount 1 cam key.
156	6¼"	R	2	3	2		Arranged to mount 2 cam keys.
157	6¼"	L	2	3	2		Arranged to mount 2 cam keys.
181	5½"	R		1	1	1-break	Arranged to mount 1 cam key.
190	5½"	R	1	1	1	2-makes and breaks	Arranged to mount 1 cam key.
191	5½"	R	1	1	1	1-make and break	Arranged to mount 1 cam key.
193	5½"	L	1	1	1		Arranged to mount 1 cam key.
198	6¼"	R	1	1	1	1-make and break	Arranged to mount 2 cam keys.

L—Locking. R—Restoring.



Code No. 198—Four Party Ringing Key  
Fig. 165



Code No. 190—Four Party Ringing Key  
Fig. 166

ORDER WIRE KEYS



Code No. 5  
Order Wire Key  
Fig. 167



Code No. 172  
Order Wire Key  
Fig. 168

**KEYS—PUSH BUTTON OR ORDER WIRE**

Code No.	Type	Number per Strip	Material of Frame	Mounting Space Exposed	Thickness of Mounting	CONTACTS OF EACH				Mounting Materials
						Move-ment	Break	Make	Sets of Springs	
5	Order wire	1	Brass	1/2"	7/8"	R		2	2	Wood
24	Order wire	1	Brass	1/2"	7/8"	R	2	2	2	Wood
61	Order wire	10	Brass	5" x .498"	7/8"	R		2	2	Wood
62	Order wire	8	Brass	5 1/2" x .498"	.221"	R		2	2	Iron
121	Signal	1	Brass	1/2"	7/8"	L	2	2	2	Wood
162	Order wire	1	Brass	1/2"	.101"	L	2	2	2	Iron
163	Order wire	1	Brass	1/2"	.101"	R	2	2	2	Iron
164	Order wire	1	Brass	1/2"	.101"	R	2	3	3	Iron
165	Order wire	1	Brass	1/2"	.101"	R		2	2	Iron
167	Order wire	1	Brass	1/2"	7/8"	L	2	2	2	Wood
172	Order wire	1	Brass	1 1/4"		R	2	2	2	Iron or Wood

L—Locking. R—Releasing.

Code No. 5—Plunger turns.

Code No. 24—Plunger turns.

Code No. 61—Metal frame. Plunger does not turn.

Code No. 62—Metal frame. Plunger does not turn.

Code No. 121—Metal plunger.

Code No. 162—Mounts on escutcheon.

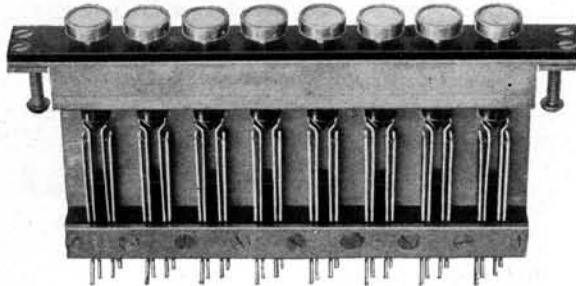
Code No. 163—Mounts on escutcheon.

Code No. 164—Mounts on escutcheon.

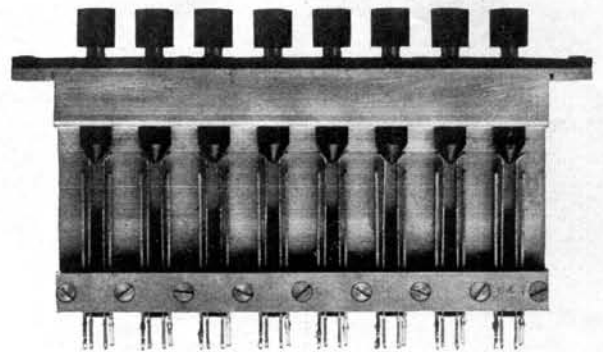
Code No. 165—Mounts on escutcheon.

Code No. 167—Metal plunger.

In Code Nos. 162, 163, 164, 165, plunger does not turn.



Code No. 62. Order Wire Keys  
Fig. 169



Code No. 179. Order Wire Key  
Fig. 170

**LAMPS—SWITCHBOARD**

These lamps are furnished for any voltage required.

**PARAFFINE**

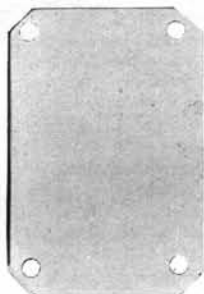
Paraffine is used on all splices of paper insulated cables and also in terminal boxes and arrester heads. Special grade furnished for this work.



Fig. 171

For Switchboard use, 1/3 c. p.

**NUMBER PLATES**



Code No. 46  
Fig. 172



Code No. 57  
Fig. 173



Code No. 5  
Fig. 175



Code No. 10  
Fig. 174



Code No. 3  
Fig. 176



Code No. 13  
Fig. 177

Number Plate, code numbers, page 32

PLATES—NUMBER

Code No.	Where Used	How Marked	Inscription	CONSTRUCTION	
				Material	Finish
2	Spring jacks Nos. 37-201	Stamped and filled with white lead	As specified	Brass	Oxidized and Lacquered
3	Spring jacks Nos. 40-95-195	Stamped and filled with white lead	As specified	Brass	Oxidized and Lacquered
4	Key and plug shelves	Engraved and filled with black paint	As specified	Ivory	Polished
5	Key and plug shelves	Engraved and filled with black paint	As specified	Ivory	Polished
10	Drop shutter	Stamped	As specified	German Silver	Oxidized and Lacquered
13	Transmitter	Stamped and printed	Kellogg (on holder)	Brass, paper and celluloid	N. P.
46	Numbering of operator's positions on switchboard	Engraved and filled with black paint	As specified	Ivory	Polished
50	Spring jacks Nos. 214-217	Stamped and filled with white lead	As specified	Brass	Oxidized and Lacquered
57	Numbering hundreds on stile strips	Engraved and filled with black paint	As specified	Ivory	Polished

Code No. 4—Round,  $\frac{3}{4}$ " diameter.  
 Code No. 5—Round,  $\frac{3}{8}$ " diameter.  
 N. P.—Nickel Plated. D. N.—Dull Nickel.

Code No. 46—Rectangular.  
 Code No. 57—Square.



Code No. 6  
 Dummy Plug  
 Fig. 178



Code No. 83  
 Dummy Plug  
 Fig. 179

PLUGS—DUMMY

Code No.	Dimensions Length Diameter	Shape of Tip	Material	Color	Where Used
6	$1\frac{1}{8}$ " $\frac{1}{2}$ "	Conical	Maple	Mahogany	Plug holes
7	$\frac{1}{8}$ " $\frac{1}{4}$ "	Flat	Maple	Mahogany	Plug holes
24	$1.24$ " $.2495$ "	Round	Hard Rubber	Black	Jacks
27	$\frac{1}{4}$ " $.249$ "	Flat	Hard Rubber	Black	Jacks
39	$\frac{1}{8}$ " $\frac{1}{4}$ "	Flat	White Oak	Dead White	Plug holes
40	$1\frac{1}{8}$ " $\frac{1}{2}$ "	Flat	White Oak	Dead White	Plug holes
45	$\frac{1}{8}$ " $\frac{1}{4}$ "	Flat	Maple	Ebony	Ebony panels
46	$\frac{1}{2}$ " $\frac{1}{4}$ "	Flat	Oak	Golden Oak	Lamp jack holes
72	$1$ " $.158$ "	Flat	Maple	Black	Jacks
83	$\frac{9}{16}$ " $.249$ "	Flat	Steel	White	Jacks
84	$\frac{9}{16}$ " $.249$ "	Flat	Steel	Black	Jacks
85	$\frac{9}{16}$ " $.249$ "	Flat	Steel	Red	Jacks
86	$\frac{9}{16}$ " $.249$ "	Flat	Steel	Blue	Jacks
87	$\frac{9}{16}$ " $.249$ "	Flat	Steel	Yellow	Jacks
88	$\frac{9}{16}$ " $.249$ "	Flat	Steel	Green	Jacks

PLUGS—REGULAR

For jacks to fit plugs see jack springs.



Code No. 55  
 Plug  
 Fig. 180

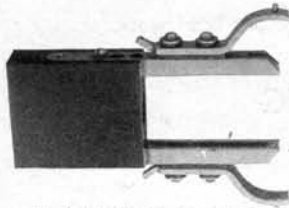


Code No. 74  
 Plug  
 Fig. 181

Code No.	Type	Total Length	Tip	Where Used
16	Twin	$3\frac{7}{8}$ "	Round	Twin toll test plug.
17	2-C	$3.198$ "	Round	
20	4-C	$25\frac{7}{8}$ "	Conical	Operator's plug.
23	4-C	$4$ "		For Kellogg No. 1 arrester.
25	4-C	$25\frac{7}{8}$ "	Round	Operator's plug.
26	2-C	$2.728$ "	Round	For .3" jacks.
31	2-C	$2.4$ "	Round	Operator's plug.
42	2-C	$3$ "	Conical	On Combined D. & J.
44	1-C	$3.192$ "	Round	Test plug.
55	2-C	$2.912$ "	Conical	Switchboard regular.
56	2-C	$2.91$ "	Conical	Switchboard.
70	2-C	$3.198$ "	Round	On Combined D. & J.
74	3-C	$3.192$ "	Conical	Switchboard regular.
75	2-C	$2\frac{7}{8}$ "	Round	Operator's.
76	2-C	$25\frac{7}{8}$ "	Conical	Operator's.
77	3-C	$3.093$ "	Conical	Switchboard.
78	2-C	$2.716$ "	Conical	Switchboard.

C—Conductors.

PLUGS—Continued



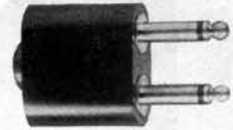
Code No. 23—Testing Plug  
Fig. 182



Code No. 16—Operator's Plug  
Fig. 183



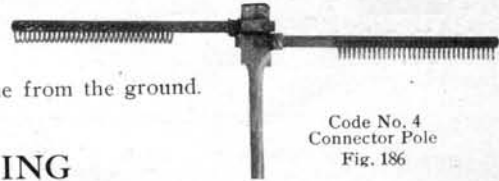
Code No. 75  
Operator's Plug  
Fig. 184



Code No. 25  
Operator's Plug  
Fig. 185

POLES—CONNECTING

These are used to connect portable or trolley phones to line from the ground.  
See page 5 for portable telephones.



Code No. 4  
Connector Pole  
Fig. 186

POST—BINDING

Code No.	Where Used	CONTACTS				Mounting Screws	Finish	Remarks
		Soldered		Terminal				
		Lug	Post	No.	Type			
2	Sub. sets, ext. bell and desk set boxes		1	1	Filistered head screw	Wood	N.P.	Used for receiver terminal.
6	Operators transmitter cord			2	Milled screws	Wood	N.P.	
7	Connecting rack and sub. sets			1	Filistered head screws	Wood	N.P.	Takes cord tip.
10	C.B. sub sets		1	1	2-hexagon nuts	Wood	N.P.	
12	Sub. sets, ext. bell and desk set boxes		1	1	Filistered head screw	Wood	N.P.	Same as No. 2, but terminal hole in line with screws.
13	Connecting racks and sub sets			1	Filistered head screw	Wood	N.P.	Same as No. 7, but terminal hole in line with screws.
16	C.B. sub. sets		1	2	2-hexagon nuts	Wood	N.P.	
17	Subscriber sets	1		2	2-hexagon nuts	Wood	N.P.	
19	Receiver cord tip or wire		1	1	Hexagon nuts	Wood	N.P.	
21	Subscriber sets	1		1	2-hexagon nuts	Wood	N.P.	Hole for cord tip.
22	Receiver cord tip or wire		1	1	2-hexagon nuts	Wood	N.P.	Same as No. 19, but bases at angle of 45°.
23	Subscriber sets	1		1	2-hexagon nuts	Machine	N.P.	Same as No. 17, except mounting screws.
24	Subscriber sets	1		1	2-hexagon nuts	Machine	N.P.	Same as No. 21, except mounting screws.
25	Lineman's test set		1	1	2-milled nuts	Wood	N.P.	
26	Subscriber sets	1		1	Milled nut	Wood	N.P.	Nut slotted for screwdriver.
27	Subscriber sets	1		2	Milled nut	Wood	N.P.	Nut slotted for screwdriver. No. 26 with extra washer.
30	Receiver cord tip or wire		1	1	2-hexagon nuts	Wood	N.P.	Same as No. 19, but base at angle of 90°.
31	Sub. sets, ext. bell and desk set boxes		1	1	Filistered head screw	Wood	N.P.	Same as No. 12, but with longer terminal.
32	Railway dispatching sets	1		1	Round Head mach. screw	Wood	D.N.	No. 11, but with shorter mounting screws.

N.P.—Nickel plated. D.N.—Dull nickel.



Code No. 7  
Fig. 187



Code No. 17  
Fig. 188



Code No. 32  
Fig. 189



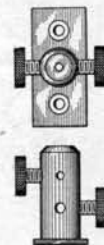
Code No. 19  
Fig. 190



Code No. 27  
Fig. 191



Code No. 2  
Fig. 192



Code No. 6  
Fig. 193



Code No. 3—Rack  
Fig. 195



Code No. 4—Rack  
Fig. 194

## POT HEAD COMPOUND

Special compound is furnished for pot head work.

## RACKS—CONNECTING

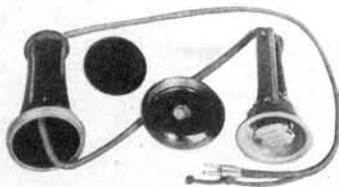
Code No.	No. of Points	Binding Posts		Size of Mounting Block	Material of Mounting Block
		No.	Code		
1	2	2	21	1½" x 2½"	Maple
2	2	2	18	¾" x 2¾"	Red Fibre
3	4	4	7	1" x 3½"	Maple
4	3	3	18	¾" x 3¾"	Hard Rubber
5	4	4	7	1" x 3½"	Maple

## RECEIVERS



Code No. 14A  
Fig. 196

Code No.	Type	Material in Shell	Remarks
14	Operators	Hard rubber	(Piece parts, page 56.)
15	Operators	Hard rubber	Two No. 14 on one head band.
16	Subscribers	Metal	For micro-telephone.
17	Subscribers	Composition	Punched metal cup.
18	Subscribers	Hard rubber	Punched metal cup.
26	Subscribers	Composition	Punched metal cup.
27	Subscribers	Hard rubber	Punched metal cup.
28	Subscribers	Composition	Punched metal cup. Direct current.
29	Subscribers	Hard rubber	Punched metal cup. Direct current.
30	Subscribers	Composition. Reinforced	Punched metal cup. Direct current.
32	Subscribers	Composition. Reinforced	Punched metal cup.



Code No. 26A  
Fig. 197



Code No. 30A  
Fig. 198



Code No. 32A  
Fig. 199

## REFLECTORS

Regular reflector for multiple sections. In ordering give length of section and height of jack space.

## RELAYS



Fig. 200



Code No. 72—Cover Removed  
Fig. 201



Code No. 56  
Fig. 202



Code No. 22  
Fig. 203



# RELAYS

Code No	Type	CONTACTS				Set of Springs	Winding	RESISTANCES											
		Break	Make	Make and Break	Make Before Break			A	B	C	D	E	F	G	H	J	K	L	M
22	22			1		1	S	200-Shunt 100-G. S.	20	3300-Cop. 6700-G. S.	500	100	200	50	400-G. S. 100-Cop.	300	1000	800-G. S. Ser. 200-Cop. Ser.	
28	22			2		2	S	500	100	250	10	200	1000	3900-Cop. 1100-G. S.					
31	22		1			1	S	100	500	1000	1500	65	250	300	400	40	150	10	
32	22	1				1	S	100	20	200-Shunt 100	1000	50	250	3900-Cop. 1100-G. S.	500	80	350		
33	22		1	1		2	S	100	500	1000	200	40	20	50					
34	22	1				1	T	100	100	500	200	250	50						
42	22		2	1		3	S	500	100	50		200							
44	22			2		2	T	250	50	500	100	300							
45	22			2		2	T	250	500	500	100	300							
48	22				2	2	T	500											
49	22				2	2	S	500	500	200									
51	22		1	1		2	T	500	200	100	200								
52	22	1	1			2	T	500	200	100	500	250							
53	22		1			1	T	100	200	500	250								
56	56			1		1	S	250	500	100	225	20	500						
57	22			3		3	S	7000-Cop. 8000-G. S.	2500	15000-Cop.									
58	22	2				2	S	500	200	100	1000	250	300	20-Cop. 100-G. S. Shunt.					
60	22	2	1			3	S	100	500	200	300								
61	22	1	1			2	S	100	500	200	1000	50	800-G. S } 200-Cop. } Ser.						
62	56		1			1	S	1.56	5000	7000-Cop. 8000-G. S. Shunt	5	500	2100	10					
65	22		2			2	S	500	100	200	1000								
66	22	3				3	S	500											
67	22		1			1	C	31	500	40-Non-ind.									
68	22		1			1	T	10	250	250	100	200	150						
69	22		2			2	P	10	250	500	100	200	150						
70	22	1	2			3	S	30	500	100									
72	72			2		2	S	30	500	100									
74	56		1			1	S	500	1000	100	200	250							
76	22		3			3	S	500	2100	8000	5000	15000-Cop.							
77	72	1	1			1	S	500	200	1000	100	50	500	50					
78	72	1	1			1	S	100	200	200	500	50	100	20					
82	22			3		3	S	100	200	100	50								
84	22		1			1	C	100	200	500	50								
88	22	1				1	S	125	500	100									
93	22		1	2		3	S	125	500	100									
94	22		2			2	S	50	500	100									
95	22			1		1	S	100	1000	500									
98	22		1	1		2	C	500	1000	500									



## RELAYS—Continued

Code No.	Type	CONTACTS				Set of Springs	Winding	RESISTANCES								
		Break	Make	Make and Break	Make Before Break			A	B	C	D	E	F	G		
99	22	1				1	C	400	100	50						
100	22	1	1			2	S	100	100	50						
103	22			2		2	C	500	300	200	1000	100				
								100	300							
104	22		2	1		3	C	100								
								100								
106	22		2			2	T	500	200	500						
								500	500	200						
107	22		2	1		3	S	100	500							
								100	500							
110	72		1	1		2	S	40	40							
								500	100							
								500	1000	200						
111	72			2		2	S	200	200	200						
								200	200	200						
112	72	1		1		2	S	1000	400							
								1000	500							
113	22		1			1	S	375	1.75	6						
								375	375							
115	72		1			1	S	375	1.75							
								375	1.75							
116	22		2			2	C	80								
								.3								
119	72		1			1	S	300	300	500	100	1000			500	
								300	40	500	100	1000			20	
120	22			1		1	P	75								
								75								
122	72			2		2	C	500-G. S.	+100-Cop.							
								100								
124	72		1			1	S	75	75							
								500								
125	72	2				2	S	500	1000							
								500	1000							
128	72		1			1	T	500	500	500						
								500	500	200						
								300	1000	300						
129	72		2			1	T	200	100							
								200	100							
130	22			3		3	T	200	100							
								200	100							
134	22		2	1		3	T	500								
								250								
135	22			1		1	P	250								
								500								
136	72			1		1	S	500	100	200	500					
								100	100	500	250					
137	72	1		1		2	S	100	500	500	1000					
								100	100	500	500					
138	72			1		1	S	100		500	500					
								100								
139	72	1		3		3	S	100								
								100								
140	72		1	1		2	S	500								
								200								
141	72		1	1		2	S	20	500							
								20	500							
142	22		2	2		2	S	100	200							
								100	350							
143	22			1		1	S	100	50							
								100	50							
144	72		1	1		1	S	500								
								500								
153	72	2		1		2	S	100	500							
								500	100							
154	72			3		3	S	500								
								500								
155	72			2		2	S	500	3000	1000						
								500	3000	1000						

## RELAYS—Continued

Code No.	Type	CONTACTS				Set of Springs	Winding	RESISTANCES			
		Break	Make	Make and Break	Make Before Break			A	B	C	D
156	72	2	2	1	2	S	250	500			
		1	1		3	S	500	500			
					1	T	500	250			
157	72		2		2	T	500	250			
		1			1	T	500	500			
158	72		1		3	S	200	400			
		2			1	S	100				
159	72	2	1		2	S	250				
		1			1	T	100				
160	72		1		1	S	100				
		1			2	S	100	200	500		
161	72		2	1	2	S	100	500	100		
			1		1	T	100				
163	72	1			1	T	100				
					1	T	100				
164	72		1		1	T	100				
		1			2	S	100				
165	72	2	1		2	S	1000	100	20	500	
		2			2	S	1000	100	20	500	
		1			1	T	100				
175	72		1		1	S	100				
		2			3	S	500				
176	72	2	1		3	S	500				
		1			1	T	50	50			
177	72	1			2	S	100				
		1			1	T	50	50			
178	72	1	1		2	S	500				
		1	2		3	S	500				
179	72	1	2		3	S	500				
		1	1		1	T	500	500			
180	72		1		1	S	500				
		1	2		3	C	1000	G. S. 500	Cop.		
190	72	2	1		3	S	500				
191	22	2	1		3	C	1000	G. S. 500	Cop.		
192	22	2	1		3	S	500				
193	22	1	1		2	C	150	G. S. 1000	Cop.		
194	22	1			1	S	125				
			1		1	T	250	500			
199	72		1		1	T	250	500			
							250	500			
200	72				2	S	1000				
					2	S	200				
					3	T	250				
201	72		2		2	T	250				
							200				
					2	T	1000				
202	72				2	T	1500				
		1			2	S	20				
			1		2	S	1000				
203	72	1			2	S	1000				
			2	1	1	S	200				
					3	T	250				
204	72		3		3	T	250				
							200				
							1000				
205	72	2	1		3	S	100				
		2	1		3	S	100				

## RELAYS—Continued

Code No.	Type	CONTACTS				Set of Springs	Winding	RESISTANCES		
		Break	Make	Make and Break	Make Before Break			A	B	C
206	72			1		1	T	100		
								1000		
207	22	2	1	2		3	S	1000		
								100		
								100		
209	72				2	2	S	500		
								500		
210	72		1	1		2	T	250		
								250		
								1000		
211	72		1			1	C		40-G. S. Non-Ind.	200-Cop. Ind.
212	72	2				1	C		40-G. S. Non-Ind.	200-Cop. Ind.
								50		
								500		
213	72				No. 20 Ret.	1	S	500		
								100		
214	72	1	2			1	S	1000	100	
								1000		
								1000		
216	72	2				2	T	200		
								200		
								200		
217	72		2	1		3	C		250-G. S. Non-Ind.	1000-Cop.
									250-G. S. Non-Ind.	3000-Cop.
218	72	1	1	1		3	S	500		
219	72	1	1	1		3	S	500		
								50		
								300		
224	72	1			No. 20 Ret.	1	S	100		
								500		
225	72	1				1	S	100	200	100
								100	200	500
228	72		1	2		1	S	200		
								200		
229	72	1	1			3	S	200		
								1000		
								100		
230	72		2			1	S	1000		
								100		
231	72	1	1			2	S	500		
								100		
232	56		1	1		2	S	100		
								1500		
								Cop.		
233	72		1	1		2	T	500		
								200		
								50		
235	72	1				1	S	50		
								50		
								500		

Code No. 1—Ringer  
Fig. 204

Code No. 2—Ringer  
Fig. 205

Code No. 26—Ringer  
Fig. 206

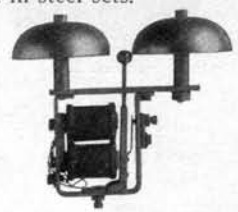
S—Single. T—Tandem. C—Concentric. P—Parallel.  
Top resistance is outside of armature winding.  
Top relay is on right hand side facing the armature.

## RINGERS

Code No.	Frequency	RESISTANCES								Remarks
		A	B	C	D	E	F	G	H	
1		1000	80	500	1600	100	250	2500	2000	( Piece parts on page 64.) Biased. Similar to No. 1 with dome gongs. Similar to No. 1 with cow bell gongs. Similar to No. 1 with tea gongs. Similar to No. 1 with sleigh bells. Vibrating bells for wood sets. ( Piece parts on page 48.)
2		2500	1000	250	1600	100	500			
5		80	1000	1600						
6		80	1000	1600						
7		80	1000	1600						
8		80	1000	1600						
24		4	50							
26—No. 1	33 1/3	500								
26—No. 2	50	500								

**RINGERS—Continued**

Code No.	Frequency	RESISTANCES								Remarks
		A	B	C	D	E	F	G	H	
26—No. 3	66 $\frac{2}{3}$	500								No. 26 but different frequency. No. 26 but different frequency. No. 24 but arranged to mount in steel sets. 6" gongs. 4" gongs. 4" gongs. 4" gongs. 4" gongs. No armature adjustment. Direct current type.
26—No. 4	16 $\frac{2}{3}$	2500								
28—No. 1	20	2500								
28—No. 2	60	500								
32		4	50							
43—No. 4	16 $\frac{2}{3}$	2500								
44—No. 1	33 $\frac{1}{3}$	500								
44—No. 2	50	500								
44—No. 3	66 $\frac{2}{3}$	500								
44—No. 4	16 $\frac{2}{3}$	2500								
45		1000	80	500	1600	100	250	2500	2000	
46		1600								
47—No. 1	30	1000								
47—No. 2	42	1000								
47—No. 3	54	1000								
47—No. 4	66	1000								



Code No. 24  
Fig. 207

**RINGER AND DROP—Combined**

Code No.	No. of Gongs	Resistances						
		A	B	C	D	E	F	G
1	2	1000	80	500	1600	2500	100	2000

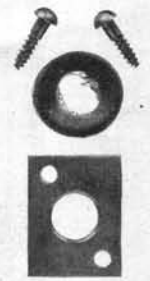


Fig. 208  
No. 1 Combination Ringer

**SEATS—PLUG**

Code No.	WASHERS				SEAT			
	Material	Thick-ness	Size	Hole	Material	Thickness	Size	Hole
2	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	.368"	Brass	No. 15—B. & S.	1" x $\frac{3}{4}$ "	.368"
3	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{1}{8}$ "	Brass	No. 15—B. & S.	1" x $\frac{3}{4}$ "	$\frac{1}{8}$ "
4	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{1}{4}$ "	Brass	No. 15—B. & S.	1" x $\frac{3}{4}$ "	$\frac{1}{4}$ "
5	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{5}{8}$ "	Brass	No. 15—B. & S.	1" x $\frac{11}{16}$ "	$\frac{1}{8}$ "
6	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{11}{16}$ "	Brass	No. 15—B. & S.	1" x $\frac{3}{4}$ "	$\frac{11}{16}$ "
7	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{1}{4}$ "	Brass	No. 11—B. & S.	1" x $\frac{3}{4}$ "	$\frac{1}{4}$ "
8	Red Fibre	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	$\frac{11}{16}$ "	Brass	No. 16—B. & S.	$\frac{5}{8}$ " diam.	$\frac{11}{16}$ "
9	Leather	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	.368"	Fibre	.114"	1" x $\frac{3}{4}$ "	.368"
10	Red Fibre	$\frac{1}{8}$ "	$\frac{11}{16}$ " diam.	.368"	Brass	No. 15—B. & S.	1" x $\frac{3}{4}$ "	.368"

Code No. 8—Special screw arrangement for removing cord and plug.  
 Code No. 10—No. 2, but with fibre washer.



Code No. 2  
Plug Seat  
Fig. 209

**SIGNALS—MECHANICAL**

Code No.	Shutter	Mounting Centers	Night Alarm	Wind-ing	Resistances					Remarks
					A	B	C	D	E	
8	Gridiron	1"		T	250	100	200	50	20	Supervisory signal.
10	Gridiron	1"	1	T	250	100	200	50	20	Supervisory signal.
12	Target	$\frac{1}{2}$ "		S	160					Busy signal.
14	Gridiron	1"	1	S	250					Line signal.

S—Single. T—Tandem.

**SLEEVING**

Our sleeving consists of cotton braid saturated with beeswax in either brown, red or white. This is used in assembling apparatus to cover the bare wires.



Code No. 10—Mech. Signal  
Fig. 213



Code No. 12—Mech. Signal  
Fig. 212



Fig. 214



Fig. 215

### SOLDER

Resin is the only flux that should be used in telephone work, because it is non-corrosive. Our resin solder is made up in flat (1/8" wide) ribbon form with the resin evenly distributed through the center. It makes a clean and perfect joint. (Fig. 216.)

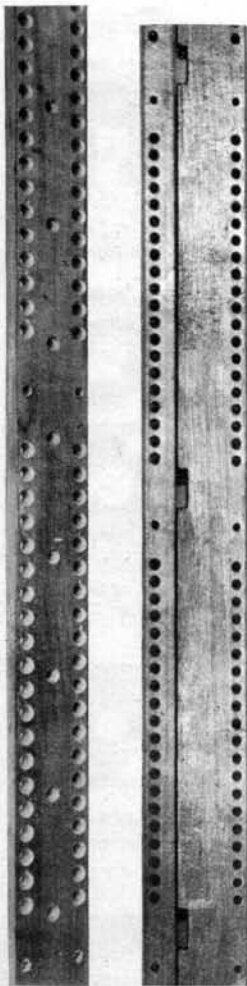
The hard solder is furnished either in bar or string form. The string form is furnished in several sizes to suit different work.



Fig. 216

### STRIPS—JUMPER

Code No.	No. of Strips	Rows of holes in each Strip	Holes in each row	Mounting Centers Vertical	Terminal Strips Used	Remarks
5	1	2	140	11"	10-11-21-22 39-44	
6	2	1	102	11"	Used with arrester.	
7	1	2	200	11"	10-11-21-22	
8	1	2	100	11"	10-11-21-22	
12	2	1	160	11"	Used with arrester.	
14	1	2	160	11"	10-11-21-22	
16	2	1	100	11"	Used with arrester	
17	2	1	160	11"	Used with arrester.	
18	2	1	120	11"	Used with arrester.	
19	1	2	120	11"	10-11-21-22	
20	1	2	200	11"	10-11-21-22	
21	2	1	200	11"	Used with arrester.	
23	1	2	160	11"	10-11-21-22	
26	2	1	140	11"	Used with arrester.	
27	1	2	140	11"	10-11-21-22	
28	1	2	180	11"	10-11-21-22	
30	1	4	2-65 2-60	11"	39-44	Holes on each side staggered.
31	2	1	100	11"	Used with arrester.	
34	1	4	2-104 2-96	10 1/2"	39-44	Holes on each side staggered.
35	2	2	160	10 1/2"	Used with arrester.	
38	1	4	2-117 2-108	11"	39-44	Holes on each side staggered.
39	2	1	180	11"	Used with arrester.	
40	1	4	2-65 2-60	10 1/2"	39-44	
41	2	1	100	10 1/2"	Used with arrester.	
42	1	4	2-91 2-84	10 1/2"	39-44	Holes on each side staggered.
43	2	1	140	10 1/2"	Used with arrester.	
44	1	4	2-91 2-84	11"	39-44	
45	1	4	2-130 2-120	10 1/2"	39-44	Holes on each side staggered.
46	2	1	200	10 1/2"	Used with arrester.	
47	1	4	2-130 2-120	11"	39-44	Holes on each side staggered.
48	1	4	2-78 2-72	10 1/2"	39-44	Holes on each side staggered.
49	2	1	120	10 1/2"	Used with arrester.	
50	1	2	100	10 1/2"	10-11-21-22	
51	1	4	2-78 2-72	11"	39-44	



Code No. 8  
Fig. 217

Code No. 31  
Fig. 218

### STANDS—LAMP

Lamp brackets, for switchboards and power boards, illustrated on page 16.

Lamp stands, such as illustrated in Figure 219, can be supplied if preferred.

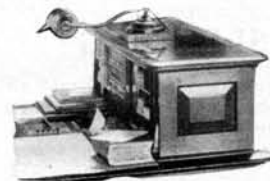


Fig. 219

## STAPLES

Staples and tacks used in interior wiring.



Code No. 1  
Fig. 220

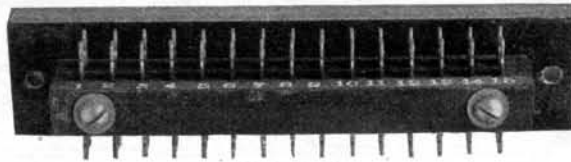


Code No. 5  
Fig. 221

## STRIPS—MOUNTING

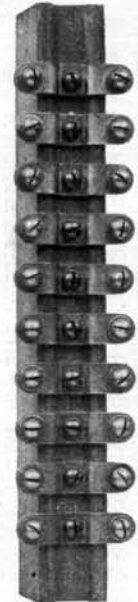
When ordering mounting strips, always specify the code number of apparatus that is to mount on strip; also giving width, length and mounting centers. This is necessary in order to get the proper mountings.

## STRIPS—TERMINAL



Code No. 36  
Fig. 222

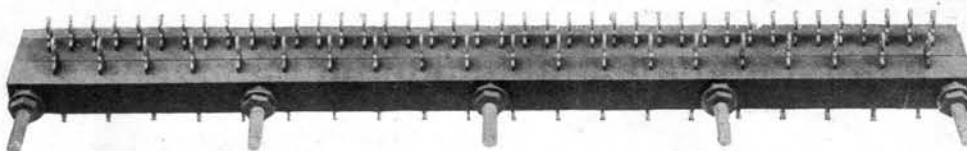
Code No.	No. of Lines	Points	Material	No. of Rows Connectors	Connectors per Row	Centers Spaced	Length of Strip
10	20	3		2 { 1	20 40	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
11	20	2		1	40	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
14	20	2		1	40	$\frac{1}{2}$ "	$10\frac{1}{2}$ "
16	20	3		2 { 1	20 40	$\frac{1}{2}$ "	$10\frac{1}{2}$ "
17	20	4		2	40	$\frac{1}{2}$ "	$10\frac{1}{2}$ "
19	20	3		2 { 1	40 20	$\frac{1}{2}$ "	$10\frac{1}{2}$ "
21	20	4		2	40	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
22	20	3		2 { 1	40 20	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
29	20	3	Maple	3	20	$\frac{1}{4}$ "	$6\frac{1}{8}$ "
30	20	2	Maple	2	20	$\frac{1}{4}$ "	$6\frac{1}{8}$ "
31	10	3	Maple	3	10	$\frac{1}{2}$ "	$6\frac{1}{8}$ "
32	10	2	Maple	2	10	$\frac{1}{2}$ "	$6\frac{1}{8}$ "
35	15	4	Maple	4	15	$\frac{1}{4}$ "	$4\frac{7}{8}$ "
36	15	2	Maple	2	15	$\frac{1}{4}$ "	$4\frac{7}{8}$ "
39	25	2		2	25	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
41	5	2	Maple	1	10	$1\frac{1}{4}$ "	$7\frac{1}{4}$ "
42	10	2	Maple	1	20	$1\frac{1}{4}$ "	$13\frac{3}{4}$ "
43	25	2	Maple	1	50	$1\frac{1}{4}$ "	$32\frac{1}{2}$ "
44	25	2		2	25	$\frac{7}{8}$ "	$9\frac{5}{8}$ "
45	10	2	Maple	1	20	$1\frac{1}{4}$ "	$13\frac{1}{2}$ "



Code No. 41  
Fig. 223



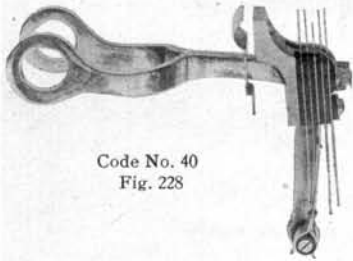
Code No. 11  
Fig. 224



Code No. 22  
Fig. 225



SWITCHES



Code No. 40  
Fig. 228



Code No. 47  
Fig. 229



Fig. 226

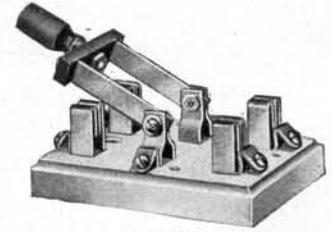
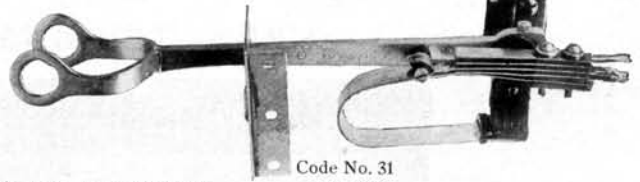


Fig. 227

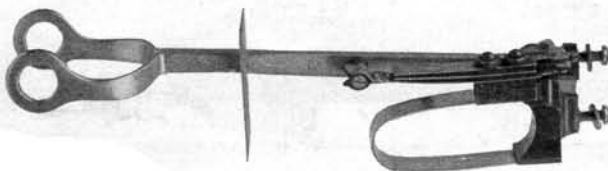


Code No. 31  
Fig. 230

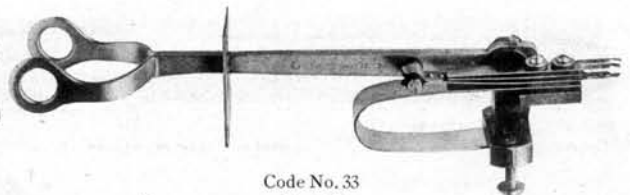
SWITCH HOOKS

Code No.	Type	Mounting Lug	CONTACT SPRINGS		Lever	HOOK		Direction of Springs
			Hook Down	Hook Up		How Made	Description	
31	Desk	Back	2	2	Long	P	C. F. Double	Ins. Horizontal.
* 33	Wall	Bottom	1	2	Long	P	C. F. Double	Ins. Horizontal.
34	Wall	Side	1	2	Long	P	C. F. Double	Ins. Horizontal.
35	Wall	Bottom		2	Long	P	C. F. Double	Ins. Horizontal.
36	Hotel	Side	2	2	Long	P	C. F. Double	Ins. Horizontal.
37	Wall	Side		1	Long	P	C. F. Double	Ins. Horizontal.
38	Wall	Side	1	1	Long	P	C. F. Double	Ins. Horizontal.
39	Wall	Back		1	Long	P	C. F. Double	Ins. Horizontal.
40	Wall	Side	2	2	Short	P	C. F. Double	Ins. Vertical.
41	Wall	Side		2	Long	P	C. F. Double	Ins. Horizontal.
42	Wall	Side	1	3	Long	P	C. F. Double	Ins. Horizontal.
43	Wall	Side	1- 1-local	2	Long	P	C. F. Double	Ins. Horizontal.
44	Wall	Bottom	2	2	Long	P	C. F. Double	Ins. Horizontal.
45	Wall	Side	2	2	Short	P	C. F. Double	Ins. Vertical.
47	Test	Side	1	2	Short	P	Head Receiver	Ins. Vertical.
48	Wall	Side	1	1-local	Short	P	C. F. Double	Ins. Vertical.
49	Wall	Back	1	2	Long	P	C. F. Double	Ins. Horizontal.
52	Wall	Bottom	2	2	Long	P	C. F. Double	Ins. Horizontal.
53	Wall	Side	2	1	Short	P	C. F. Double	Ins. Vertical.
56	Hotel	Side	1	2	Short	P	C. F. Double	Ins. Vertical.
57	Hotel	Side	1	1	Short	P	C. F. Double	Ins. Vertical.
58	Hotel	Side		1	Short	P	C. F. Double	Ins. Vertical.
59	Wall	Bottom	1	2	Long	P	C. F. Double	Ins. Horizontal.
61	Dummy	Side				C	Microtelephone	
62	Wall	Bottom		1	Long	P	C. F. Double	Ins. Horizontal.
† 63	Wall	Back		2	Long	P	C. F. Double	Ins. Horizontal.
64	Wall	Bottom		1	Long	P	C. F. Double	Ins. Horizontal.
68	Wall	Side	1	2	Short	P	C. F. Double	Ins. Vertical.
69	Hotel	Bridge	2	2	Long	P	C. F. Double	Ins. Horizontal.
71	Wall	Back	2	2	Long	P	C. F. Double	Ins. Horizontal.
72	Wall	Side		2	Short	C	Single	Ins. Vertical.
74	Wall	Side		1	Short	C	Single	Ins. Vertical.
77	Wall	Side	2	2	Long	P	C. F. Double	Ins. Horizontal.

C. F.—Circular fork. P—Punched. C—Cast. \*Page 51. †Page 50.



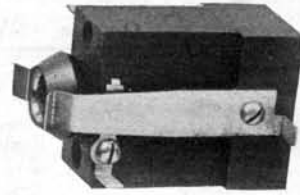
Code No. 41  
Fig. 231



42  
Code No. 33  
Fig. 232

## SWITCHES—PLUG

Code No.	Make	CONTACTS	
		(When plug is withdrawn)	
		Break	Sets of Springs
1	2	2	2
2		2	2
3	2		2
4		2	2



Code No. 2—Plug Switch  
Fig. 233

## TAPE

Tape for butting cables consists of a braid (white)  $\frac{3}{8}$ " wide. Manson and Okonite tape used for regular work.

## TERMINALS AND CONNECTORS



Fig. 234—Pc. 150



Fig. 235  
Pc. 8818



Fig. 236  
Pc. 8249



Fig. 237—Pc. 361



Fig. 238—Pc. 3181



Fig. 239—Pc. 6069



Fig. 240—Pc. 12925



Fig. 241—Pc. 6028



Fig. 242—Pc. 7625

## TOOLS

Tools made especially for assembling and adjusting of our apparatus.



Fig. 244—Pc. 636



Fig. 245—Pc. 1813



Fig. 246—Pc. 151



Fig. 243—Pc. 2734



Fig. 248

Champion Cabinet Screw Driver. Has a light handle and slender blade adapted for light work. Sizes,  $2\frac{1}{2}$ ,  $3\frac{1}{2}$ ,  $4\frac{1}{2}$ ,  $5\frac{1}{2}$ ,  $6\frac{1}{2}$ ,  $8\frac{1}{2}$ ,  $10\frac{1}{2}$ ,  $12\frac{1}{2}$  inches.



Fig. 247

Chain Pliers, long nose, oval points. Sizes, 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$ , 6 inches.



Fig. 249

Side-Cutting Nippers, "Box Joint." (Stub's pat.) Sizes, 3 in. to 8 in.



Fig. 249A

Klein's Special Side-Cutting Pliers. Sizes, 6, 7, 8, 9 inches.

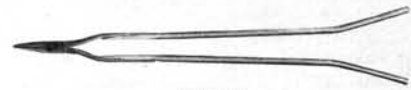


Fig. 250

14-inch Long-Handled Chain Pliers. Pc. 11041



Fig. 251

Heat Coil Pliers. Pc. 3105



Fig. 252

Side-Cutting Nippers, "Lap Joint." Sizes, 4 in. to 6 in.

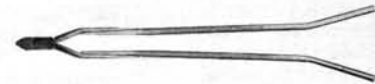


Fig. 253

14-in. Long-Handled Diagonal Cutters. Pc. 11040



Fig. 256

Wrench for Pc. No. 989 Multiple Nut. Pc. 3096



Fig. 255

Wrench for removing sleeve of No. 88 type of Spring Jack. Pc. 11039



Fig. 254

Side-Cutting Pliers. Sizes, 5 in. to 8 in.



Fig. 257

Small Screw Driver for Combination Drops and Jacks. Pc. 3839



Fig. 258

Key Spring Adjuster. Pc. 3406



Fig. 259

Relay Spring Adjuster. Pc. 3424



Fig. 260  
Wrench for removing major relay shells.



Fig. 261  
Wrench for 77 Nut. Used for removing major relays from the mounting strip. Pc. 3095.



Fig. 262  
Socket Wrench for Nuts on Nos. 16 and 22 Binding Posts. Also for Nuts on Ringer Gongs. Pc. 6462.



Fig. 263  
Socket Wrench for Relay Armature Nuts. Pc. 11039. Also for Standard Arrester Nuts. Pc. 3098.



Fig. 264  
Wrench for adjusting Straight Line Ringers. Pc. 2867.



Fig. 265  
Wrench for Two Gong Party Line Ringers. Pc. 6944.



Fig. 266  
Wrench for Two Gong Harmonic Party Line Ringer. Pc. 6945.



Fig. 269  
Supervision Lamp Cap Extractor. Pc. 424.



Fig. 268  
Lamp Extractor. Pc. 3120.



Fig. 267  
Line Lamp Cap Extractor. Pc. 5248.

## TRANSMITTERS

### CODE NUMBERS

No. 22 - L Transmitter, for concealed cord type transmitter arm. (Standard transmitter case and mounting.)

No. 23 - L Transmitter, same as No. 22-L, but for use on a solid type transmitter arm employing an exposed connecting cord.

No. 55 - L is standard operator's transmitter.

Have you seen our metal reinforced rubber insulated mouthpieces? Send for folder.



No. 22-L



No. 55-L



No. 23-L



Code No. 76  
Fig. 271

Code No.	Style	Finish	Battery	REMARKS
22	Subscribers	Nickel plated	L. & C.	Standard. (Piece Parts, page 49.)
35	Operators	Oxidized	L. & C.	Suspended.
49	Operators	Nickel plated	L. & C.	Suspended.
55	Operators	Semi-gloss, black enamel	L. & C.	Suspended.
56	Subscribers	Rubber finish	L. & C.	Same as No. 22 except finish.
64	Subscribers	Nickel plated	L. & C.	Used on new desk stand head.
70	Subscribers	Nickel plated	L. & C.	Special for damp climates.
76	Operators	Polished	L. & C.	Breast plate.

L—Local battery. C—Common battery.

### GUARANTEE

The Kellogg Transmitter is guaranteed superior to any other make on the market, and any part showing an inherent defect within five years will be repaired or replaced *free of charge on being returned to the Company.*

### TWINE

Barbour's Boston Lock Stitch Twine is used for lacing cables and sewing forms. This is made in several sizes and is especially good for telephone use. The standard sizes are 6, 8 and 12 strands.

### WEBBING

Webbing for holding multiple cables in place is furnished in three (3) colors (red, white and slate). This webbing is 1 inch wide. Staples or pins are used to hold it in place.

## WEIGHTS—CORD

No. 1  
Cord Weight  
used on  
Switchboard  
Cords



Fig. 272

No. 4  
Cord Weight  
used on  
Transmitter  
Cords



Fig. 273

## WIRE

### MAGNET WIRE.

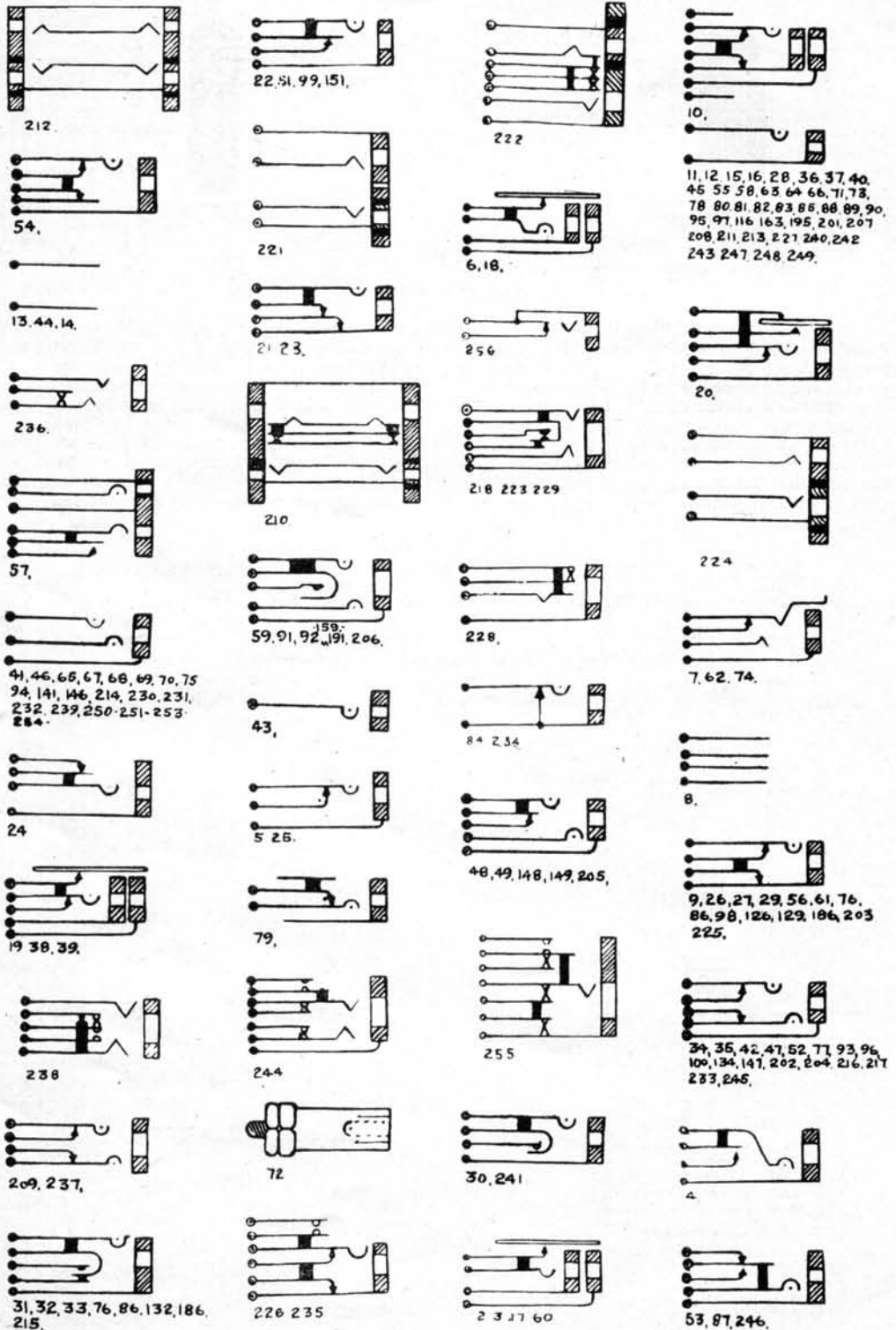
The conductor in Kellogg Magnet Wire is drawn from pure copper having conductivity of 98.5 per cent; is smooth, round, free from splinters, thoroughly and evenly annealed and cleaned. Wire No. 30 and larger does not vary from the diameter specified more than one per cent over and under; wire smaller than No. 30 does not vary from the diameter specified more than one ten-thousandth of an inch (.0001 inch) over and under. The wire has an average specific resistance of 1.747 microms at 20° C.; its tensile strength is not less than 30,000 pounds per square inch and the elongation in eight inches is not more than 30 per cent. The insulation is firmly and evenly applied, and free from knots and irregularities. No other silk than the best quality of boiled-off Italian Tram silk is used. We make a specialty of "long lengths." All our magnet wire is put up one piece only per spool. This is furnished in any size and insulation desired.

### BARE WIRE.

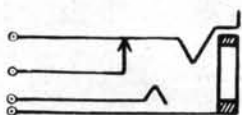
Bare tinned wire suitable for all telephone uses is carried in stock. See Supply Bulletin No. 17.

### ANNUNCIATOR AND SWITCHBOARD WIRE.

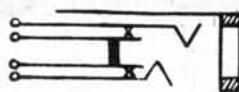
These are carried in stock in standard sizes and colors. See Supply Bulletin No. 17



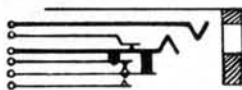
Spring arrangement of jacks with code numbers. For description see pages 27 and 28



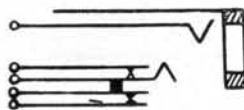
4-6-9-15-



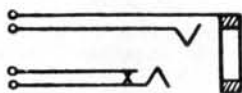
23-25-32-34-43-45



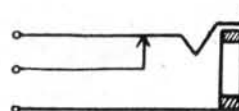
47



37-



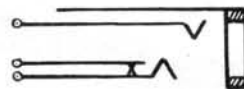
21-26-30-35-41-46



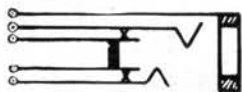
1-2-3-5-10-12-17-



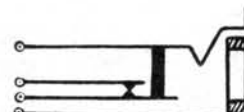
36-



20-24-29-33-40-44



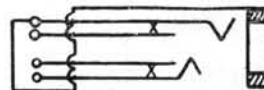
22-31-42



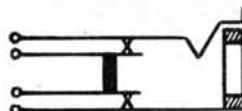
15-



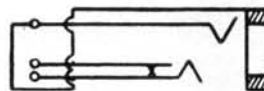
7-13-



39-



8-11-14-18-27-28-



38-48-

Spring arrangement of jacks (combined drops and jacks) with code numbers.  
(See page 24.)



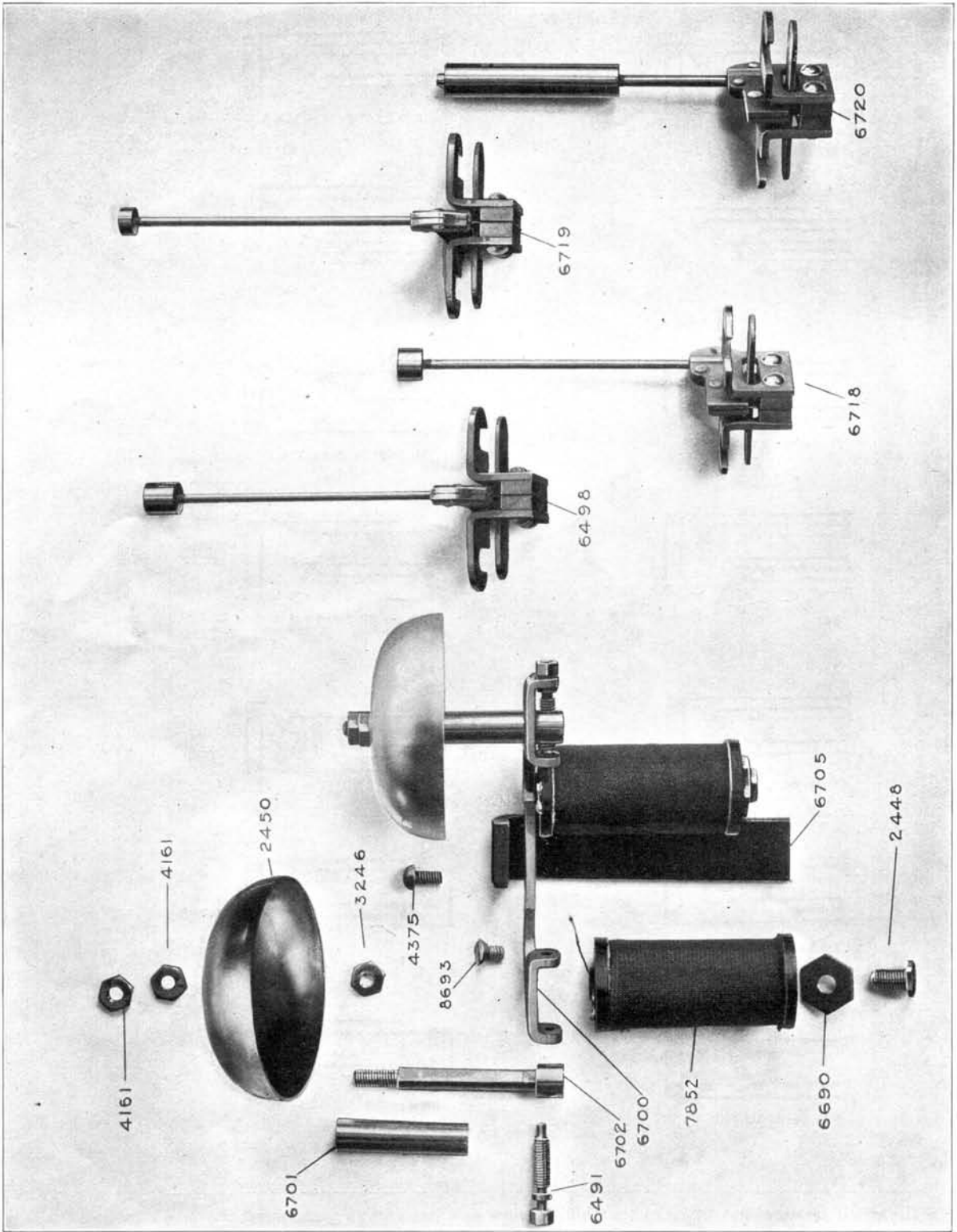


Plate No. 1—Type No. 26—Ringer

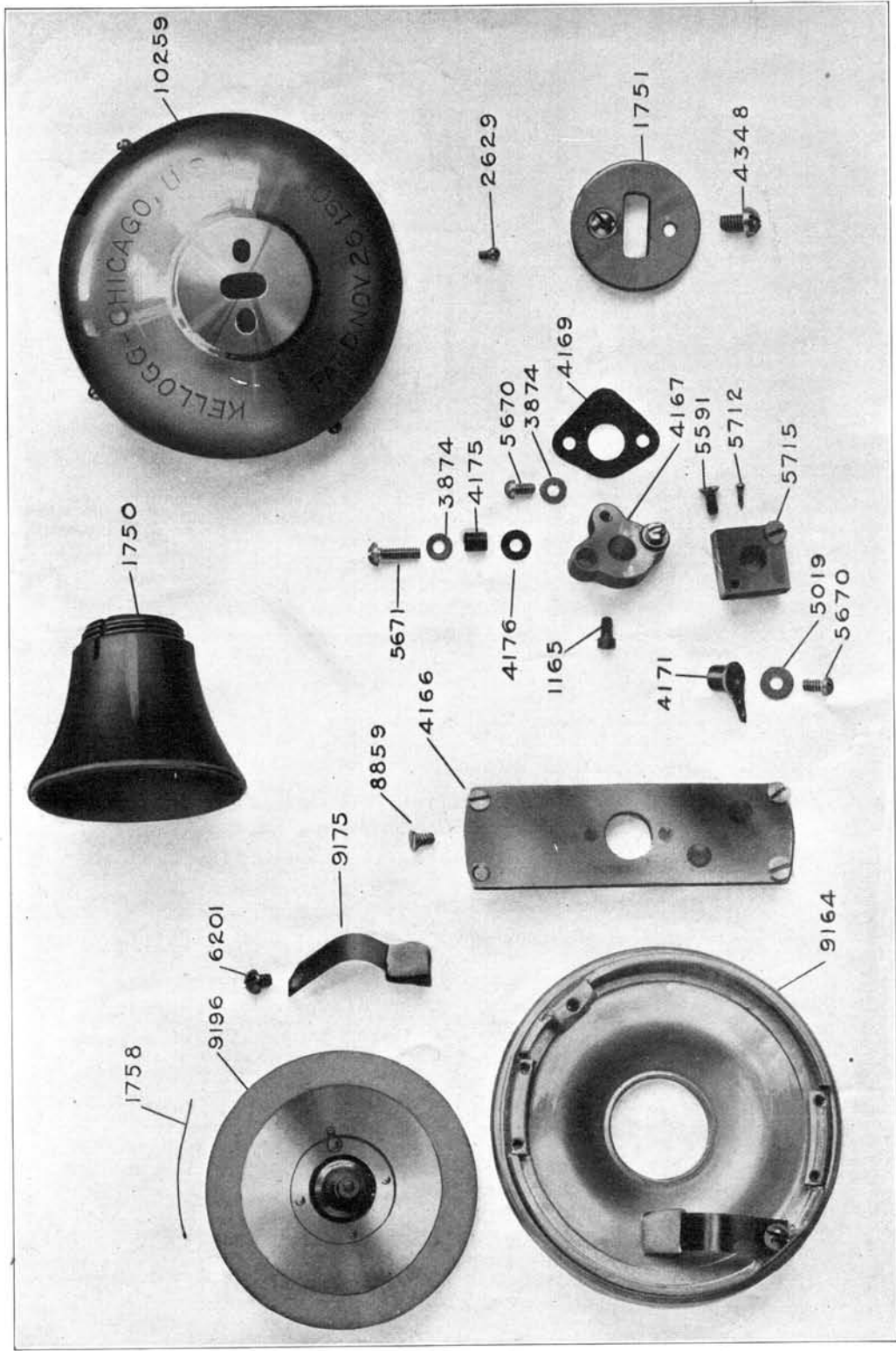


Plate No. 2—Kellogg Transmitter—No. 22L

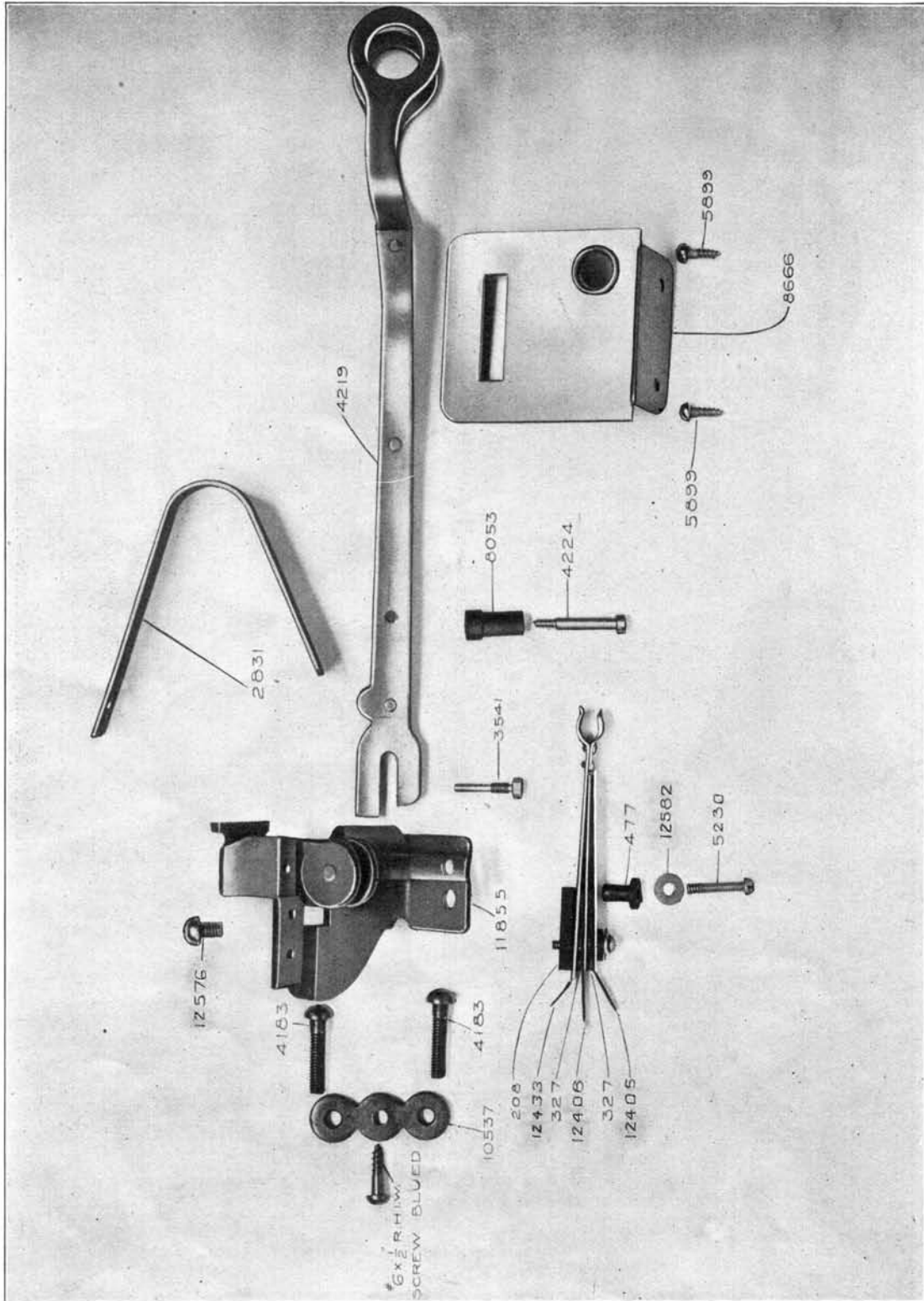


Plate No. 3—Type No. 63—Switch Hook

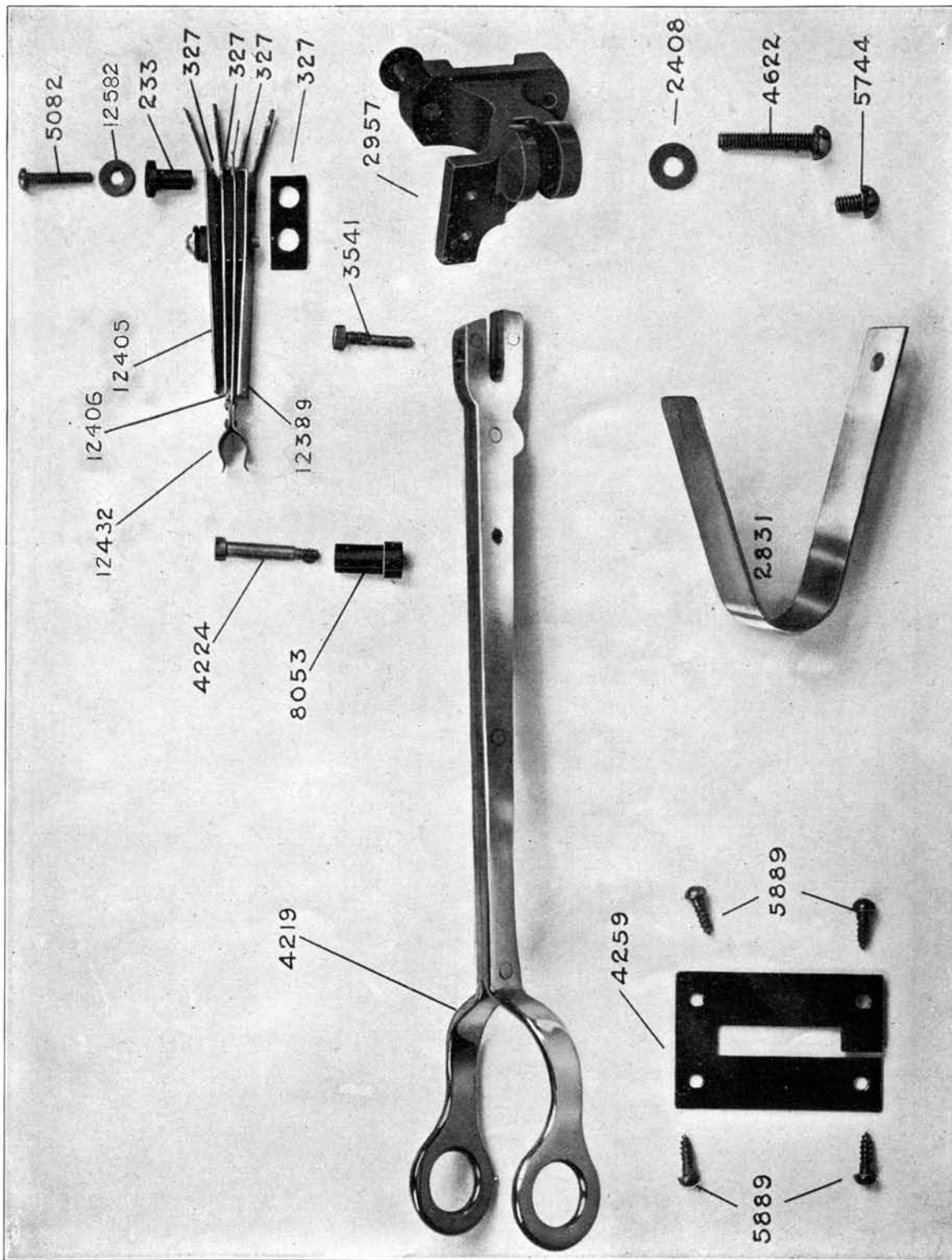


Plate No. 4—Type No. 33—Switch Hook

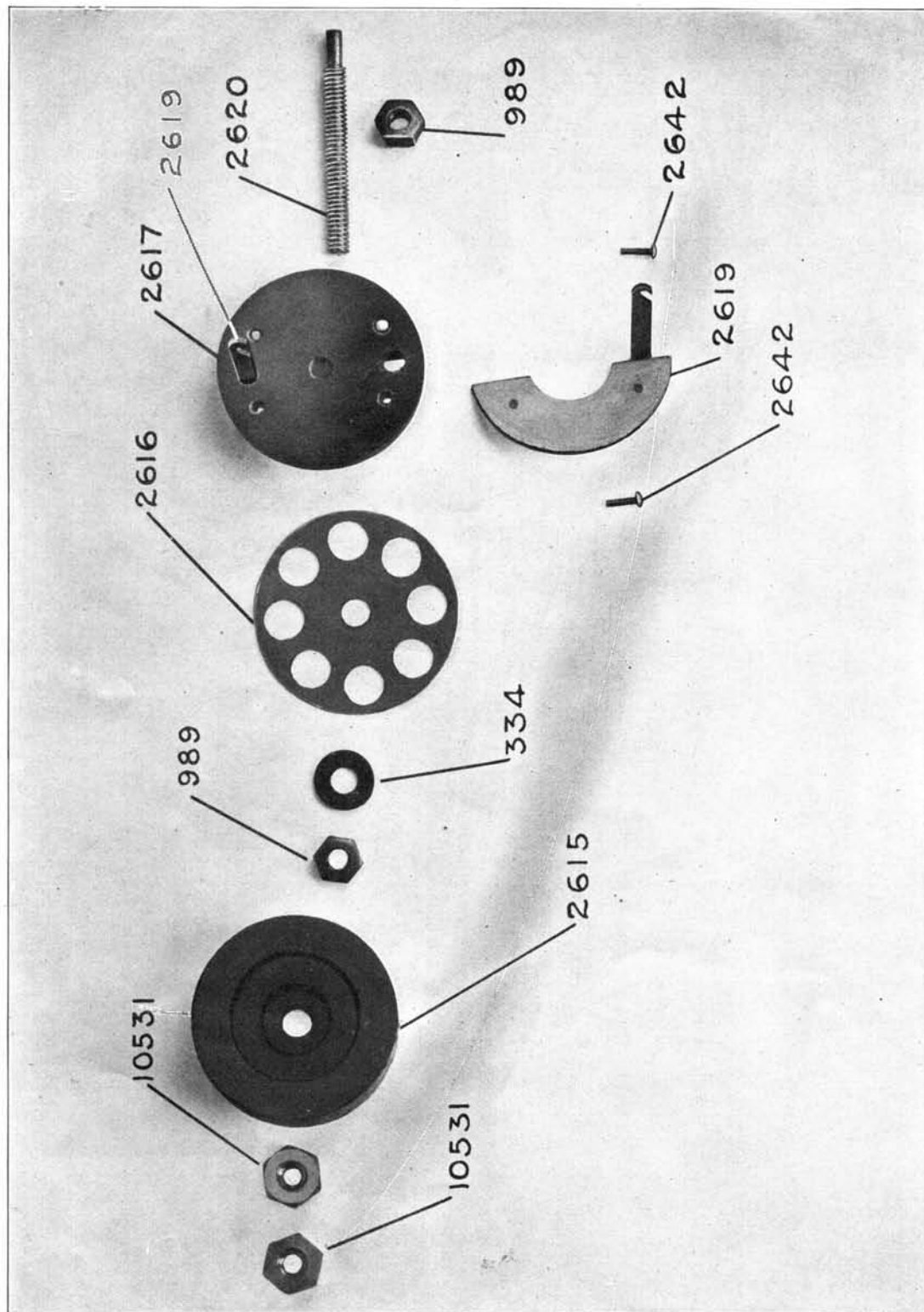


Plate No. 5—Type No. 3—Arrester



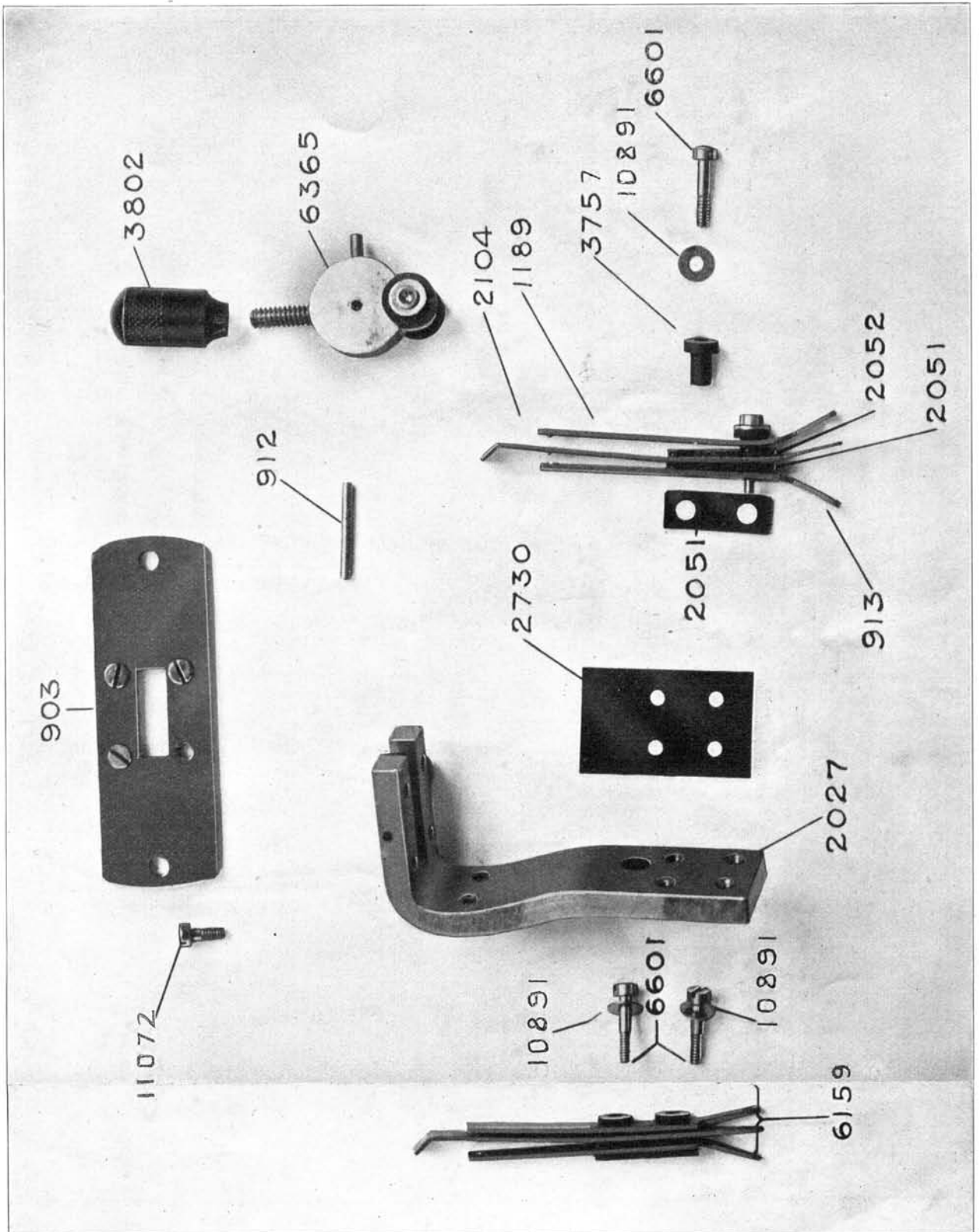


Plate No. 6—Type No. 28—Key



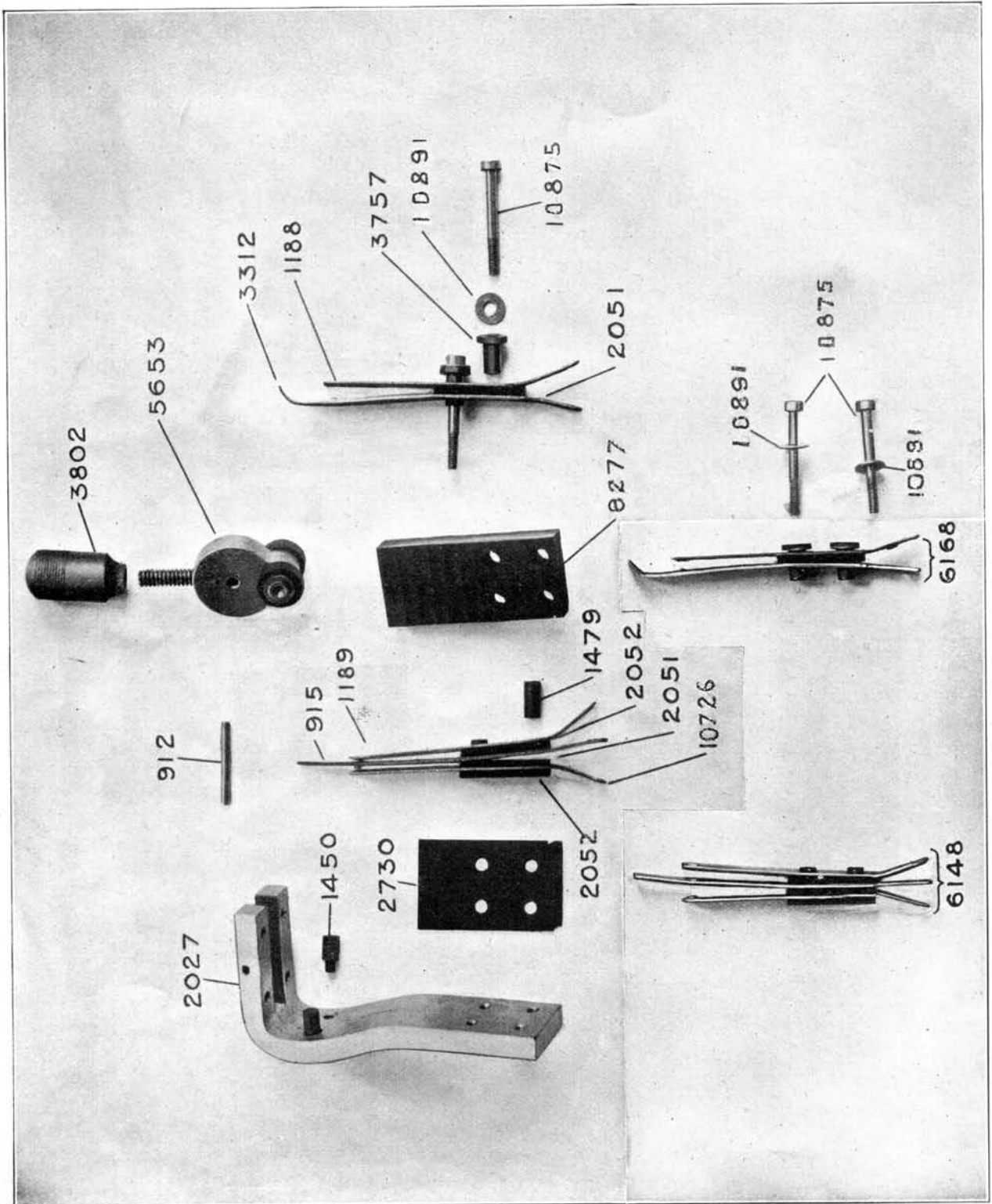


Plate No. 7—Type No. 41—Key

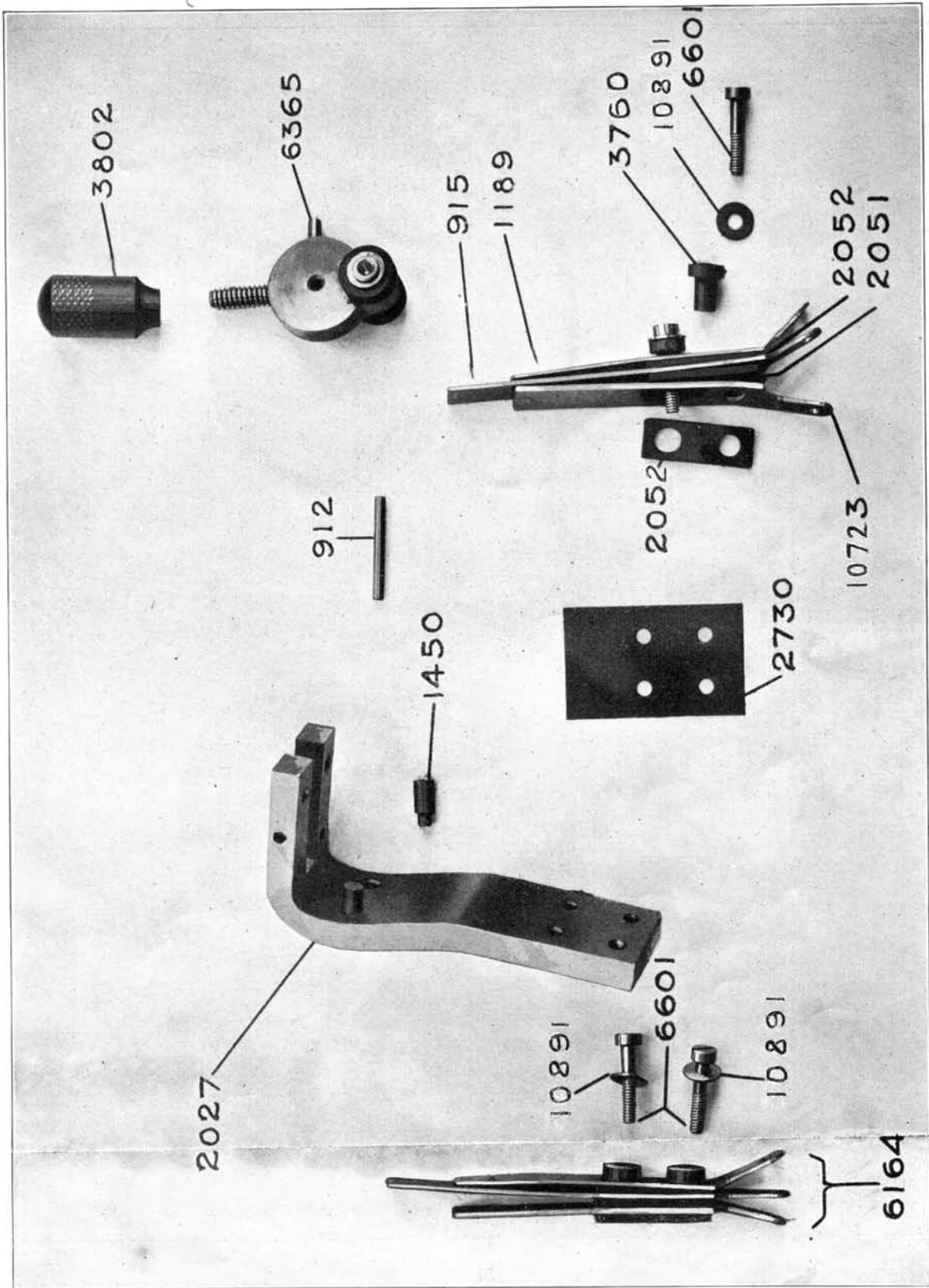


Plate No. 8—Type No. 33—Key

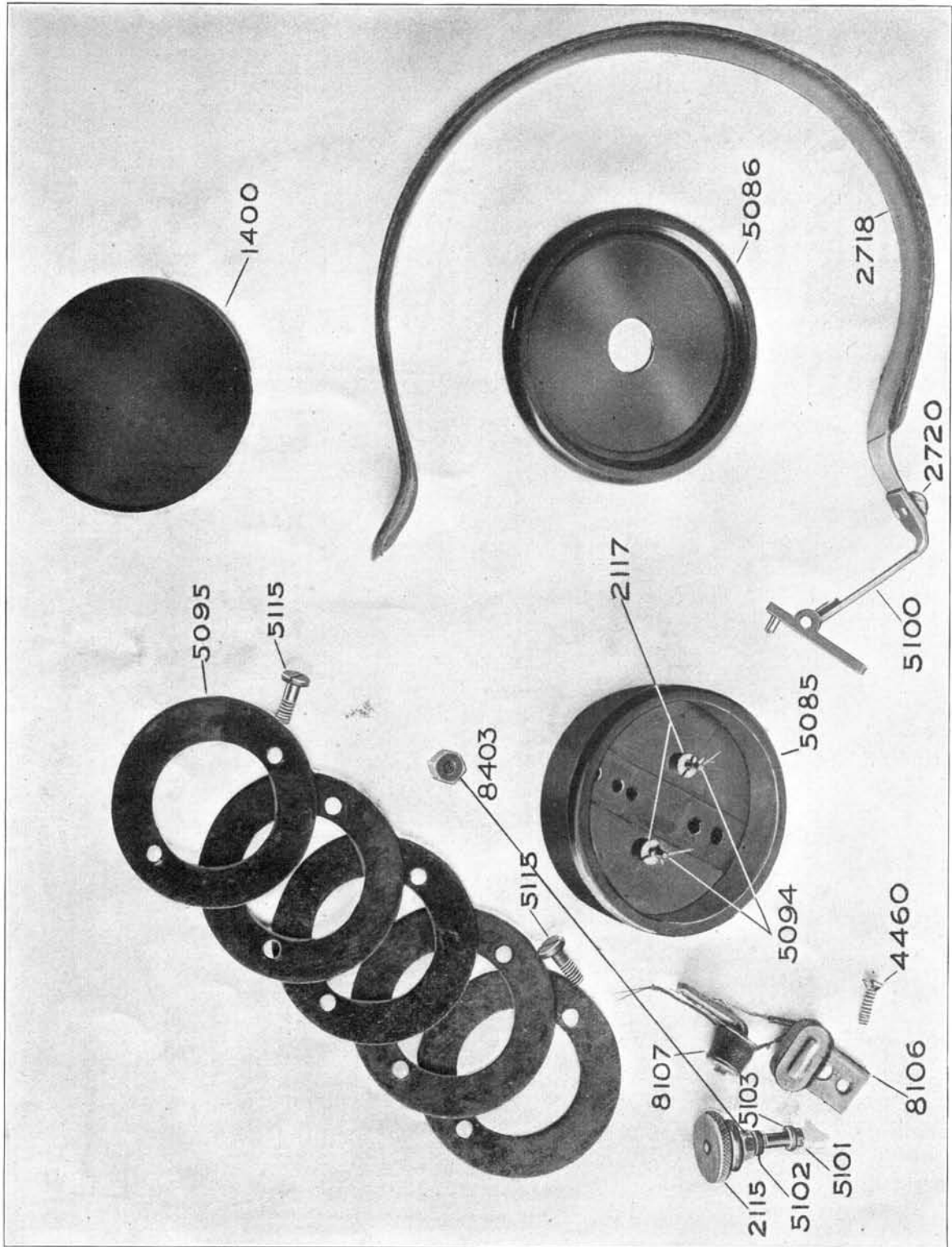


Plate No. 9—Type No. 14—Receiver  
Two pieces are used instead of five (No. 5095), the piece number being 13602

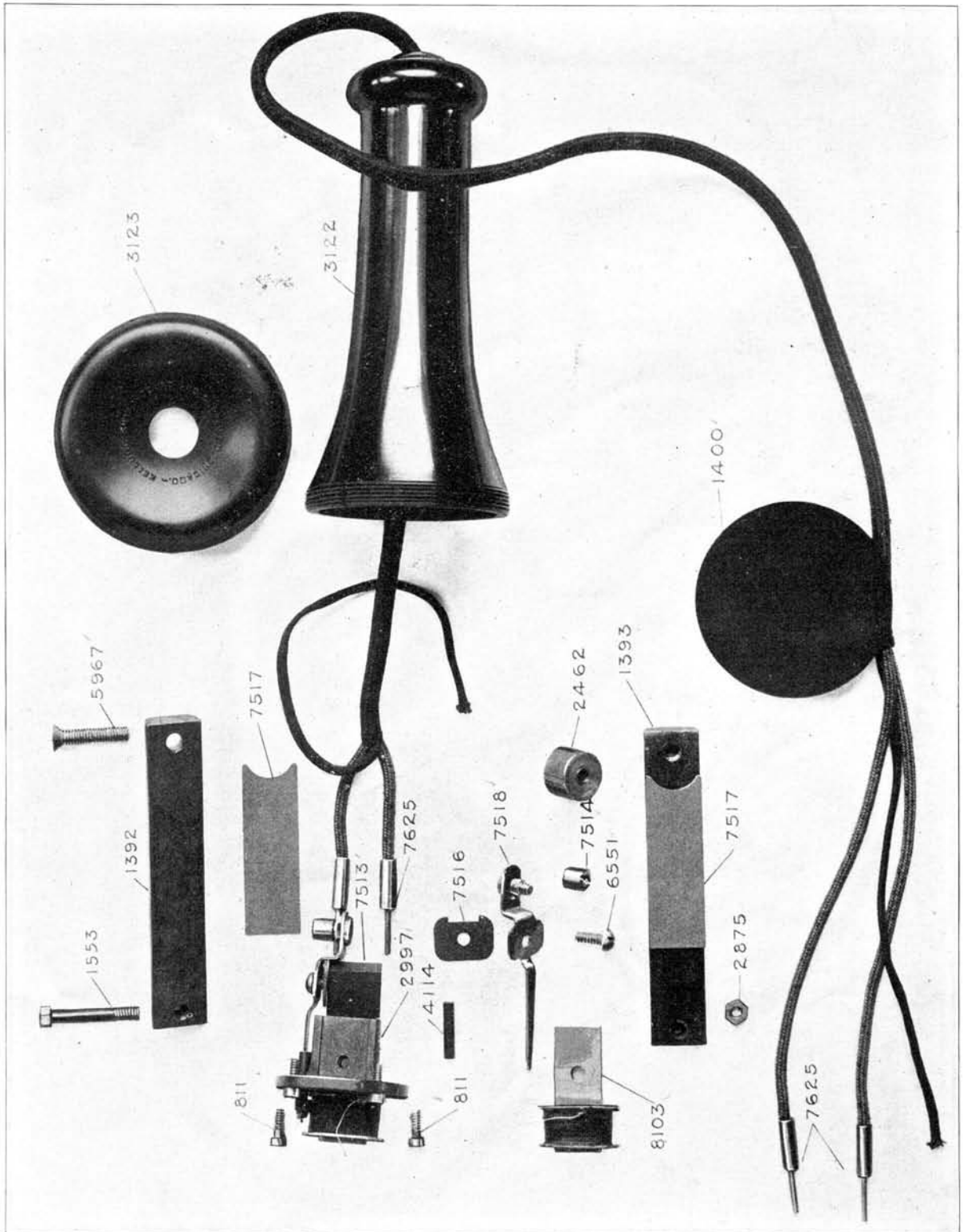


Plate No. 10—Type No. 18—Receiver  
 The only difference between No. 17 and No. 18 Receiver is in the shell and cap. No. 17 shell is piece No. 5313; No. 17 cap is piece No. 2657

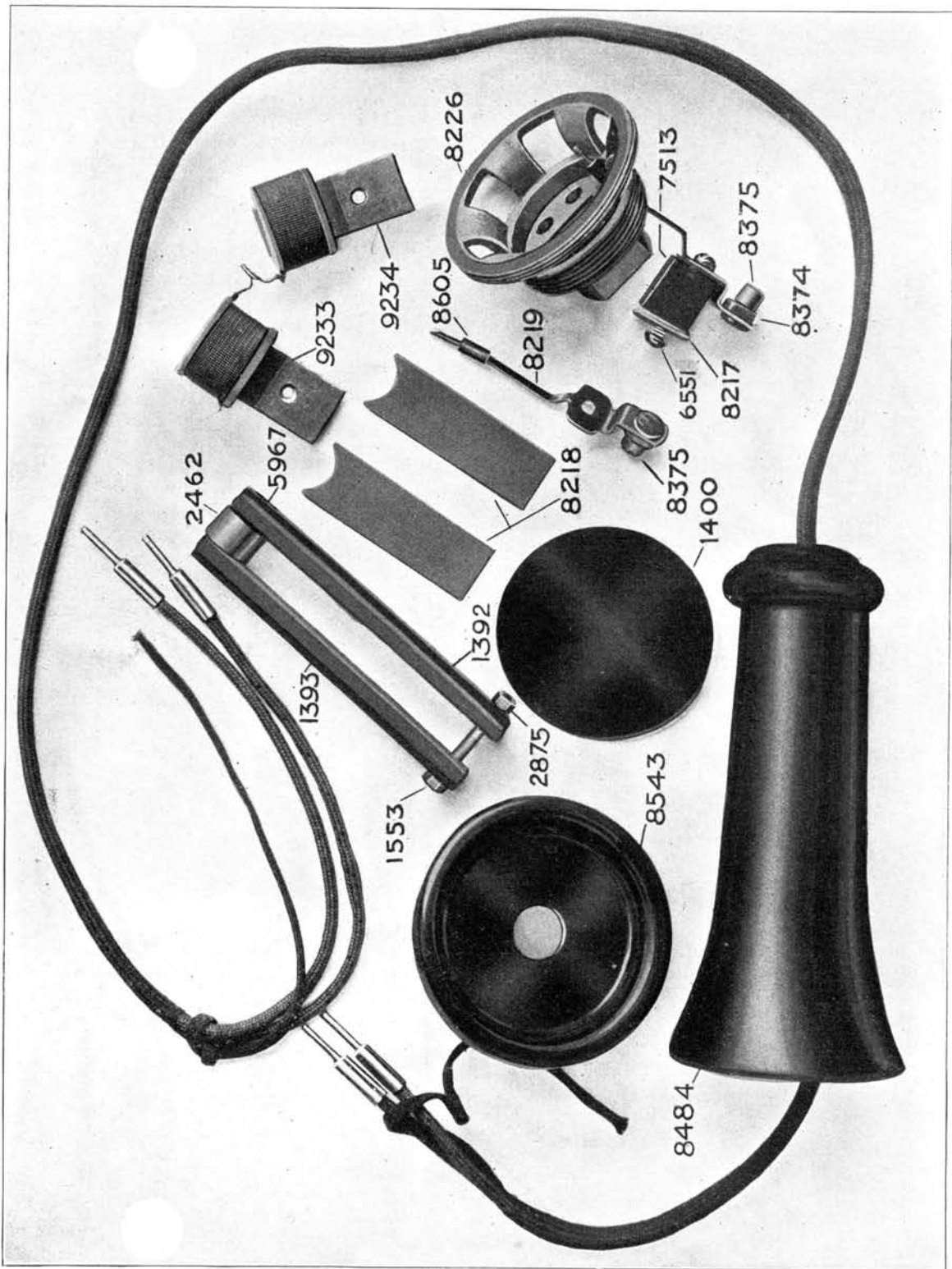


Plate No. 11—Type No. 23—Receiver. Composition or Hard Rubber (Type No. 22) Shell



KELLOGG SWITCHBOARD AND SUPPLY COMPANY, CHICAGO

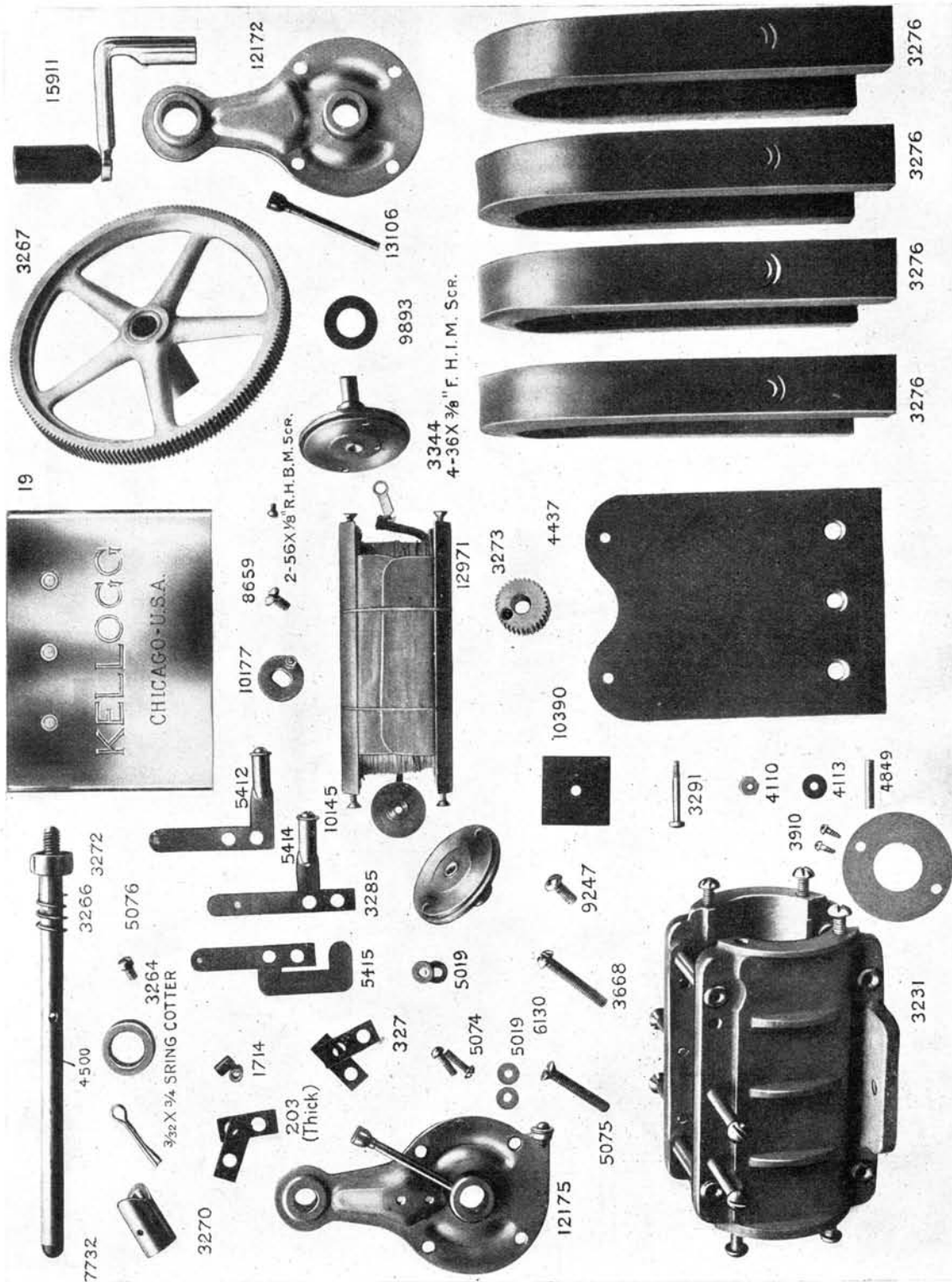


Plate No. 12—Type No. 22—Generator



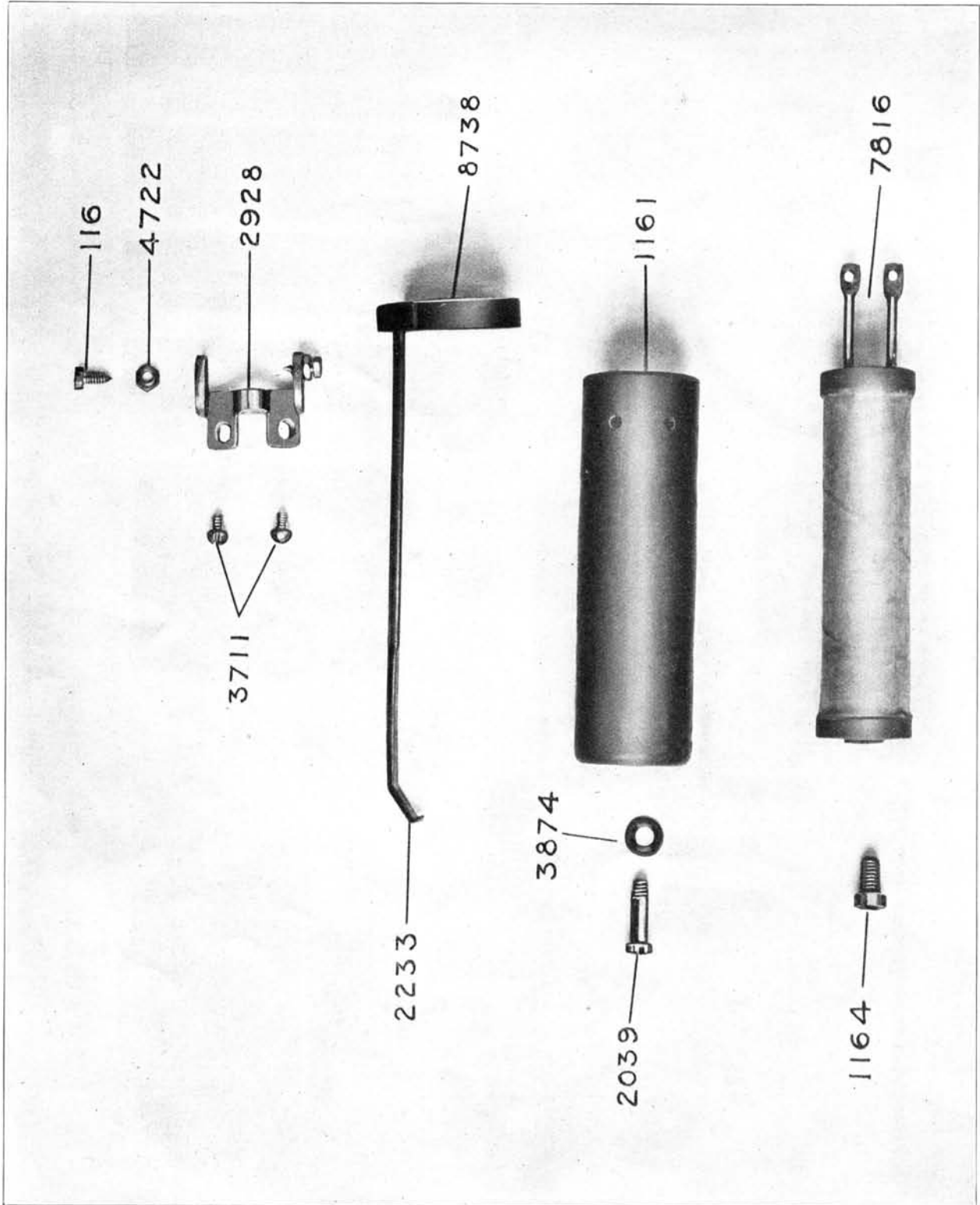


Plate No. 13—Type No. 8

JACK ASSEMBLED  
Pc. 4908

DROP ASSEMBLED  
Pc. 4904

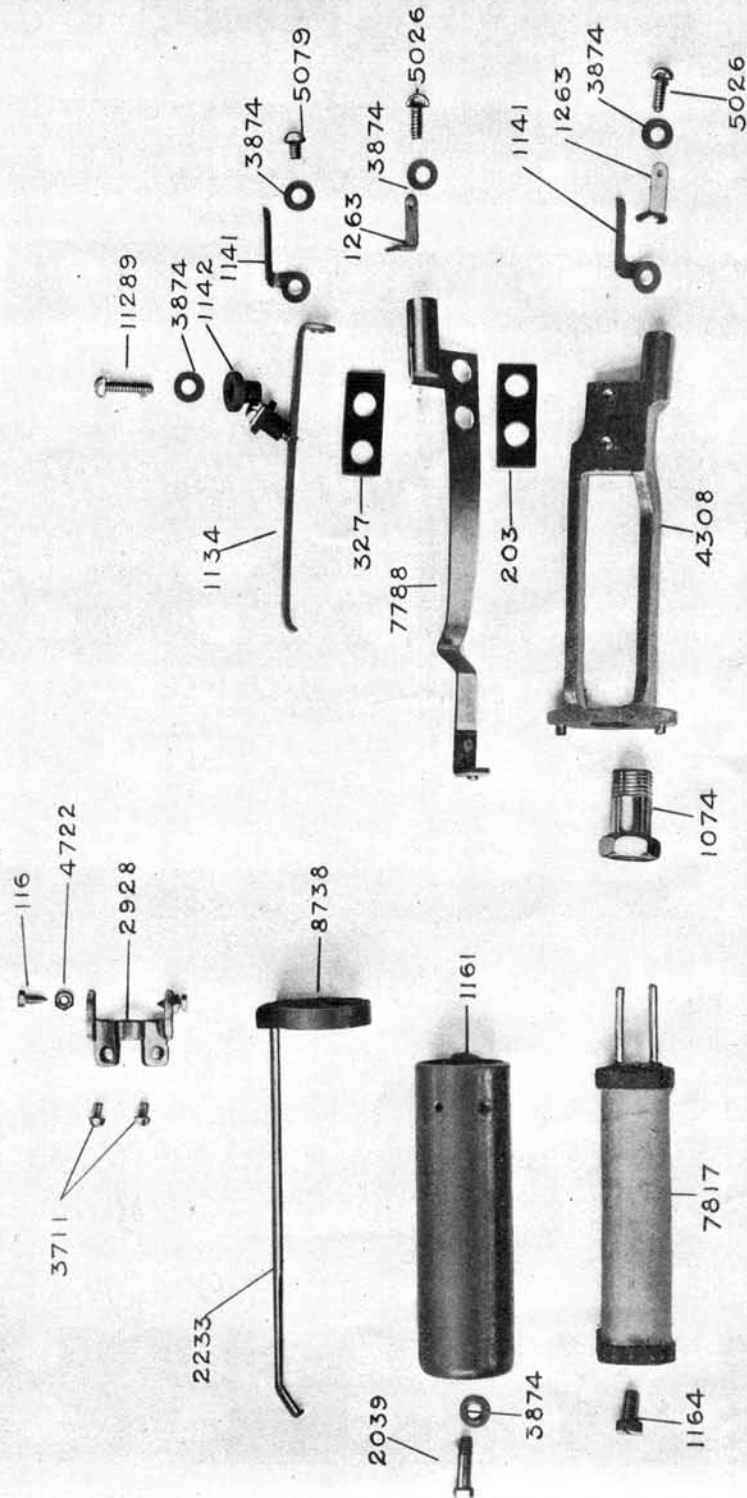
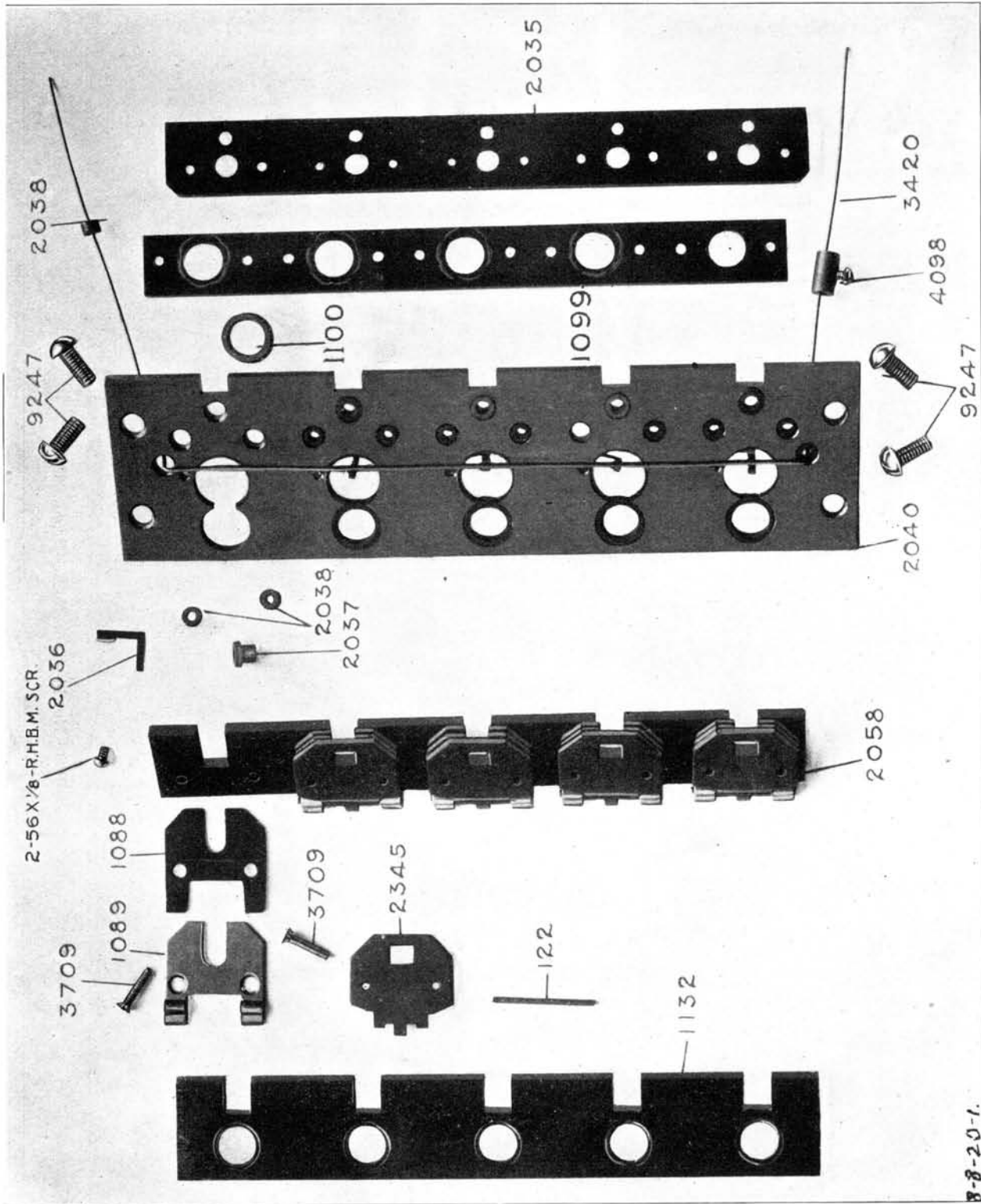


Plate No. 14—Type No. 3—Drop and Jack



8-8-20-1.

Plate No. 15—Type No. 114—Mounting Strip for No. 3 Combined Drop and Jack  
 Piece No. 4098 does not include screw (2-56x1/8 R. H. B. M. Scr.)  
 Piece No. 2038 refers to bushing only.

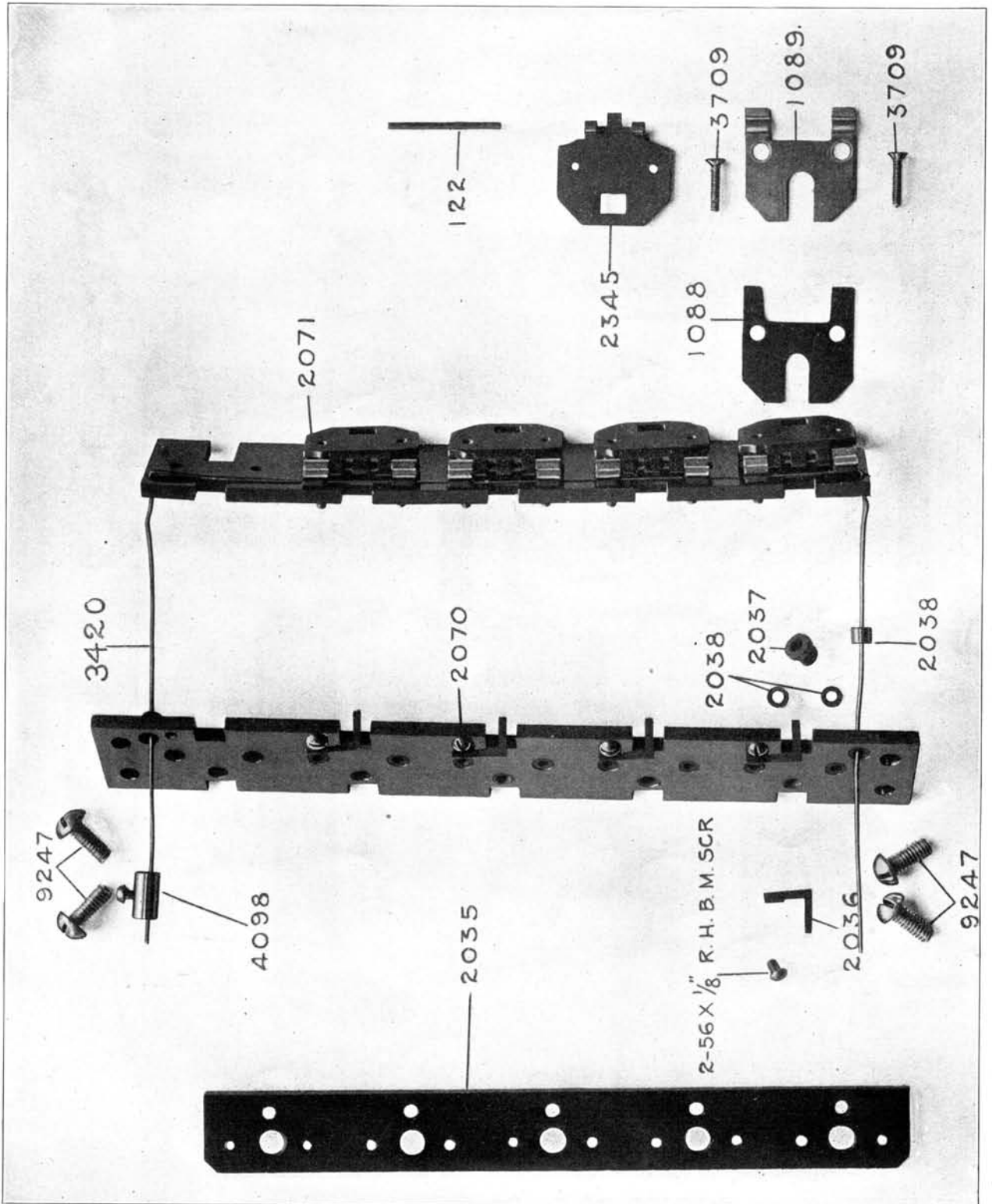


Plate No. 16—Type No. 115—Mounting Strip for No. 8 Drop  
 Piece No. 2071 Refers to Mounting Strip—not Shutter  
 Piece No. 4099 does not include screws (2-56x<sup>1</sup>/<sub>8</sub> R. H. B. M. Scr.)

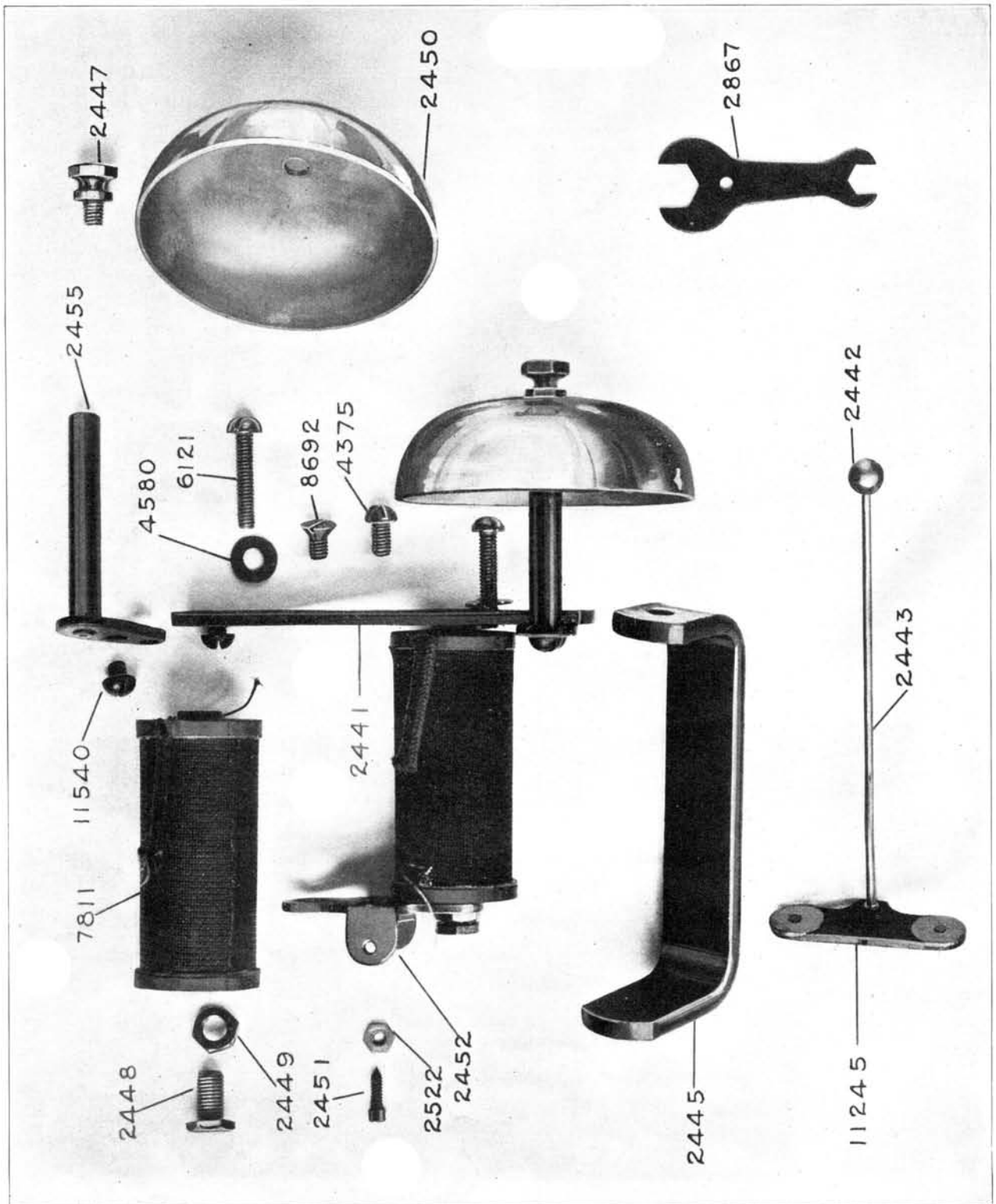


Plate No. 17—Type No. 1—Ringer  
 Piece No. 11245 should be 11606.

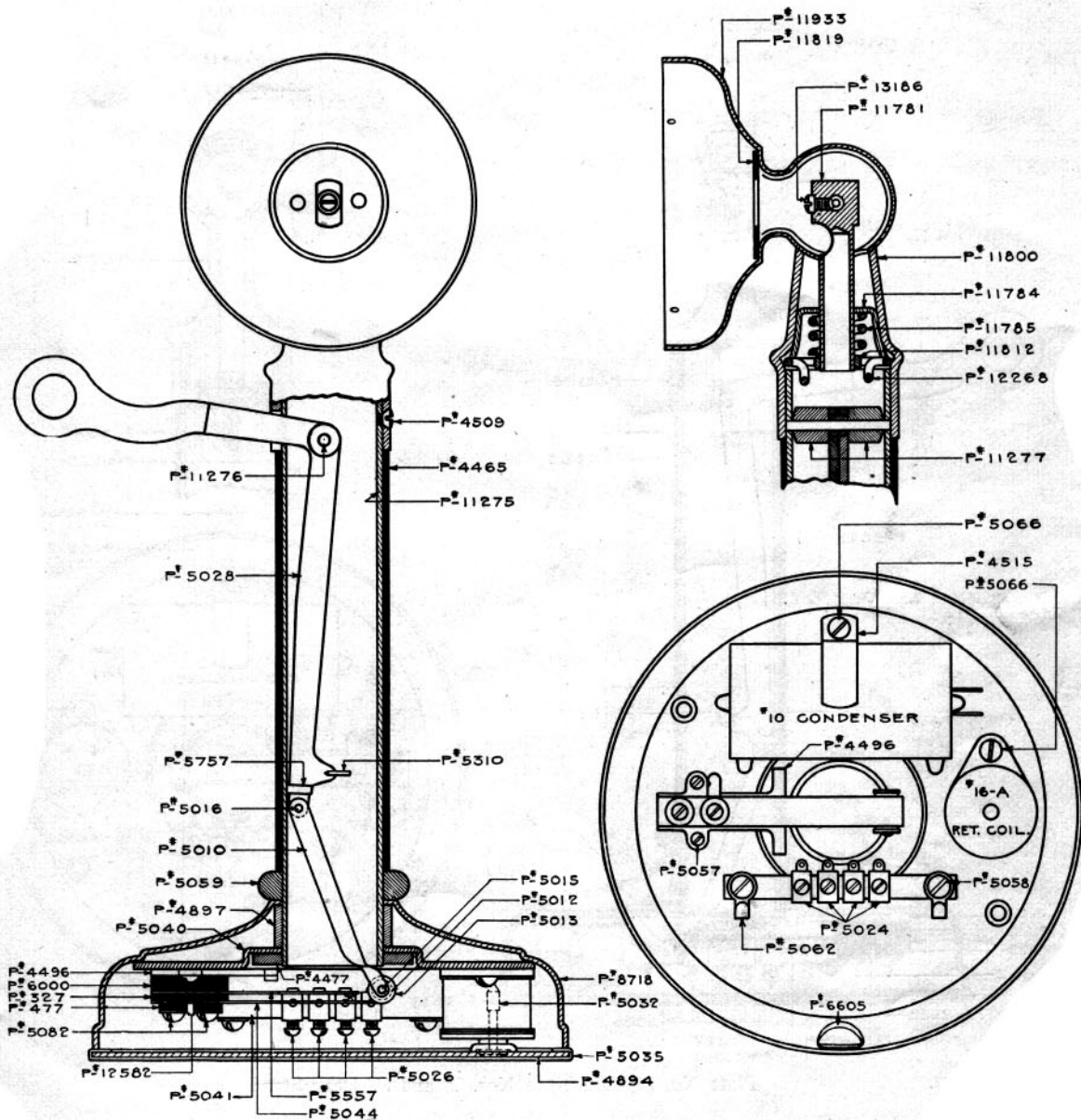


Plate No. 18—No. 39 Type Desk Stand



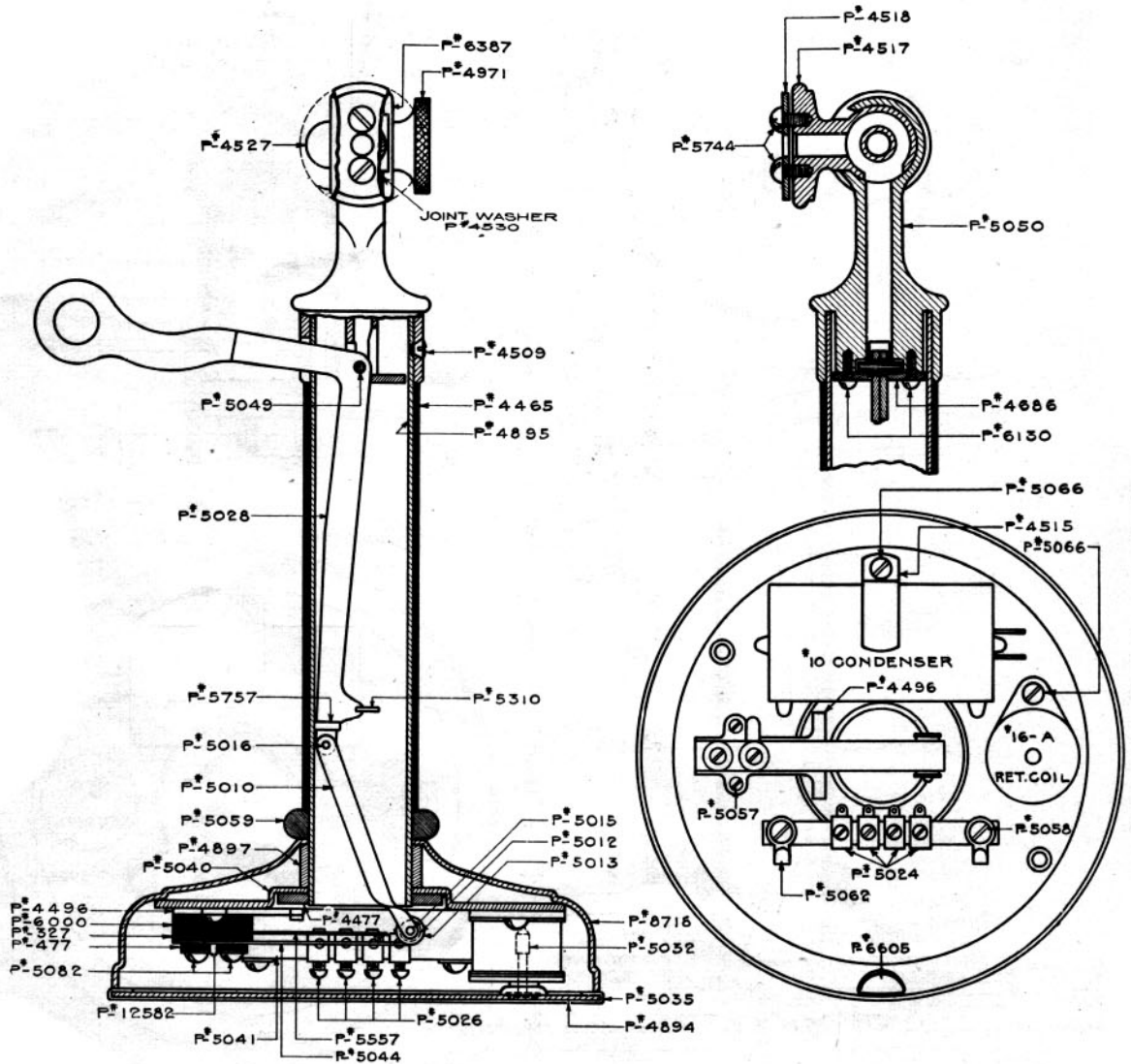


Plate No. 19—Old Type Nos. 28 and 39 Desk Stand

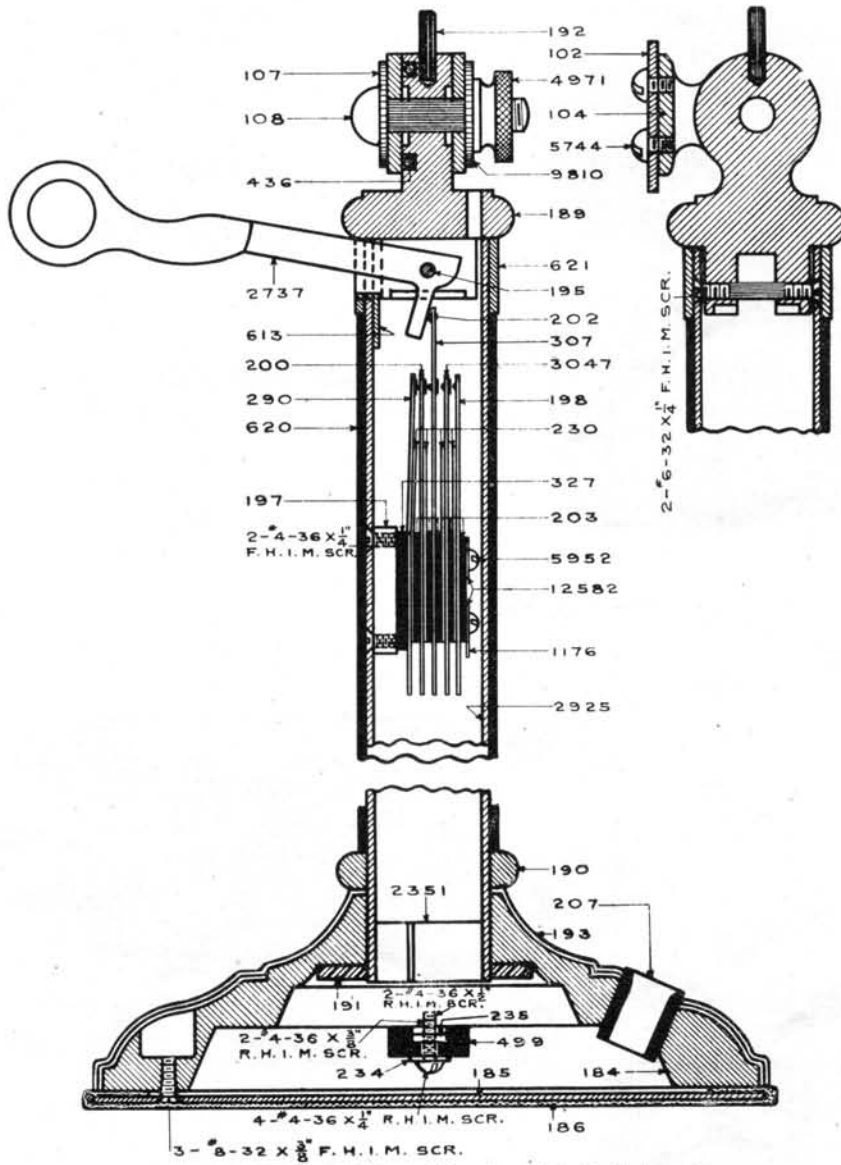


Plate No. 20—Old Type Nos. 4 and 9 Desk Stand

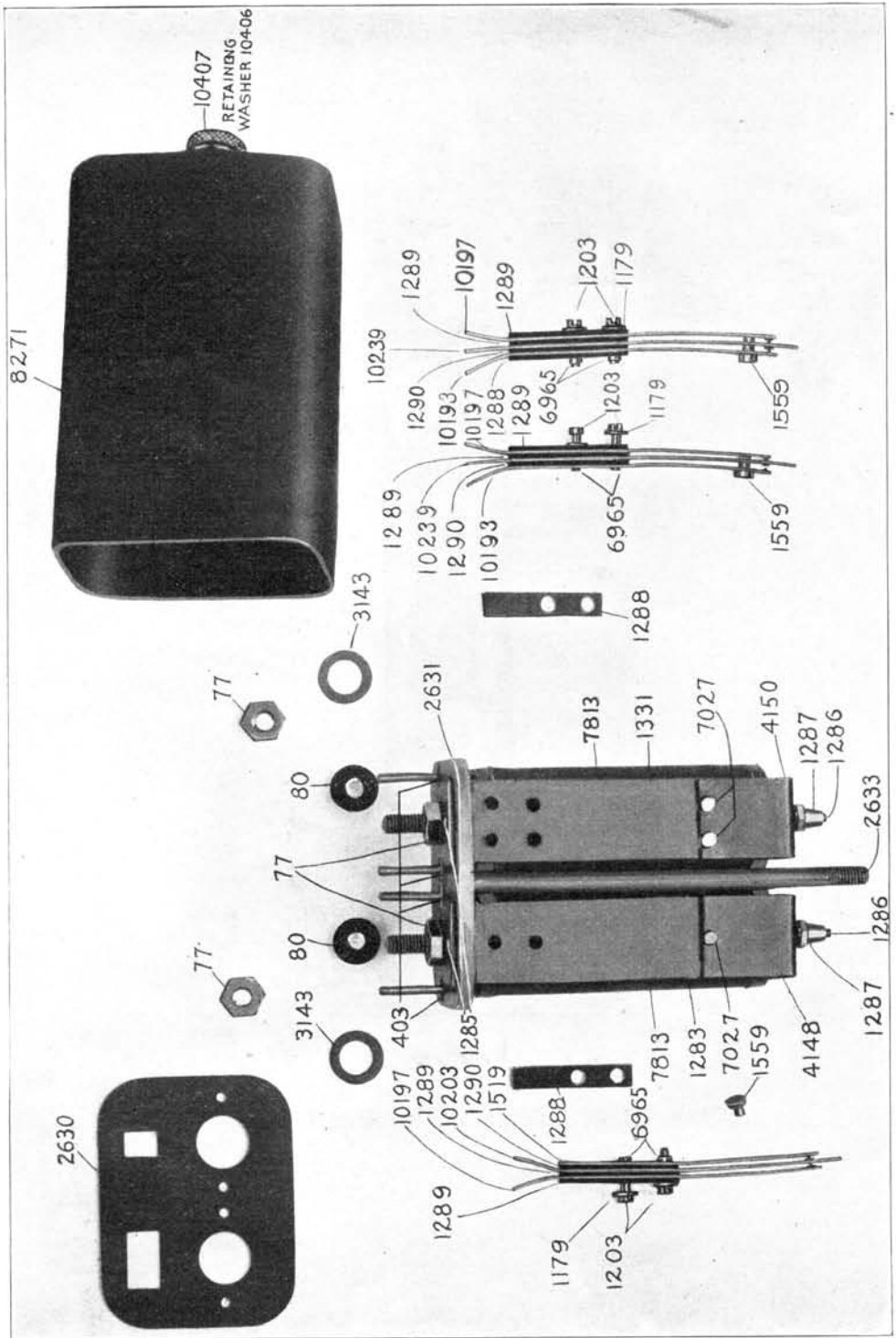


Plate No. 21—No. 72 Type Relay