

# GENERAL TELEPHONE APPARATUS

CATALOGUE No. 3A

A PARTIAL LIST OF WHAT WE MAKE  
USE IS THE TEST

Farm Line Telephones	Harmonic Systems	High Efficiency Repeating Coils
Magneto Switchboards	Harmonic Converters	Relays
High Efficiency Common Battery Telephones	Multiple Switchboards	Drops and Jacks
Universal Telephones	Automatic Ringing Relay Interrupters	Order Wire Keys
Portable Telephones	Test Panels	Plug Seat Switches
Weatherproof Telephones	Power Boards	Buzzers
Special Insulated Telephones	Pole Changers	Switchboard Cable, Silk and Enamel
Convertible Telephones	Police and Fire Alarm Systems	Magnet Wire, Silk and Enamel
Railway Telephones	Marine Telephone and Switchboard Equipment	Flame Proof Jumper Wire
Mine Telephones	Despatching Systems	Terminal Blocks
Booth Telephones	Toll Test Panels	Resin Core Solder
Microphones	Transmitters	Lightning Arresters
Cut-in Stations	Impedance Coils	Heat Coils
Intercommunicating Systems	Kellogg Bakelite Mouthpieces	Main Frames
Test Sets	Kellogg Bakelite Operators' Receivers	Lacing Twine
Howlers	Kellogg Bakelite Receivers	Switchboard Tools
Universal Switchboards	Cordage	Loud Ringing Extension Bells
Cord Weights	Generators	Transformer Sets
Instantaneous Recall Switchboards	Condensers	Transformers
P. B. X. Equipment	Switchboard Lamps	Ring and Listening Keys
Toll Boards	Lamp Caps	Switching Keys
Wire Chief's Desks	Plugs	Switches
Chief Operator's Desks	Ringers	Cabinets for Telephone Requirements
Monitor's Desks	Retardation Coils	Electric Light Current Converters
Supervisor's Desks	Induction Coils	
Cordless P. B. X. Switchboards		

**KELLOGG SWITCHBOARD  
and SUPPLY COMPANY**  
CHICAGO - ILLINOIS

BRANCH OFFICES: KANSAS CITY, MO.; SAN FRANCISCO, CAL.  
DISTRIBUTING HOUSES: Canada West Electric, Ltd., Regina, Sask., Can.; The McGraw Co., Sioux City, Iowa; The McGraw Co., Omaha, Neb.; Pacific States Electric Co., Los Angeles, Cal.; Oakland, Cal.; Portland, Ore.; Seattle, Wash.; Northwestern Electric Equipment Co., St. Paul, Minn.; Duluth, Minn.; Tower-Binford Electric & Mfg. Co., Richmond, Va.; National Telephone Supply and Development Co., Atlanta, Ga.

## TO THE PURCHASER

Index Pages 95 and 96.

### TERMS

Our terms are 30 days net with discounts for cash payments within 10 days from date of invoice as stated for various lines of goods on latest net price sheet applying to this catalog. Purchasers unknown to us should have satisfactory bank or commercial references accompany their first order when it is desired to have same shipped on open account, and a remittance with first order will avoid the delay incident to the necessary credit investigation. Goods may be forwarded by freight with sight draft attached to bill of lading or by express collect on delivery, if a remittance, sufficient to pay express charges both ways, accompanies the order.

### CHANGES AND CANCELLATIONS

Owing to the special stock conditions, etc., changes and cancellations of orders once entered cannot be made without our consent and on terms that will make good all loss and expenses incurred in preparing the order for shipment.

### SHIPMENTS

Shipments are made according to directions received with orders. In their absence we will use our best judgment in making selections of routes. State whether we shall ship by freight, express or parcel post. It is our endeavor to ship standard goods immediately upon receipt of orders, and customers will greatly assist us in making prompt shipments if they will order by number and thus save delay in entering orders correctly.

### CLAIMS

Goods are carefully packed by experienced men, and each article is checked three times before reaching the packing case. Claims for shortage should be made immediately upon receipt of goods, and should be accompanied by the packer's ticket, which is placed in each packing case. Do not deduct from your remittances any charges for freight or express, unless we shall have agreed to allow them.

Do not return goods without writing us, and in all cases when shipping goods back, notify us at once what disposition should be made of them. Transportation charges should be prepaid on all goods returned.

### LIABILITY

We cannot be responsible for packages after having obtained "In good order" receipt from transportation company. All claims for breakage and damage should be made to the carrier.

### PARCEL POST SHIPMENTS

Goods ordered to be shipped by parcel post will only be sent at purchaser's risk of loss or damage unless insured.

We reserve the right to insure mail shipments when we deem them of sufficient value. The additional postage charges incurred will be charged to the customer.

### PRICES

We issue price lists from time to time which are subject to change without notice, and are f. o. b. factory unless otherwise stated; giving latest and lowest market prices upon all standard goods. Please order all items by code number and name to avoid error.

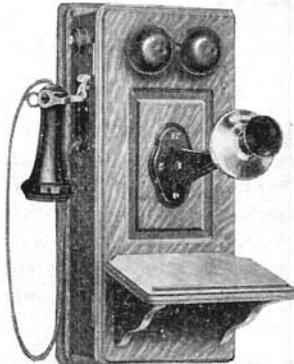
Index Pages 95 and 96.

Prices on Application

One

Please Mention Catalogue No. 3A.

**KELLOGG MAGNETO TELEPHONES**

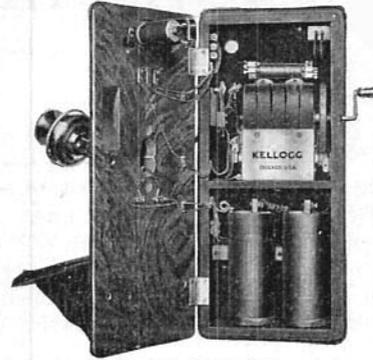


No. 2816 Closed

**KELLOGG FARM  
LINE TELEPHONES**

Kellogg compact telephones are known throughout the United States from coast to coast, there being upwards of a million now in service.

In the design of this set every improvement that experience could reveal has been incorporated. The transmitter arm has been shortened to half its



No. 2816 Open

former length, so that the new telephone does not project as far into the room. All binding posts are placed inside the cabinet, and it is impossible to produce short circuits and put the line out of business by piling spectacles, oil cans or metal of any kind on top of the telephone. Each telephone is furnished with a reliable lightning arrester mounted on the cabinet.

All telephones on this page furnished with composition shell receiver or with **KELLOGG BAKELITE** shell receiver, as specified.

Code No.	Description Telephones without Condensers or Push Button		Code No.	Description Telephones without Condensers or Push Button	
	Generator	Ringer		Generator	Ringer
2809	3-bar	1000 ohm	2811	4-bar	1600 ohm
2810	4-bar	1000 ohm	2812	5-bar	1600 ohm

**Farm Line Telephones**

With condenser in receiver circuit. The following instruments are equipped with a special  $\frac{1}{2}$  microfarad condenser wired in the receiver circuit. This device tends to prevent the passage of ringing current through the receiver when it is off the hook. Thus it is possible for the operator or a subscriber to ring on a long and heavily loaded party line when a number of receivers are off the hook. This device also protects the delicate receiver parts from injury by ringing current.

2813	3-bar	1000 ohm	2815	4-bar	1600 ohm
2814	4-bar	1000 ohm	2816	5-bar	1600 ohm

**Farm Line Telephones**

With condenser in receiver circuit. Pulsating and alternating current generator and push button for calling central secretly on grounded or metallic lines.

These instruments are equipped with a  $\frac{1}{2}$  microfarad condenser and also with a special generator delivering two kinds of ringing current—pulsating and alternating. A special push button mounted on the left hand side of the instrument when operated delivers pulsating current to the line. This pulsating current will throw the drop at "central" without ringing the other bells on the line. When the button is not used alternating current is generated, ringing the bells on the line as well as operating the drop. These sets are specially recommended as they may be used on either grounded or metallic lines, and without the necessity of equipping the other instruments with these special features.

2817	3-bar	1000 ohm	2819	4-bar	1600 ohm
2818	4-bar	1000 ohm	2820	5-bar	1600 ohm

**Farm Line Telephones**

With condenser in receiver circuit and grounding key for metallic lines only.

The following sets are equipped with condensers and grounding keys for calling central secretly. These sets can be used on metallic two-wire lines only and all sets on the line must be wired alike. The drop at the central office must have one side disconnected from the line and wired to ground. As there are more or less complications in installing these instruments, and lines must be kept perfectly free from grounds at all times, we recommend sets equipped with pulsating and alternating current generators as described above.

2821	3-bar	1000 ohm	2823	4-bar	1600 ohm
2822	4-bar	1000 ohm	2824	5-bar	1600 ohm

Two

Prices on Application

Please Mention Catalogue No. 3A.

## KELLOGG MAGNETO TELEPHONES

### UNIVERSAL TELEPHONES FOR CITY LINES



No. 2809

No. 2807—3-Bar Generator, 1,000-ohm harmonic ringer, harmonic selective ringing 4-party on grounded lines. 4-party across metallic lines. 8-party to ground on metallic lines. Without batteries.

Frequencies 30-42-54-66 cycles (specify parties desired).

No. 2808—3-Bar Generator, 1,000-ohm biased ringer. Biased selective ringing. 2-party on grounded lines. 2-party across metallic lines. 4-party to ground on metallic lines. Without batteries.

No. 2809—3-Bar Generator, 1,000-ohm ringer (not biased).

#### Compact Type

A handsome instrument in quarter-sawed oak, suitable for single party lines in town and for lightly loaded country lines.



No. 2806

#### Hotel or Residence Type

An instrument requiring less wall space than the compact type. Batteries must be located outside of cabinet. See Paragon Battery Box listed below.

No. 2804—3-Bar Generator, 1,000-ohm harmonic ringer, harmonic selective ringing. 4-party on grounded lines. 4-party across metallic lines. 8-party to ground on metallic lines.

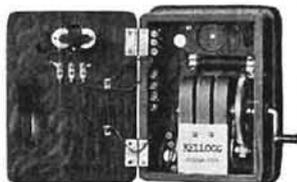
Frequencies 30-42-54-66. (Specify parties desired.)

No. 2805—3-Bar Generator, 1,000-ohm biased ringer. Biased selective ringing. 2-party on grounded lines. 2-party across metallic lines. 4-party to ground on metallic lines.

No. 2806—3-Bar Generator, 1,000-ohm ringer (not biased).

#### Desk Sets

The following Desk Sets include a No. 84 Desk Stand, which is built of heavy brass punchings, and when equipped with Kellogg unbreakable receiver shells makes a non-destructible telephone. It is equipped with the famous reverse type Kellogg transmitter, standard receiver, and moisture-proof cords and is unequalled for transmission efficiency.



No. 2328 Desk Set

Code No.	Generator	Ringer
2326	3-Bar	1000 ohm

Harmonic ringer, harmonic selective ringing. 4-party on grounded lines. 4-party across metallic lines. 8-party to ground on metallic lines.

Frequencies 30-42-54-66. (Specify parties desired.)

Code No.	Generator	Ringer
2327	3-Bar	1000 ohm

Biased ringer, biased selective ringing. 2-party on grounded lines. 2-party across metallic lines. 4-party to ground on metallic lines.

Code No.	Generator	Ringer
2328	3-Bar	1000 ohm

(Not biased.)

### PARAGON BATTERY BOXES

#### For Telephone and Electric Bell Work



Paragon Battery Box

The Paragon Battery Box, used with desk or hotel types of local battery telephones or in electric bell installations, provides a neat receptacle for the batteries which are generally left exposed and unprotected. It has holes at top and bottom for leading-in wires. The cover is attached to the

Three

Prices on Application

Please Mention Catalogue No. 3A.

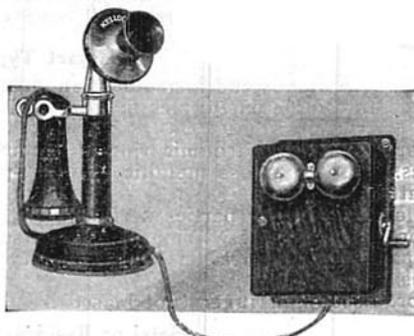
Three

## KELLOGG MAGNETO TELEPHONES

### FARM LINE DESK SETS

#### Desk Sets—No Condenser or Push Button

Each of the following desk sets include one No. 84 Kellogg, non-destructible desk stand which has never been surpassed for transmission efficiency, and one quarter-sawed oak desk set box with concealed binding posts and No. 3 lightning arrester.



No. 2328 Desk Set

All telephones on this page furnished with composition or KELLOGG BAKELITE shell receivers, as specified.

Code No.	Generator	Ringer	Code No.	Generator	Ringer
2328	3-bar	1000 ohm	2358	4-bar	1600 ohm
2357	4-bar	1000 ohm	2361	5-bar	1600 ohm

#### Desk Sets with Condenser

The following instruments are equipped with a special  $\frac{1}{2}$  microfarad condenser wired in the receiver circuit. This device tends to prevent the passage of ringing current through the receiver when it is off the hook. Thus it is possible for the operator or a subscriber to ring on a long and heavily loaded party line when a number of receivers are down. The device also protects the delicate receiver parts from injury by ringing current.

2363	3-bar	1000 ohm	2367	4-bar	1600 ohm
2366	4-bar	1000 ohm	2370	5-bar	1600 ohm

#### Desk Sets with Condenser, Pulsating and Alternating Current Generator and Push Button for Calling Central Secretly on Grounded or Metallic Lines

These instruments are equipped with a  $\frac{1}{2}$  microfarad condenser and also with a special generator delivering two kinds of ringing current—pulsating and alternating. A special push button mounted on the left hand side of the instrument when operated delivers pulsating current to the line. This pulsating current will throw the drop at "central" without ringing the other bells on the line. When the button is not used alternating current is generated, ringing the bells on the line as well as operating the drop. These sets are specially recommended, as they may be used on either grounded or metallic lines, and without the necessity of equipping the other instruments with these special features.

2375	4-bar	1600 ohm	2374	5-bar	1600 ohm
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#### Desk Sets with Condenser, Grounding Key and Push Button for Calling Central Secretly on Metallic Lines Only

The following sets are equipped with condensers and grounding keys for calling central secretly. These sets can be used on metallic two-wire lines only and all sets on the line must be wired alike. The drop at the central office must have one side disconnected from the line and wired to ground. As there is more or less complication in installing, these instruments and lines must be kept perfectly free from grounds at all times; we recommend sets equipped with pulsating and alternating current sets as described above.

2377	4-bar	1600 ohm	2376	5-bar	1600 ohm
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Four

Prices on Application

Please Mention Catalogue No. 3A.

## KELLOGG BATTERY SAVERS

Batteries are being consumed unnecessarily in every magneto telephone.

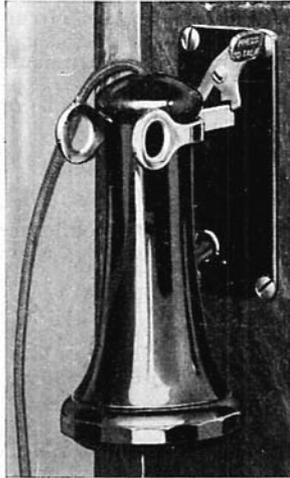
Save this waste by installing the **KELLOGG HOOK SWITCH STOP** or **Battery Saver**. This is a simple trouble-proof attachment which prevents all battery waste while parties are "listening in." The hook switch is stopped in an intermediate position after the listening circuit is closed, but before the battery circuit is closed.

The instant success of the Kellogg battery saver or hookswitch stop which not only proves a great economizer of batteries, but vastly better the service of magneto party lines, has hastened the production of a slightly modified hookswitch stop suitable for the older style Kellogg wall telephone. Incidentally this modified stop fits several other makes of telephones.

The principle of the modified stop is exactly the same as the first Kellogg patented battery saver, a slight difference in design taking care of the longer hookswitch movement.

All of the advantages of the Kellogg hookswitch stop for compact telephones are applicable to the stop designed for the long lever hookswitch telephone. These battery savers are nominal in price, a set so equipped costing but twenty-five cents additional.

The new **KELLOGG HOOKSWITCH STOP** is purely mechanical, can be installed by anyone on any Kellogg telephone, costs but 25c, and is the final solution of the before-mentioned difficulties.



No. 1 Battery Saver

In making or answering a regular call, the user merely releases this stop with his left thumb at the time he takes the receiver from the hook. When listening in, the receiver is removed without releasing the stop and the battery circuit is not closed unless the party desires to talk, in which case the stop can be released by touching it once, after which the user can both listen and talk in the usual manner.

With this new device, a party endeavoring to carry on a conversation from a noisy location can kill his battery by merely touching the hook; and release his battery when it comes his turn to speak, by lightly touching the stop, and in this manner conversation may be had without inconvenience in locations too noisy to talk from in the usual manner.

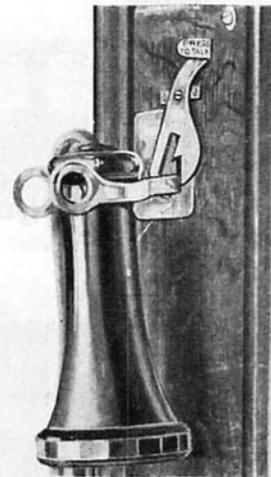
In giving market reports and bulletin service, the use of this device results in a twofold benefit. First, the line is quiet instead of carrying a bedlam of noises as heretofore. Second, the talking party's voice current is more evenly distributed and is heard almost as plainly by the parties at the extreme end of the line as by those nearest the Central office.

In ordering, be sure to state whether these stops are for the Kellogg new type short lever hookswitch compact wall set, Code No. 1 stop, or for the older style long lever hookswitch wall telephone, Code No. 2 stop.

The most careful investigations and tests on existing rural lines throughout this country prove an annual loss from battery wasted by mere "listeners" of more than a quarter of a million dollars.

This amount represents 6% interest on more than four million dollars, which sum, wisely expended, would go a very long way toward improving the rural lines and making the service what it ought to be.

Investigation further proves that with new uses for rural telephones being constantly discovered, this criminal waste is increasing rather than decreasing, and also that much of the waste cannot be blamed on the ever present "rubber-neck," but attends the legitimate usages of the rural telephone.



No. 2 Battery Saver

Five

Prices on Application

Please Mention Catalogue No. 3A.

**KELLOGG COMMON BATTERY TELEPHONES**

**KELLOGG INDUCTION COIL TYPE**

These instruments are unequalled for local work and are especially efficient for long distance. A scientifically designed circuit combined with the famous Kellogg transmitter makes them superior in talking quality to any other common battery instruments on the market.

All telephones on this page furnished with composition or **KELLOGG BAKELITE** shell receivers, as specified.



No. 730

**Business Type**

Code Number	Ringer	Condenser	Code Number	Ringer	Condenser
730	1000 ohm	2 M. F.	720	Harmonic	2 M. F.

No. 720. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.

**Steel, Hotel or Residence Type**

716	1000 ohm	2 M. F.	719	Harmonic	2 M. F.
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No. 719. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.

**Oak, Hotel or Residence Type**

729	1000 ohm	2 M. F.	733	Special. Harmonic	2 M. F.
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No. 733. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.



No. 716

**Desk Sets**

The Kellogg No. 97 Stand is practically indestructible when equipped with Bakelite receiver shell. Handsomely furnished with black base and Bakelite encased stem. Induction coil and condenser in base. Two conductor moisture-proof cords.

In ordering specify No. 97 Stand with any of the following boxes.



No. 729 Oak Set

**No. 97 Stand with Flat Steel Box**

75	1000 ohm	1 M. F.	400	Harmonic	1 M. F.
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No. 400. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.

**No. 97 Stand with Hinged Cover Type Box**

257	1000 ohm	1 M. F.	259	Harmonic	1 M. F.
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No. 259. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.

**No. 97 Stand with Oak Box**

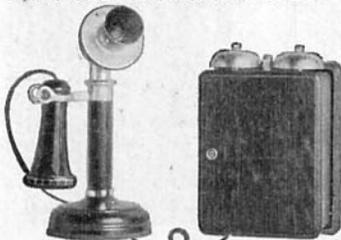
Code No.	Ringer	Con- denser	Code No.	Ringer	Con- denser
349	1000 ohm	1 M. F.	347	Harmonic	1 M. F.

No. 347. Furnished in frequencies 33 $\frac{1}{3}$ %, 50, 66 $\frac{2}{3}$ %, 16 $\frac{2}{3}$ %.

Note—Harmonic telephones can be furnished in other frequencies when desired.



No. 97 Stand and No. 75 Steel Box



No. 97 Stand and No. 347 Oak Box



No. 97 Stand and No. 259 Steel Box

• Prices on Application

Please Mention Catalogue No. 3A.

## KELLOGG STANDARD DESK STAND

### CONSIDER THESE FEATURES—



No. 97 Desk Stand.

#### Two-conductor cord advantages with Kellogg:

A desk telephone giving unequalled service with but two connections to make. Only two ways to do it and each way is right.

With a three-conductor equipment the following combinations are possible and the results inevitable. Connections can be, for instance:

1	2	3	}	and five of them are WRONG
2	1	3		
3	1	2		
2	3	1		
1	3	2		
3	2	1		

With the induction coil condenser type telephone, it is possible to talk commercially over greater distances than with other types of circuits.

This statement is the result of actual commercial tests.

The superiority of this set has caused the leading telephone companies to adopt it as a standard for long distance as well as

local work.

These companies have materially increased their toll business from subscriber stations due to more dependable and better service.

No rattle to hookswitch.

Weight is in the right place.

Accessibility and practicability in arrangement of apparatus in base of stand.

Absolutely unequalled transmission for either short, or the longest distances.

This set has never been equalled in transmission efficiency in a competitive test.

### LONG SERVICE—LOW MAINTENANCE

The Kellogg Company has made, for many years, satisfactory subscribers' sets and central office equipment—satisfactory to the telephone user because he talks to his party best over Kellogg, and satisfactory to the public utility company because they know the subscriber is well pleased and that the maintenance on Kellogg is the lowest of any make.

### NO. 97 DESK STAND

We have told you much about our Instantaneous Recall Switchboard and now we offer the No. 97 Common Battery Desk Stand or Subscriber's Set, equipped with the Kellogg transmitter—which has proven universally satisfactory and has not been changed in principle since 1900,—the permanently adjusted bi-polar receiver and, lastly, a circuit which is largely responsible for its success, a high efficiency condenser and induction coil circuit, using only a two-conductor cord. This stand has a non-breakable neck, a superior **KELLOGG BAKELITE** receiver shell and mouthpiece (also non-breakable). It has all moisture-proof cords. All of these advantages make low maintenance a certainty.

### BEST ON THE MARKET

This set is furnished with a black base; it can be supplied with nickel base on request. It will give the subscriber more volume, clearer articulation, plainer enunciation, than any other set on the market. We know—don't you want to know? This set is at your disposal. We court competitive transmission tests, and a sample order will prove to you and your subscribers that it is satisfactory in every respect.

Have you a "chronic kicker" whom you are unable to satisfy on long distance transmission? If so, place a No. 97 set in his office and given him connection to some long distance point. It will convert him to be a "booster" for your exchange. Thousands in service—most satisfactory.

A Desk Telephone built up to a standard—not down to a price.

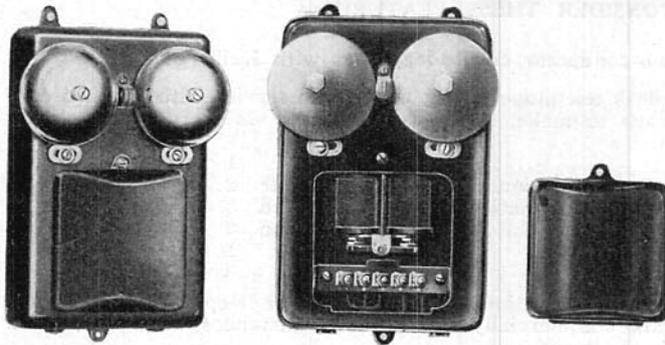
BEGIN STANDARDIZING TODAY WITH THIS SET

Prices on Application

Please Mention Catalogue No. 3A.

Seven

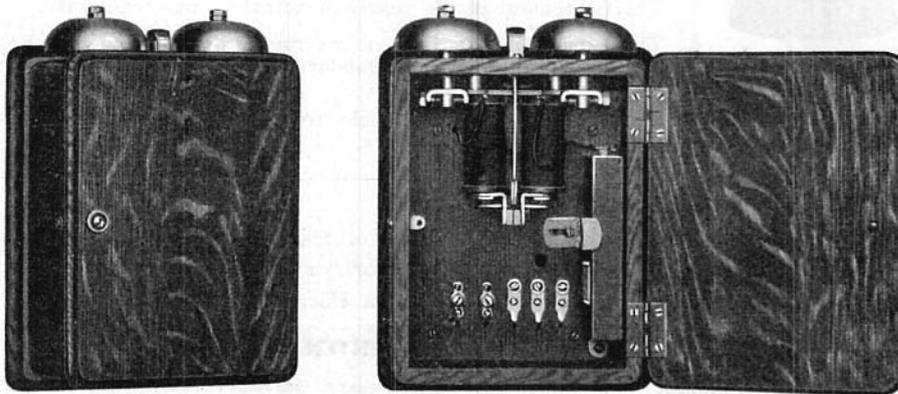
**KELLOGG DESK SET BOXES USED WITH 97 STAND**



Code No. 75 Desk Set Box

This enameled pressed steel bell box is very compact, making it specially in demand where limited space is allowed for mounting. By removing one screw the cover can be taken off, giving immediate access to binding posts, ringers and cord connecting rack.

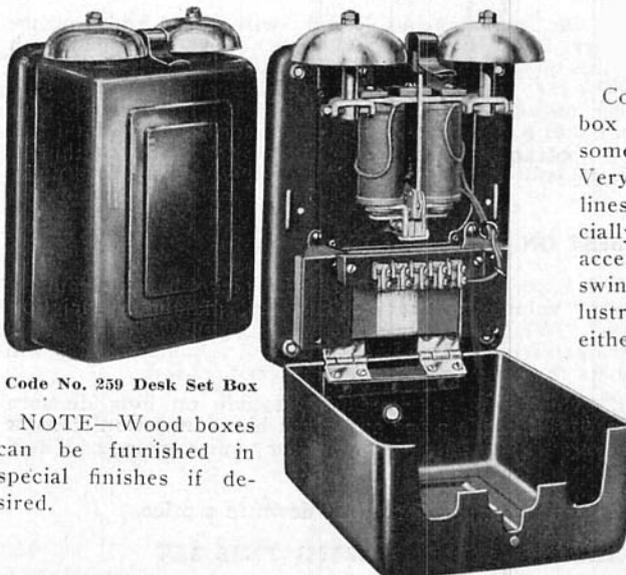
Used on straight lines only.



Code No. 347 Desk Set Box

We show here the latest type oak bell box for common battery service. Light, compact, handsome in appearance. Can be furnished in special finish if desired. A very popular type of desk set box.

Used on both harmonic and straight lines.



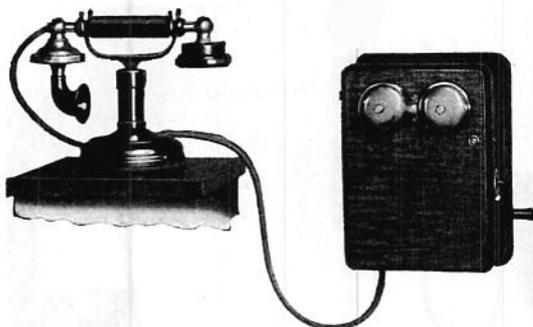
Code No. 259 Desk Set Box

NOTE—Wood boxes can be furnished in special finishes if desired.

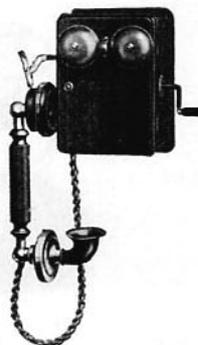
Code No. 259 is a newer style bell box of pressed steel construction somewhat similar to Code No. 75. Very popular on common battery lines. One feature which is especially noteworthy is the immediate accessibility, the whole front cover swinging down as shown in the illustration. This set can be made either 1st, 2nd or 3rd party by simply changing the armature, and can be made 4th party, straight line or biased by changing ringer.

## KELLOGG MAGNETO GRABAPHONES

"Grabaphone and Talk Right!"



11LC Grabaphone with 115 Desk Stand and 2328 Desk Set Box.



12LC Grabaphone with Standard Wall Set.

Our old Microphones have been changed as follows:

Old No. 2 Replaced by 11 L. C. Grabaphone.

Old No. 7 Replaced by 14 L. C. Grabaphone.

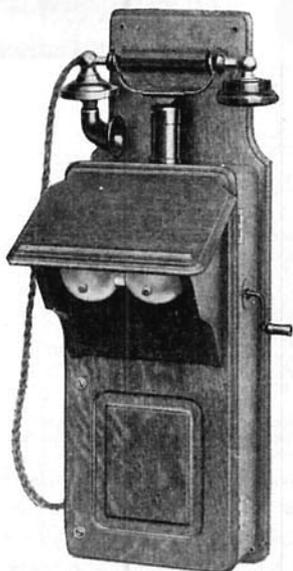
The following sets are now used:

11 L. C. Grabaphone with No. 115 stand and No. 2328 Desk set box.

12 L. C. Local Battery Grabaphone with No. 2827 steel box.

14 L. Grabaphone with No. 2361 box.

**Grabaphone**



Kellogg Grabaphone Mounted on Standard Subscriber's Sets

Height, of back board, 25¼ inches.  
Width, 8¾ inches. Depth, at writing shelf, 9¾ inches.

One reason for the superiority of the Kellogg Grabaphone in actual service is that the transmitter is always held by the subscriber without effort or thought in the correct position for the best transmission.

The Grabaphone has many advantages, and used in connection with the compact oak wall set, as here illustrated, proves a most convenient and successful style. Standard apparatus throughout with the durable pressed steel cradle arm at the top of the instrument with writing shelf in convenient position. This telephone appeals to many managers, and will satisfy the most cranky kicker in your exchange.

This set includes all the advantages of the standard Kellogg wall sets with the convenience of the Grabaphone added.

Notice a man at his desk, reach out with one hand, without disturbing everything on his desk, take the Grabaphone, talk, one hand free all the time for notes, etc., and place it back on the stand after a clear, satisfactory conversation. That's the Kellogg Grabaphone, handy, durable, neat in design, clear in transmission, and above all—reliable.

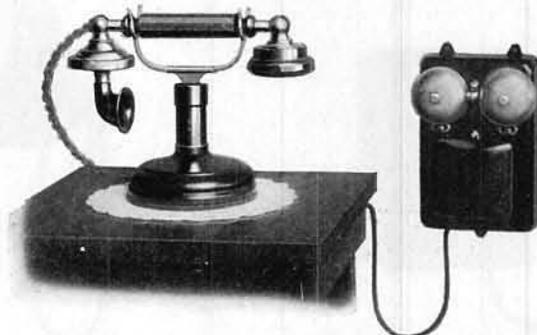
Prices on Application

Please Mention Catalogue No. 3A.

Nine

**KELLOGG COMMON BATTERY GRABAPHONES**

**"Grabaphone and Talk Right!"**



**Code No. 11C Grabaphone with  
111 Desk Stand and 75  
Desk Set Box.**

The Kellogg common battery Grabaphone is as efficient as is our famous No. 97 Induction Coil and Condenser desk stand, likewise the Kellogg local battery Grabaphone has the same efficiency as the well known Kellogg Magneto Telephone circuits. The Kellogg Grabaphone is 100% efficient.

Our old type Microphones have been changed as follows:

- Old No. 1 replaced by 11 C Grabaphone.
- Old No. 2 replaced by 11 L.C. Grabaphone.
- Old No. 4 replaced by 12 C Grabaphone.
- Old No. 7 replaced by 14 L.C. Grabaphone.

The following combinations are used:

- 11 C. Grabaphone with No. 110 unit type stand—complete telephone.
- 11 C. Grabaphone with No. 111 stand and No. 75 Desk set box.
- 12 C. Grabaphone with No. 722 Box.
- 12 C. Grabaphone with No. 732 Box.



**12C Graba-  
phone with  
722 Box for  
Extension  
Sets.**



**Code 110A Unit Type Stand  
with 11C Grabaphone.**

**Grabaphone**

Code No. 111 stand with 11C Graba-  
phone can be furnished with any of  
our standard bell boxes.

**New Sets.**

No. 110H.A. Desk stand is same as  
No. 110A but has a No. 76A Harmonic  
ringer.

No. 120A is same as No. 110A but  
has a No. 43A Retardation coil and a  
No. 103 condenser.

No. 120H.A. is same as No. 120A  
but has No. 76A Harmonic ringer.

Unit type Grabaphone contains con-  
denser, induction coil, ringer and  
switch.

This type does away with the addi-  
tional bell box which is necessary in  
all desk set types.

The base of the unit type set is of  
heavy pressed steel with the Kellogg  
durable enamel finish and contains  
standard equipment for its particular  
type of service.

Also, the bell being entirely enclosed, gives even more reliable service, as tampering is impossible. Paper or other material cannot be placed under the gongs, or the latter removed, etc.; likewise the clapper is out of the reach of meddlesome subscribers.

Another advantage of the unit type set is that the bell being in the stand proper has a sure tendency to speed up the service. A subscriber, with a bell in the telephone close at hand, will hasten his answering of calls.

Kellogg unit type Grabaphone, as illustrated above, is the last word in compact common battery subscriber equipment.

In all the types of Grabaphone stands the switch is of the vertical type, equal in durability to our standard hookswitch.

The stands of these sets are of the same indestructible design as the well known Kellogg desk telephone. The cradle is of heavy pressed steel, Kellogg black enameled, lending strength, durability and beauty of design to the Grabaphone. Not only is a set a convenience in your home and office, but it is also an ornament, lending dignity to any surroundings.

The Grabaphone service surpasses that of all others because of its design. Unconsciously the subscriber holds the mouthpiece where it will be in the best possible position for transmission. It requires no exertion and no thought, and the service is vastly improved for this reason. Everyone talks directly into the mouthpiece all the time.

**Write for prices on these popular instruments.**

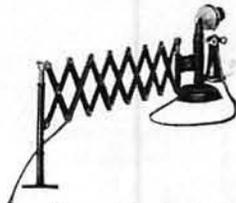
Ten

**Please Mention Catalogue No. 3A.**

**Prices on Application**



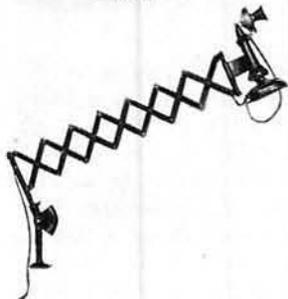
**12C Graba-  
phone with  
Standard  
Steel Wall  
Box.**



Sperry Standard Bracket

**THE SPERRY STANDARD BRACKET**

The Standard Bracket works horizontally only. Strong and durable construction. The lazy-tongs are made of  $\frac{3}{4} \times \frac{1}{8}$ -in. steel. The closing of the bracket is provided for by posts made of  $\frac{1}{2}$ -in. screw-steel telescoping in steel tubes. It is absolutely locked when fully extended and does not sag. Furnished complete with the minute clamp, any mounting selected, dummy hook, cord holders, and screws for mounting. Black enamel, standard finish.



Sperry Universal Bracket

**THE UNIVERSAL ATTACHMENT**

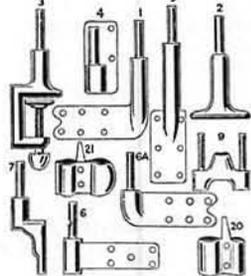
The Universal Attachment fits any Sperry Standard Bracket. It is inserted between the bracket and the mounting and serves to give it a vertical, as well as a horizontal movement.

**MOUNTINGS**

No. 1 is used on side of flat or roll top desk. No. 2 is used on the top of the desk. No. 3 clamps on edge of a flat top desk. No. 4 is used on a wall or partition. No. 5 is used on side of flat top desk. No. 6 is used on side of roll top desk. No. 7 is used on side of flat top desk. No. 9 attachment fits any mounting and holds two arms.

**CLAMPS**

No. 20 Clamp fits all phones with a cylindrical barrel. No. 21 Clamp fits all phones with a convex shaped barrel.



Mountings

No.	Length when extended	Approximate shipping weight	Standard		Universal	
			No.	Length when extended	No.	Length when extended
8	26 in.	5 lbs.	8	26 in.	7 lbs.	
10	30 in.	5½ lbs.	10	30 in.	7½ lbs.	
12	34 in.	6 lbs.	12	34 in.	8 lbs.	
14	38 in.	6½ lbs.	14	38 in.	8½ lbs.	
16	42 in.	7 lbs.	16	42 in.	9 lbs.	

**BELLS—EXTENSION**

**Wood Boxes**

	Code	Ringer		Code	Ringer
		ohm	(Code)		
Bridging Magneto.....	37C	1000	78A	37D	1600 78D
.....	37F	2500	78G	59C	6" gongs 1000 69 A
Biased Ringer.....	38C	1000	79A	38B	2500 79 G
Harmonic Ringer.....	51		73A		
30	42	54	66		
Series Ringer.....	37A	80	78B		

**Flat Steel Boxes**

Bridging Magneto.....	49A	1000	48A	49D	1600	48D
Biased Ringer.....	52A	1000	30B	52D	2500	
Series Ringer.....	49B	80	48B			

Common Battery—(See Boxes—Desk Set.) For common battery extension bells use any standard desk set box with ringers of the proper resistance and type to meet the ringing requirements of the line on which they are used.

**Wood Box—6-inch Gongs**

	Ringer	Frequencies
47A—No. 12 Cond.	43A	33⅓-50-66⅔-16⅔
58A—No. 12 Cond.	67A	30 -42-54 -66

We carry a large and varied stock of extension bells and are prepared to fill promptly any and all requirements for this line of equipment. Our extension bells are made from the same material and after the same general plans as our desk set boxes illustrated on these pages.

In the above list are given the code numbers of some of the more commonly used extension bell boxes.

In ordering extension bells specify same ringer as telephones with which they are to be used.



No. 37 Extension Bell



Standard Flat, Compact Desk Stand Box



No. 4 Rack for Microphone and Desk Extension Set

Prices on Application

Please Mention Catalogue No. 3A.

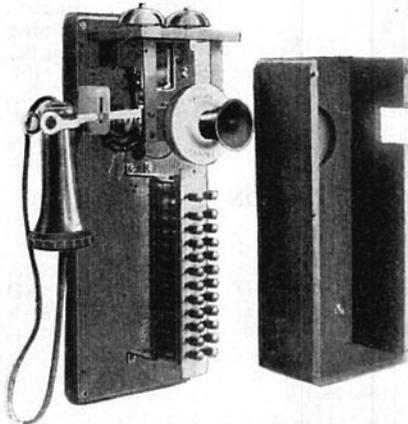
## KELLOGG INTERCOMMUNICATING SYSTEMS



Closed View, Wall Set.  
23 Station Size.

Today all progressive business houses are equipping their plants with private exchanges for interconnecting the various departments. Such equipment gives an almost instantaneous means of directing the whole business force and provides a certain way of getting immediate answers to any of the questions that may arise between departments.

This effectiveness of the telephone, so greatly appreciated in a business house, is attracting attention in other lines, and with the improvements made by the Kellogg Company in a system especially designed for intercommunication, it is considered good economy to equip hospitals, schools, libraries, apartments and residences with telephones in the different rooms, or between floors or departments. The amount of time this saves and the satisfaction derived is best appreciated by those who have installed the Kellogg system.



Open View, Wall Set.

The key type intercommunicating system is manufactured in two standard styles—Wall Set and Desk Set. Each of these can be furnished in two sizes containing twelve and twenty-four keys, respectively. The twelve-key size can be used for any number of stations to an ultimate of eleven, and the twenty-four key size for an ultimate of twenty-three stations; one of the keys having a green button, being for the purpose of ringing the bell of the desired station.

Closed view shows the external appearance of the wall set, which is neat, compact and very accessible. A card holder or designation strip is placed at each key. Into this strip a card may be inserted, giving the name of the party who will be called by depressing this button. By removing the cover in front, as illustrated in the open view, every piece of apparatus is in plain sight and easily accessible.

The Desk Set uses the standard Kellogg desk stand with a key box; this style, because of its convenience and elegance, is preferred in many cases. A view of this key box with cover removed, shows it to be just as accessible as the wall set.

It will be seen that the same key unit is used in both styles. In this set a buzzer is provided in place of the bell of the wall set, mounted on a neat oak base equipped with the proper binding posts as shown on page 13.

Both the wall and desk sets have been designed for severe service and the usual careful work has been placed on these instruments. The talking circuit is exactly the same as that of our telephones, which are used in the largest exchanges and is alike for both styles of sets; wall sets can be used indiscriminately with the desk sets in the same system.

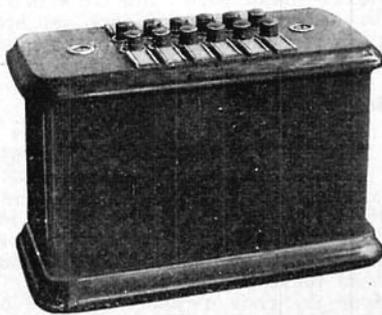


Fig. 4  
Eleven station size, desk set key box, showing arrangement of key buttons and station name slips.

Twelve

Please Mention Catalogue No. 3A.

Prices on Application

**KELLOGG INTERCOMMUNICATING SYSTEMS**



Eleven-Station Desk Set Box With Cover Removed—Very Accessible



Attendant Station Box



Buzzer and Binding Posts



Code No. 64 Desk Stand

Prices on Application

Sometimes it is desirable to be able to talk direct from the Intercommunicating system to any city subscriber. This is easily arranged. Provision has been made in all the sets, so that two of the keys in the twelve-key and four in the twenty-four-key size can be used for trunk service.

In case trunks to a city office are used, one of the stations designated "The Attendant's Station" answers incoming calls for parties in the Intercommunicating system. An extension bell at the Attendant's Station is necessary for each trunk. For the proper supervision of calls an Attendant's Station Box is required. This is shown herewith.

A dependable intercommunicating system is a valuable addition to any business, but it must be reliable in its operation and economical to maintain.

Kellogg key type systems are constructed from the same high-grade apparatus that is used in the famous Kellogg telephones and switchboards—the same high-grade long-distance transmitter and receiver—the same reliable key action and the same sturdy construction throughout.

The operation is simple, the calling party pressing the button corresponding to the station desired until it locks, and then depressing the green or ringing button. This rings the bell at the called station and the called party presses the red or home button and removes the receiver, completing the connection. Pressing any key restores any others which may be set.

**INTERCOMMUNICATING TELEPHONES**

**With Trunk Equipment**

Where trunks to a common battery central office are used any station may signal the central office direct, but incoming calls are handled at an attendant's station.

The telephones coded below should be installed except at the attendant's station

- 101 Wall set for 10 stations and 1 trunk or 9 stations and 2 trunks.
- 105 Desk set for 10 stations and 1 trunk or 9 stations and 2 trunks.
- 103 Wall sets for 22 stations and 1 trunk, 21 stations and 2 trunks, 20 stations and 3 trunks, 19 stations and 4 trunks.
- 107 Desk sets for 22 stations and 1 trunk, 21 stations and 2 trunks, 20 stations and 3 trunks, 19 stations and 4 trunks.

Each trunk equipped requires in addition to the above:  
One No. 1 Attendant's Station Box.  
One No. 18A Extension Bell.

**Without Trunk Equipment**

Code No.	Wall Sets Capacity	Code No.	Desk Sets
100	11 Station	104	11 Station
102	23 Station	106	23 Station

**SETS USED AT ATTENDANT'S STATIONS**

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.

Please Mention Catalogue No. 3A.

## KELLOGG INTERCOMMUNICATING CABLE

We recommend 22 gauge, one silk and one cotton covered switchboard cable with a  $\frac{1}{8}$ -inch lead sheath for all intercommunicating systems, although cable without the lead covering is sometimes used.



Attendant Station Cabinet

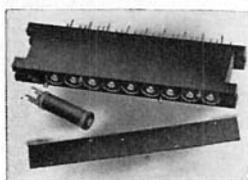
Cable should be ordered with one pair for each station and at least two additional pairs to carry ringing current.

Code No.	No. of Pairs	Diameter Inches	Remarks	Code No.	No. of Pairs	Diameter Inch	Remarks
56	7	$\frac{1}{8}$	No Lead Sheath	56	7	$\frac{3}{8}$	With $\frac{1}{8}$ " Lead Sheath
55	13	$\frac{3}{8}$		55	13	$\frac{1}{2}$	
100	16	$\frac{1}{2}$		100	16	$\frac{1}{2}$	
6	21	$\frac{3}{4}$		6	21	$\frac{3}{4}$	
8	26	$\frac{1}{2}$		8	26	$\frac{1}{2}$	

Prices per 100 feet on application.  
Specify when lead sheath is desired.

### Terminal Strips and Junction Boxes

Code No.	No. of Pairs	Length Inches	Spacing Inches	Remarks
36	15	$4\frac{7}{8}$	$\frac{1}{4}$	Terminal arranged in two rows
35	30	$4\frac{7}{8}$	$\frac{1}{4}$	
14017	Iron Cover for above			



No. 36 Terminal Strip, Cover, 1 Coil Exposed

### Batteries for Intercommunicating Systems

We recommend any standard No. 6 dry cell. The following table gives the approximate number of cells required for the different systems.

	No. of Dry Cells for Talking	For Ringing	Total
11 Stations, with 1,000 feet cable.....	3	6	9
11 Stations, with 2,000 feet cable.....	4	7	11
23 Stations, with 1,000 feet cable.....	6	6	12
23 Stations, with 2,000 feet cable.....	8	7	15

### Cut-In-Stations

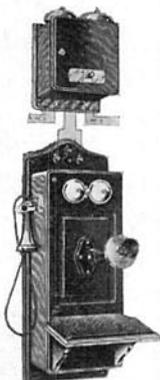
Cut-In-Stations are designed for the purpose of connecting a through toll line through a switchboard or switching station.

They are a great benefit in dividing a heavily loaded line, as when the key is pressed in one direction, one line is cut off and the telephone is in position for conversation with the remaining line. At the same time the key connects the bridged bell with the line that has been cut off.

When the key is left in its central position the telephone is bridged on the line.

They are also used for connecting two separate lines.

No. 5. For bridging lines, oak woodwork, 1000 ohm ringer, one No. 30 key, six binding posts.



No. 5 Cut-in-Station

### TWO PARTY LINE TELEPHONES

#### For Two Station, Private Service

It is a time and money-saver in the home, for "up and down stairs calls," on the farm from the house to the barn, in public buildings—wherever it is important to have two individuals or departments keep in touch with each other.

There is a special demand for this kind of service in moving picture and larger theaters to enable the important departments to co-operate to best advantage.

These telephones are economical to operate and easy to install. Three dry batteries for each set and wire for three conductor circuit make the equipment complete.

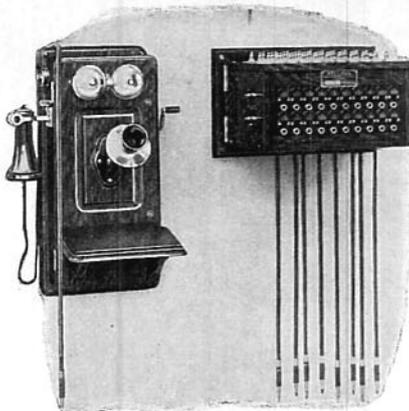


No. 233 Two-Party Line Set

## KELLOGG MAGNETO WALL SWITCHBOARDS

WITH AND WITHOUT KEYS IN CORD  
CIRCUIT.

Telephones Are Not Included in Prices of These Boards



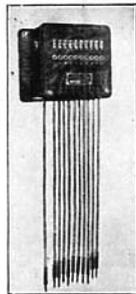
Code No. 24A Wall Switchboard. 20 line

Code No. 24A Wall Switchboard is an excellent switching arrangement for 20 lines. 4 straight cord circuits are provided, and one of the high impedance line drops is adapted for ring-off signal when a connection is established by the insertion of two plugs, fastened to each end of a cord.

A separate operator's plug and cord are furnished to be used with either a wall or desk type standard bridging telephone.

Two binding posts are provided on left side for separate night alarm outfit.

Each line is provided with a saw tooth spark gap lightning arrester as well as a heavy common ground strip.



Kellogg switch-box for 10 grounded lines, to be used with extension bells on each line.

The ten-line switchbox for grounded lines was designed to fill a long-felt want, is practical, and has met with favor. Each line is provided with a connecting plug and cord, an answering jack and a non-ring-through condenser. Each incoming line is provided with a regular extension bell placed on the wall. The operation of the equipment is as follows: Operator, on receiving a call, plugs into calling line's jack and ascertains who is wanted. Operator thereupon moves the master cord into the jack of the line called for and rings for the desired party. While waiting for party to answer, the operator picks up plug of the called line and inserts it into jack of calling line and the connection is complete. Suppose, for instance, line No. 3 wants line No. 7. Operator answers in jack No. 3, moves master plug to line No. 7 and rings; then places plug No. 7 in jack No. 3, which connects the parties through the condenser for talking purposes only.

Another feature making this form of switchboard popular is its ability to care for connections of three or four lines as readily as connections of two lines only. For instance, plug No. 1 can be put in jack No. 2; plug No. 2 in jack No. 3; plug No. 3 in jack No. 4, etc., which will connect all the lines together for talking purposes, but cause them to remain as separate individual lines so far as ringing is concerned.

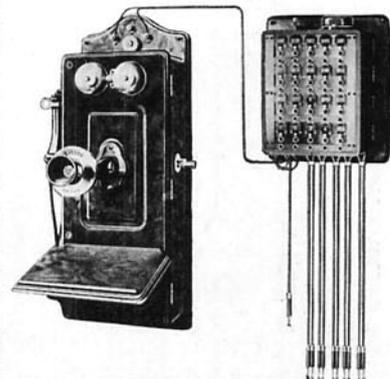
The 20 line switchboard with keys operates in connection with any bridging telephone, the latter being used for ringing and talking. This type of board is fitted with combined ringing and listening keys and operates in substantially the same manner as a regular standing equipment. It is equipped for 20 lines.

A still simpler form of 20-line wall type switchboard is shown at the right. The latter equipment dispenses with ringing and listening keys and substitutes a duplicate jack in each line circuit. The operation of the equipment is as follows: On receiving a call, the operator inserts the master plug into the regular jack, thereby restoring the drop, and ascertains the party desired. Operator thereupon moves master plug to the line called for and rings the desired party. While waiting for party to answer, operator connects the two lines with one of the pairs of connecting plugs. This leaves one of the line drops acting as a bridging ring-off drop, so that operator's attention can be secured when the conversation has been finished. Where the switching traffic is not too heavy, this board will give excellent results, as it has been designed with the idea of producing a small wall type board of low cost that would give good and reliable service.

Prices on Application



Kellogg 20 line wall switchboard with combined self-restoring drops and jacks, ringing and listening keys. Cabinet No. 11134.



Kellogg 20 line wall switchboard without keys. Cabinet No. 11140.

Please Mention Catalogue No. 3A.

Fifteen

## KELLOGG MAGNETO WALL SWITCHBOARDS

*Telephones Are Not Included in Prices of These Boards*

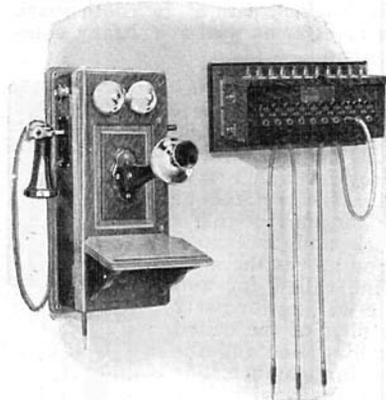
### Code No. 9A, 10 Metallic Lines

An excellent switching arrangement for 10 lines. 2-straight cord circuits are provided, and one of the high impedance line drops is adapted for ring-off signal when a connection is established by the insertion of two plugs, fastened to each end of a cord.

A separate operator's plug and cord are furnished to be used with either a wall or desk type standard bridging telephone.

Two binding posts are provided on left side for separate night alarm outfit.

Each line is provided with a saw tooth sparking arrester as well as a heavy common ground strip.



No. 9A with Wall Telephone.

### Code No. 22-A

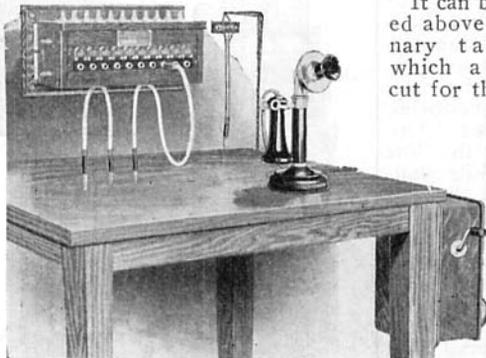
Similar to 9-A but only 5 lines. 1 cord circuit. Cabinet Code No. 120. 1 connecting cord.

### Code No. 23-A

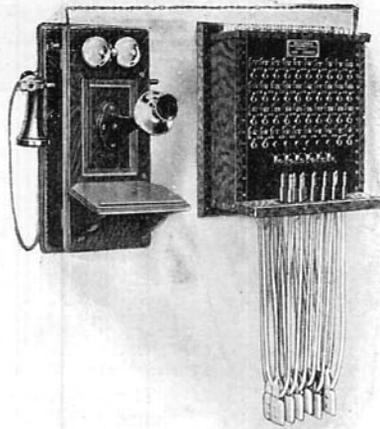
Equipped with same cabinet as No. 17-A, but wired for 20 lines. Ringing and listening keys. 4 cord circuits.

Kellogg Thirty-four Line Wall Switchboard, used with a standard compact bridging telephone. Is arranged for thirty local lines and four toll lines; six cord circuits, keys for ringing and listening. This board is strongly built, simple to operate, with standard Kellogg apparatus throughout. A very economical and satisfactory equipment where the number of lines is not likely to exceed thirty.

It can be mounted above an ordinary table, in which a hole is cut for the cords.



No. 9A with Desk Stand, Used with Ordinary Table.



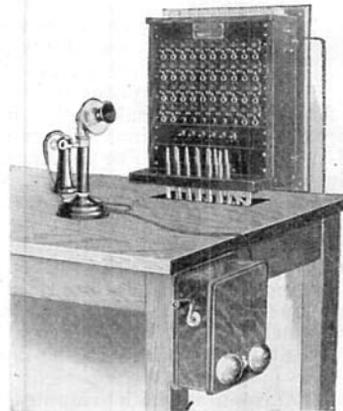
No. 17A with Wall Telephone.

### Code No. 17A, 30 Local and 4 Toll Metallic Lines Six Cord Circuits

The cord circuits are arranged for single supervision, with single ringing and listening keys.

This switchboard is used with a standard desk or wall type bridging telephone, by connecting a pair of wires to the proper binding posts.

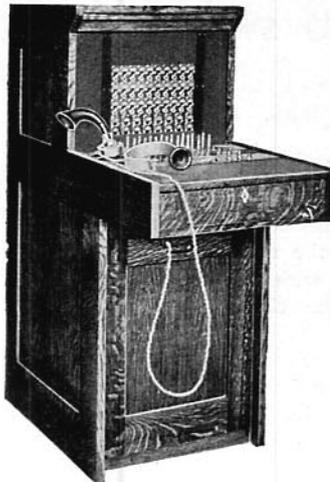
Arranged for separate night alarm outfit.



Code No. 17A with Desk Stand, Used with Ordinary Table.

Kellogg Ten Line Wall Switchboard can be installed over an ordinary table with standard Kellogg Desk Telephone and box. This is a convenient arrangement. The desk set box can, if preferred, be mounted on the wall at right or left of board.

In communities where the population is not large enough to warrant the use of a regular switchboard and operator, the man with a country store will find one of these boards a good source of revenue.



Code No. 11-B—Equipped with Breast Plate Transmitter, 50-line capacity, 8 cord circuits. Low keyshelf.

## KELLOGG LOW KEYSHELF MAGNETO SWITCHBOARDS

These boards are very popular. Ordinary office chairs used. These boards also have ample key shelf room and are convenient to operate with ordinary office desks and tables for miscellaneous work.

Kellogg magneto switchboards are designed to meet the needs of every magneto telephone exchange with equipment that will operate reliably and give the best class of service under all conditions. Everything has been done to eliminate complicated circuits and apparatus and to build every part with the idea of eliminating future maintenance costs. The Kellogg self-restoring drop and jack with its pure hard rubber insulation between drop shell and frame, its long lever hook and simple spring arrangement is giving service in many thousand boards in this country and abroad.

Bakelite and mica insulations and bushings are used in all key and jack assemblies, preventing shorts, crosses and all the troubles heretofore met with in key and jack construction.

Each drop coil with its core and containing shell is heavily insulated with hard rubber from the mounting plate, from the night alarm circuit, and from all other drop coils and adjacent parts. Such construction is very expensive, but it renders burnouts and damage from lightning highly improbable under any circumstances and practically impossible when proper carbon protection is employed.

The night alarm contact is held point up in a long and resilient German silver spring. It is completely protected from damage by the restoring device and will not fail to operate the bell on night calls.

Apparatus of that quality and durability which Kellogg equipment has proven itself to be, deserves housing in strong, handsome and durable cabinets. For this reason Kellogg switchboard cabinets are not purchased in the open market, but are built from the raw material in the Kellogg Company's own woodworking plant. These cabinets are of a better quality than it is possible to procure in the open market, and it was the fact that woodwork of the Kellogg standard was not obtainable that led to the building of the complete woodworking plant.

The standard woodwork for all Kellogg magneto switchboards is heavy, quarter-sawed oak in dark antique finish. Over two weeks' time is required in applying, drying in and rubbing down the several coats of shellac and varnish. In this manner it is possible to secure a finish that will endure through the long years of continuous and hard usage which most switchboards receive.

Write for prices and special switchboard bulletin containing complete information on magneto switchboards.

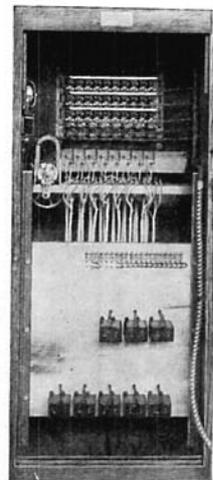
In writing for prices, state cabinet and capacity desired, number of country lines at present in service, number of city lines, number of cord circuits necessary and whether they are to be single or double supervisory.

Switchboards may be ordered with wiring and capacity for future growth but with only the necessary equipment installed to take care of present requirements.

Write for our new illustrated bulletins describing this magnificent line of magneto switching equipment.

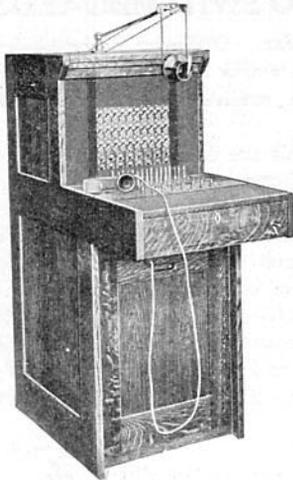
Prices on Application

Please Mention Catalogue No. 3A.



Code No. 11.  
Rear View

## KELLOGG LOW KEYSHELF MAGNETO SWITCHBOARDS



Code No. 11B.

Code No. 11-B—Equipped with Suspended Type Transmitter. Capacity 50 lines. Wired for 50 lines. 8 Cord Circuits.

No. 9 Dark Golden Oak Finish.

The Kellogg boards, equipped with the new Kellogg transmitter arm, unless breastplate operator's equipment is preferred, have the added advantage of the superior service possible with this arm, for instance, the doing away with the clumsy transmitter cord weights.

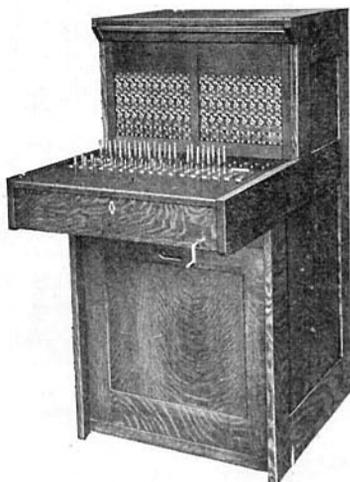
This arm is of special merit in installations where the operator handles office work in addition to caring for the board because of its wider range of position and ease of handling. It means better service.

The No. 9 Dark Golden Oak finish regularly used on all low keysheff Kellogg switchboards will match very nicely with a standard dark golden oak desk or table obtainable from any local furniture dealer. Kellogg cabinets of standard finish are carried in stock at all times. Special finishes can be supplied to order, at a small additional cost, but three to four weeks' extra time is required. We recommend the use of standard cabinets whenever possible.

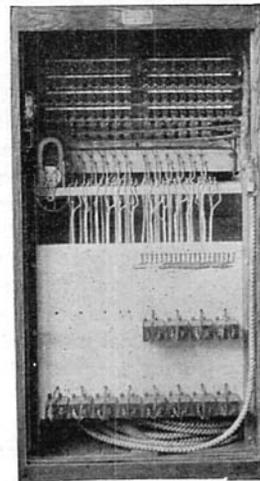
Code No. 12 is an ideal low key shelf equipment where an ultimate capacity of 100 lines is desired. Can be used in connection with either desk or table.

### FEATURES:

Standard woodwork and finishes in keeping with regular designs in office furniture.



Code No. 12B.



Rear View, Code No. 12B.

Code No. 12-B, 100 line capacity.

Wired for 100 lines.

12 cord circuits.

Drops and jacks, generators, coils and condensers rigidly mounted and get-at-able. Coils and condensers mounted on heavy maple panel.

The superiority of Kellogg drop and jack strip, generator night alarm, condenser and coil mounting is evident to the switchboard man.

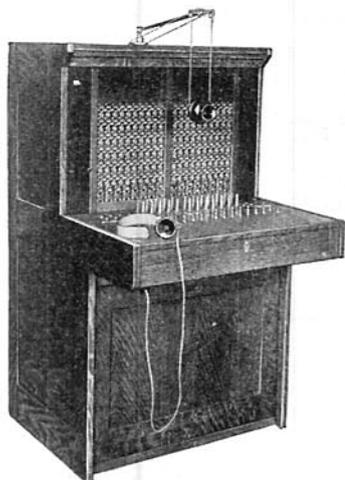
### INSTALLATION

While we are prepared to furnish expert installers when purchaser so desires, we recommend that competent local men be given preference whenever they are available.

Switchboards of one section are extremely simple to install, as all necessary wiring within such boards is done at the factory, and after their arrival it is only necessary to connect night alarm battery, transmitter battery and the power generator (if one is used) as indicated in diagrams and blue prints sent with the board.

Kellogg magneto switchboards are regularly wired with 40, 50 or 100 pair cables.

## KELLOGG LOW KEYSHELF MAGNETO SWITCHBOARDS



Code 13B

Code No. 13-B—Suspended type transmitter. Capacity, 160 lines.

Wired for 160 lines.

16 cord circuits.

### ADVANTAGES:

Generous key shelf room allowing ample writing space. Transmitter conveniently adjusted to position by raising or lowering arm. No weights to wear out transmitter cords or injure wiring. Operator's jack mounted under key shelf.

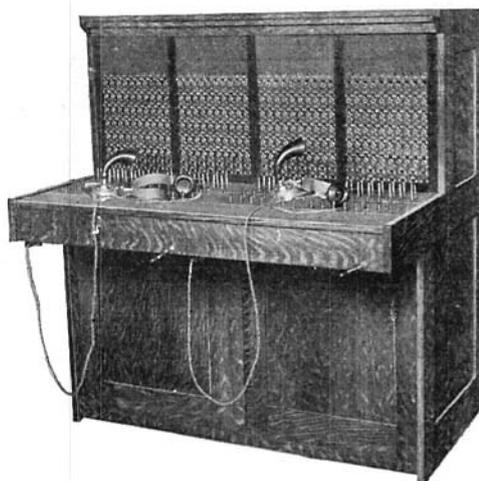
Code No. 14-B—Capacity, 240 lines.

Wired for 240 lines.

30 cord circuits.

Two-position switchboard.

To meet the demand for a switchboard of larger capacity than 160 lines, where future growth might not warrant the wiring and capacity of our Code 15-B we have the above switchboard, Code No. 14-B, two operators' positions, and wired for 240 lines, 30 cord circuits. This offers a fast operating board. 60 lines per panel. A standard board throughout.



Code 14B

Code No. 15-B—Capacity, 320 lines.

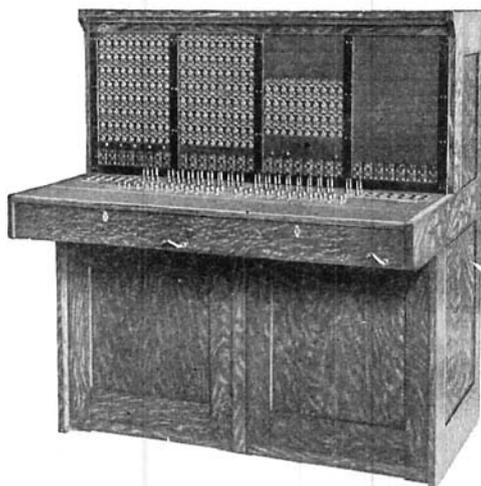
Wired for 320 lines.

30 cord circuits.

Two-position switchboard.

This is an ideal two-position switchboard. The sturdy, compact cabinet, of heavy quartered oak, is built to stand years of hard usage. A roomy cabinet and shelf, with ample line and cord capacity for extreme service conditions.

These magneto switchboards are designed with a low, wide key shelf, for comfort and convenience. The operator is able to use an ordinary office chair with these boards, and can use the key shelf for clerical work. The operator's feet are on the floor.



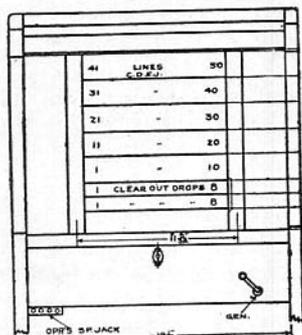
Code 15B

Prices on Application

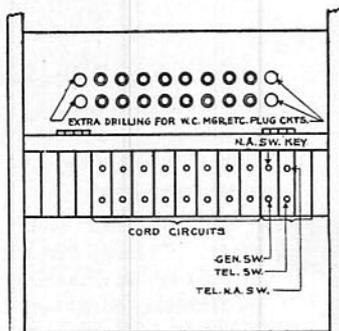
Please Mention Catalogue No. 3A.

Nineteen

DIMENSIONAL DRAWINGS

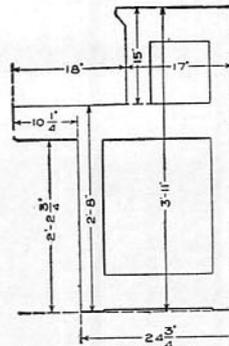


**Code No. 11B. 50 Line.**  
Front view of face equipment showing drops and jacks and front end of key shelf, with operator's jack.

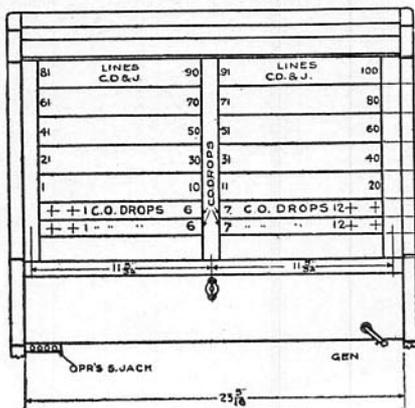


**Top View, Code 11B.**

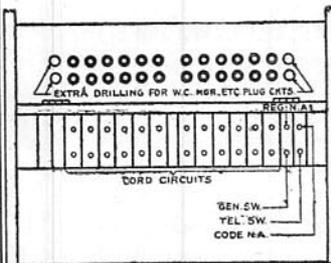
Top view of key shelf showing keys and cord equipment.



**Side Elevation.**  
The side elevation gives an excellent idea of the convenient key shelf space.  
Cabinet No. 11-B (10 to 50 lines) is arranged for the following ultimate capacity:  
50 combined drops and jacks, ten per strip.  
8 complete cord circuits, either double or single supervision.  
Repeating coils in as many cord circuits as desired.  
1 operator's set.  
1 night alarm circuit.  
1 five bar hand generator.

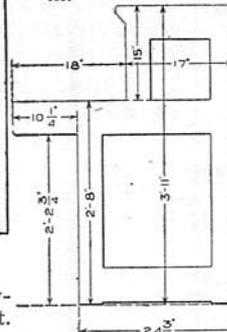


**Code No. 12B. 100 Line.**  
Front view of face equipment showing drops and jacks and front end of key shelf, with operator's jack.

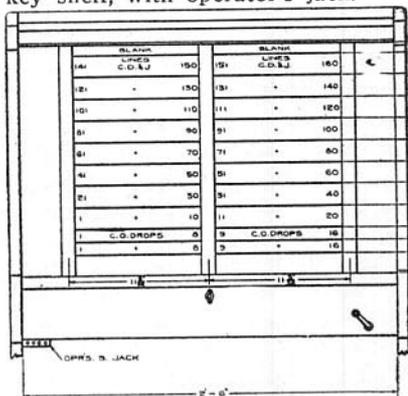


**Code No. 12B.**

Top view of key shelf showing keys and cord equipment.

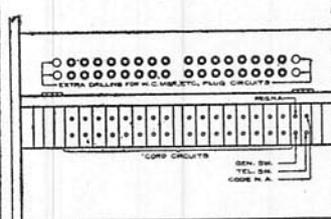


**Side Elevation.**  
Cabinet No. 12-B has the following ultimate capacity:  
100 combined drops and jacks.  
12 complete cord circuits, either double or single supervision.  
Repeating coils in as many cord circuits as desired.  
1 operator's set.  
1 night alarm equipment.  
1 five bar hand generator.



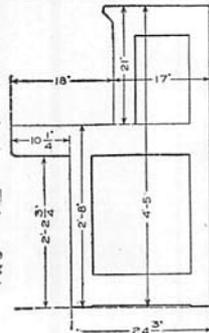
**Code No. 13B.**

Front view of face equipment showing drops and jacks and front end of key shelf, with operator's jack.



**Code No. 13B.**

Top view of key shelf showing keys and cord equipment.



**Side Elevation.**  
Cabinet No. 13-B has the following ultimate capacity:  
160 combined drops and jacks.  
16 complete cord circuits, either double or single supervision with repeating coils in as many cord circuits as desired.  
1 operator's set.  
1 night alarm equipment.  
1 five bar hand generator.



## KELLOGG PRIVATE BRANCH EXCHANGE SWITCHBOARDS

Equipped with either Suspended or Breast Plate Type Transmitter.

### Code No. 1A

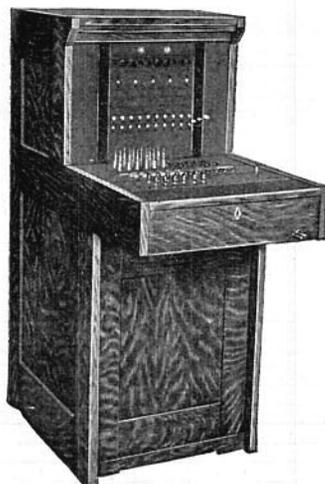
50 lines capacity. Code No. 100 cabinet.  
5 trunk lines, 12 cord circuits.  
Jacks arranged 10 per strip.

### FEATURES:

A very durable cabinet which provides the maximum of equipment in the minimum of space.

Jacks rigidly mounted and arranged ten per strip to avoid cord congestion and to allow sufficient finger room for putting up and taking down connections.

The wood in these cabinets is heavy quarter-sawed oak. Not only will the wood work last almost indefinitely, but the finish will also endure through years of continuous and severe service.



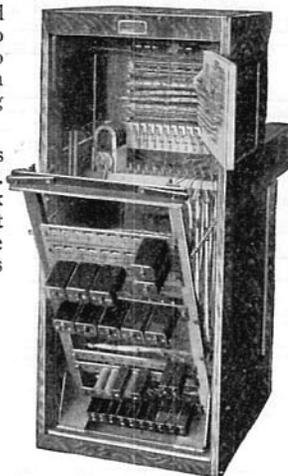
Code No. 1A

### ADVANTAGES:—Shown by Rear View.

Relays substantially and conveniently mounted on swinging rack, providing easy access to cords.

Connecting rack for terminating line and trunk cables hinged to allow ready access to lamp and jack mountings.

Cord racks arranged to prevent tangling of cords.



Rear View Code No. 1A

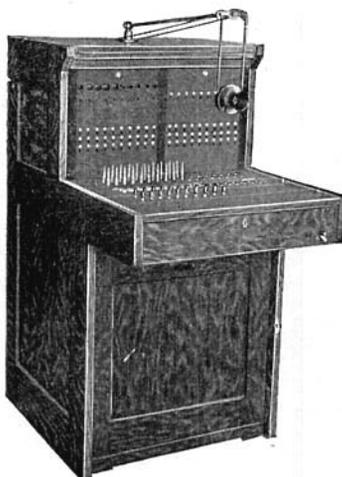
### Code No. 2A

100 lines capacity. Code No. 101 cabinet.  
Suspended type transmitter.  
10 trunk lines, 18 cord circuits.

### FEATURES:

Generous key shelf room, allowing ample writing space. Transmitter conveniently adjusted to position by raising or lowering arm. No transmitter weights to wear out transmitter cords or injure wiring. Operator's jack mounted under key shelf, keeping receiver cord from being jammed against plug.

These P. B. X. boards are built with a low key shelf, as are Kellogg magneto switchboards. This allows the use of an ordinary office chair, it being an economical and convenient arrangement. The operator is able to spend her spare moments on clerical work at an adjoining desk.



Code No. 2A

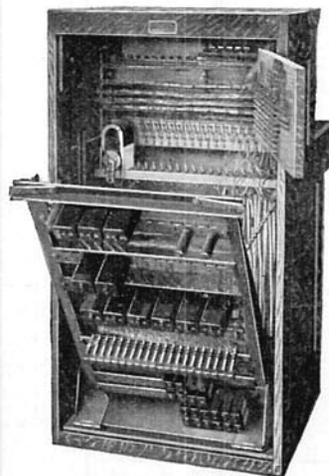
### ADVANTAGES:—Shown by Rear View.

Apparatus is properly numbered and designated so that its particular function can be readily identified.

Relay rack and hinged heavy maple connecting rack securely locked in place when closed. In this position, they give added strength to the cabinet.

Heavy bus bars practically arranged for connecting and fusing the battery leads.

Twenty-two

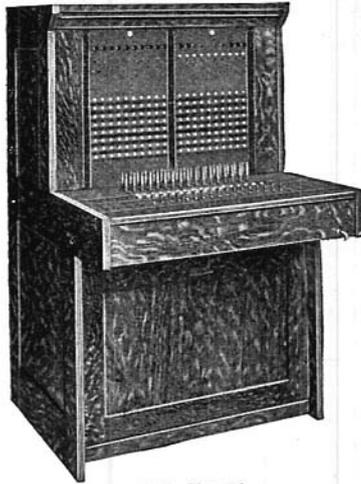


Rear View Code No. 2A

Prices on Application

Please Mention Catalogue No. 3A.

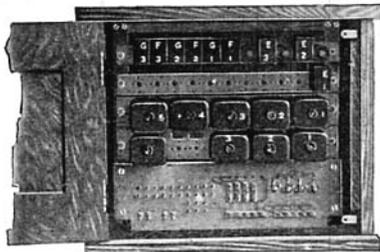
**KELLOGG PRIVATE BRANCH  
EXCHANGE SWITCHBOARDS**



Code No. 3A.

**Operator's Jack and Plug Equipment**

Kellogg operator's jack and plug equipment for P. B. X. boards is exceptional, both in durable service qualities and in convenience. It must be seen and used to be appreciated. These plugs and jacks, if desired, allow the use interchangeably of either suspended or breast plate type transmitters or both at the same time.



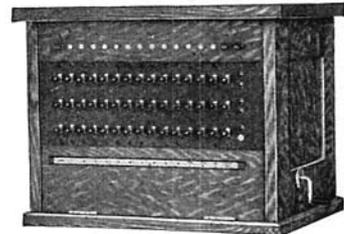
Code No. 3A.  
Code 102 cabinet.  
Capacity 200 lines.  
Installed for ten trunk lines.  
Twenty-five cord circuits.

**Features:**

Relay rack, when open, securely held at an angle of 45 degrees by side chains which can be unlocked to allow lowering of rack to horizontal position, giving free access to all parts of interior of cabinet.

Heavy flange hinges constructed to keep relays and condensers from coming in contact with the floor, when rack is lowered.

This is an ideal equipment where more than 100 lines are needed.



Code No. 6A Cordless P. B. X.  
10 local lines, 3 trunk lines.  
5 connecting circuits.

**Dimensions of P. B. X. Cabinets**

Code	Height	Depth all	Depth Shelf	Depth Shelf	Depth at Base	Width	No. of Lines
1A	3' 11"	35"	18"	2' 2 <sup>3</sup> / <sub>4</sub> "	24 <sup>3</sup> / <sub>4</sub> "	20"	50
2A	3' 11"	35"	18"	2' 2 <sup>3</sup> / <sub>4</sub> "	24 <sup>3</sup> / <sub>4</sub> "	25 <sup>1</sup> / <sub>4</sub> "	100
3A	4' 5"	35"	18"	2' 2 <sup>3</sup> / <sub>4</sub> "	24 <sup>3</sup> / <sub>4</sub> "	31 <sup>3</sup> / <sub>4</sub> "	200
Cordless	14 <sup>5</sup> / <sub>8</sub> "	13 <sup>1</sup> / <sub>8</sub> "	18"	18 <sup>1</sup> / <sub>8</sub> "	15 <sup>3</sup> / <sub>8</sub> "		

**Cordless P. B. X.**

For business houses that do not require the interconnection of more than ten telephones and three city lines, the cordless private branch exchange has been developed.

The construction and woodwork of this cabinet will match the regular office furniture, and when placed on a flat top desk will present the appearance of a regular turret. Its simplicity of operation makes it very desirable where the attendant is required to do clerical work when not answering calls.

The key arrangements provide five connecting circuits, and five conversations can be carried on at the same time without interference. Each line and trunk circuit is a unit of three keys with a signalling lamp above each unit. The operator's key unit consists of three keys at the left, and she can answer any call by throwing one of these keys and then throwing the line key under the signal in the corresponding row in the same direction.

**Kellogg P. B. X. Advantages**

Various classes of service and operation can be furnished with the different types of private branch exchange equipment. The trunk circuits can be arranged to terminate at the private branch exchange in either jacks or plugs. The line circuits can be arranged to ring all telephones simultaneously, either as a fire alarm or for the purpose of calling a party to any telephone in case a shop superintendent, for instance, is to be located for a telephone call. Circuits are arranged so that any number of departments can be connected to switchboard for intercommunication. As many conversations can be carried on as there are pairs of cords or connecting circuits.

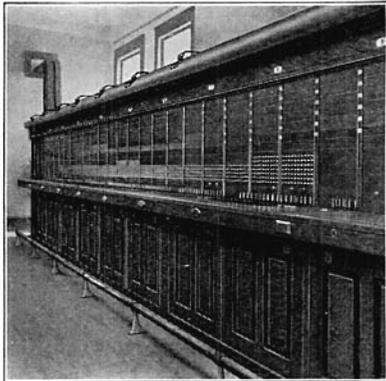
Write for our complete, illustrated bulletin on P. B. X. equipment.

Prices on Application

Please Mention Catalogue No. 3A.

Twenty-three

## KELLOGG UNIVERSAL SWITCHBOARDS



A Universal in a large exchange.

### 800-Line Full Multiple Board.

Only possible for operator to handle 160 lines efficiently.

5 operators required for 800 local lines under consideration.

Number of lines per operator must be determined in the beginning.

Operators' maximum reach above plug shelf is twenty-five inches.

Accidental cut-offs frequently occur, due to congestion of multiple jacks.

Not practical to answer remote calls.

False busy reports often given when person on four-party line calls for number on own line.

Board contains total of:  
2,800 Five-Spring Jacks.  
2,800 Pairs Contact Points in Jacks.  
14,000 Jack Springs.  
11,200 Multiple Cable Conductors.  
22,400 Soldered Joints in Multiple.  
800 Line Drops.

150 ring-off drops subject to battering and likely to get into bad adjustment.

All lines must remain magneto at the old rates until a new board is installed, when the old one must be junked or sacrificed on the second-hand market. In other words there can be no progress toward better service and better rates while this board remains in service.

The entire switchboard proposition resolves itself into the following:

1. For medium sized exchanges, expecting to cut over to common battery at some future time, use UNIVERSAL LAMP SIGNAL SWITCHBOARDS with which the installation of common battery telephones at higher rates can begin immediately.

2. For medium sized exchanges, desiring to change to common battery at once, retaining a large number of farm lines, use magneto UNIVERSAL LAMP SIGNAL SWITCHBOARDS with which all cord circuits in the entire board can be used to switch farm and city lines indiscriminately.

3. For large magneto exchanges where for any reason full common battery cannot be installed at once, use UNIVERSAL LAMP SIGNAL SWITCHBOARDS so that common battery telephones can be introduced gradually and the rates raised without excitement or trouble.

Twenty-four

It is conceded by all telephone authorities that the magneto system will remain the standard equipment for small town and village exchanges where large numbers of farm lines are to be switched.

It is also conceded by the best traffic experts in the country that the full common battery system with the modern refinements of automatic ringing and listening, secret service and automatic traffic meters will remain the standard for large city exchanges.

Now, between these two we encounter a "twilight zone" in the larger towns and smaller cities and it is for the needs of such exchanges that the equipment described in this page has been designed.

Following is a brief comparison of the advantages of the Universal Switchboard when compared with the magneto board.

### 800 Line Universal Board

Operator can handle 200 to 300 lines, with double supervision more efficiently than 160 standard magneto multiple.

Only four operators necessary to give better service.

Number of lines per operator need not be definitely determined, but may vary from twenty to eight hundred by shifting lamp signals.

Operators' maximum reach above plug shelf is 16 inches.

Accidental cut-offs are practically impossible as operator has plenty of finger and thumb space.

Any operator can answer remote calls, without observing number of calling line.

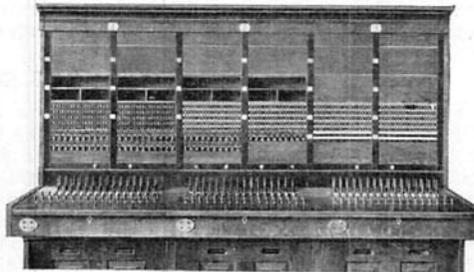
Impossible for this confusion to arise.

Board contains total of:  
1,600 Three-Spring Jacks.  
No contact points in jacks.  
4,800 Jack Springs.  
4,800 Multiple Cable Conductors.  
9,600 Soldered Joints in Multiple.

800 line and cut-off relays mounted in pairs under individual dust-tight steel covers, also 800 indestructible lamp jacks, caps and lamps.

120 pair cord relays mounted under dust tight steel covers. Also 120 supervisory lamp jacks, lamps and protecting caps.

Any one of the magneto lines can be changed to common battery at any time by changing connections at line relay and without adding or removing any apparatus. In this manner the plant can be changed to common battery gradually and higher rates charged for the common battery service.

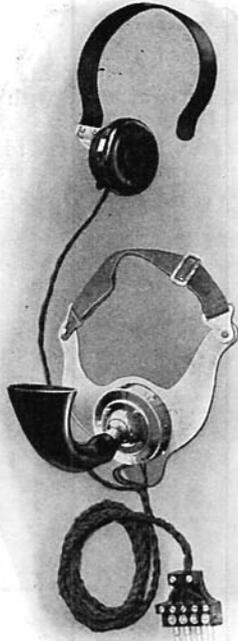


A 300-Line Universal Switchboard.

Please Mention Catalogue No. 3A.

Prices on Application

**OPERATOR'S EQUIPMENT**



No. 46-A Receiver With No. 2 Leather Covered Head Band Complete With No. 76 Transmitter, No. 111 Cord and No. 20 Plug



No. 43 Jack for No. 20 Plug, Illustrated Above

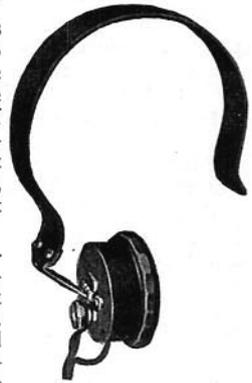
The head receiver shell is made of KELLOGG BAKELITE, the wonderful new unbreakable material manufactured by the Kellogg Company. It is of surpassing strength and endurance; is not brittle, will not chip, crack or lose its shape, texture or color under the most severe conditions.

Durability is especially important in this receiver equipment, as many operators do not use the head band continuously. Being often engaged in clerical work, the frequent handling results in breakage in less durable shell materials.

Standard Kellogg breastplate transmitters furnished when specified. They are of aluminum, light weight and very durable. The mouthpieces are correctly shaped and built for proper transmission.

**SUSPENDED TYPE TRANSMITTER**

The suspended type transmitter is recommended as having been found more satisfactory in small exchanges, and will be furnished except when the breastplate type is specified. Many prefer the latter for use in large exchanges.



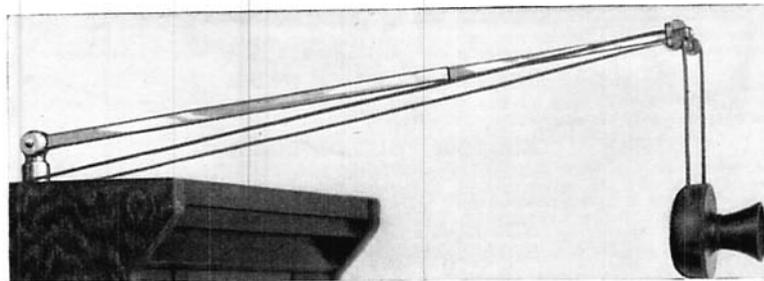
No. 46-A Receiver With No. 2 Band With Leather Cover



No. 55 Transmitter and Cord

This is the standard Kellogg transmitter, of which there are now over two million in use, of practically one type. Its service everywhere under most strenuous conditions has placed it in a class by itself. It is a transmitter capable of the longest long distance work, yet economical in use and suitable for all types of service.

**KELLOGG SWITCHBOARD TRANSMITTER ARMS**



Code No. 45 Transmitter Arm

The new Kellogg transmitter arm, Code No. 45, is a marked improvement over old styles. It is made of heavy brass with Kellogg nickel plating, an assurance of long service. Does away with cord weight bother. With this arm, position of transmitter can be instantly changed—brought forward or backward, moved sidewise, raised or lowered. Holds transmitter conveniently for use in standing as well as sitting position.

This arm is especially valued with P. B. X. or magneto switchboards, where operator or attendant has other work to do and uses adjoining desk or counter.

Prices on Application

Please Mention Catalogue No. 3A.

Twenty-five

## KELLOGG POLE CHANGERS

Two distinct types of pole changers are made by the Kellogg Switchboard & Supply Co. One is used in connection with transformers and is designed to operate from 11 cells storage battery. The second type is used without transformers, with dry cells as the source of current.

In each case special care is taken to secure ringing current at the exact rated frequency, without regard to changes in voltage of the operating battery. As a result the battery may vary from 20 to 29 volts without changing the frequency of the ringing current or the rate of the vibration of the pole changer reeds.

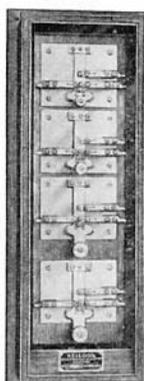
Each pole changer unit, with the exception of the pole changer which gives pulsating and alternating current, has but three spring contacts, two ringing and one operating contact. These contacts are very accessible and easily adjustable, although after being adjusted properly, very little attention is required.

All pole changers are designed to mount in a vertical position upon the wall, thus requiring no floor space.

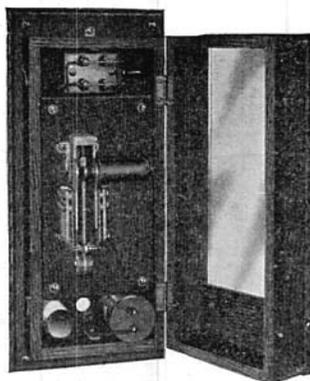
### NO. 6-A POLE CHANGER

The 6-A pole changer is the standard Kellogg four-frequency party line pole changer for common battery switchboards. It consists of four units mounted upon a substantial slate slab, and with the assistance of transformers, furnishes ringing current at  $16\frac{2}{3}$ ,  $33\frac{1}{3}$ , 50 and  $66\frac{2}{3}$  cycles per second, of the proper voltage for ringing harmonic party line bells.

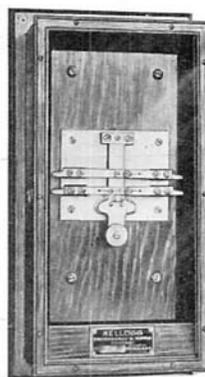
The above pole changer is used in connection with our Nos. 1-B, 2-B or 4-B transformer sets.



No. 6-A Pole Changer



No. 9-A Pole Changer



No. 13-A Pole Changer

### NO. 9-A POLE CHANGER

It is operated from two sets of batteries, one set consisting of eighteen dry cells connected in series for operating the Pole Changer Vibrator, and the other set of sixty dry cells in series for supplying current for ringing, making a total of seventy-eight dry cells.

It is similar in construction to No. 23-A. Delivers alternating and both negative and positive pulsating current for ringing both straight line and biased 4 party selective telephones.

### NO. 11-A POLE CHANGER

This pole changer is the same as the No. 13-A, except that the ringing current is  $16\frac{2}{3}$  cycles, instead of 20. It is used in connection with transformer set No. 9-B.

### NO. 12-A POLE CHANGER

This is a two-frequency pole changer for use with common battery switchboards. It furnishes ringing current at 33 and 50 cycles, and is used with transformers and storage batteries. It is used in connection with the No. 8-A transformer set.

### NO. 13-A POLE CHANGER

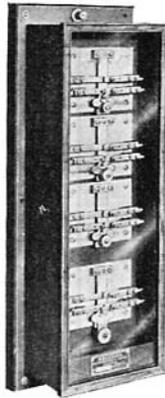
This is a single frequency pole changer, which, when used with a 24-volt storage battery and a transformer, furnishes ringing current at 20 cycles for ringing ordinary polarized bells. This pole changer is used in connection with transformer set No. 9-A.

### NO. 15-A POLE CHANGER (Shown on Next Page)

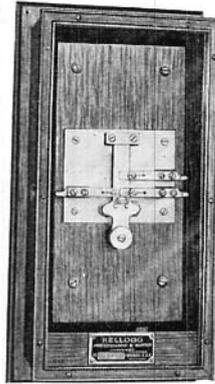
This is the Kellogg standard four-frequency direct ringing pole changer. It is designed for use in connection with magneto switchboards. It is operated from dry cells and delivers current direct from these cells to the line, without the use of transformers, at frequencies of 30, 42, 54 and 66 cycles. The vibrators are operated from 18 dry cells and the ringing current is supplied by two sets, each of which consists of 60 dry cells.

In connection with the above pole changer, it is necessary to supply switches, fuses and lamp resistance for protection and control of the pole changer; therefore, it is essential to order with the above pole changer an auxiliary apparatus board No. 14408, in case a single 15-A pole changer is desired, and No. 14412 in case duplicate 15-A pole changers are desired. When so ordered, this apparatus is mounted on an oak panel and completely wired.

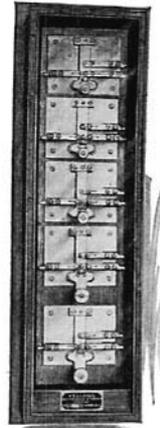
**KELLOGG POLE CHANGERS**



No. 15-A Pole Changer



No. 16-A Pole Changer



No. 19-A Pole Changer

**NO. 15-A POLE CHANGER (Continued)**

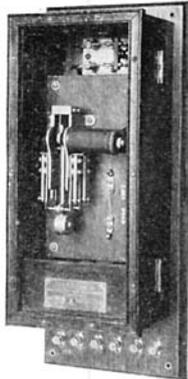
When this pole changer is used, a condenser is not required in series with the telephone bell. Any bridging telephone can be converted into a four-party telephone for use with this pole changer by merely changing the bell, no alteration of the circuit or additional apparatus being required.

It will be found in some cases where long, heavily loaded farmers' lines are in use that current of lower frequency than 30 would meet the requirements more satisfactorily for straight line ringing. For these cases we recommend that a single frequency pole changer be used in addition to the 15-A. Number 16-A is especially suited for this purpose.

One of the most reliable features is the means for adjustment, which requires only a screwdriver. Once the adjustment is made the machine will run for months without attention. No bending of springs with pliers is necessary.

A high resistance magnet operating from 18 dry cells gives the vibrator a firm, powerful action, insuring the delivery of a high voltage to the line and eliminating the waste found in most pole changers.

All connections are brought out on binding posts on the base of the machine, making it an easy matter to install and put into service.



No. 23-A Pole Changer

**NO. 16-A POLE CHANGER**

This pole changer is a single frequency (20 cycle), direct ringing pole changer operated in a manner similar to the 15-A. It is used for ringing standard polarized bells only, and the circuit arrangement is the same as for one of the units of the 15-A.

**NO. 19-A POLE CHANGER**

This pole changer is our standard five frequency common battery pole changer where frequencies of 16, 30, 42, 54 and 66 cycles are used. It is designed for use in connection with 24 volt storage battery and the proper transformer set.

**NO. 23-A POLE CHANGER**

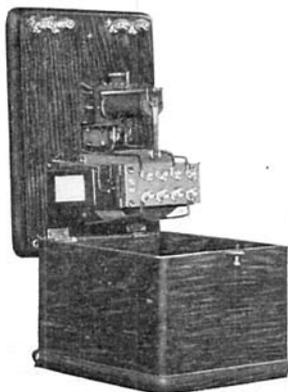
The No. 23-A pole changer is the latest development in dry battery ringing machines. Since the Kellogg No. 9-A pole changer was first introduced in the telephone field, it has become the standard both for efficiency and economy in operation. The Kellogg No. 23-A pole changer is a further development of the No. 9-A, but delivers alternating current only for ringing standard polarized bells. This simplifies the construction and wiring of the machine and makes it easier to keep the springs in perfect adjustment.

It is operated with two sets of batteries, one set consisting of 18 dry cells connected in series for operating the pole changer vibrators, and the other set of 60 dry cells in series for supplying current for ringing, making a total of 78 dry cells.

**NO. 25-A POLE CHANGER**

The No. 25-A pole changer is a combined pole changer and transformer equipment, arranged to operate from 24 volt storage battery and designed for use in connection with private branch exchanges and other small switchboard installations.

Its use does away with the necessity of conducting ringing current for private branch installations through cable from the main exchange, saving cable pairs and eliminating generator noise from the cable. The pole changer is simple yet durable and efficient.



No. 25-A Pole Changer

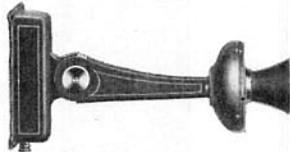
Prices on Application

Please Mention Catalogue No. 3A.

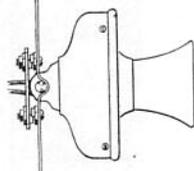
Twenty-seven

## KELLOGG ARMS—TRANSMITTER

### FOR TELEPHONES



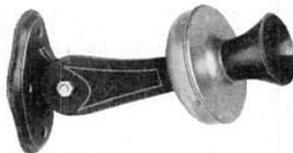
Code No. 21 Transmitter Arm



Code No. 39  
Transmitter Arm



Code No. 41 Transmitter Arm



Code No. 42 Transmitter Arm

These adjustable transmitter arms are not of the ordinary brittle cast-iron construction, but are formed of pressed steel. These arms always adjust readily and with ease and hold the transmitter in the desired position. Cast arms are often extremely stiff-jointed when new and almost impossible to adjust, and within a few years, become so worn, as to be unable to hold the transmitter in any but the lowest position. These pressed steel arms will always hold the correct position for greatest transmitting efficiency.

All wiring is concealed and with the lasting coats of heavy black enamel, they make a very attractive transmitter arm.

Mounting screws furnished.

- 39 Punched brass, nickel finish, arranged with swivel joint bearing on face of steel set to adjust at an angle of 15 degrees above or below horizontal, for use on steel sets, arranged to conceal cords.
- 41 Punched brass, nickel finish, arranged with knuckle joint to adjust at an angle of 15 degrees above or below horizontal, for use on wood sets, arranged to conceal cords.
- 42 Pressed steel, enamel finish, used on extra compact sets,  $4\frac{3}{4}$ " long, arranged to conceal cords.
- 46 Same as No. 39, but with dull black finish.

### PLUG AND JACK FOR PORTABLE TELEPHONE

#### Portable Desk Set Plug and Jack



No. 97 Jack with  
No. 75 Plug

It is sometimes desirable to have a desk telephone which may be moved up stairs at night in case of a doctor's telephone, or from one spot to another in the house.

For those having common battery desk stands with two conductor cords we can recommend the following:

- 97 Jack. Same as No. 24 operator's jack but mounts from the front with two wood screws. Diameter  $1\frac{7}{8}$  inches. Handsomely nickel-plated. Uses No. 75 plug.

For three and four conductor cords on portable sets we recommend the No. 291 jack and No. 131 plug described on page 42. This jack may be mounted on the under side of desk or table.



No. 8 Cord  
Weight



No. 9 Cord  
Weight

### SWITCHBOARD CORD WEIGHTS

No. 8—Weight,  $20\frac{1}{4}$  ounces. For switchboard transmitter cords.

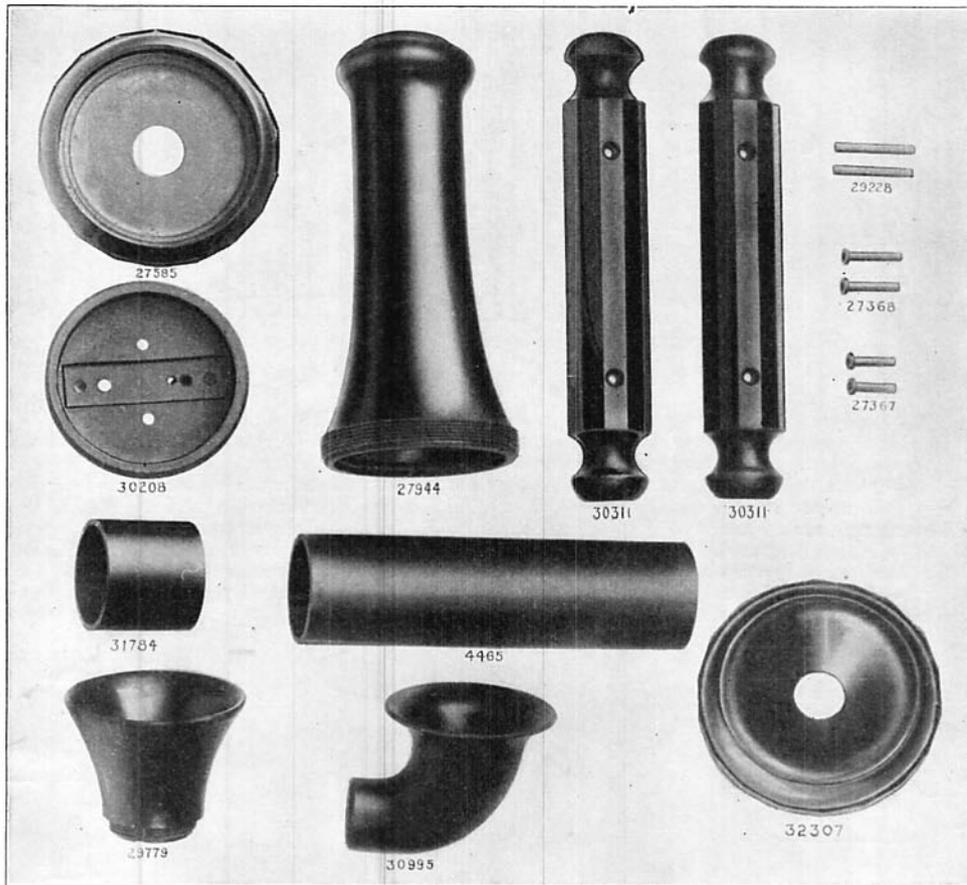
No. 9—Weight, 9 to 11 ounces. For switchboard cords. Steel incased to protect the lead core from becoming battered. The cord pulley is of hard wood, works easily and prevents wear on the cords.

Twenty-eight

Prices on Application

Please Mention Catalogue No. 3A.

KELLOGG BAKELITE



This shows samples of parts made from **KELLOGG BAKELITE**. Listed according to their piece part numbers, they are:

- Piece No. 29779, mouthpiece—used on all telephones, except the Grabaphones.
- Piece No. 31784, sleeve used on Grabaphones.
- Piece No. 30208, shell of operator's receiver.
- Piece No. 27585, ear cap used on all subscriber's receivers, except No. 47.
- Piece No. 30995, mouthpiece used on all Grabaphones.
- Piece No. 4465, sleeve used on desk stands.
- Piece No. 27944, shell for subscriber's receivers.
- Piece No. 30311, handle for Grabaphones.
- Piece No. 32307, ear cap for No. 47 receiver.
- Piece Nos. 27367, 27368, 29228, bushings. All other Bakelite bushings are cut down from these pieces.

**KELLOGG BAKELITE** is made of a new and wonderful insulating material which has a tensile strength of 4,800 pounds to the square inch and will stand a temperature of 572 degrees Fahrenheit. It is insoluble in all solvents and can withstand strong chemicals, oil, hot water and steam.

Receiver shells made of this material are practically indestructible. They do not warp, crack, discolor or strip threads, and always present a neat appearance.

The discovery of this new material has reduced maintenance on telephones to a minimum.

**KELLOGG BAKELITE** is a substance which, in its different forms, offers the advantages of hard rubber, Japanese lacquer and celluloid; having unlimited commercial uses. However, the construction of the new Kellogg products has only to do with **KELLOGG BAKELITE** in its final stage—when it becomes as hard as flint and practically indestructible.

It does not emanate sulphur, like hard rubber, and when subjected to a flame does not suddenly catch fire nor melt like rubber, but simply chars, and finally, at a temperature of melting glass, carbonizes.

It is remarkable that in the formation of Bakelite, two strong smelling liquid substances (carbolic acid and formaldehyde) should, under certain well defined conditions, react chemically upon each other and solidify to a substance entirely devoid of odor or taste.

The Kellogg Company, quick to recognize the merit of Bakelite, installed special machinery for preparing and producing **KELLOGG BAKELITE**, and after a long series of experiments, wherein the product was subjected to every possible test, the new **KELLOGG BAKELITE** specialties were pronounced perfect and have now been on the market three years.

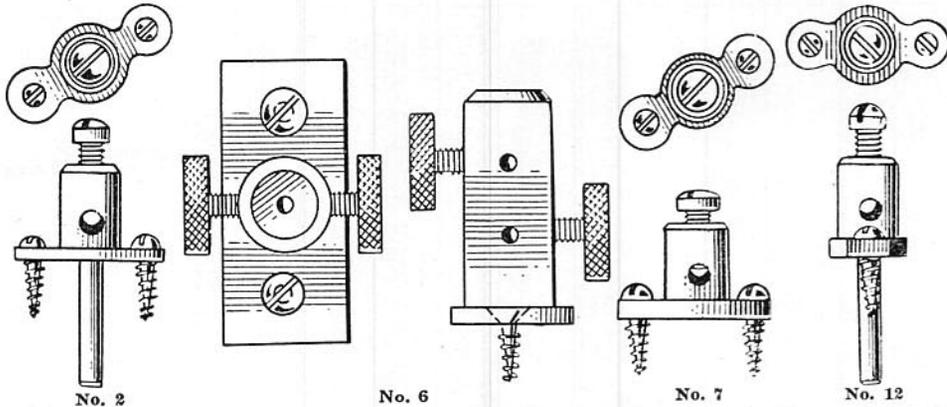
The Receiver Shell is light in weight, artistic in design and of a permanent glossy black which no amount of handling will rob of its luster. This shell is calculated to withstand the severest use and abuse, and at once relieve the telephone company of the hitherto unavoidable expense entailed through breakage. **KELLOGG BAKELITE** operator's receiver shells and transmitter mouthpieces, desk stand and Grabaphone parts are equally efficient.

Prices on Application

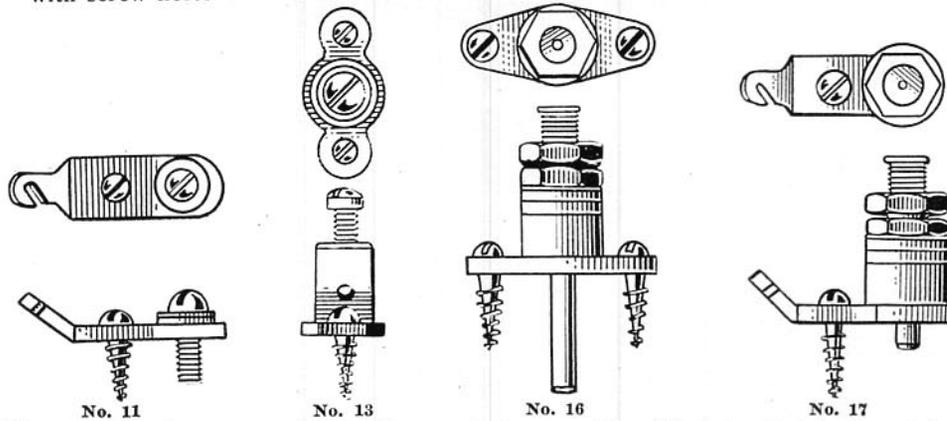
Please Mention Catalogue No. 3A.

Twenty-nine

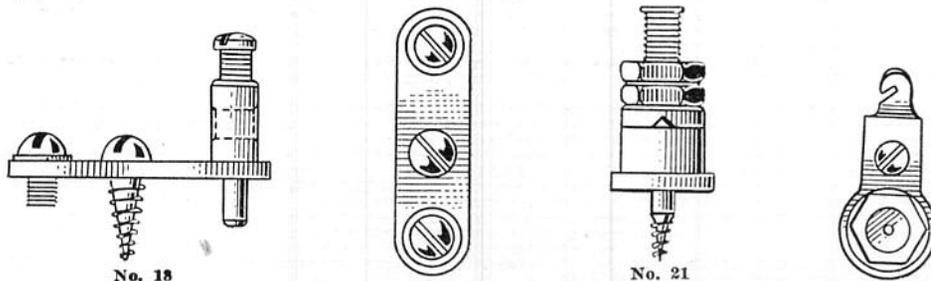
**KELLOGG BINDING POSTS (Cuts Actual Size)**



- No. 2—Telephone binding post; brass; white nickeled. Size of hole No. 28 T. D. G. Mounting screws are two No. 4 x  $\frac{3}{8}$  inch R. H. brass wood screws, plated. Terminal is  $\frac{5}{8}$  inch long by  $\frac{1}{8}$  inch diameter and is tinned for soldering.
- No. 6—Operator's transmitter cord binding post; brass; white nickeled. Size of hole in top and upper hole in side No. 42 T. D. G.; lower hole in side No. 29 T. D. G. Mounting screws are two No. 5 x  $\frac{3}{4}$  inch F. H. brass wood screws, plated.
- No. 7—Connecting rack binding post; brass; white nickeled. Size of hole No. 28 T. D. G. Mounting screws are two No. 4 x  $\frac{3}{8}$  inch R. H. brass wood screws, plated.
- No. 12—Same as No. 2 binding post, except that the hole for cord tip is drilled in line with screw holes in the base.



- No. 11—Telephone concealed binding post; brass; white nickeled. End is tinned for soldering. Mounting screw is No. 5 x  $\frac{1}{2}$  inch R. H. Brass wood screw.
- No. 13—Same as No. 7 binding post, except that the hole for cord tip is drilled in line with screw holes in the base.
- No. 16—Telephone binding post; brass; nickeled and polished. Mounting screws are two No. 4 x  $\frac{1}{2}$  inch R. H. brass wood screws, plated. Terminal is  $\frac{5}{8}$  inch long by  $\frac{1}{8}$  inch diameter and is tinned for soldering.

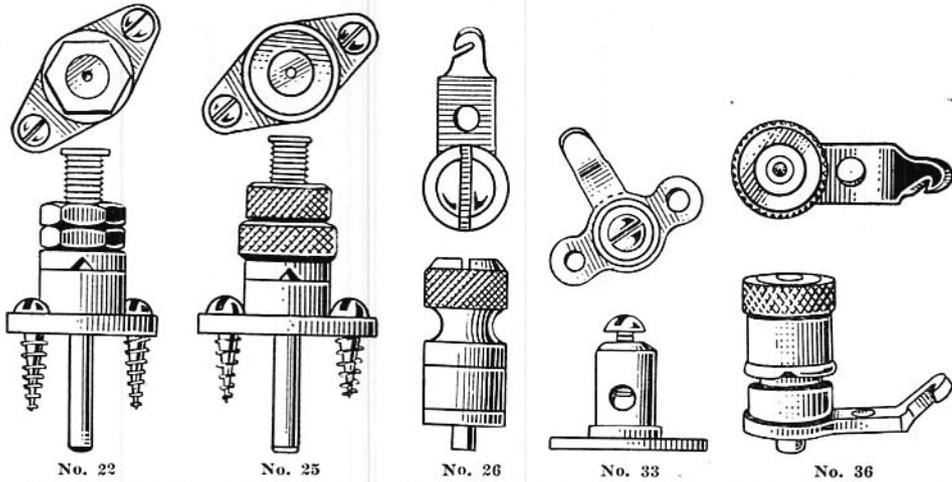


Thirty

Please Mention Catalogue No. 3A.

Prices on Application

**KELLOGG BINDING POSTS (Cuts Actual Size)**



No. 17—Telephone concealed binding post; brass; nicked and polished. Mounting screw is No. 5x½ inch R. H. brass wood screw, plated. Upper end is spun over after assembling; left hand end is tinned for soldering.

No. 18—Connecting rack binding post; brass; white nicked. Mounting screw is No. 6x½ inch R. H. brass wood screw, plated.

No. 19—Telephone binding post; brass; nicked and polished. Size of hole No. 42 T. D. G. Mounting screws are two No. 4x½ inch R. H. brass wood screws, plated. Terminal is ⅝ inch long x ⅛ inch diameter and is tinned for soldering.

No. 21—Telephone concealed binding post; brass; nicked and polished. Mounting screw is No. 5x½ inch R. H. brass wood screw. Upper end is spun over after assembling; left hand end is tinned for soldering.

No. 22—Telephone binding post. Same as No. 19 binding post, except that base is on an angle of 45 degrees.

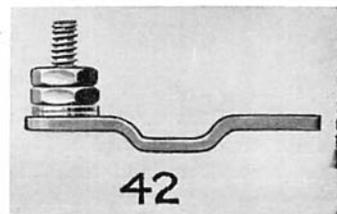
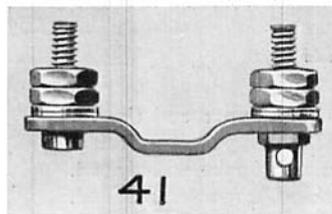
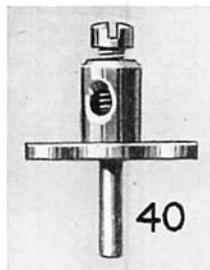
No. 25—Lineman's Test Set binding post; brass; white nicked; also used in railway portable sets. Mounting screws are two No. 4x⅜ inch R. H. brass wood screws, plated. Terminal is ⅝ inch long x ⅛ inch diameter, and tinned for soldering.

No. 26—Telephone concealed binding post; brass; white nicked. Mounting screw is No. 5x½ inch R. H. brass wood screw. Left hand end is tinned for soldering. Nut slotted for screw driver.

No. 29—Same as 16, but terminal post is slotted.

No. 33—Connecting rack binding post; brass. Mounting screws No. 5x½ inch R. H. brass wood screw.

No. 36—Telephone concealed spring binding post; brass; polished. Mounting screw is No. 5x½ inch round head brass wood screw. Upper end is spun over after assembling. Left hand end tinned for soldering. Used also on automobiles.



No. 40—Used with subscriber sets, extension bells and desk set boxes; mounted on wood; used for receivers; nickel plated.

No. 41—Used with subscriber sets; mounted on wood; dull nickel finish.

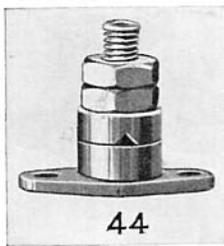
No. 42—Used with subscriber sets; mounted on wood; dull nickel finish.

Prices on Application

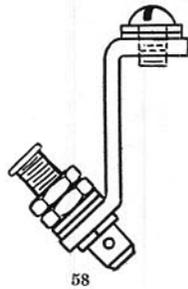
Please Mention Catalogue No. 3A.

Thirty-one

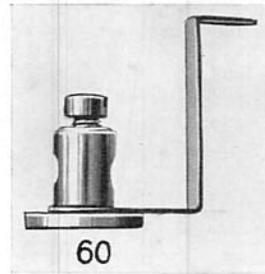
**KELLOGG BINDING POSTS**



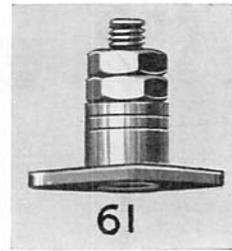
44



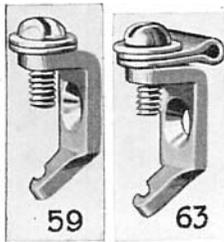
58



60



61

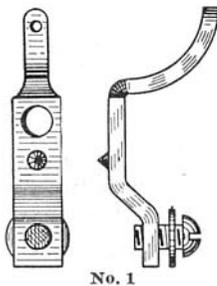


59

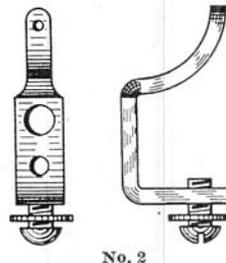
63

- 44—Used with connecting racks; mounted on wood; dull nickel finish.
- 58—Used with subscriber sets; mounted on wood; dull nickel finish.
- 59—Used on new type subscriber sets; mounted on wood; dull nickel finish.
- 60—Used on new type subscriber sets; dull nickel finish.
- 61—Used on connecting racks; brass finish.
- 63—Used on new type subscriber sets; dull nickel finish.

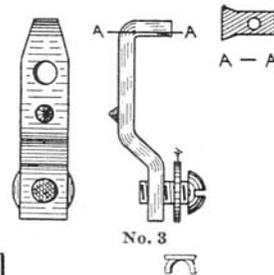
**CORD FASTENERS (Actual Size)**



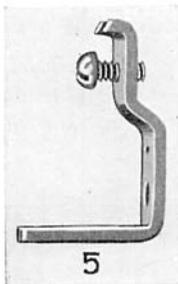
No. 1



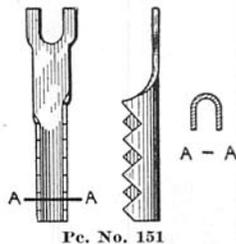
No. 2



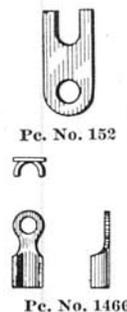
No. 3



5



Pc. No. 151



Pc. No. 152

Pc. No. 1466



Pc. No. 153

Pc. No. 288

- No. 1 cord fastener, No. 12 brass sheet, upper end tinned.
- No. 2 cord fastener, No. 12 brass sheet, upper end tinned.
- No. 3 cord fastener, No. 12 brass sheet, upper end tinned.
- No. 5 cord fastener, No. 12 brass sheet, upper end tinned.
- Pc. No. 151 tip, No. 22 brass sheet.
- Pc. No. 152 cord tip, No. 26 brass sheet.
- Pc. No. 153 cord tip, No. 22 brass sheet.
- Pc. No. 1466 cord tip, No. 24 brass sheet.
- Pc. No. 288 cord tip, No. 30 phosphor-bronze, end tinned.

Thirty-two

Please Mention Catalogue No. 3A.

Prices on Application

**KELLOGG CORD FASTENERS**



Pc. No. 1769



Pc. No. 1813



Pc. No. 1931

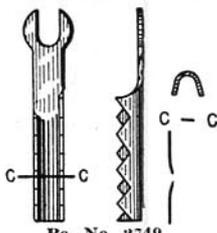


Pc. No. 2734



Pc. No. 2986

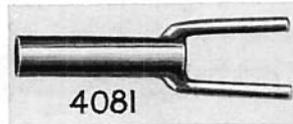
Pc. No. 1769—Cord tip, No. 26 brass sheet  
 Pc. No. 1813—Cord tip, No. 26 brass sheet  
 Pc. No. 2986—Cord tip, No. 25 brass sheet  
 Pc. No. 1931—Cord tip, No. 30 brass sheet  
 Pc. No. 2734—Cord tip, No. 22 brass sheet  
 Pc. No. 2749—Cord tip, No. 24 brass sheet



Pc. No. 2749



3429



4081



Pc. No. 7625



Pc. No. 4928

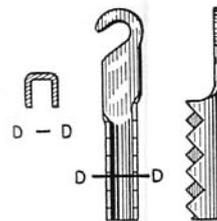


\* 32 DRILL  
 Pc. No. 5006



6028

Pc. No. 3429—Single tip.  
 Pc. No. 4081—Brass—double tip.  
 Pc. No. 4928—Cord tip, No. 22 brass sheet.  
 Pc. No. 6028—Block connector; brass.  
 Pc. No. 5006—Cord tip, brass, nicked and polished.  
 Pc. No. 7625—Cord tip;  $\frac{1}{16}$  inch round brass rod,  $1\frac{1}{4}$  inches long.



Pc. No. 3477



Pc. No. 6069



11196



Pc. No. 12925



11192



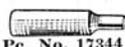
12129



14311



17132



Pc. No. 17344



Pc. No. 17346



22097



31070



Pc. No. 15388

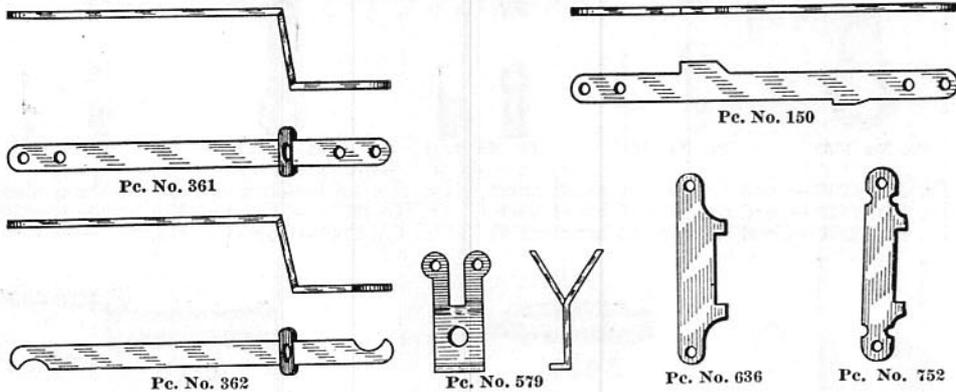
Pc. No. 3477—Cord tip, No. 22 brass sheet.  
 Pc. No. 6069—Cord fastener, No. 22 B. & S. brass sheet.  
 Pc. No. 11192—Brass terminal fastener; used on Desk Stand Cord.  
 Pc. No. 11196—Brass terminal fastener; used on receiver cord.  
 Pc. No. 12129—Brass terminal fastener; used on Desk Stand cord.  
 Pc. No. 12925—Terminal, No. 26 tinned brass sheet,  $\frac{1}{16}$  inch wide,  $\frac{1}{16}$  inch long.  
 Pc. No. 14311—Brass terminal fastener; used on relays.  
 Pc. No. 15388—Connector, No. 8 tinned brass; used with No. 36 binding post.  
 Pc. No. 17132—Brass terminal fastener; used on cords.  
 Pc. No. 17344—Cord tip;  $\frac{3}{8}$  inch round brass rod,  $\frac{5}{8}$  inch long.  
 Pc. No. 17346—Cord tip;  $\frac{3}{8}$  inch round brass rod,  $\frac{3}{4}$  inch long.  
 Pc. No. 22097—German silver H. H. terminal fastener; used on condensors.  
 Pc. No. 31070—Brass terminal fastener; used on cords.

Prices on Application

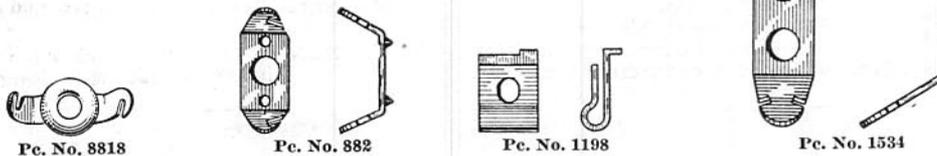
Please Mention Catalogue No. 3A.

Thirty-three

**KELLOGG CONNECTORS (Actual Size)**

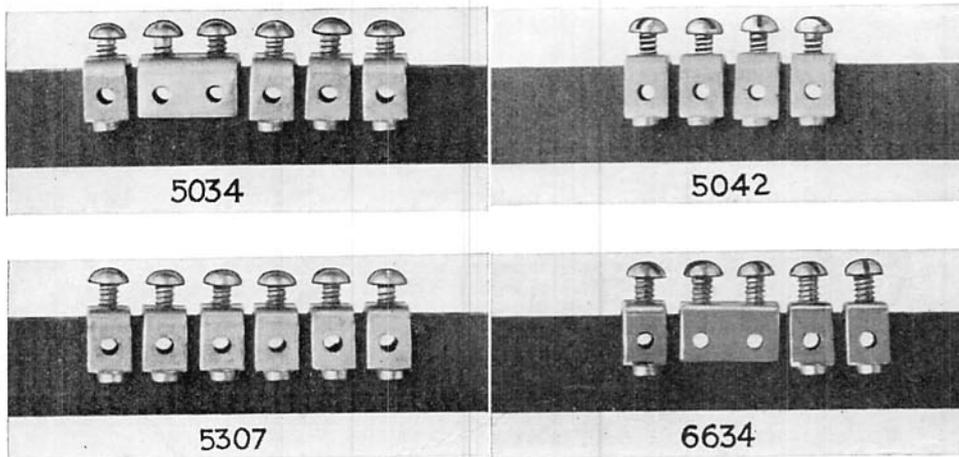


- Pc. No. 150—Connecting rack punching, No. 20 brass sheet.  
 Pc. No. 361—Connecting rack punching, No. 22 brass sheet.  
 Pc. No. 362—Connecting rack punching, No. 18 brass sheet.  
 Pc. No. 579—Coil terminal, No. 22 brass sheet.  
 Pc. No. 636—Terminal strip connector, No. 22 brass sheet, both ends tinned.  
 Pc. No. 752—Terminal strip connector, No. 22 brass sheet, both ends tinned.



- Pc. No. 882—Coil terminal, No. 20 brass sheet.  
 Pc. No. 1198—Connecting rack terminal to bind cord tip Pc. No. 1578, or Pc. No. 5006, No. 22 brass sheet. This piece is not silver dipped.  
 Pc. No. 1534—Special terminal, No. 20 brass sheet.  
 Pc. No. 8818—Connector, No. 20 soft brass sheet.

**CONNECTING RACKS (Desk Stand)**



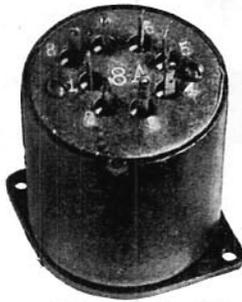
- No. 5034—Mounting block assembled; hard rubber; used on desk stand.  
 No. 5042—Connecting rack assembled; hard rubber; used on desk stand.  
 No. 5307—Connecting rack assembled; hard rubber; used on desk stand.  
 No. 6634—Connecting rack, assembled; hard rubber; used on desk stand.

Thirty-four

Please Mention Catalogue No. 3A.

Prices on Application

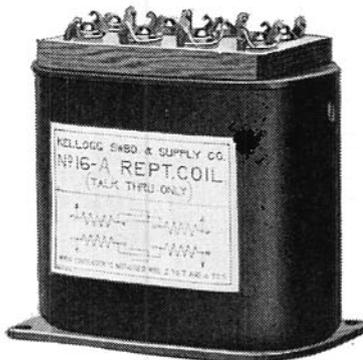
## KELLOGG COILS, REPEATING



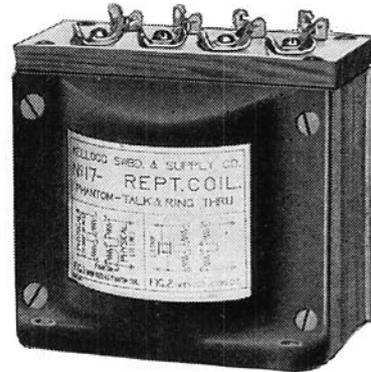
No. 8-A Repeating Coil

In magneto switchboards where two clearingout drops are used, and condensers inserted in the tip and sleeve of the cord circuit to prevent ringing-through and hang-up trouble, the repeating coils, used to connect grounded lines to metallic lines, and local lines to toll lines, should be constructed so as to prevent ringing current from passing inductively from one winding to the other, while the high frequency voice currents pass with only a slight loss.

The No. 8-A coil meets these requirements, being a talk through coil and used in double supervisory cord circuits.



16-A

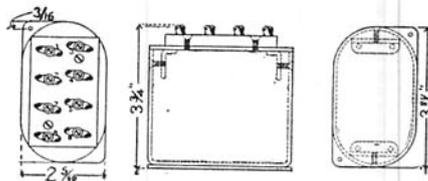


17-A

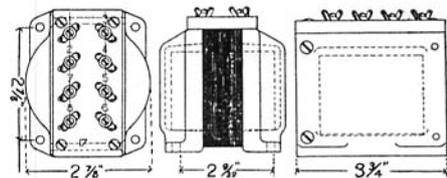
The conditions under which repeating coils are used vary greatly according to local requirements. The Kellogg Switchboard & Supply Company has recently developed two new repeating coils which meet all the requirements of modern telephone practice.

The No. 16-A repeating coil shown above is the most efficient on the market for talking purposes. The mounting centers and dimensions of this coil are given below.

No. 17-A coil also shown above is the ring-through type and is as efficient for talking as the No. 16-A type. Below are also shown the dimensions and mounting centers of the No. 17-A type coil.



Dimension No. 16-A



Dimension of 17-A Repeat Coil

### CONNECTIONS OF REPEATING COILS

No. 16-A repeating coil has four windings. The resistance between terminals 1 and 2 is 20 ohms; 3 and 4, 16 ohms; 5 and 6, 20 ohms, and 7 and 8, 16 ohms.

No. 17-D repeating coil, or insulating transformer, is similar to the No. 17-A coil. This 17-D coil is used with the Kellogg No. 1 Electric Light current converter, and with the No. 25-A pole changer.

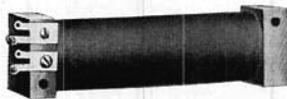
No. 17-A coil consists of four parallel windings of 26 ohms each. For switchboard or phantom work no more efficient piece of apparatus has ever been designed. With two of these coils a grounded phantom may be obtained from a metallic line and with four coils a metallic phantom may be secured from two metallic lines. This coil should be used in all single supervisory cord circuits and wherever it is necessary to connect metallic and grounded lines.

Prices on Application

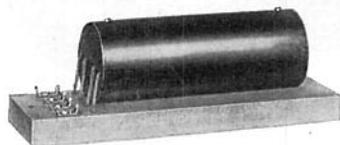
Please Mention Catalogue No. 3A.

Thirty-five

KELLOGG COILS, RETARDATION



Code No. 8			Code No. 9			Code No. 10		
Code No.	Type	Terminals	Winding	Resistance	Remarks			
8A	Open	2	Single	100 ohm	Used standard for C. B. Sub. sets.			
8B	Open	2	Single	200 ohm				
8C	Open	2	Single	350 ohm				
8D	Open	2	Single	30 ohm				
8E	Open	2	Single	500 ohm				
8F	Open	2	Single	400 ohm				
8G	Open	2	Single	200 ohm C. S.				
				800 ohm G. S.				
9A	Open	2	Single	25 ohm				
9B	Open	2	Single	150 ohm				
9C	Open	2	Single	200 ohm	Cross talk proof.			
10A	Closed iron encased	2	Single	500 ohm				
10B	Closed iron encased	2	Single	100 ohm				
10C	Closed iron encased	2	Single	200 ohm				
10D	Closed iron encased	2	Single	1000 ohm				
10E	Closed iron encased	2	Single	300 ohm				
10F	Closed iron encased	2	Single	1800 ohm C. S.				
				700 ohm G. S.				
10G	Closed iron encased	2	Single	30 ohm				
10H	Closed iron encased	2	Single	40 ohm				
10J	Closed iron encased	2	Single	1800 ohm C. S.				
				200 ohm G. S.				
10K	Closed iron encased	2	Single	50 ohm				
10L	Closed iron encased	2	Single	70 ohm				
10M	Closed iron encased	2	Single	150 ohm				
10N	Closed iron encased	2	Single	250 ohm				
10P	Closed iron encased	2	Single	175 ohm				



Code No. 11			Code No. 14			Code No. 15				
Code No.	Type	Terminals	Winding	Resistance	Remarks					
11A	Closed	4	2 parallel on one spool	60 ohm	For duplexing.					
12A	Closed	4	2 on two spool	15 ohm	For use in connection with composite telegraph circuits, and for this purpose is usually connected non-inductively. Used by Postal Telegraph Company.					
12B	Closed	4	2 on two spool	15 ohm						
				25 ohm						
12B	Closed	4	2 on two spool	25 ohm	Cross talk proof. Similar to No. 14, but enclosed.					
13A	Closed	2	Single	1000 ohm						
13B	Closed	2	Single	200 ohm						
14A	Closed iron encased	4	2 concentric coils	250 ohm						
				250 ohm						
14B	Closed iron encased	4	2 concentric coils	100 ohm				Arranged for mounting in iron cross-talk proof strips. Used in intercommunicating systems to feed battery to the several instruments.		
14C	Closed iron encased	4	2 concentric coils	100 ohm						
				25 ohm						
				25 ohm						
14D	Closed iron encased	4	2 concentric coils	10 ohm						
14E	Closed iron encased	4	2 concentric coils	10 ohm						
14F	Closed iron encased	4	2 concentric coils	500 ohm						
				500 ohm						
14G	Closed iron encased	4	2 concentric coils	50 ohm						
				50 ohm						
14G	Closed iron encased	4	2 concentric coils	150 ohm	Arranged to mount in common battery sub-sets, in series with transmitter. Kellogg C. B. retard coil circuit.					
15A	Open	2	Single	150 ohm						
				25 ohm	Used in No. 39 type C. B. desk sets.					
16A	Open	2	Single	33 ohm						
16R	Open	2	Single	100 ohm						
16C	Open	2	Single	4.5 ohm						
17A	Open	4	No. 1 and No. 2 concentric	100 ohm						
				100 ohm	Same size as No. 28C induction coil. Owing to the fact that the two windings are concentric the winding is not "balanced."					

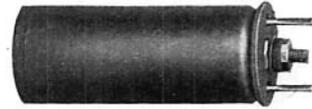
**KELLOGG COILS, RETARDATION**



Code No. 16



Code No. 18

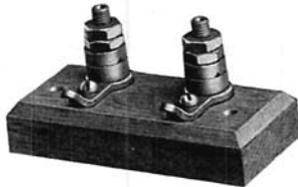


Code No. 21

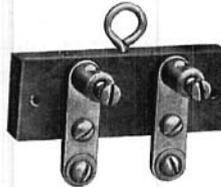
Kellogg retardation coils are built of best quality wire cores, of proper size, both silk and enamel insulated wire being used in different coils for different purposes. End blocks, connectors and covers put on to stay. **Use Is The Test.**

Code No.	Type	Terminals	Winding	Resistance	Remarks
18A	Open	2	Single	25 ohm	4 party line coll.
18B	Open	2	Single	80 ohm	
18C	Open	2	Single	200 ohm	
19A	Open	4	Induct. Non-ind.	25 ohm C. S. 5000 ohm G. S.	
20 type replaced by coded relay coils, single.					
21A	Closed	2	Single	350 ohm	These coils have a closed magnetic field and exceedingly high impedance, arranged iron strips.
21B	Closed	2	Single	100 ohm	
21C	Closed	2	Single	30 ohm	
21D	Closed	2	Single	2000 ohm	
21E	Closed	2	Single	500 ohm	
21F	Closed	2	Single	.32 ohm	
21G	Closed	2	Single	50 ohm	
21H	Closed	2	Single	1000 ohm	
21J	Closed	2	Single	300 ohm	
21K	Closed	2	Single	1500 ohm	
21L	Closed	2	Single	200 ohm	

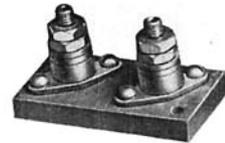
**CONNECTING RACKS**  
ONE-HALF ACTUAL SIZE



Code No. 1



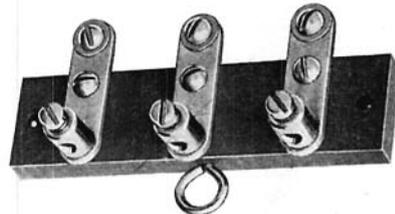
Code No. 2



Code No. 8



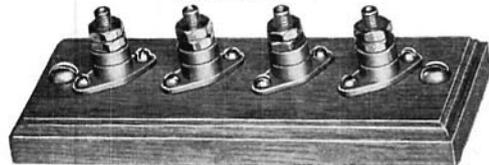
Code No. 5



Code No. 4



Code No. 10



Code No. 7

Code No.	No. of Posts	Binding Post Code	Size of Mounting Block	Material of Mounting Block
1	2	21	1½ in. x 2¼ in.	Maple
2	2	18	¾ in. x 2¾ in.	Red Fibre
4	3	18	¾ in. x 3¾ in.	Hard Rubber
5	4	7	1 in. x 3½ in.	Maple
7	4	44	2 in. x 5 in.	Oak
8	2	61	2 in. x 1 in.	Red Fibre
10	4	44	3½ in. x 1 in.	Black Fibre

Prices on Application

Please Mention Catalogue No. 3A.

Thirty-seven

## KELLOGG COILS, INDUCTION



No. 28C Induction Coil



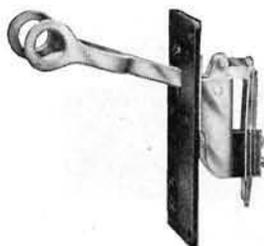
No. 20A Induction Coil



No. 52A Induction Coil



No. 14C Induction Coil



No. 95 Hook Switch



No. 88 Number Plate



No. 10 Number Plate

Thirty-eight

### Local Battery

The No. 28C Kellogg Induction Coil has been designed to give maximum efficiency both in talking and receiving. Terminals are arranged for either soldered or screw connections. Dimension—length over all  $4\frac{1}{4}$  inches, heads 1 inch square.

The No. 20A Coil is intended for use in connection with extension sets or in other places where the coil must be mounted outside of the telephone. It consists of No. 28C Induction Coil mounted on an oak block with six binding posts.

### Common Battery

The No. 52A Kellogg Induction Coil is designed for use in Kellogg common battery telephones, greatly improving transmission efficiency.

### Switchboard Induction Coils

The No. 14A Induction Coil is used with gravity cells and No. 55L Transmitter. A coil designed to insure the highest possible grade of transmission.

Dimensions—Width 2 inches, length 6 inches.

The No. 14C Induction Coil is of the same construction as No. 14A but used in connection with No. 55C Transmitter and three dry batteries. (See description of this equipment under transmitters, page No. 52.)

### Hook Switch

No. 95 is a reliable hook switch for magneto telephones. Springs of heavy German silver with steel reinforcing spring. Hook is punched brass, handsomely nickered, and is easily removable. The entire assembly is mounted on a heavy plate which, in turn mounts on the telephone with four screws.

### Number Plates

No. 88 fastens to front of transmitter with two of the screws used in fastening the front into the back cup. Complete with paper and celluloid.

No. 10 switchboard number plate. Stamped German silver oxidized and lacquered. Fastens to Kellogg drop shutters by means of small metal ears which bend into slots provided for the purpose in the shutter. In ordering specify numbers wanted.

For standard No. 1 to 500 only.

Special numbers or letters if desired.

Prices on Application

Please Mention Catalogue No. 3A.

**KELLOGG CONDENSERS**



Code No. 12—1 M. F.  
Dimensions No. 12, height including terminals  $4\frac{1}{2}$  in., Width, 2 in., Thickness  $25/32$  in.

The common battery telephone necessarily uses a condenser which prevents the flow of direct current and permits the flow of alternating current through the ringer.

The condenser also plays an important part in cord circuits, providing a clean talking path between the subscribers, and preventing confusion.

No. 12 or No. 16 condenser is especially suitable for this purpose.



Code No. 16—2 M. F.  
Dimensions No. 16, Height including terminals  $4\frac{1}{2}$  in., Width,  $2\frac{1}{8}$  in., Thickness  $1\frac{1}{8}$  in.



Code No. 28— $\frac{1}{2}$  M. F.  
Dimensions No. 28, Height including terminals  $2\frac{47}{64}$  in., Width,  $1\frac{1}{4}$  in., Thickness,  $\frac{3}{4}$  in.

Our No. 28 condenser having one-half M. F. capacity, with a minimum resistance of 10,000 ohms is used in the receiver circuit. This allows the telephone receiver to be off the hook without crippling the ringing service on heavily loaded lines.

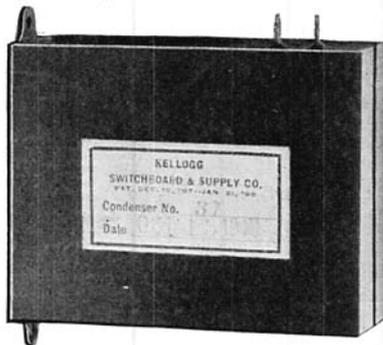


Code No. 24.  
Dimensions No. 24 and No. 25, Height,  $2\frac{3}{4}$  in., and Width,  $2\frac{1}{8}$  in.  
No. 24 is  $\frac{1}{2}$  M. F. and No. 25 is 1 M. F.

The latest and most important use for condensers is in the magneto switchboard cord circuit.

By the use of condensers, the calling and answering subscribers have control of their respective signals. Condenser No. 37 is used for this purpose.

Dimensions No. 62, Height, including terminals  $3\frac{5}{8}$  in., Width,  $1\frac{1}{2}$  in., Thickness,  $1\frac{1}{32}$  in., Capacity, 2 M. F.  
Dimensions No. 78, Height including terminals  $3\frac{5}{8}$  in., Width,  $1\frac{1}{2}$  in., Thickness,  $1\frac{1}{32}$  in., Capacity, 1 M. F.



Code No. 37—1 M. F.  
Dimensions No. 37, Height including terminals  $2\frac{3}{4}$  in., Width, 3 in., Thickness 1 in.

Our pole changer for harmonic ringing makes use of the condenser for the purpose of killing the spark which ensues at the contact of the primary interrupters.

Many power circuit arrangements use the condenser for destroying the destructive arc which ensues when the switches are opened. Our Nos. 24 and 25 are especially adapted for this purpose.

The workmanship in these condensers is the very best and the material of strictly the highest grade. Kellogg condensers stand up under great electrical stress. It is well known that where an ordinary condenser fails, the Kellogg condenser takes its place and prevents further trouble.

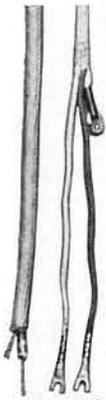
All Kellogg condensers are given a capacity and break-down test.

Prices on Application

Please Mention Catalogue No. 3A.

Thirty-nine

**KELLOGG CORDS, SWITCHBOARD AND TELEPHONE**



No. 304A

Kellogg cords are manufactured from the best obtainable material by skilled workmen and under the most rigid factory inspection. The problem of cord maintenance in the telephone exchange is an important one. These cords solve it.

**SWITCHBOARD CORDS**

**Two Conductor—Steel and Tinsel**

No. 304-A—This cord consists of two spiral steel conductors wrapped over braided tinsel, making an almost perfect cord. The round steel conductors are practically unbreakable, giving the cord a wonderfully long life, while the tinsel lowers the resistance of the steel conductors, making a most satisfactory cord from a transmission standpoint.

The outer braids are stitched together, preventing them from fraying out and pulling back, should they become worn through from long use.

These cords furnished in 24 to 96-inch lengths.

**Three Conductor—Steel and Tinsel**

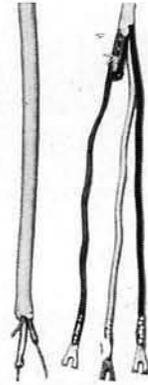
No. 303-A—Same construction as No. 304-A, but three conductor.

**Two Conductor—All Tinsel**

No. 301-A—An all tinsel cord manufactured from the best materials. Not as durable as our round steel and tinsel construction described above, but a thoroughly dependable cord for those desiring an all tinsel cord.

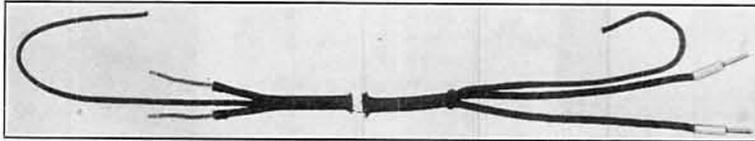
**Three Conductor—All Tinsel**

No. 309-A—Same construction as No. 301-A, but three conductor.  
 Note.—The above cords are carried in stock to fit standard two and three conductor Kellogg plugs. We can furnish them to fit any make of plug if sample plug is submitted with order. These cords come in the standard lengths: 24, 36, 48, 60, 72, 84 and 96-inch.



No. 303A

**KELLOGG RECEIVER CORDS**



These cords are made up of conductors of the finest tinsel covered with a double insulation and with a green spun silk, mercerized cotton or worsted maroon and black outside braid.

**Code No. 98 Receiver Cords**

Light weight cords with letter "A" following the code number have eighteen strands of tinsel to each conductor, while heavy cords with the letter "B" following the code number have twenty-four strands of tinsel.

Moisture-proof cords have a special moisture-proof braid over each conductor. These cords are especially desirable for use in places where the telephone is subjected to unusual moisture conditions.

**Two Conductor Receiver Cords—Light**

No. 96-A—Worsted maroon and black. No. 98-A—Green silk.  
 No. 1096-A—Worsted maroon and black, moisture-proof. No. 1098-A—Green silk, moisture-proof.

**Two Conductor Receiver Cords—Heavy**

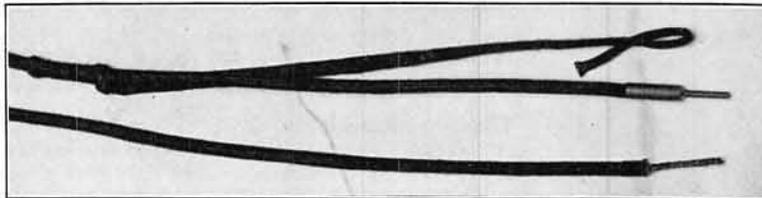
No. 96-B—Worsted maroon and black. No. 98-B—Green silk.  
 No. 1096-B—Worsted maroon and black, moisture-proof. No. 1098-B—Green silk, moisture-proof.

**Two Conductor Cotton Receiver Cords**

Code No. 250—This cord is of the light type with mercerized green cotton braid and is made for those wishing a cheaper cord than those listed above.

Note.—All above cords are furnished with pin tips per illustration. We can furnish any arrangement of tips desired.

**TRANSMITTER CORDS**



**Code No. 35 Transmitter Cords**

**KELLOGG TELEPHONE TRANSMITTER CORDAGE**

This cordage is made up of 15 parallel strands of No. 30 copper wire covered with a wrapping of silk and a red and blue cotton braid. Used in telephone transmitter arms, for wiring transmitter in desk stands, etc.

**SWITCHBOARD TRANSMITTER CORDS**

No. 35-B—72-inch green silk solid pin tips, both ends.

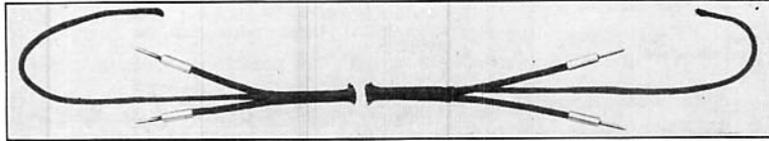
No. 1035-B—72-inch green silk solid pin tips, moisture-proof.

## KELLOGG CORDS, DESK STAND

Kellogg desk stand cords are made up of conductors of the finest tinsel covered with a double insulation. The conductors are twisted together with a filler of jute and a green silk braid over all. This construction gives a very smooth and flexible cord as well as great durability.

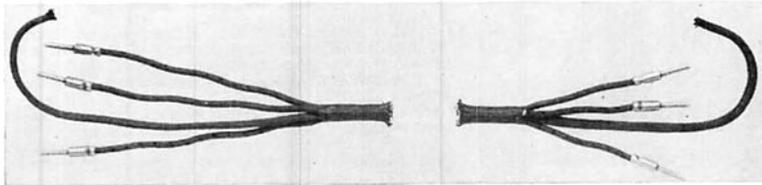
Light weight cords with the letter "A" following the code number each have eighteen strands of tinsel to the conductor, while heavy cords with the letter "B" following the number have twenty-four strands.

Moisture-proof cords have a special moisture-proof braid over each conductor, making them especially desirable for use in places where the telephone is subjected to much dampness, such as meat markets, ice houses, etc. All Kellogg telephones are regularly furnished with moisture-proof cords.



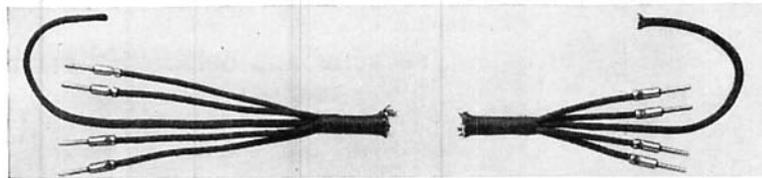
**Two Conductor Desk Stand Cords—Light. Code No. 100A**  
Code No. 100-A, length 72-inch. Code No. 1100-A, length 72-inch, moisture-proof.

**Two Conductor Desk Stand Cords—Heavy**  
Code No. 100-B, length 72-inch. Code No. 1100-B, length 72-inch, moisture-proof.



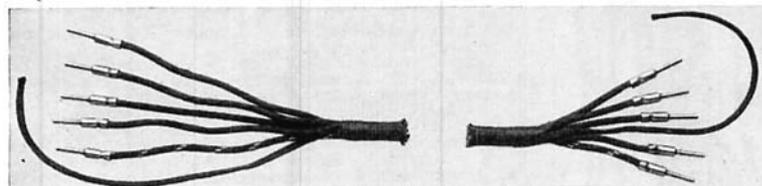
**Three Conductor Desk Stand Cords—Light. Code No. 101A**  
Code No. 101-A, length 72-inch. Code No. 1101-A, length 72-inch, moisture-proof.

**Three Conductor Desk Stand Cords—Heavy**  
Code No. 101-B, length 72-inch. Code No. 1101-B, length 72-inch, moisture-proof.



**Four Conductor Desk Stand Cords—Light. Code No. 102A**  
Code No. 102-A, length 72-inch. Code No. 1102-A, length 72-inch, moisture-proof.

**Four Conductor Desk Stand Cords—Heavy**  
Code No. 102-B, length 72-inch. Code No. 1102-B, length 72-inch, moisture-proof.



**Five Conductor Desk Stand Cords—Light. Code No. 103A**  
Code No. 103-A, length 72-inch. Code No. 1103-A, length 72-inch, moisture-proof.

**Five Conductor Desk Stand Cords—Heavy**  
Code No. 103-B, length 72-inch. Code No. 1103-B, length 72-inch, moisture-proof.

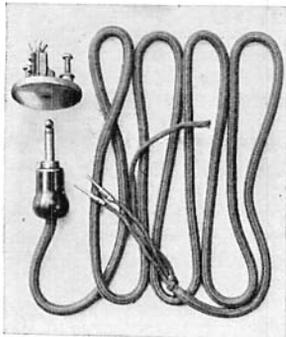
Prices on Application

Please Mention Catalogue No. 3A.

Forty-one

## PLUGS, JACKS, AND CORDS; OPERATORS

### Light Two Conductor Operator's Cord



No. 24 Jack      No. 31 Plug  
No. 26 Cord

- No. 237 Tinsel, length 72 inches. Conductors of copper tinsel with double insulation and covered with an outer braid of green spun silk. Cord is filled with strands of jute, making it very smooth and flexible. No. 75 Plug or No. 31 Plug with adapter.

### Light Two Conductor Operator's Cord

- 114 Steel and tinsel, length 72 inches. This cord is designed for those desiring a more durable cord than the No. 237. Construction is practically the same as our two conductor switchboard cord but outer braid is of green spun silk. Used with No. 75 Plug or No. 31 with adapter.
- 110 Light weight two conductor green silk cord used with No. 131 plug.

### Heavy Two Conductor Operator's Cord

- 26 Tinsel, 72-inch. A heavy green silk cord made to fit Kellogg No. 31 plug without adapter. The plug end is filled with strands of jute making a very smooth and satisfactory cord.

### Four Conductor Operator's Cords for Breast Plate Sets

#### Used with No. 25 Plug

- 67 68-inch. Braid over all. Made up of four conductors of copper tinsel, each having a double insulation and covered overall with a green spun silk braid. Cordage is twisted and filled making a very smooth and flexible cord.
- 67 68-inch. Plaited without outer braid. Construction is same as the No. 67 cord above, except that each conductor is covered with a green silk braid and the four are plaited together. Preferred by some on account of lightness and greater flexibility. Similar to No. 111 cord illustrated.
- 111 68-inch, plaited without outer braid. Same construction as No. 67 plaited cord, but used with No. 131 plug.
- 111 68-inch, plaited without outer braid. Construction is same as 67 cord, but used with 145 plug and 43 jack.
- 110 72-inch light weight, 2 conductor green silk cord. Used with No. 43 jack and No. 146 plug.

Note.—Above cords are for standard Kellogg plugs; cords will be furnished for any other make of plug if sample plug is submitted with order.

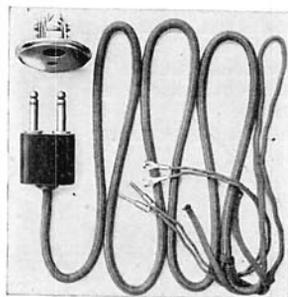
### SWITCHBOARD OPERATOR'S PLUGS

#### Used with Above Cords

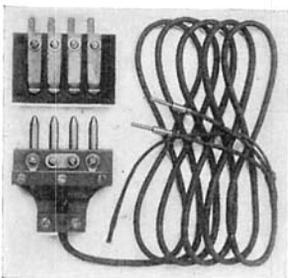
- 31 Two Conductor fits No. 24 jack and No. 26 cord.
- 75 Two Conductor same as No. 31 with adapter to take light weight operator's cord, No. 237 or No. 114 cord.
- 25 Four Conductor. Used with breast plate operator's sets. Fits No. 57 jack.
- 145 Four Conductor. Used with No. 43 jack.
- 146 Same as above except with jumper across 2 middle conductors, for 2 conductor cords.
- 131 Five Conductor. Used with No. 291 jack. May be used as two, four or five conductor. Similar to No. 145 but has 5 prongs.

### SWITCHBOARD OPERATOR'S JACKS

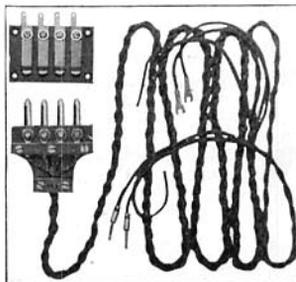
- 24 Two Conductor, face diameter  $1\frac{7}{8}$  inches, uses No. 31 or No. 75 plug.
- A two conductor jack used on switchboards. Handsomely nickel-plated. Mounts from the back. Has contact to open battery circuit when plug is withdrawn.
- 57 Four Conductor, face diameter 2 inches.
- Used with No. 25 plug on breast plate transmitter sets. Has one make contact to close transmitter battery when plug is inserted. Handsomely nickel-plated.
- 43 Four Individual Conductors, face dimensions  $2\frac{1}{4} \times 1\frac{1}{2}$  inch.
- Used with No. 145 or 146 plug. Mounts under key shelf. Constructed with special hard rubber frame.
- 291 Five Individual Conductors, face dimensions  $2\frac{1}{4} \times 1\frac{1}{2}$  inch.
- Used with No. 131 plug for either two, four or five conductor. A flat jack which mounts out of sight under key shelf or table. When used with two conductor jack the transmitter battery is connected to two of the springs which are shortened by insertion of the plug.



No. 57 Jack      No. 25 Plug  
No. 67 Cord



No. 43 Jack      No. 146 Plug  
No. 110 Cord



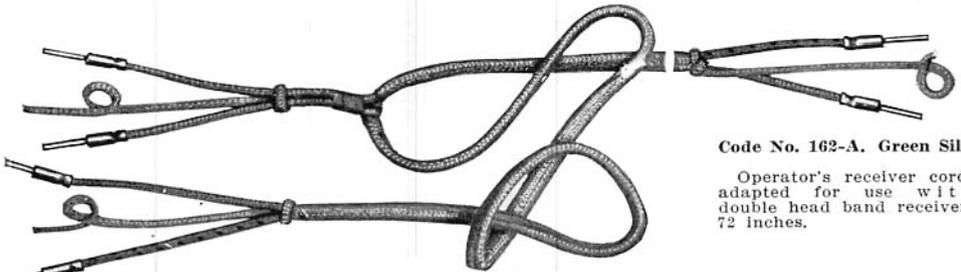
No. 43 Jack      No. 145 Plug  
No. 111 Cord

**KELLOGG LONG SERVICE RAILWAY RECEIVER CORDS**



**Code No. 242-B. Black and Maroon, Mercerized Cotton**

Special heavy waterproof cord for exposure to outside locations in booths, mine sets, etc. Has a strong stay cord running through the entire length. 36 inches.



**Code No. 162-A. Green Silk**

Operator's receiver cord, adapted for use with double head band receiver. 72 inches.



**Code No. 278-B. Black and Maroon, Mercerized Cotton—Steel Clad**

Extra special waterproof cord, steel clad, each conductor being wound with a spiral of steel piano wire, so as to protect the copper tinsel and to prevent kinking. The finest product on the market today. 36 inches.



**Code No. 248-B. Black and Maroon, Mercerized Cotton**

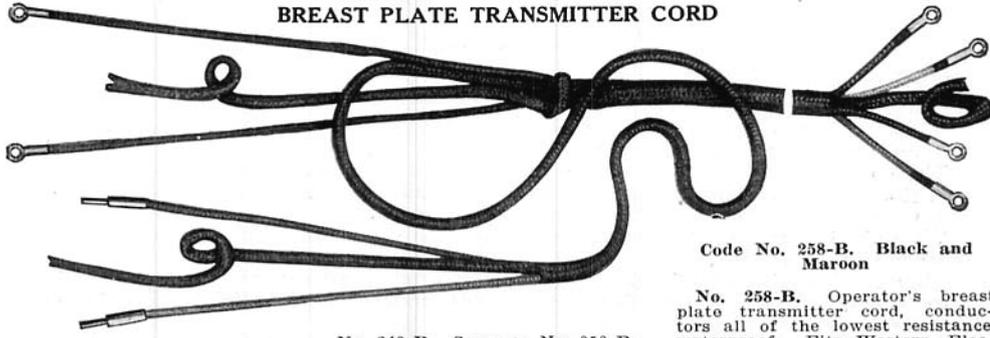
Mercerized cotton, tinsel clad. Same as No. 242-B, except terminals. 36 inches.



**Code No. 168-B. Black and Maroon**

Spade tips on one end, pin tips on the other end, waterproof. 36 inches.

**BREAST PLATE TRANSMITTER CORD**



**Code No. 258-B. Black and Maroon**

No. 258-B. Operator's breast plate transmitter cord, conductors all of the lowest resistance, waterproof. Fits Western Electric equipment. 72 inches.

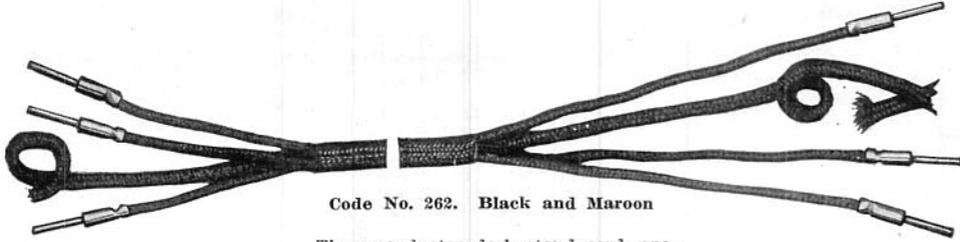
No. 240-B. Same as No. 258-B, but fits Kellogg equipment. 72 inches.

Prices on Application

Please Mention Catalogue No. 3A.

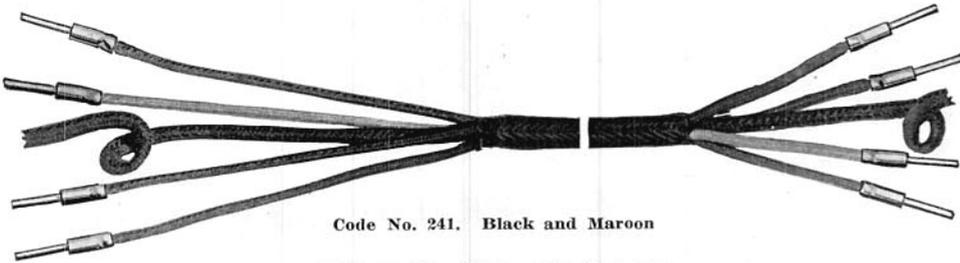
Forty-three

**KELLOGG LONG SERVICE RAILWAY DESK STAND CORDS**



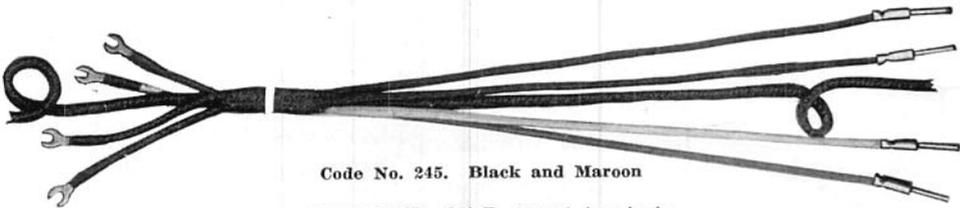
**Code No. 262. Black and Maroon**

Three-conductor desk stand cord, special heavy tinsel conductors, two of which are equipped with 15 strands each of No. 35 tinned soft drawn copper wire. These two conductors are inserted in the battery or transmitter circuit. Moisture proof. 72 inches. Fits Kellogg equipment.



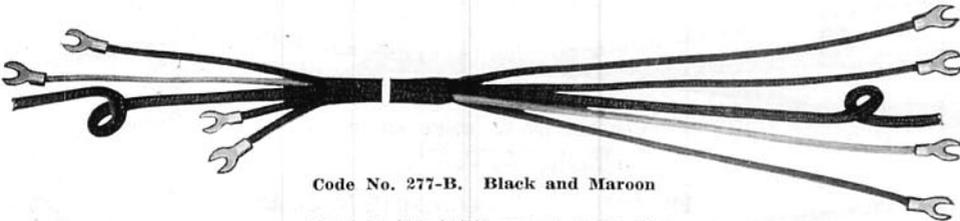
**Code No. 241. Black and Maroon**

Same as No. 262-B, only four conductors. 72 inches. Fits Kellogg equipment.



**Code No. 245. Black and Maroon**

Same as No. 241-B, except terminals. Fits Western Electric equipment. 72 inches.



**Code No. 277-B. Black and Maroon**

Same as No. 241-B, except spade tips all eight ends. 72 inches.

**General Information**

We can furnish any tip or length of terminal desired, so that our customers can fit any style instrument they may be using.

The cords described are mostly of mercerized cotton braid, and black and maroon in color. For railway purposes we cannot recommend green silk braid, as it does not wear satisfactorily, and is expensive.

We only list and recommend the material and equipment having the least maintenance cost in service.

The cords on this and the preceding page are types we can recommend to railway dispatchers, for the reason that these cords endure most satisfactorily the most strenuous service required.

Submit sample cord or plug when special cords or special tips are desired for other make plugs.

Forty-four

Prices on Application

**Please Mention Catalogue No. 3A.**

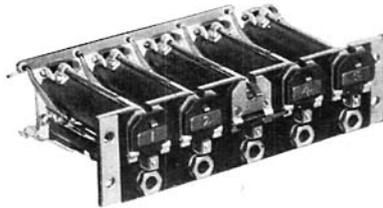
**KELLOGG COMBINED SELF RESTORING DROPS AND JACKS**

The Kellogg Combined Drop and Jack is extremely sensitive and will fall reliably with a minimum of current; will give a good clean rattle and its mechanism is designed so drop will restore reliably, no matter how badly plug may be worn.

The Jack springs catch the plug firmly and are so tempered as to give fine service on the busiest toll and rural lines. All iron work is permanently protected against rust and scaling.



10 Per Strip



5 Per Strip

**No. 101 Combined Drops and Jacks.**

A drop and jack that will cause you no trouble. Practically no burn-outs—the record is one in each five hundred and forty years of drop service.

Code No.	Resistance	Code No.	Resistance
101-A	100 ohms	101-D	1600 ohms
101-L	300 ohms	101-E	500 ohms
101-C	1000 ohms		

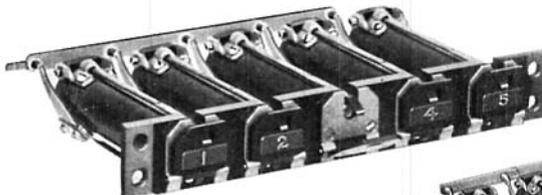
Mounting strips are included without extra charge, where at least three Drops and Jacks are ordered on a five per strip mounting, and at least six on a ten per strip mounting.

In ordering give board number if Kellogg, otherwise name of manufacturer and dimensions of present mountings.

**DROPS—RING OFF**

**For Magneto Switchboard Cord Circuits**

The Kellogg ring-off drops or “clearing-out drops” as they are sometimes called, are similar in design and embody all points of excellence found in the Kellogg line drops. They are sensitive. Shutters are forced to fall. Drops are of rust-proof construction and are fitted with contacts for night alarm or pilot lamp signals, the same as are the drops used in the line circuits.



5 Per Strip



8 Per Strip

**No. 51 Ring Off Drops.**

Code No.	Resistance
51-E	500 ohms

Mounting strips are included without extra charge where at least three Drops and Jacks are ordered on a five per strip mounting, and at least six on a ten per strip mounting.

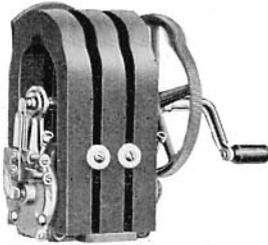
In ordering give board number if Kellogg, otherwise name of manufacturer and dimensions of present mountings.

Prices on Application

Please Mention Catalogue No. 3A.

Forty-five

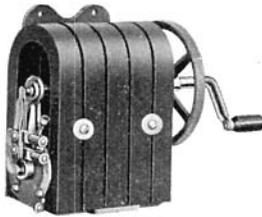
**KELLOGG TELEPHONE GENERATORS**



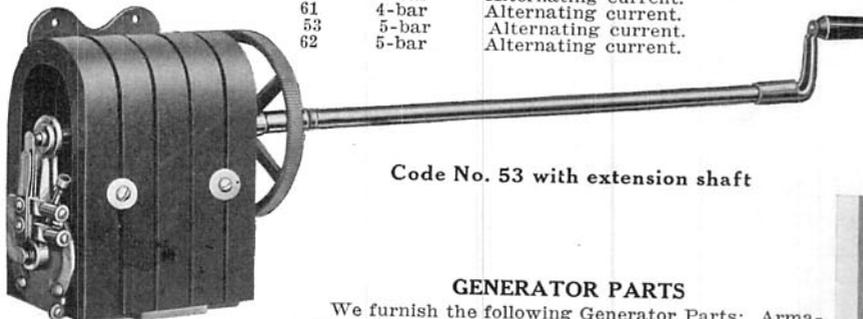
Code No. 15 Generator



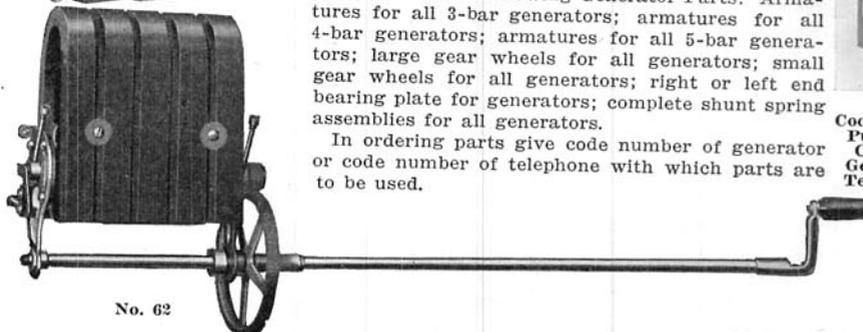
Code No. 22 Generator



Code No. 53 Generator



Code No. 53 with extension shaft



No. 62

The secret of the Kellogg generator's extraordinary strength lies not only in its permanent magnet, but in the superior design of its revolving electro-magnet or armature, upon which the wire is wound. It is just as important that this revolving magnet be massive in size as it is to have a large and powerful permanent magnet, for it is absolutely useless to have the permanent magnet furnish more magnetism than the electro-magnet has capacity to use. Most important of all, however, is the necessity for a liberal amount of winding space to accommodate a large coil of magnet wire in which the ringing circuit is generated.

Repeated laboratory and exchange tests of the most severe character prove time and again the uniformly superior service of Kellogg generators.

The Kellogg Company overcomes all danger from rust and from short circuits caused by small pieces of loose nickel scale by giving their generator magnets a heavy plating of pure copper. This is afterward oxidized or burnt to a dead black finish that cannot rust or scale and will last forever.

Code No.	Size	Description
15	3-bar	Alternating current.
22	4-bar	Alternating current.
53	5-bar	Alternating current.

Pulsating and Alternating Current Generators for use with Push Buttons for calling central secretly. (See Farm Line Telephones.)

Code No.	Size	Description
32	3-bar	Pulsating and Alternating.
33	4-bar	Pulsating and Alternating.
54	5-bar	Pulsating and Alternating.

**SWITCHBOARD GENERATORS**

Code No.	Size	Description
11	4-bar	Alternating current.
12	5-bar	Alternating current.
7	4-bar	Pulsating and Alternating.
10	5-bar	Pulsating and Alternating.
64	3-bar	Alternating current.
61	4-bar	Alternating current.
53	5-bar	Alternating current.
62	5-bar	Alternating current.

**GENERATOR PARTS**

We furnish the following Generator Parts: Armatures for all 3-bar generators; armatures for all 4-bar generators; armatures for all 5-bar generators; large gear wheels for all generators; small gear wheels for all generators; right or left end bearing plate for generators; complete shunt spring assemblies for all generators.

In ordering parts give code number of generator or code number of telephone with which parts are to be used.



Code No. 53 Alternating Current Generator Terminals



Code No. 59 Pulsating & Alternating Current Generator Terminals



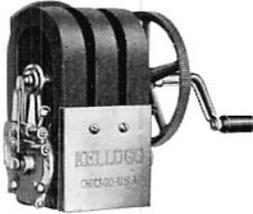
Code No. 23 Pulsating Current Generator Terminals

# THE KELLOGG GENERATOR

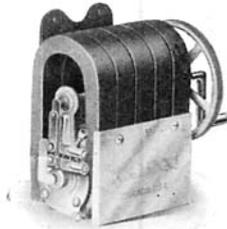
## TABLE OF SPRING COMBINATIONS

Code Numbers of Kellogg Generators.

See description at top of several columns and find proper code numbers for three, four and five bar generators below the several descriptions.

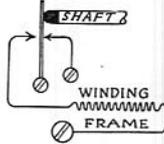


3 Bar.  
4 Bar.  
Mounts interchangeably with 5 bar generator.  
5 Bar Compact Type.  
Mounts interchangeably with 4 bar generator.  
5 Bar Old Style, Bars Spaced Out.



3 Bar.  
4 Bar.  
Mounts interchangeably with 5 bar generator.  
5 Bar Compact Type.  
Mounts interchangeably with 4 bar generator.  
5 Bar Old Style, Bars Spaced Out.

### COLUMN "A"



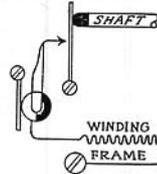
Shunt spring assembly No. 5420. Standard A. C. generator for bridging and series telephones having code numbers above 2000. Also interchanges with H. C. generators in telephones with codes below 1000.

No. 15  
No. 22

No. 53

No. 29

### COLUMN "B"



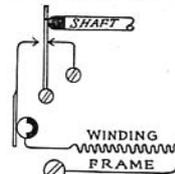
Shunt spring assembly No. 17313. Standard P. & A. generator for telephones having push button to call central secretly with pulsating current.

No. 32  
No. 33

No. 54

No. 34

### COLUMN "C"



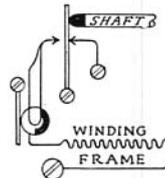
Shunt spring assembly No. 5614. Standard pulsating generator always interchangeable with standard A. C. generators listed in column A.

No. 19  
No. 23

No. 55

No. 45

### COLUMN "D"



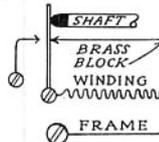
Shunt spring assembly No. 7642. Special P. & A. generator with ringer cut off contact otherwise same as generator listed in Column B.

No. 31  
No. 26

No. 59

No. 30

### COLUMN "E"



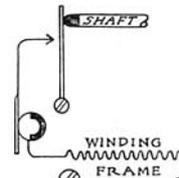
Shunt spring assembly No. 5417. Obsolete A. C. generator formerly used in all Kellogg bridging sets. (Except two party selective.) Having code Nos. between 1000 and 2000.

No. 4  
No. 2

No. 53 Special with No. 5417. Shunt spring assembly.

No. 5

### COLUMN "F"



Shunt spring assembly No. 5421. Pulsating current generator without ringer cut off contact, otherwise same as generators listed in Column C.

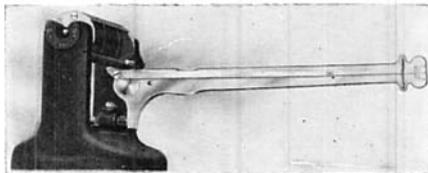
No. 8  
No. 6

No. 55 Special with No. 5421. Shunt spring assembly.

No. 9

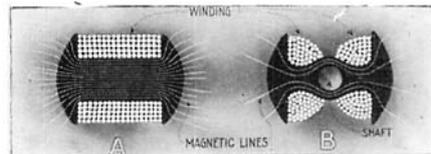
SHAFTLESS CONSTRUCTION of the armature has been the great secret of the strength and enduring qualities of the KELLOGG GENERATOR. Such construction allows armature iron and wire to occupy the valuable space which in the shaft type construction is necessarily occupied by air.

Cuts of above also shown on preceding page.



(Showing Kellogg generator armature in gauge which measures variations in diameter down to a thousandth part of an inch.)

Prices on Application

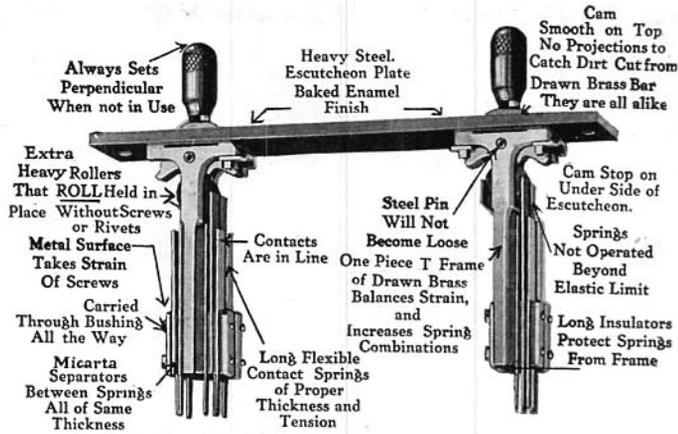


Kellogg Not Kellogg  
(Showing comparison of size of armature and winding space in Kellogg generator and in old style continuous shaft type.)

Please Mention Catalogue No. 3A.

Forty-seven

**KELLOGG SWITCHBOARD KEYS**



No. 1041 Key, No. 1033 Key Mounted on 1013 Escutcheon

No part of the switchboard is more vital to good service than the keys. Kellogg keys have long led the field; the new Kellogg key contains features which make it well nigh perfect.

In the new key there is no hard rubber used, all bushings, insulations, rollers, etc., being made from Bakelite and micarta—two materials which will not carbonize or break down under high voltages and which are practically unbreakable.

Pure German silver springs of just the proper tension insure smooth action and perfect contacts.

The most reliable and smoothest operating key on the market.

**SOME ADVANTAGES OF KELLOGG KEYS**

1. Long flexible German silver springs of the proper thickness and tension, with short action, which reduces spring breakage to a minimum and avoids excessive wear on the cam and rollers.
2. Tube bushings are of **KELLOGG BAKELITE** and of the headless type.
3. All screws are flush with escutcheon.
4. Heavy metal clamps are used under the mounting screw heads, which permit rigid assembling.
5. The heavy brass "T" frame permits the contact springs to be mounted on both sides, thereby increasing possible spring combinations and at the same time balancing the strain under all conditions.
6. The cam is so designed that the extra heavy rollers are held in place without the use of screws or rivets.



No. 1042 and 1031 Keys on 1013 Escutcheon

**RINGING, LISTENING AND RINGBACK KEY**

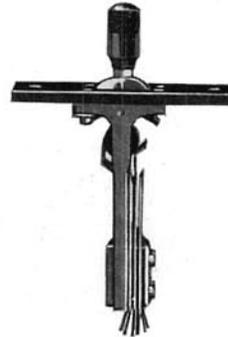
For Ringing on Both Cords

1041-1033—Key on No. 1013 Mounting Plate. Listening and Ringing Key on front of mounting, ringback Key on rear. Mounting one inch wide by four inches long. Used in magneto board cord circuits.

1042 and 1031 Keys on 1013 Mounting Plate. No. 1031 Key is double restoring type, while 1042 is a single locking key. Mounting plate one inch wide by four inches long.

1028—Key on No. 1021 Mounting Plate. Single locking key used for switching from hand generator to pole changer for night alarm switch, etc. Two make and break contacts.

Let us quote you our prices on keys.

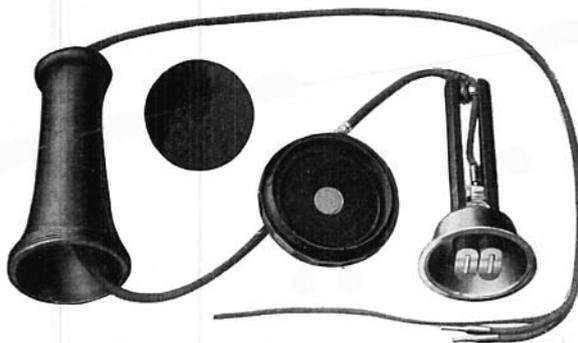


No. 1028 Key on No. 1021 Escutcheon Prices on Application

**KELLOGG RECEIVERS**



No. 41A Receiver



No. 41A Receiver with Shell Removed



No. 46A Receiver and Head Band

**RECEIVERS**

**No. 41A Bakelite**

The New Kellogg receiver of the slip-shell type has magnets made from pure Norway iron, and is designed for the best transmission. The excellence of this piece of apparatus has been greatly increased by the new Bakelite shell. This material is tougher and more durable than anything heretofore used, and does not warp or discolor and is not affected by heat or moisture. 70 ohms resistance.

No. 41B receiver, same as above, but 700 ohms resistance for railway use.

Furnished with 36-inch green silk cord, or with 36-inch maroon and black worsted cord.

**No. 26A Composition Shell Receiver**

This receiver is the same as No. 41A but the shell is composition instead of Bakelite.

Furnished with 36-inch green silk cord, or with 36-inch maroon and black worsted cord.

**No. 32A Steel Reinforced Shell Receiver**

No. 32A receiver with metal reinforced shell, an extremely strong shell that is unbreakable in ordinary service. Built of a heavy metal perforated frame around and through which is forced, under great hydraulic pressure, the Kellogg special insulating rubber composition.

Furnished with 36-inch green silk cord, or with 36-inch maroon and black worsted cord.

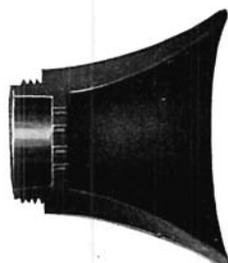
**No. 46A Operator's Head Receiver**

A well balanced watch-case receiver with Bakelite shell. Terminals are so arranged that cord tips may be inserted and fastened in place without removing the back. Has an extra post for fastening stay cord. 140 ohms resistance.

No. 46B, same as above but 650 ohms for railway use, wireless, etc.

**SUBSCRIBERS' TRANSMITTER MOUTHPIECE**

The KELLOGG BAKELITE mouthpiece, like all other KELLOGG BAKELITE products, is strong, durable, neat in design and of a permanent glossy appearance that the hardest usage will not deface. The inside of this mouthpiece is absolutely smooth, there are no cracks, nor scars from corrosion in which dust, dirt or other unsanitary debris of any kind can settle. It is the most sanitary mouthpiece on the market, but more important than that is its exceptional durability. It can withstand the most severe abuse and still remain without a blemish. Use is



Cross Section Bakelite Mouthpiece the test.

Prices on Application

Please Mention Catalogue No. 3A.

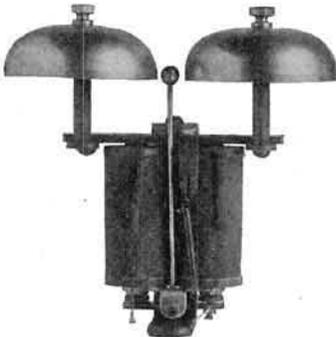
Forty-nine

## KELLOGG RINGERS

In the Kellogg Ringer all adjustments are disposed of except that of the position of the gongs. The length of stroke and proper armature air gap has been accurately determined and will also remain unchanged because the soft copper rivet points have been done away with and a uniform and permanent separation secured by a thin strip of German silver on the inside of the armature.



No. 54 Ringer



No. 2 Biased Ringer



No. 26 Harmonic Ringer



No. 54 Ringer, Disassembled.

This offers a larger flat surface to the pole piece and absolutely prevents all chances of "freezing."

In the Kellogg ringer it matters not what thickness of wood is used in mounting the ringer, as the tapper will strike the gong at its most responsive point and produce a clear, sharp ring.

In its entire make-up, mechanically, as well as electrically, this ringer is a typical Kellogg product. The coils are of the long type, provided with cores of soft annealed Norway iron, to secure best results. The spools are carefully insulated and wound with the highest grade of insulated copper wire. The gongs are of the best grade of brass, of rich tone, and will not develop cracks and become dead through use. All the exposed iron and steel parts are carefully copper plated and oxidized, which, as already explained, offers the only perfect protection against rust and in the case of nickel-plating over iron and steel, the tendency to peel off and cause short circuits. The brass gongs being exposed on the outside of the cabinet are, of course, heavily nickel-plated and polished.

No. 54B— 80 ohms complete with gongs.

No. 54A—1000 ohms complete with gongs.

No. 54D—1600 ohms complete with gongs.

No. 54H—2000 ohms complete with gongs.

No. 54G—2500 ohms complete with gongs.

### RINGERS—BIASED. (For Four Party Pulsating.)

No. 2B—1000 ohms complete with gongs.

No. 2D—1600 ohms complete with gongs.

No. 2A—2500 ohms complete with gongs.

### RINGERS—HARMONIC

The No. 47 Type Harmonic Ringers are of the low voltage type and operate either from dry battery without transformers or from storage battery with transformers. Condensers are not required in series with the ringers on magneto plants.

Code

No.	No.	Cycles	Resistance
47	Station No. 1	30	1000 ohms
47	Station No. 2	42	1000 ohms
47	Station No. 3	54	1000 ohms
47	Station No. 4	66	1000 ohms
26	Station No. 1	33½	500 ohms
26	Station No. 2	50	500 ohms
26	Station No. 3	66½	500 ohms
26	Station No. 4	16½	2500 ohms

The No. 26 Type Ringers must be operated from transformers, and condensers must be used in ringer circuit in either magneto or common battery systems.

Telephone men find it well worth while to have a bound set of Kellogg bulletins handy. These bulletins are practical and helpful. Any additional information may be had by writing our Engineering Department.

Prices on Application

Please Mention Catalogue No. 3A.

**SWITCHBOARD TOOLS**



Heat Coil Pliers. Pc. 3105.



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



Wrench for mounting jacks and blanks on new style Magneto and P. B. X. Boards. Pc. No. 30144.



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



Key Spring Adjuster. Pc. 3406.



Supervision Lamp Cap Extractor. Pc. 424.



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



Assembler's Screw Driver. No. 671B.



Wrench for Adjusting Straight Line Ringers. Pc. 2867.



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



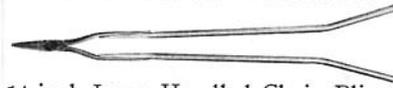
Pliers for Buttons on 4 Party Keys. Pc. No. 27049.



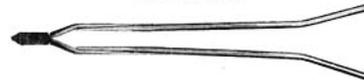
Lamp Extractor—Pc. No. 27088 replaces Pc. No. 3120.



Wrench for Relay Mounting Nut on New P. B. X. Boards. Pc. No. 964.



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



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



Relay Spring Adjuster. Pc. 3424.



Wrench for Removing Sleeve of No. 88 Type of Spring Jack. Pc. 11039.



Wrench for Removing Pc. No. 8271 Relay Shelves. Pc. No. 25939.



Wrench for 77 Nut. Used for Removing Major Relays from the Mounting Strip. Pc. 3095.



Wrench for Removing Major Relay Shells. Pc. 3107.



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



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



Line Lamp Cap Extractor. Pc. 5248.

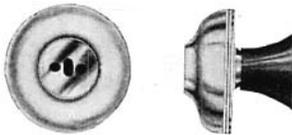
Prices on Application

Please Mention Catalogue No. 3A.

Fifty-one

## KELLOGG TRANSMITTER

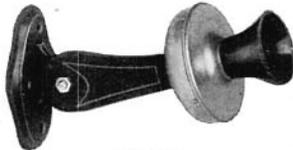
THE FAMOUS KELLOGG REVERSE TYPE TRANSMITTER



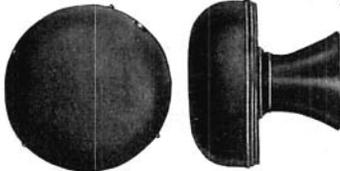
Standard Transmitter and Mouthpiece



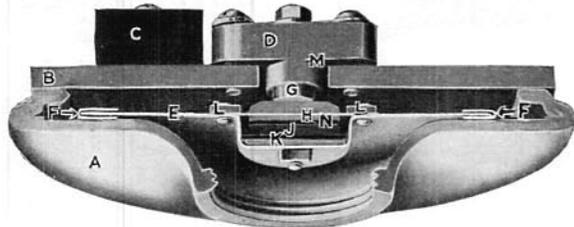
No. 21 Transmitter Arm



No. 42 Transmitter Arm



No. 55 Suspended Type Transmitter



Cross-section View

Over Two Million of One Type in Operation Today

- A Transmitter front punched from heavy sheet brass; one piece.
- B Transmitter bridge or solid back, dull nicked.
- C Hard rubber mounting block for terminal.
- D Rear electrode block, brass, dull nicked.
- E Transmitter diaphragm, made of aluminum.
- F Heavy white rubber gasket.
- G Post of rear electrode fastened to rear electrode block by a set screw.
- H Mica electrode diaphragm, fastened to aluminum diaphragm.
- J Space for granulated carbons.
- K Front electrode with highly polished carbon, fastened by screw and nut to diaphragm.
- L Aluminum ring riveted on to the diaphragm, holding the mica diaphragm.
- M Hard rubber insulation.
- N Rear electrode with highly polished carbon.



No. 41 Arm

The success of the Kellogg transmitter lies in the fact that the microphone or carbon chamber is a part of and carried by the diaphragm and is thus constantly shaken up in such a manner as to positively prevent packing and in addition produce an efficiency not obtainable in any other form of construction.

### Telephone Transmitters

- No. 22C. For common battery work only.
  - No. 85LC. For local or common battery work.
- Above transmitters furnished with No. 42 or No. 41 arm complete with cords. Also with No. 21 arm complete with No. 28 induction coil in base.
- No. 22L and No. 85L are especially recommended for railway use on high efficiency circuits.

### Switchboard Operators' Transmitters

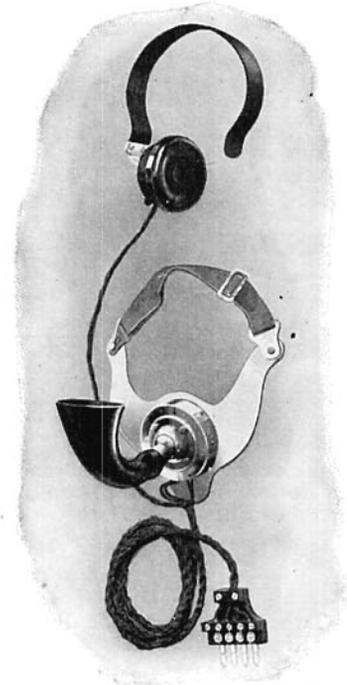
The world renowned talking qualities of Kellogg transmitters are not lacking in Kellogg operators' transmitters, which is very important, as patrons and neighboring exchanges judge the character of service of any plant very largely by how well they hear the operator.

Kellogg Company offers a special transmitter and a special induction coil to work from four or five old dry batteries. After such cells have become so far exhausted that two of them will no longer give satisfactory service on regular telephones, four or five of them in series will give excellent results on a switchboard for several weeks. Specify No. 55C suspended or No. 76C Breast Plate transmitter and No. 14C induction coil. See induction coils, page 38.

This type transmitter requires four or five old dry cells or 4 R. R. or BSCo., 305 Edison. 2 cells storage or 5 gravity cells 5x7 or 6x8.

Local battery or 55C (common battery). Suspended Type Operators' transmitters for switchboard use complete with 72 inch cords. 76C Breast Plate Type Operator's Transmitters only.

For cords and plugs for use with breast plate transmitters see "Cords" and "Plugs."



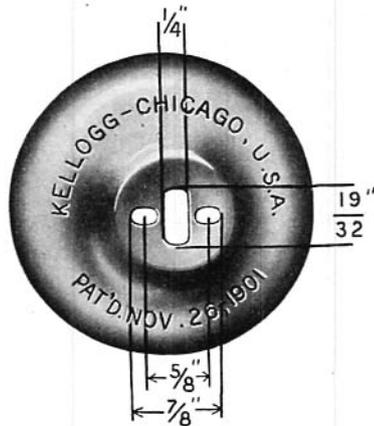
No. 76 Operator's Breast Plate Transmitter, complete with receiver, headband, cord and operator's plug.

Fifty-two

Prices on Application

Please Mention Catalogue No. 3A.

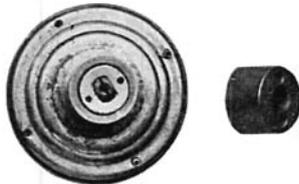
**KELLOGG TRANSMITTERS, Continued**



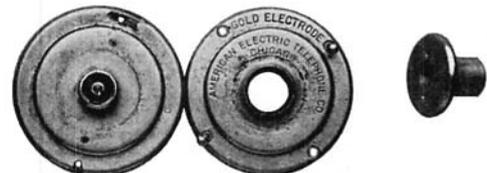
**Kellogg Standard Transmitter Back**



**Ericksen Electric Co. Pe. 8274 Adapter**



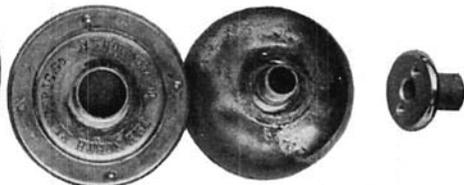
**Stromberg-Carlson Elec. Co. Pe. 5742 Adapter**



**American Electric Co. Pe. 8545 Adapter**



**Sterling Electric Co. Pe. 27505 Transmitter Back**



**North Electric Co. Pe. 6689 Adapter**



**American Electric Co. Pe. 5755 Transmitter Back**

**Kellogg Standard Transmitter Backs Fit Monarch, Dean and Garford Transmitter Arms**

**Prices on Application**

**Please Mention Catalogue No. 3A.**

*Fifty-three*

**MOUTHPIECES**

Metal reinforced mouthpiece.  
Bakelite unbreakable mouthpiece.  
Ordinary composition mouthpiece.  
Hard rubber Breast Plate Transmitter mouthpieces.

Old Kellogg transmitters returned to the factory with no parts broken will be made to operate equal to new at a cost of 30 cents each. For an additional charge of 30 cents the transmitters will be cleaned and renicked, making them equal to new, both in appearance and operation, at a total cost of 60 cents, regardless of how long the transmitters have been in service.

**KELLOGG TRANSMITTER BACKS AND ADAPTERS**

Telephone companies everywhere are standardizing with Kellogg transmitters. It becomes necessary in fitting various types of transmitter arms to furnish special mounting lugs to adapt Kellogg transmitter backs to these arms.

If the standard back does not meet your requirements you will probably find the right adapter here.

Standard Backs separate.

Pc. 6689 Adapter.

Pc. 5742 Adapter.

Pc. 27505 Transmitter Back.

Pc. 5755 Transmitter Back.

Pc. 8274 Adapter.

Pc. 8545 Adapter.

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

## KELLOGG PLUGS, SWITCHBOARD AND DUMMY

In the following list of plugs the various numbers have been divided according to the following classifications:

Regular, Operators, Test, Special and Dummy.

Regular Plugs have been subdivided into classifications:

Plugs for New Boards, and Existing Boards. Plugs to be used on existing boards only. Plugs for other manufacturers boards and Single Conductor Plugs.

Thus a glance at the following index will show whether a Code number is in use and if a standard plug, under what classification it is to be found.

Dummy plugs are divided into three classifications: Apparatus blanks, designation plugs, and special.

Code	No. of Condr.	Diameter	Class	Where used	Code	No. of Condr.	Diameter	Class	Where used
3	2	.2495	Regular	Existing boards	80			Test No. 11	Terminal Strip
12	3-C	.2495	.....	Replaced by No. 152	81	6-C	.2495	Special	
14	2-C	.2215	.....	Replaced by No. 151	82	3	.248	.....	Other Mfrs. Boards
16	Twin	.2495	Test	Test Panel	83		.249	Dummy	Designation plug
17	2-C	.2495	.....	Replaced by No. 70	84		.249	Dummy	Designation plug
20	4-C	.210	Operators	Replaced by No. 145	85		.249	Dummy	Designation plug
21	4-C		Test.		86		.249	Dummy	Designation plug
22		.2656	Dummy		87		.249	Dummy	Designation plug
23	4-C		Kellogg Arrester	Test.	88		.249	Dummy	Designation plug
24		.2495	Dummy		89	1	.2495	Regular	Sgl. Conductor
25	4-C	.2495	Operators		90	2	.1873	.....	Other Mfrs. Boards
26	2-C	.1775	Regular	Existing boards	91	3-C	.2187	.....	Other Mfrs. Boards
31	2-C	.2495	Operators	Replaced by No. 107	92	2-C	.2495	.....	Replaced by No. 109
32		.175	Dummy	Designation plug	93		.221	Dummy	Designation plug
34	3-C	.2495	.....	Replaced by No. 152	94		.221	Dummy	Designation plug
36	2-C	.2215	.....	Replaced by No. 151	95		.221	Dummy	Designation plug
42	2-C	.2495	Regular	New works and existing boards	96		.221	Dummy	Designation plug
43	2	.2215	.....	Replaced by No. 151	97		.221	Dummy	Designation plug
44	1-C	.2495	Test Panels		98		.221	Dummy	Designation plug
47		.1875	Dummy	Special for power boards	99	3-C	.2495	Regular	
51		.175	Dummy	Designation plugs	100		.218	Dummy	Designation plug
52		.175	Dummy	Designation plugs	101		.218	Dummy	Designation plug
53		.175	Dummy	Designation plugs	106	3-C	.2495	Regular	New works and existing boards
54		.175	Dummy	Designation plugs	107	2-C	.2495	Operators	
55	2-C	.2495	.....	Replaced by No. 112	108	3-C	.2495	.....	Replaced by No. 152
62		.240	Dummy	Replaced by No. 85	109	2-C	.2495	.....	Other Mfg. Boards
63		.240	Dummy	Replaced by No. 84	111	3-C	.2495	.....	Other Mfg. Boards
64		.240	Dummy	Replaced by No. 86	112	2-C	.2495	Regular	Used on new work and existing boards
65		.240	Dummy	Replaced by No. 83	115	3-C	.2495	.2655 for 278	Jack Dummy Special
66		.240	Dummy	Replaced by No. 87	116	3-C	.2495	.....	Replaced by No. 152
67		.240	Dummy	Replaced by No. 88	118	3-C	.2495	.....	Replaced by No. 152
70	2-C	.2495	Regular	Existing boards	119		.437	Dummy	Replaced by No. 135
71	3-C	.2495	.....	Other Mfrs. Boards	120		.113	Dummy	Apparatus blank
74	3-C	.2495	.....	Replaced by No. 152	122	2-C	.2013	.....	Other Mfg. Boards
75	2-C	.2495	Operators	Replaced by No. 148	123	3-C	.2175	Special	
76	2-C	.210	Operators	Replaced by No. 146	124		.312	Dummy	Replaced by No. 133
77	3-C	.2215	.....	Replaced by No. 143	125		.468	Dummy	Replaced by No. 134
78	2-C	.2215	.....	Replaced by No. 151	126		.406	Dummy	Replaced by No. 135

Fifty-four

Prices on Application

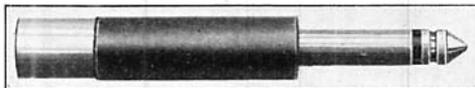
Please Mention Catalogue No. 3A.

**KELLOGG PLUGS, SWITCHBOARD AND DUMMY**

Code	No. of Condr.	Diameter	Class	Where used	Code	No. of Condr.	Diameter	Class	Where used
128	2-C	.2215	.....	Replaced by No. 151	147	2-C	.250	Special	
129	3-C	.2215	.....	Replaced by No. 143	148	2-C	.2495	Operators	
130	2-C	.2495	.....	Other Mfg. Boards	149		.490	Dummy	Apparatus Blanks
131	5-C	.210	Operators		150		.5625	Dummy	Apparatus Blanks
132			Dummy	Apparatus blanks	151	2-C	.2215	Regular	New work and Existing boards
133		.333	Dummy	Apparatus blanks	152	3-C	.2495	Regular	New work and Existing boards
134		.490	Dummy	Apparatus blanks	153	3-C	.2495	.....	Other Mfgs. Boards
135		.427	Dummy	Apparatus blanks	154	3-C	.2215	.....	Special
136	4-C	.2495	Operators	Use No. 25					
137	3-C	.2495	Regular	New work and Existing boards					
138	2-C	.2495	Regular	New work and Existing boards					
139	4-C	.2495	Operators						
140		.177	Dummy	Designation plug					
141	2-C	.2215	Regular	New work and Existing boards					
142			Dummy	Apparatus blank					
143	3-C	.2215	Regular	New work and Existing boards					
144	2-C	.2485	.....	Other Mfgs. Boards					
145	4-C	.210	Operators						
146	2-C	.210	Operators						

**Kellogg Plugs—Switchboard, Regular**

For use on new and existing boards.



Code No. 42 Plug with Sleeve.

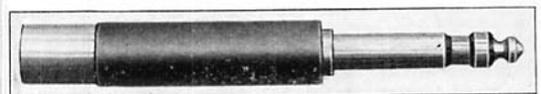


Code No. 112 Plug with Sleeve.

Code	No. of Condr.	Diameter	Steel	Cord Tinsel	Where Used.
42	2	.2495	304	301	Magneto Boards.
112	2	.2495	304	301 2 Wire	Multiple. Replaces No. 55.



Code No. 137 Plug.



Code No. 106 Plug with Sleeve.

Code	No. of Condr.	Diameter	Steel	Cord Tinsel	Where Used.
137	3	.2495	303	309	Same as No. 112 but 3 conductor. Used on Universal cord circuits on 2 wire boards.
106	3	.2495	303	309	Used on 3 wire boards. Replaces No. 74 on all new work. The balance of plugs shown on this page are without sleeves to show detail.



Code No. 138 Plug.



Code No. 151 Plug.

Code	No. of Condr.	Diameter	Steel	Cord Tinsel	Where Used.
138	2	.2495	304	301	Same as No. 106, but 2 conductor. Used on 3 wire common battery boards.
151	2	.2215	324	332	For 3/8" Center Jacks on 2 wire circuits. Replaces Nos. 14-78-128 Plugs.
143	3	.2215	326	325	For 3/8" Center Jacks on 3 wire circuits. Replaces Nos. 77/129 Plugs.
141	2	.2215	324	332	Used on 2 wire circuits on 3 wire boards. Same as No. 143 but 2 conductor.

Prices on Application

Please Mention Catalogue No. 3A.

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KELLOGG SWITCHBOARD AND SUPPLY COMPANY

**KELLOGG PLUGS—SWITCHBOARD, Regular**  
FOR USE ON NEW AND EXISTING BOARDS.



Code No. 3 Plug					
Code	No. of Condr.	Diameter	Steel	Tinsel	Where Used.
3	2	.2495	304	301	With No. 3 and No. 6 Jacks.
152	3	.2495	303	309	3 wire circuits. Replaced by No. 42 for all magneto boards. Replaces Nos. 74-34 Jacks.



Code No. 70 Plug					
Code	No. of Condr.	Diameter	Steel	Tinsel	Where Used.
70	2	.2495	304	301	Replaces No. 17, 2 wire, in 3 wire boards. Same as No. 152 but 2 conductor.
26	2	.1775	305	3/19"	Center Jacks

**SWITCHBOARD PLUGS FOR OTHER MANUFACTURERS BOARDS**

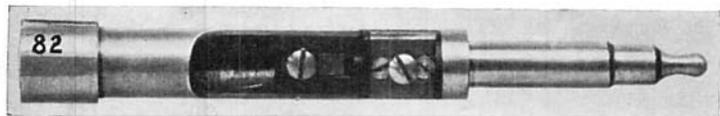
153	3	.2495	303	309	Our No. 74, but arranged to fit Monarch 3 wire board.
90	2	.1873	301	304	Special



Code No. 122 Plug					
Code	No. of Condr.	Diameter	Steel	Tinsel	Where Used.
122	2	.2013	336		Same as Stromberg-Carlson No. 33 plug.
130	2	.2500	301	304	Replaces W. E. No. 47. Fits W. E. 2 conductor, D. & J. Shutter & Bullseye, also Kellogg No. 66 D. & J.



Code No. 144 Plug					
Code	No. of Condr.	Diameter	Steel	Tinsel	Where Used.
144	2	.2485	301	304	Fits Swedish American Magneto boards.
109	2	.2495	303	309	Fits Dean Combined D. & J.
82	3	.248	335		
					Fits Sterling Jacks.
91	3	.2187		317	
					Fits Dean 3/8" 3 Conductor Jack.
71	3	.2495		317	
					Fits Dean 3 Conductor Jack.
42	2	.2495	301	304	
					Fits Monarch D. & J.
111	3	.2495	301	304	
					Fits North Jack.



Code No. 82 Plug.

These plugs actual size; photographed without sleeve to show connections.

**KELLOGG SWITCHBOARD LAMPS**

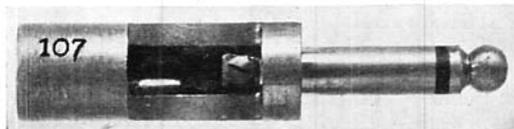
Kellogg lamps are noted for low current consumption and long life. A special process of making the filaments, combined with an almost perfect vacuum, give these lamps a life not possessed by any other on the market.

Furnished in any voltage from 4 to 48. Stock lamps 24 and 48 volt.



Kellogg Switchboard Lamp.

**KELLOGG PLUGS—OPERATORS**



Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
107	2	24	26	Hard Rubber

Replaces No. 31 and is exactly the same except that more threads are provided on cord end insuring firmer grip on cord. No. 24 jack mounts in front of key shelf.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
148	2	24-77	237	Hard Rubber

Same as No. 107 but with piece No. 30991 adapter for small No. 237 cord. Replaces No. 75 plug.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
25	4	57-224-276	67	Hard Rubber

Breast plate operators' sets where jack mounts in front of keyshelf. Not used on new magneto boards.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
145	4	43	111	Gray Fibre

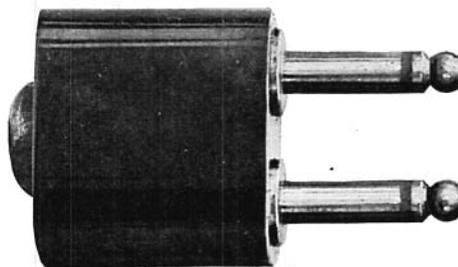
New Magneto and P.B.X. boards. Replaces No. 20 plug.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
146	2	43	110	Gray Fibre

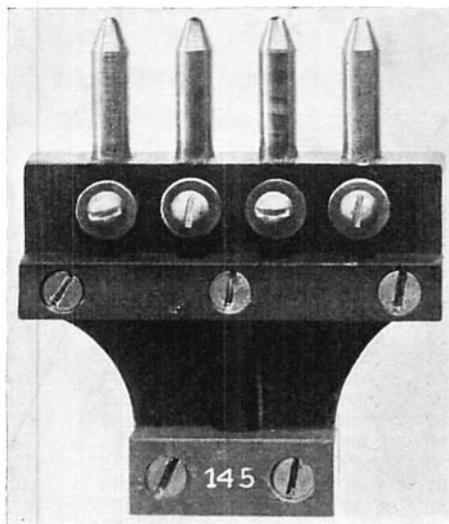
Same as No. 145, but 2 inside conductors strapped together to make 2 conductors. Replaces No. 76 plug.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
131	5	291	110 for	Gray Fibre Suspended

111 for breast plate  
Used on magneto boards for both suspended and breast plate transmitters simultaneously.



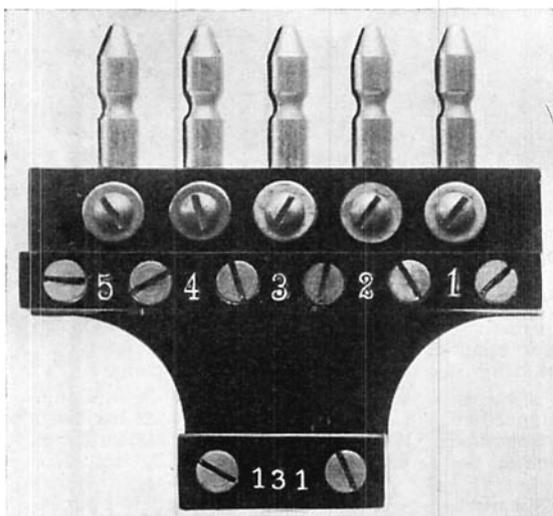
Code No. 25 Plug.



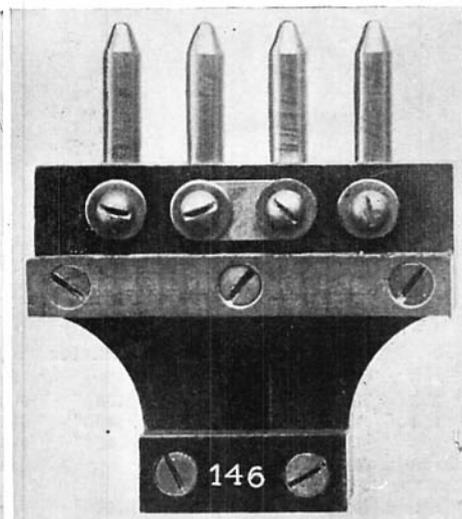
Code No. 145 Plug.

Code Plug	No. of Cond.	Code Jack	Code No. Cord	Body Material
139	4	310	228	

Fits same jack as No. 103 W. E. plug.



Code No. 131 Plug.



Code No. 146 Plug.

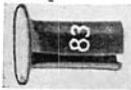
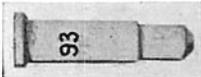
Prices on Application

Please Mention Catalogue No. 3A.

Fifty-seven

**KELLOGG PLUGS**

**DUMMY DESIGNATION**

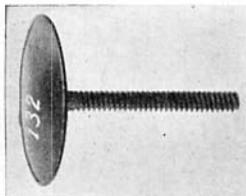
	Total Code	Length	Ma-terial	Diameter	Color	Where Used
	32	1"	Maple	.175"	Shellaced	Used in jacks taking No. 26 plug.
	51	1"	Composition	.175"	Black	Used in jacks taking No. 26 plug.
	52	1"	Composition	.175"	Yellow	Used in jacks taking No. 26 plug.
	53	1"	Composition	.175"	Red	Used in jacks taking No. 26 plug.
	54	1"	Composition	.175"	White	Used in jacks taking No. 26 plug.
	83	$\frac{1}{8}$ "	Steel	.249"	White	Used in jacks taking .2495 diam. plug.
	84	$\frac{1}{8}$ "	Steel	.249"	Black	Used in jacks taking .2495 diam. plug.
	85	$\frac{1}{8}$ "	Steel	.249"	Red	Used in jacks taking .2495 diam. plug.
	86	$\frac{1}{8}$ "	Steel	.249"	Blue	Used in jacks taking .2495 diam. plug.
	87	$\frac{1}{8}$ "	Steel	.249"	Yellow	Used in jacks taking .2495 diam. plug.
	88	$\frac{1}{8}$ "	Steel	.249"	Green	Used in jacks taking .2495 diam. plug.

Total Code	Length	Material	Diameter	Color	Where Used
93	.950"	Celluloid	.221"	White	Used in jacks taking .2215 diam. plug.
94	.950"	Celluloid	.221"	Black	Used in jacks taking .2215 diam. plug.
95	.950"	Celluloid	.221"	Red	Used in jacks taking .2215 diam. plug.
96	.950"	Celluloid	.221"	Blue	Used in jacks taking .2215 diam. plug.
97	.950"	Celluloid	.221"	Yellow	Used in jacks taking .2215 diam. plug.
98	.950"	Celluloid	.221"	Green	Used in jacks taking .2215 diam. plug.
100	$1\frac{3}{8}$ "	Maple	.218"	White	To fit Dean jack.
101	$\frac{3}{8}$ "	Brass	.218"	White	To fit Dean jack.
140	2.417"	Maple	.177"	Shellac	To fit $\frac{1}{8}$ " jack.

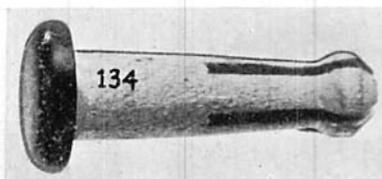
**DUMMY PLUGS**

**Special**

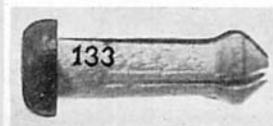
- 47 Twin, for use with switch on power boards.
- 163 Double sleeve, for designating defective plugs and cords. Made of black fibre tubing .308" diameter. Slips over No. 42 plug sleeve.



Code No. 132 Plug.



Code No. 134 Plug.



Code No. 133 Plug.

**PLUGS**

**DUMMY APPARATUS BLANKS**

Total Code	Length	Material	Diameter	Finish	Where Used
132	$\frac{7}{8}$ "	Brass		Black enamel head	With No. 733 key mounting.
133	1.201"	Maple	.333"	As specified	Used with Pc. No. 6074 bushing.
134	1.699"	Maple	.490"	As specified	Used with Pc. No. 19322 bushing.
135	1.699"	Maple	.427"	As specified	Used with Pc. No. 25325 bushing.
142	1.046"	C. R. Steel		Enamel	Used to cover opening for No. 1000 type keys.
149	1.295"	Maple	.490"	As specified	On new PBX and Magneto boards.
150	1.295"	Maple	.427"	As specified	On new PBX and Magneto boards.

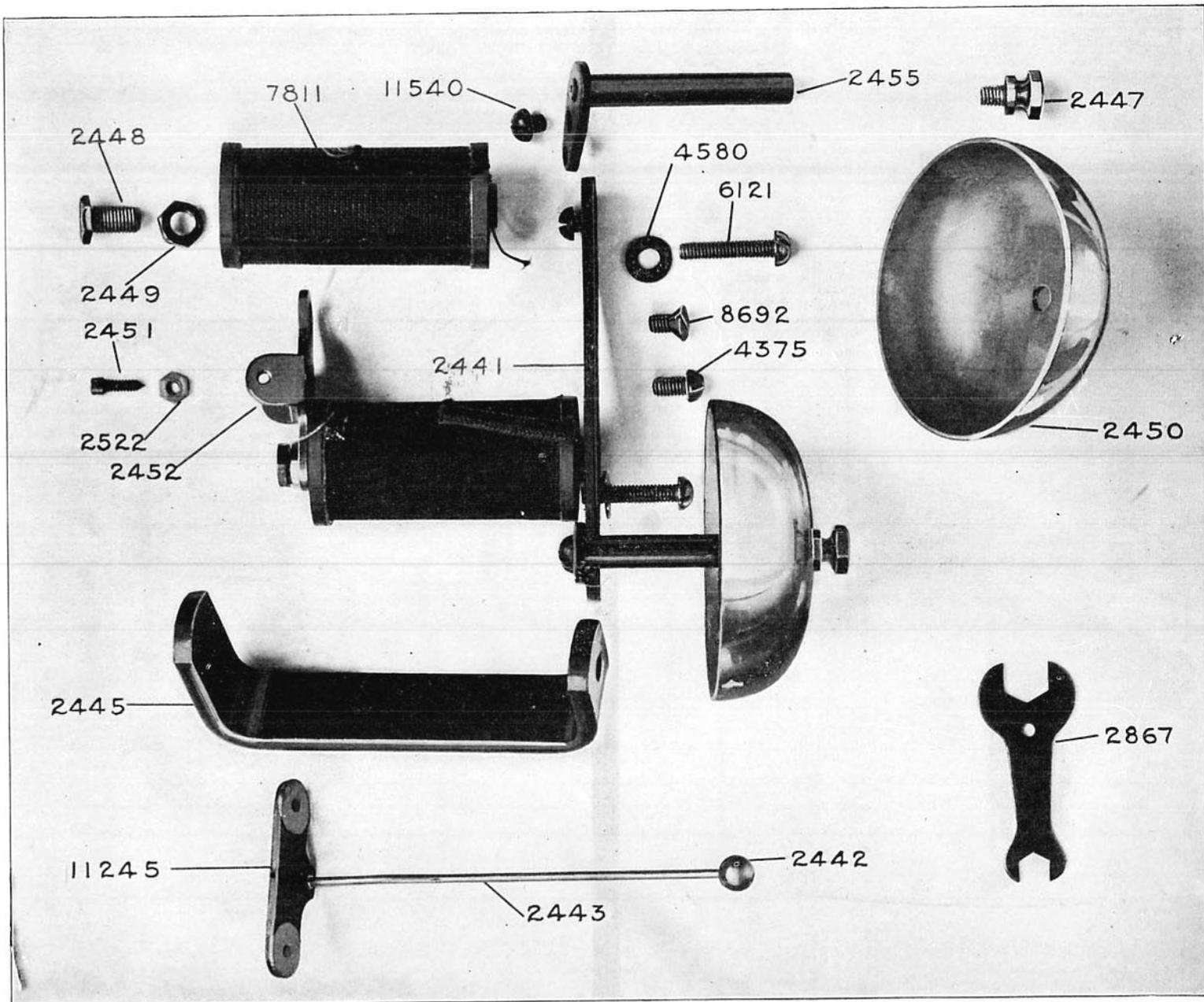
Fifty-eight

Prices on Application

Please Mention Catalogue No. 3A.

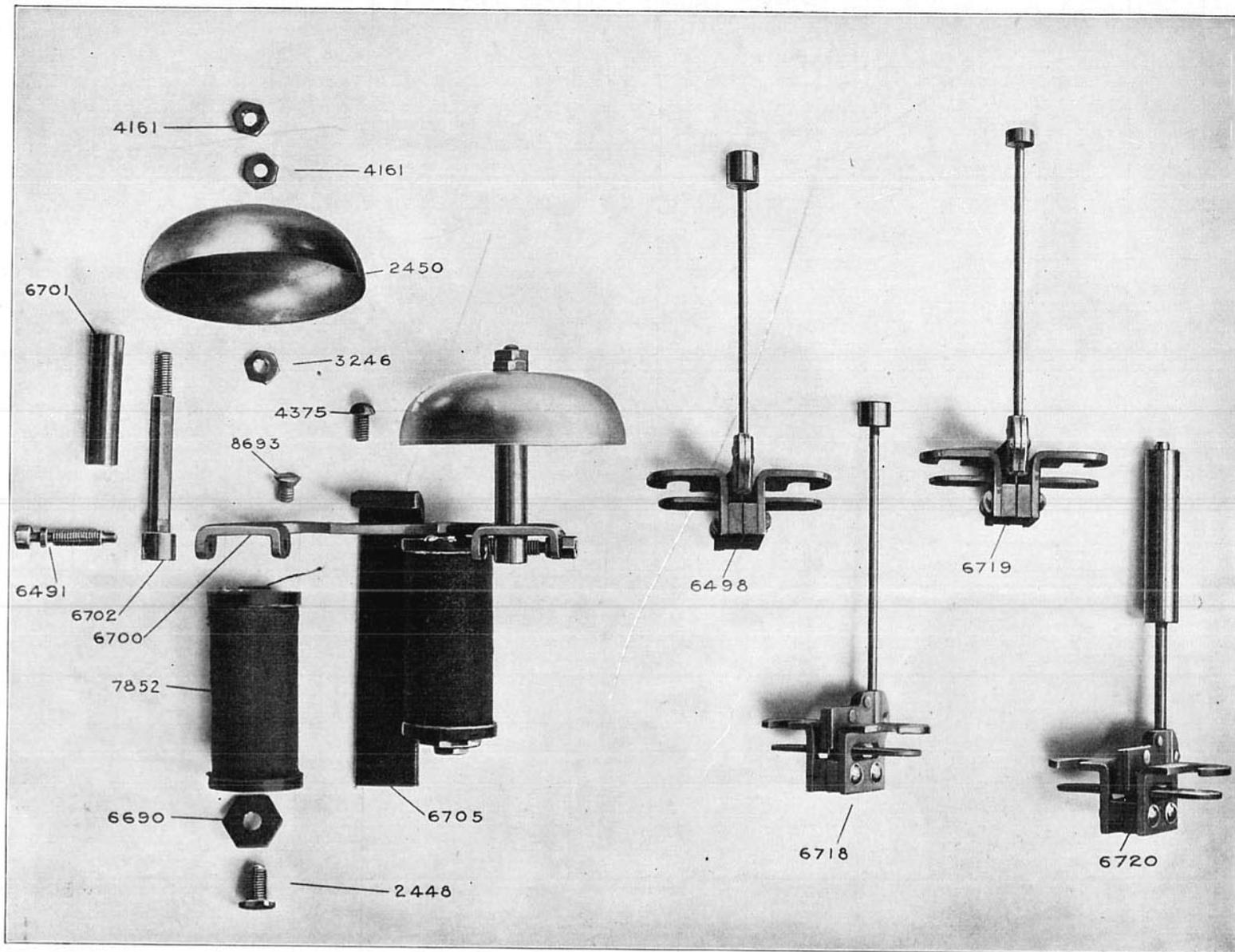
In Ordering From These Plates, Specify Page Number and Catalogue Number.

Fifty-nine



Cat'1 3—Plate No. 1—Type No. 1—Ringer

In Ordering From These Plates, Specify Page Number and Catalogue Number.

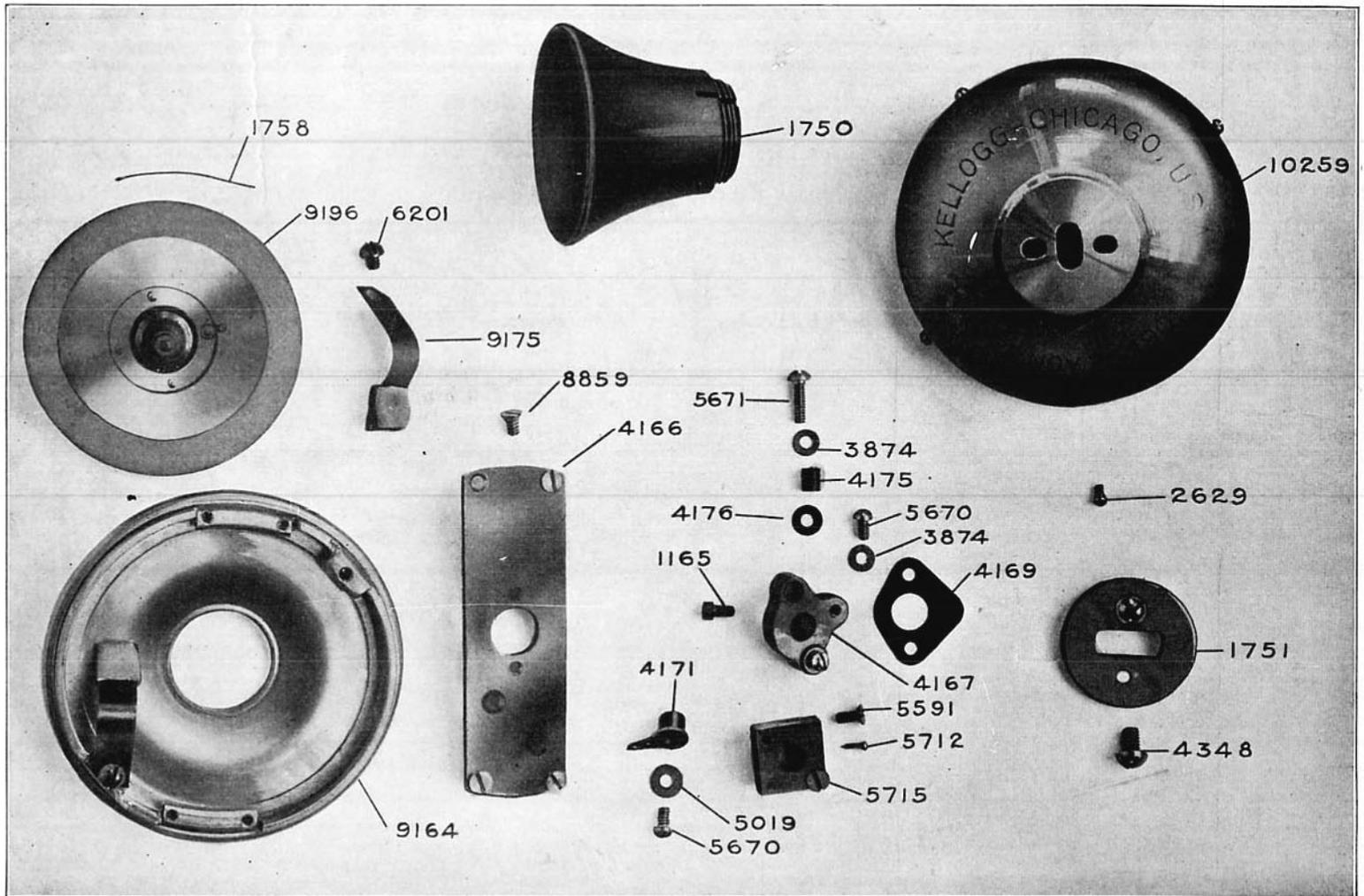


Cat'l 3—Plate No. 2—Type No. 26—Ringer  
6498, 1st party. 6918, 2nd party. 6719, 3rd party. 6720, 4th party

Pc. No. 9175 replaced by Pc. 12344. Pc. 6201 replaced by Pc. 12349  
 Pc. 4175 and 4176 are transposed

In Ordering From These Plates, Specify Page Number and Catalogue Number.

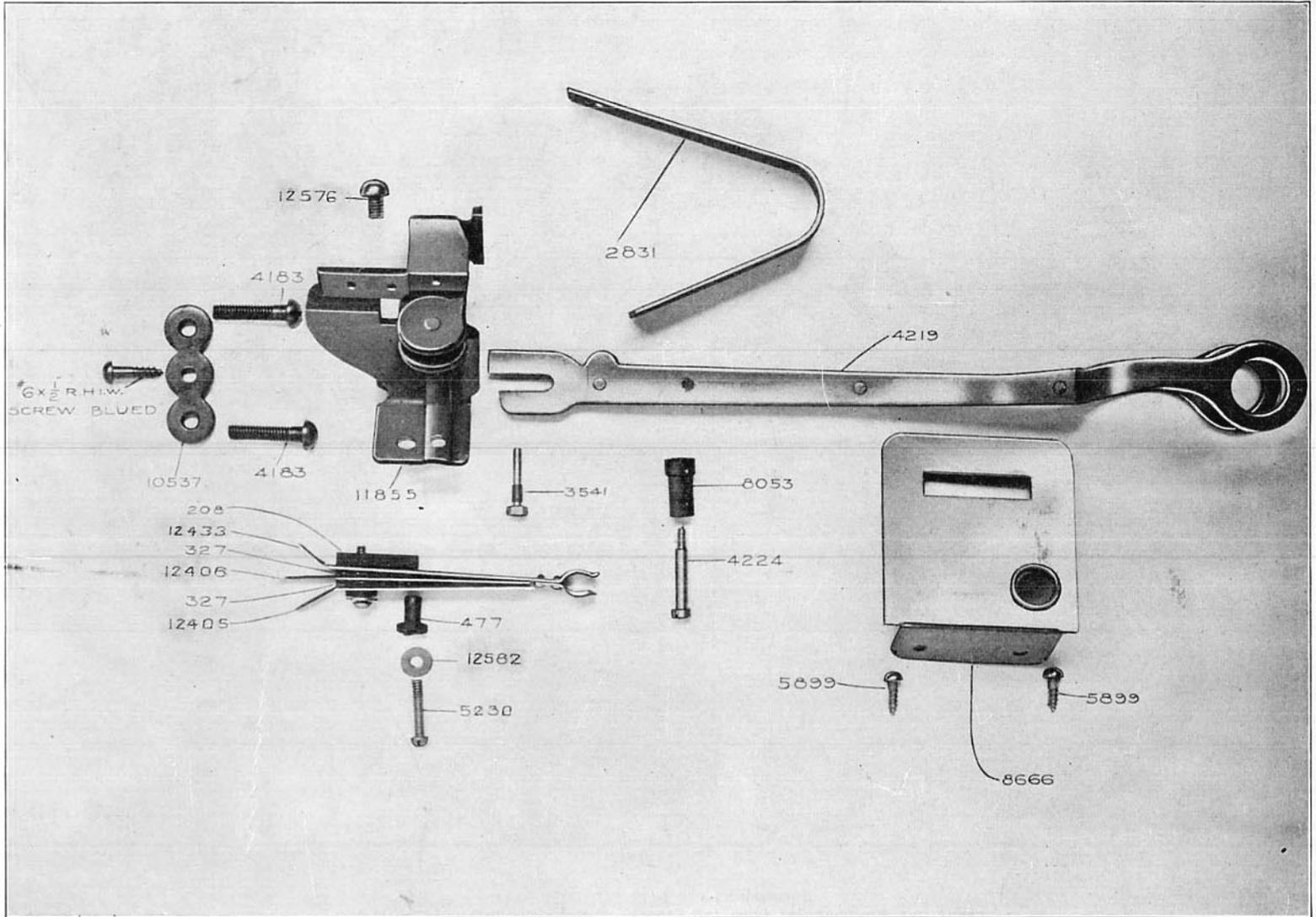
Sixty-one



Cat'1 3—Plate No. 3—Kellogg Transmitter—No. 22 L  
 Pc. No. 4172, Stud for 22 L Transmitter is set in place in Front of Screw, Pc. No. 1165

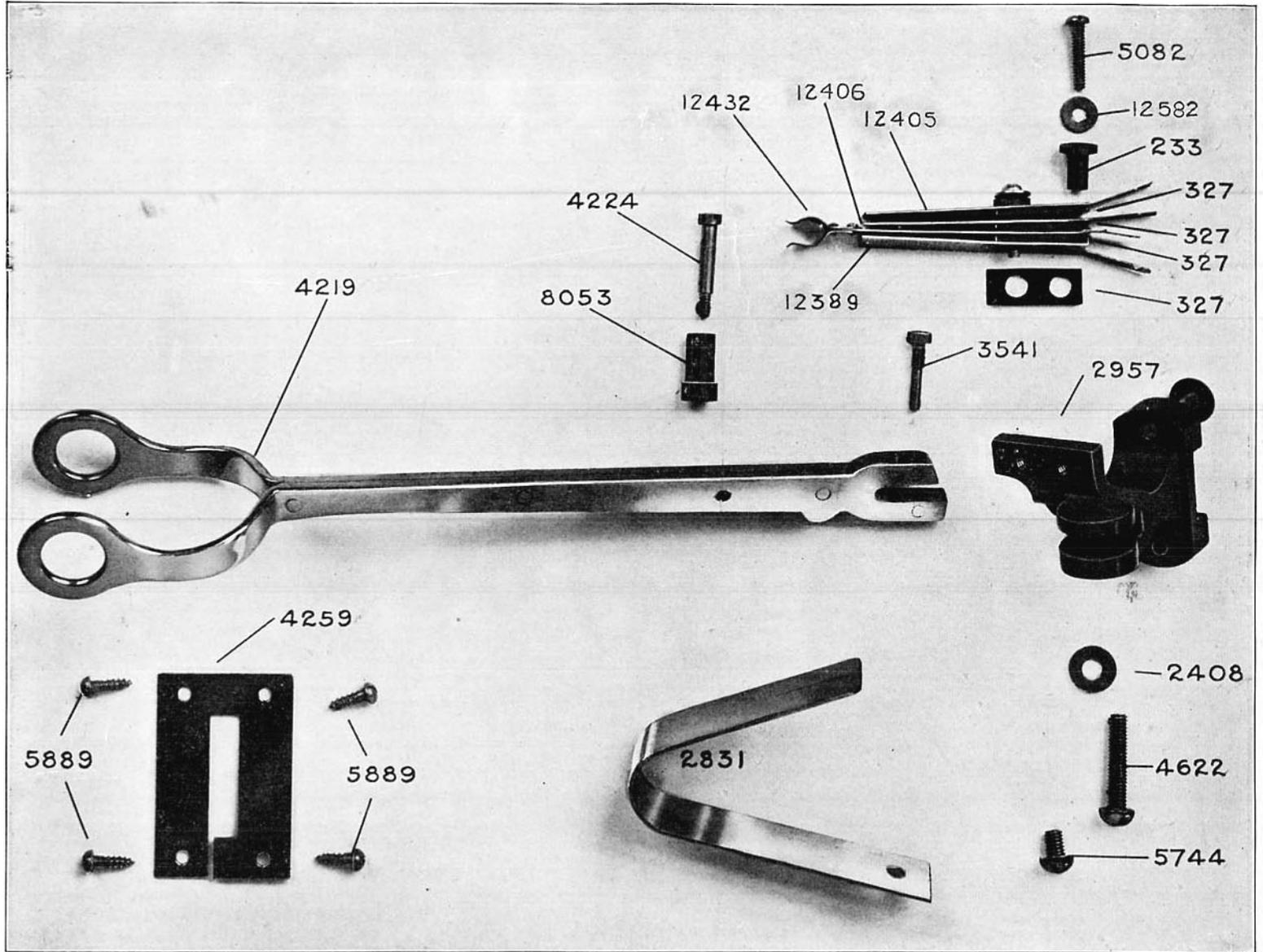
Pc. No. 8666 replaced by Pc. No. 6469  
Pc. No. 5899 replaced by 3437

In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 4—Type No. 63—Switch Hook.

Pc. 2408 replaced by Pc. No. 4580



In Ordering From These Plates, Specify Page Number and Catalogue Number.

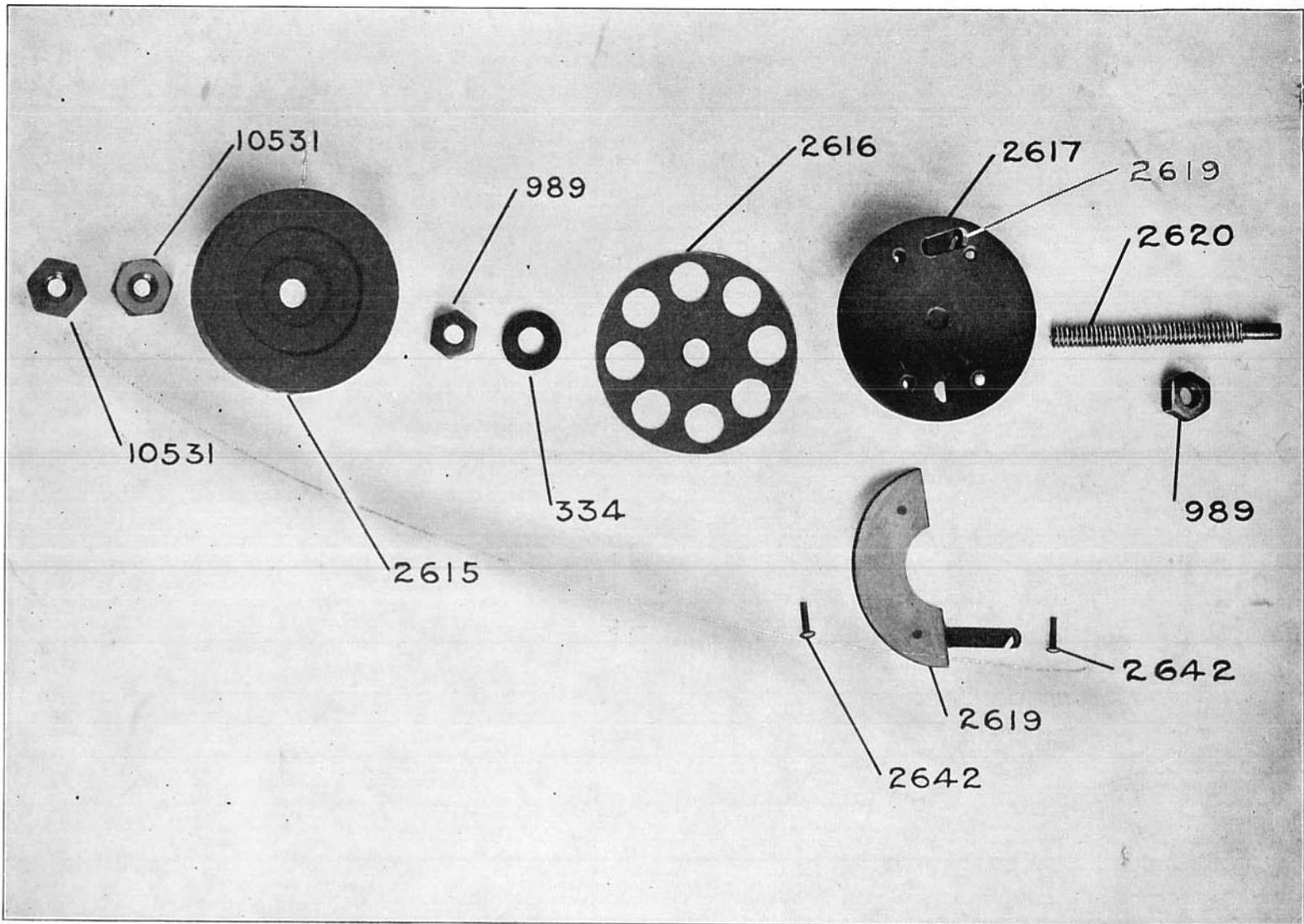
Sixty-three

Cat'l 3—Plate No. 5—Type No. 33—Switch Hook

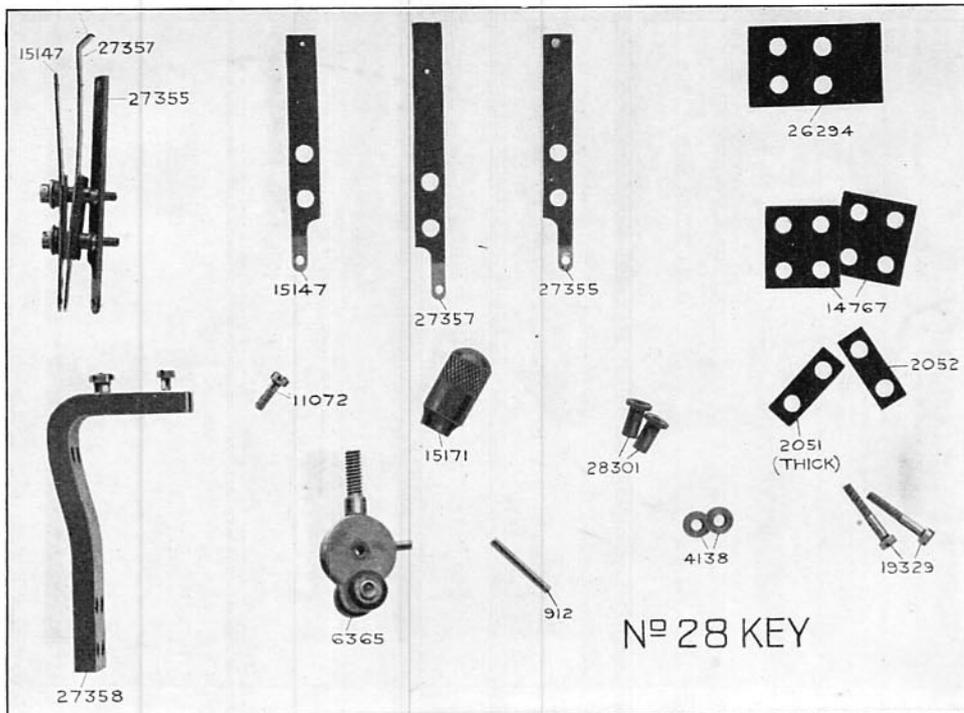
Pc. No. 2620 replaced by Pc. No. 28254

Sixty-four

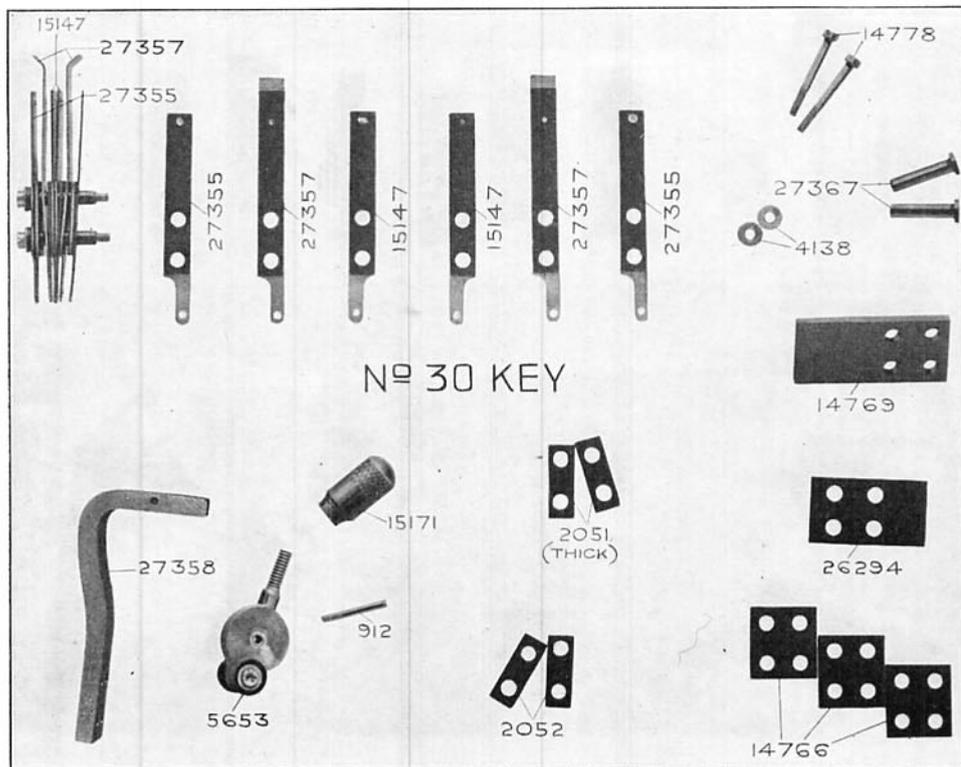
In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 6—Type No. 3—Arrester



Cat'1 3—Plate No. 7—Code No. 28 Key.

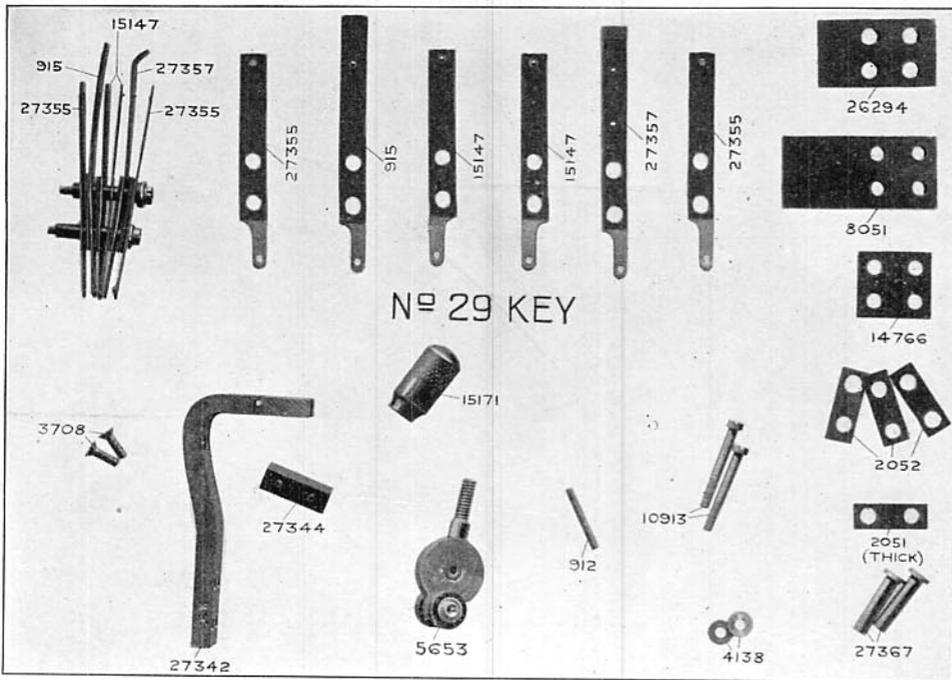


Cat'1 3—Plate No. 8—Code No. 30 Key

In Ordering From These Plates, Specify Page Number and Catalogue Number.

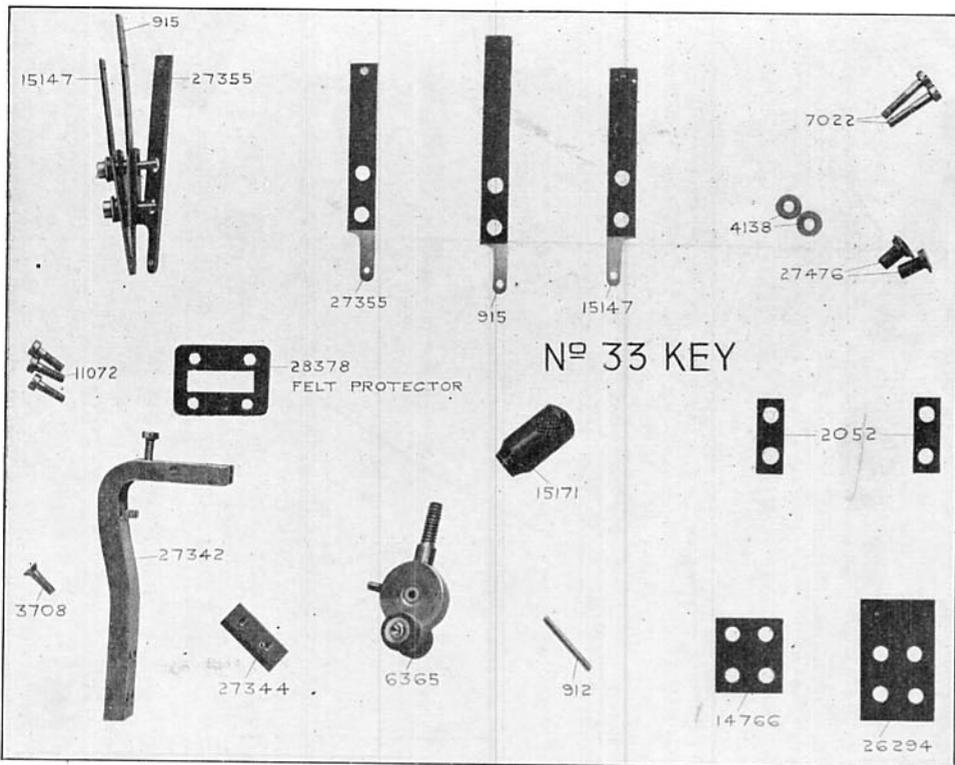
*Sixty-five*

Piece No. 15147 Replaced by Piece No. 27499



Cat'l 3—Plate No. 9—Code No. 29 Key

Piece No. 7022 replaced by Piece No. 19329; Piece No. 27476 by Piece No. 28301; Piece No. 2052 by Piece No. 2051

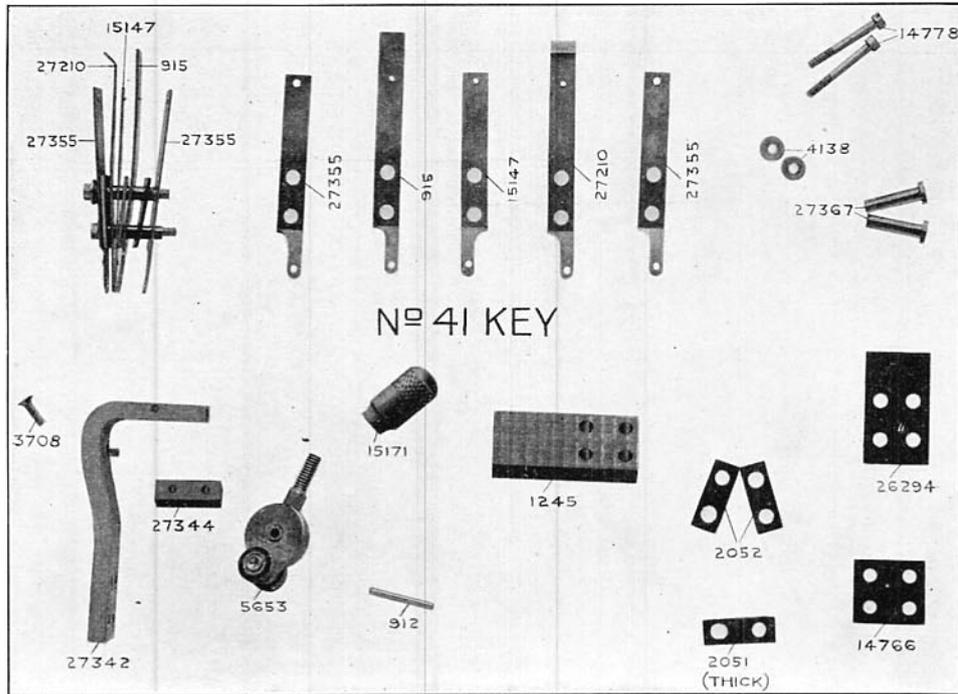


Cat'l 3—Plate No. 10—Code No. 33 Key

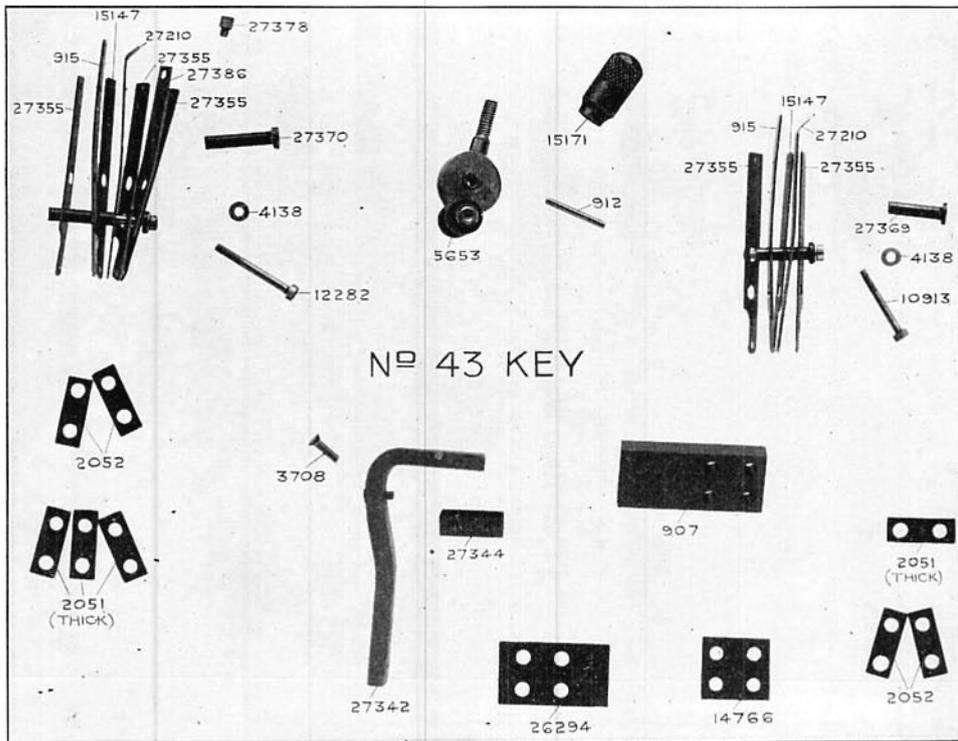
Sixty-six

**In Ordering From These Plates, Specify Page Number and Catalogue Number.**

Piece No. 15147 replaced by Piece No. 27499; Piece No. 14778 by Piece No. 10875; Piece No. 27367 by Piece No. 27368; Piece No. 1245 by Piece No. 907; Piece No. 2052 by Piece No. 2051



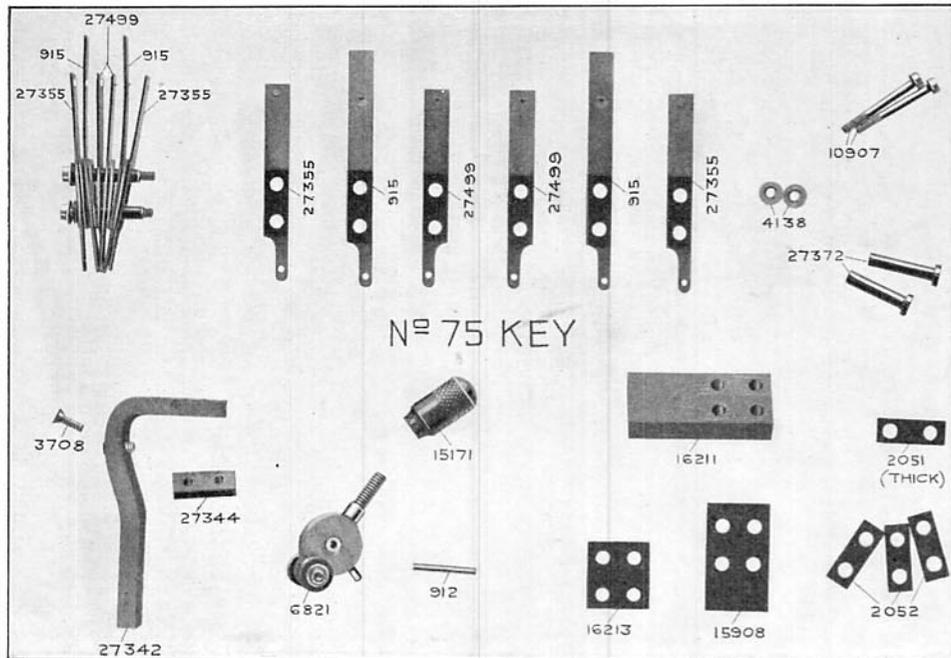
Cat'1 3—Plate No. 11—Code No. 41 Key.  
 Piece No. 15147 replaced by Piece No. 27499



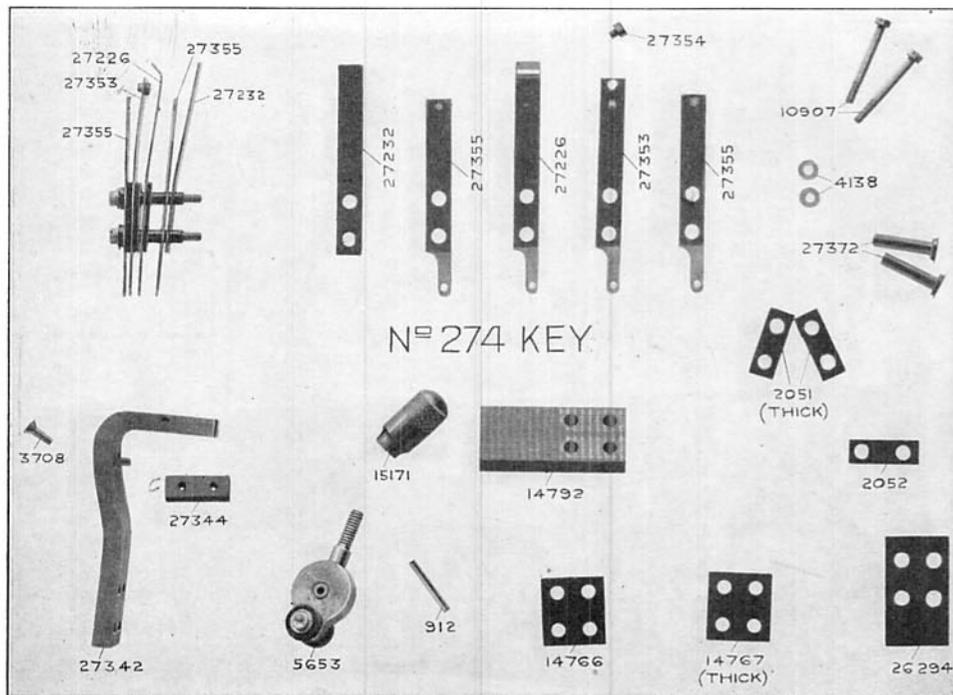
Cat'1 3—Plate No. 12—Code No. 43 Key

In Ordering From These Plates, Specify Page Number and Catalogue Number.

Piece No. 10907 replaced by Piece No. 10897; Piece No. 16211 replaced by Piece No. 1245; Piece No. 2052 by Piece No. 2051; Piece No. 16213 by Piece No. 14767; Piece No. 1450, and (2) Piece No. 2051, removed



Cat'1 3—Plate No. 13—Code No. 75 Key



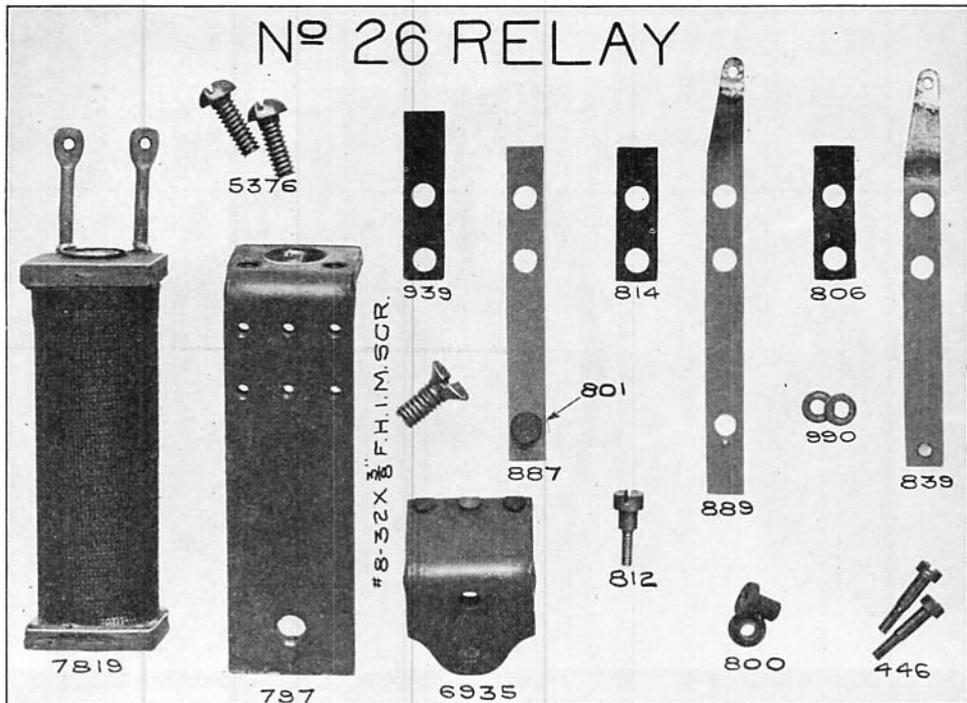
Cat'1 3—Plate No. 14—Code No. 274 Key

Sixty-eight

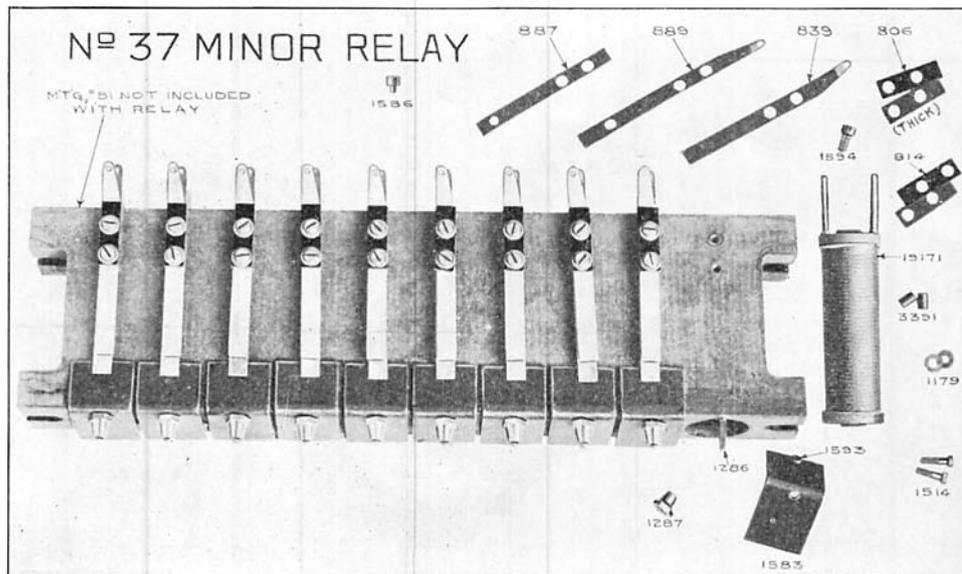
In Ordering From These Plates, Specify Page Number and Catalogue Number.







Cat'l 3—Plate No. 17—Code No. 26 Relay



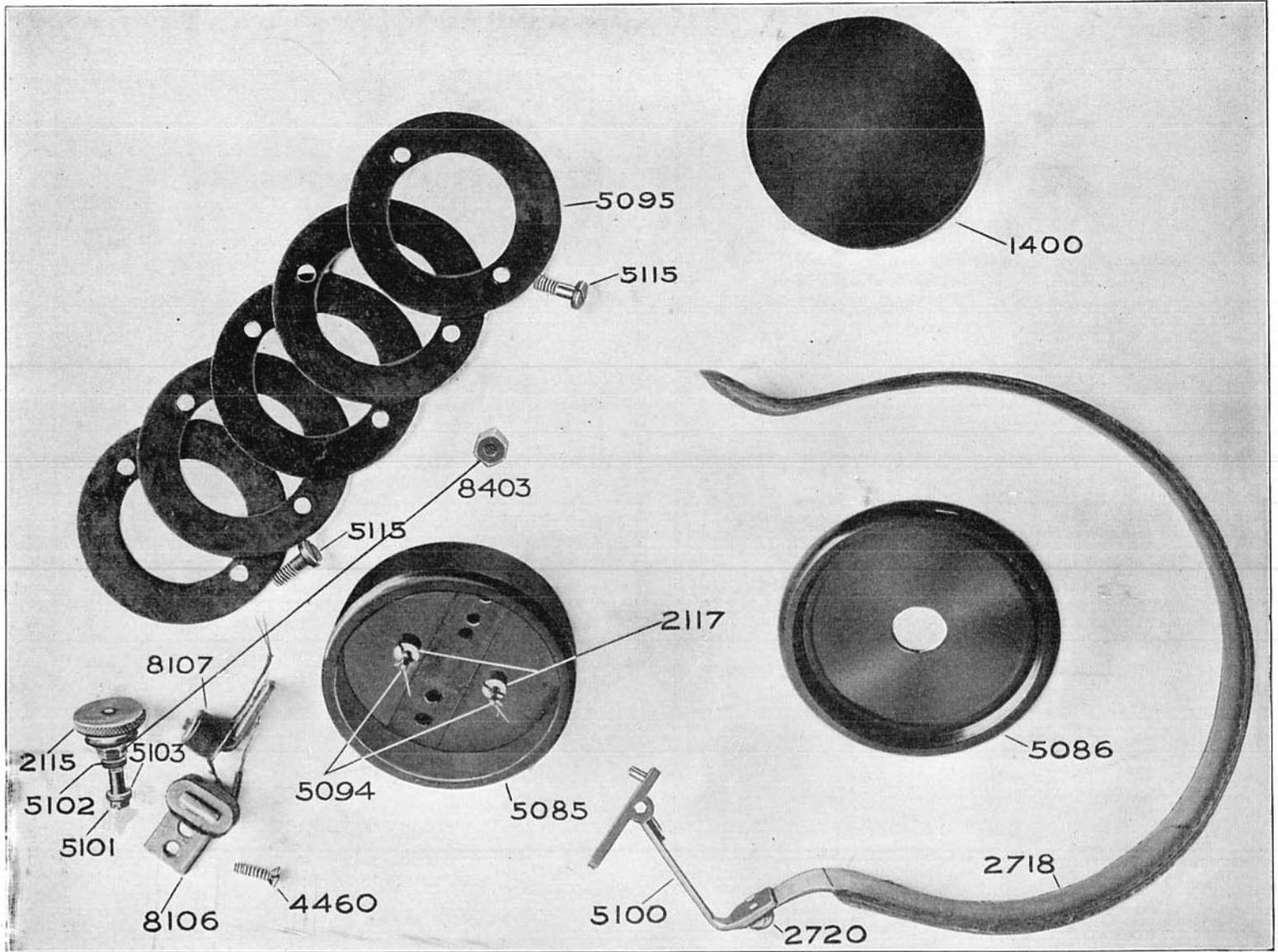
Cat'l 3—Plate No. 18—Code No. 37 Minor Relay

**In Ordering From These Plates, Specify Page Number and Catalogue Number.**

(5) Piece No. 5095 are now replaced by (2) Piece No. 13602

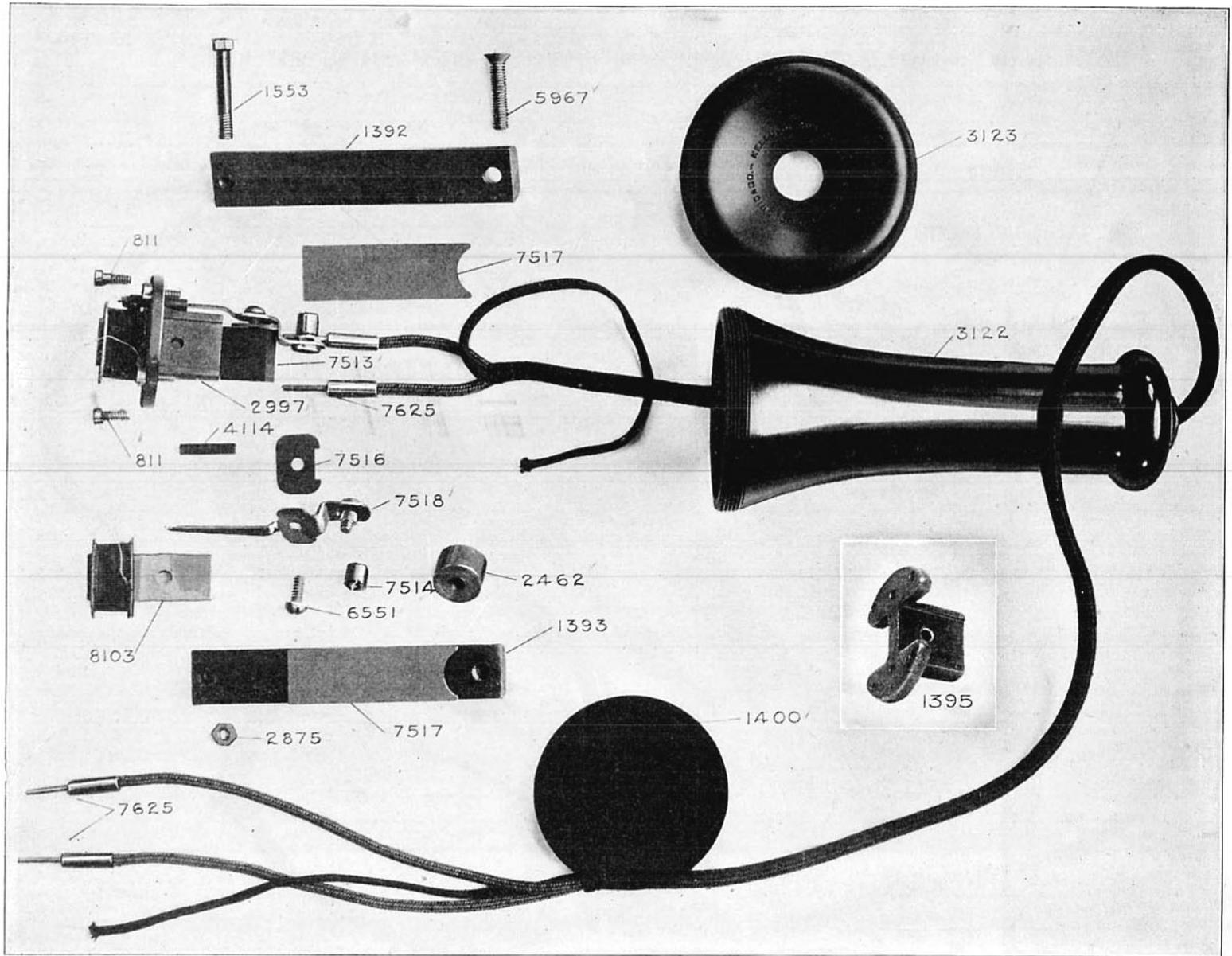
Security-Info

In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 19—Code No. 14—Head Receiver

Pc. No. 2 replaced by 25954. Pc. No. 2997, which was replaced by Pc. No. 1395, is now replaced by Pc. No. 32,333.  
 Pc. No. 811 screws replaced by Pc. No. 19245

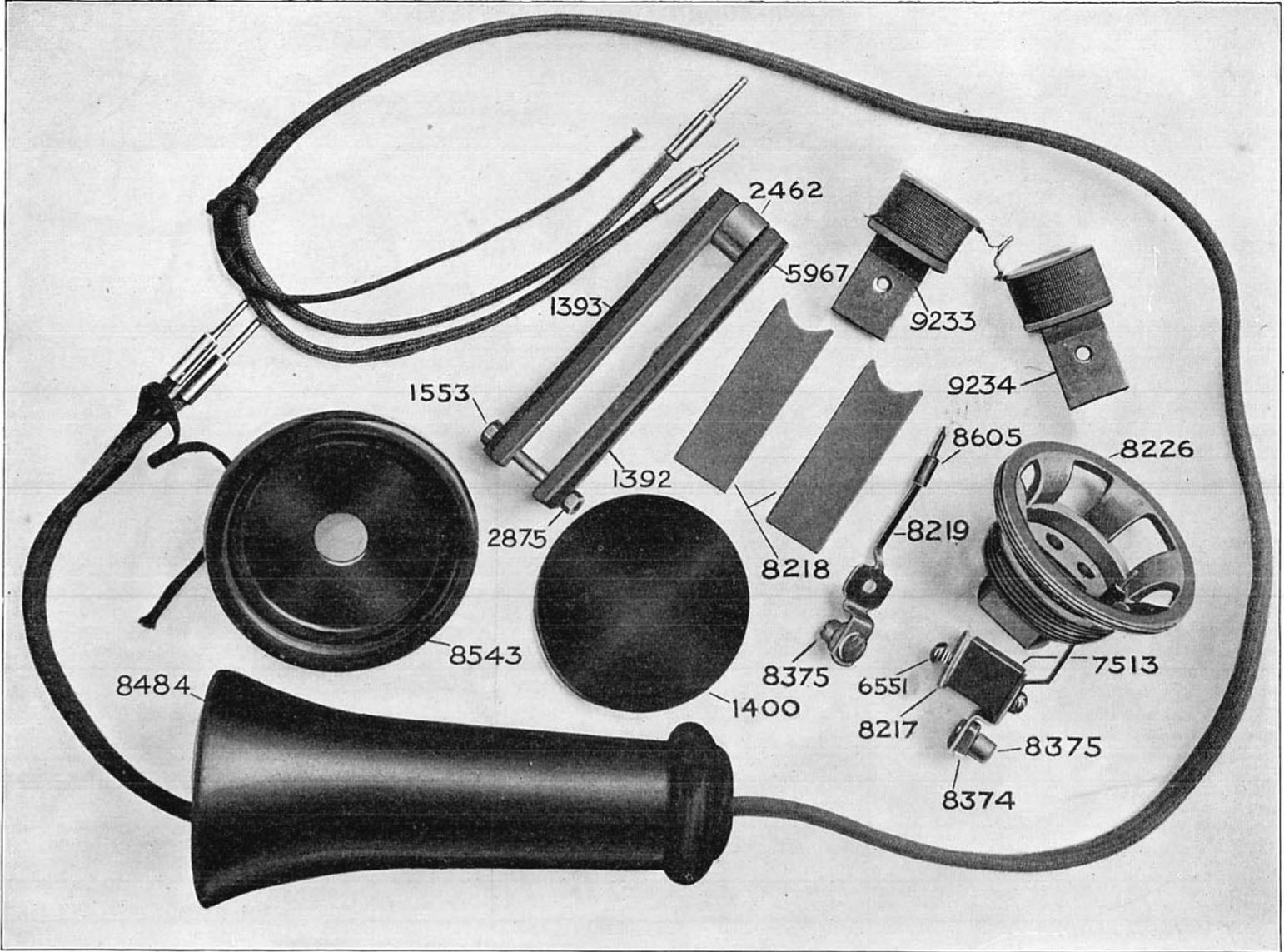


In Ordering From These Plates, Specify Page Number and Catalogue Number.

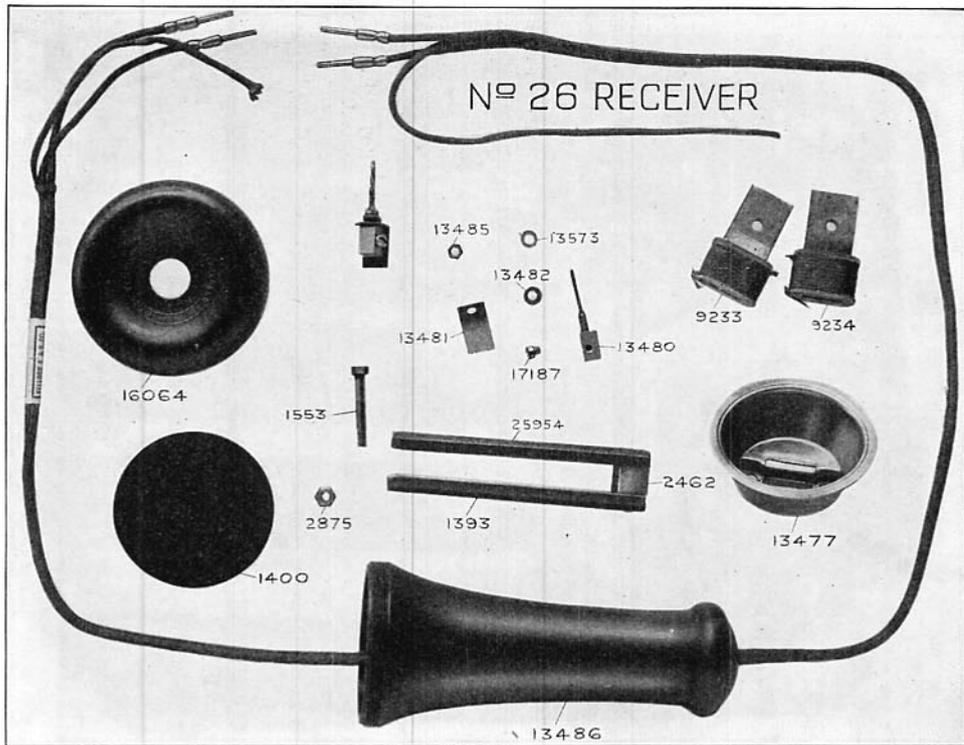
Security-three

Cat'l 3—Plate No. 20—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

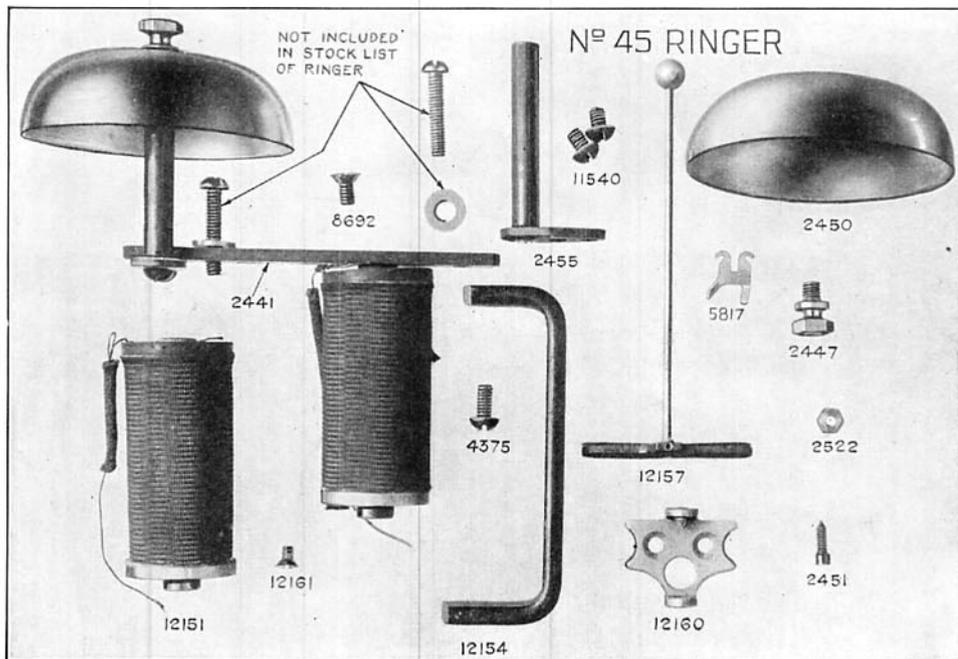
In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 21—Type No. 23—Receiver. Composition or Hard Rubber (Type No. 22) Shell



Cat'1 3—Plate No. 22—Code No. 26 Receiver



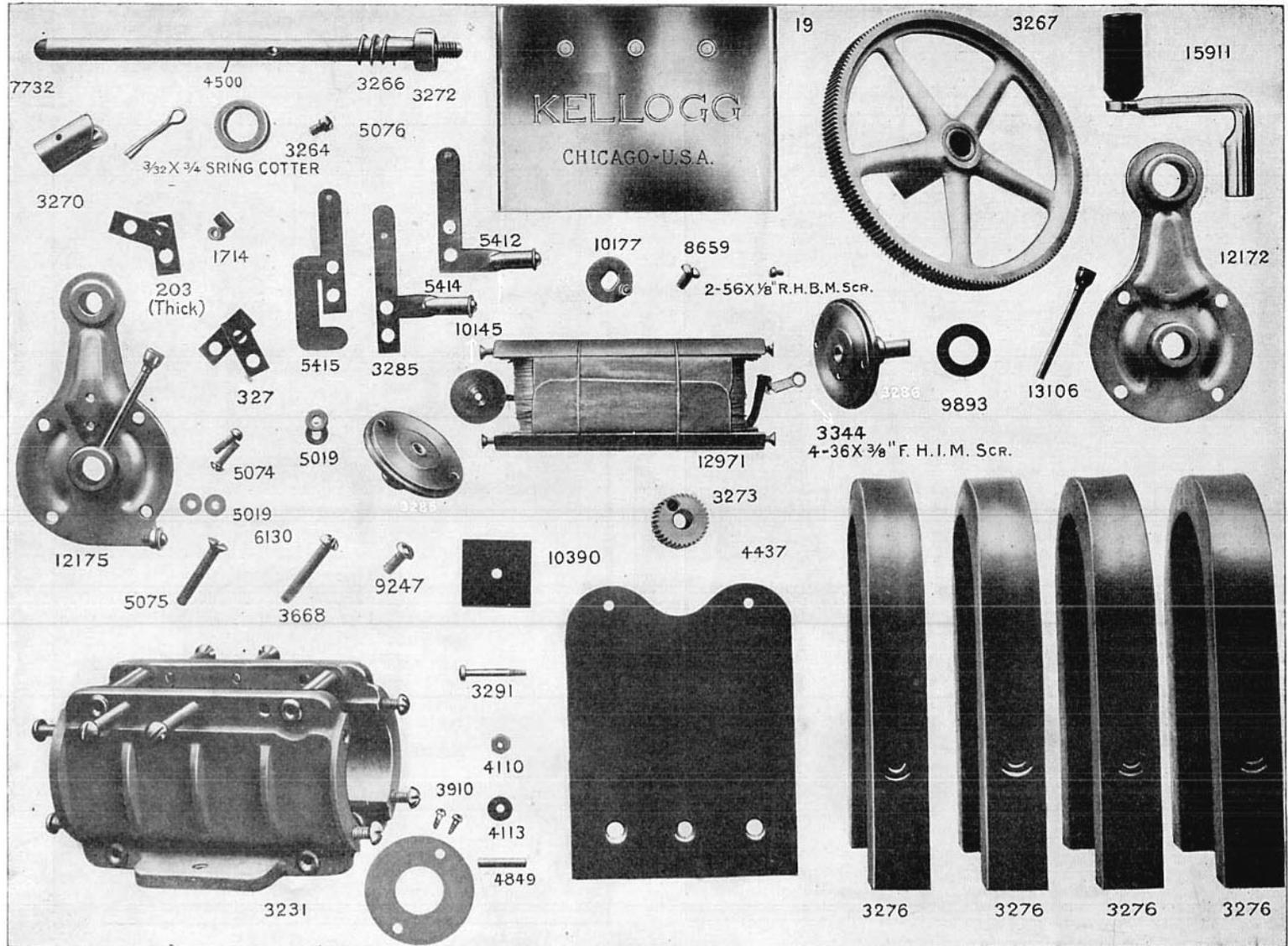
Cat'1 3—Plate No. 23—Code No. 45 Ringer  
 The only difference between No. 45 and No. 54 Ringer is that in the No. 54 Ringer  
 Piece No. 5817 is substituted for Piece No. 12151  
 Piece No. 5817 is not part of No. 45 Ringer

**In Ordering From These Plates, Specify Page Number and Catalogue Number.**

Pc. No. 3231 should be 3281  
 Pc. No. 3285 should be 10061 and Pc. No. 3286 should be 10060

See also page 11

In Ordering From These Plates, Specify Page Number and Catalogue Number.



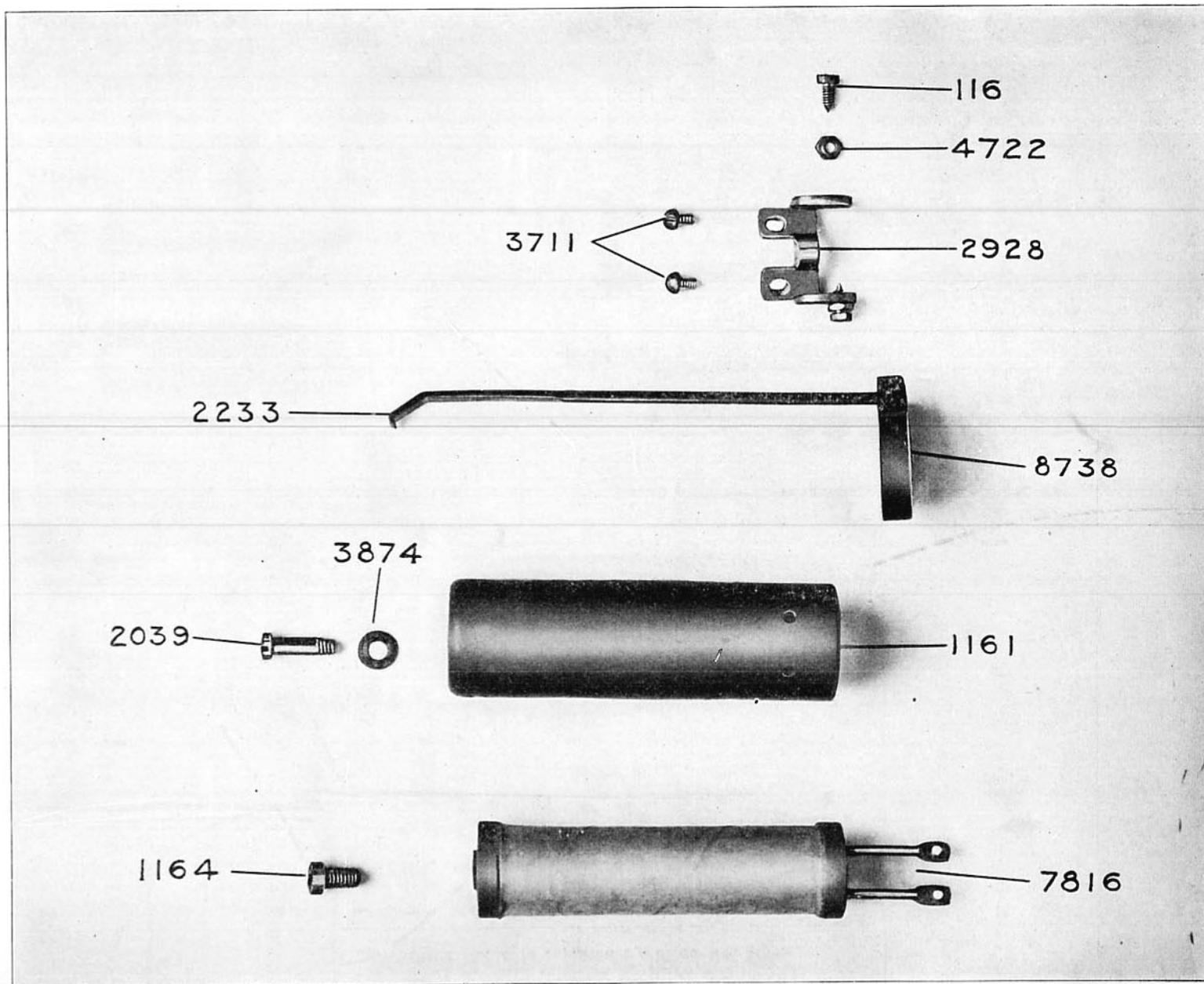
Cat'l No. 3—Plate No. 24—No. 22 Generator

Punched brass end plates—Pc. No. 12175 and 12172 now replace all old end plates. Handle Pc. No. 15911 is now black enameled throughout, with same piece number. Screw Pc. No. 8659 now replaced by hexagonal head screw Pc. No. 28670 with spring washer Pc. No. 22073. Pc. No. 3344 belongs fastened to Pc. No. 3286, with a 3/2x16 tubular rivet in place of the 2-56x1/8" R. H. B. M. screw shown in plate. Pc. No. 10145 belongs fastened to Pc. No. 3285.

Piece No. 1161 changed to Piece No. 12891

In Ordering From These Plates, Specify Page Number and Catalogue Number.

Seventy-seven

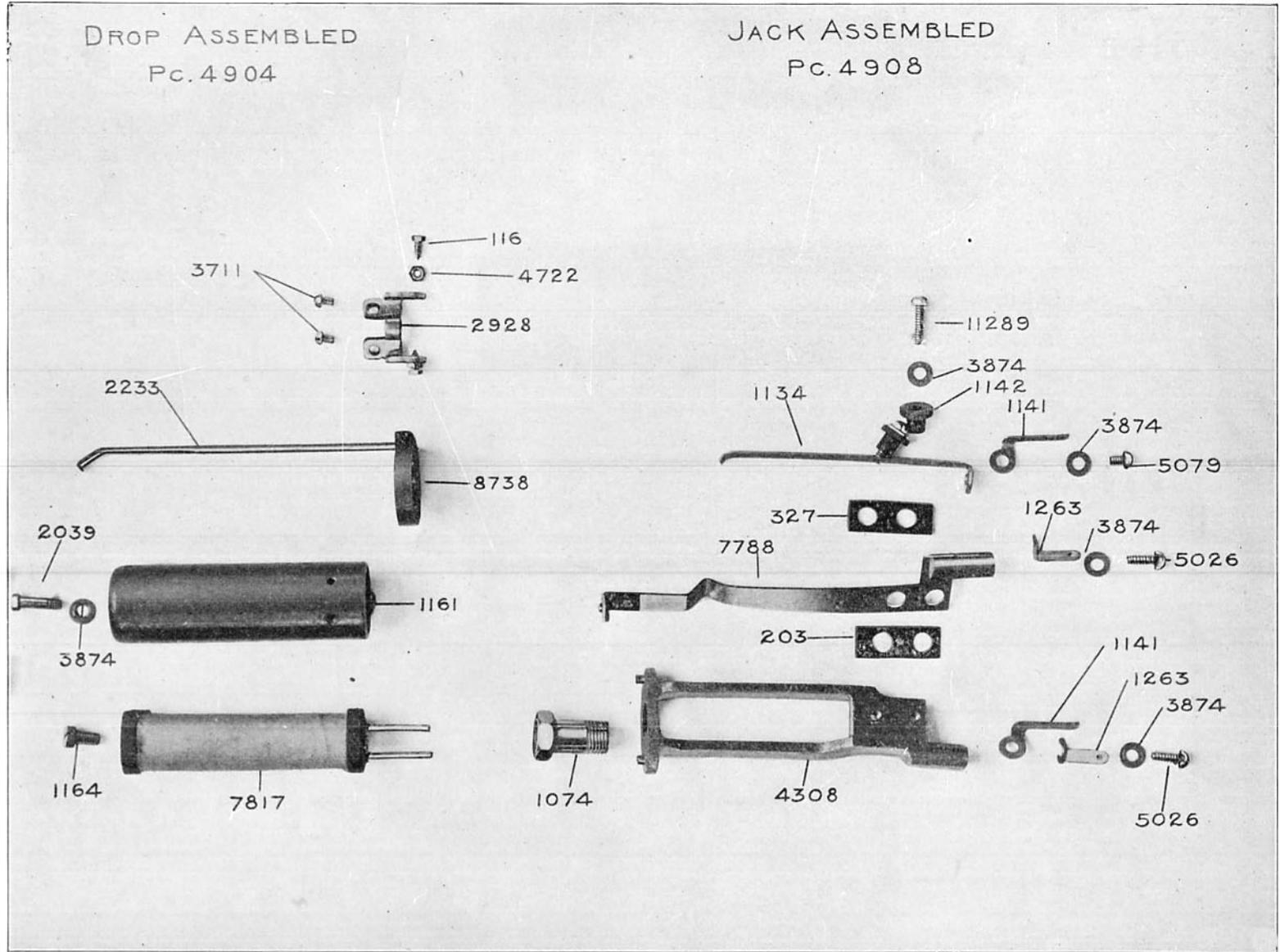


Cat'l 3—Plate No. 25—Type No. 8 Drop

Piece No. 1161 replaced by Piece No. 12891  
Piece No. 5079 replaced by Piece No. 5426

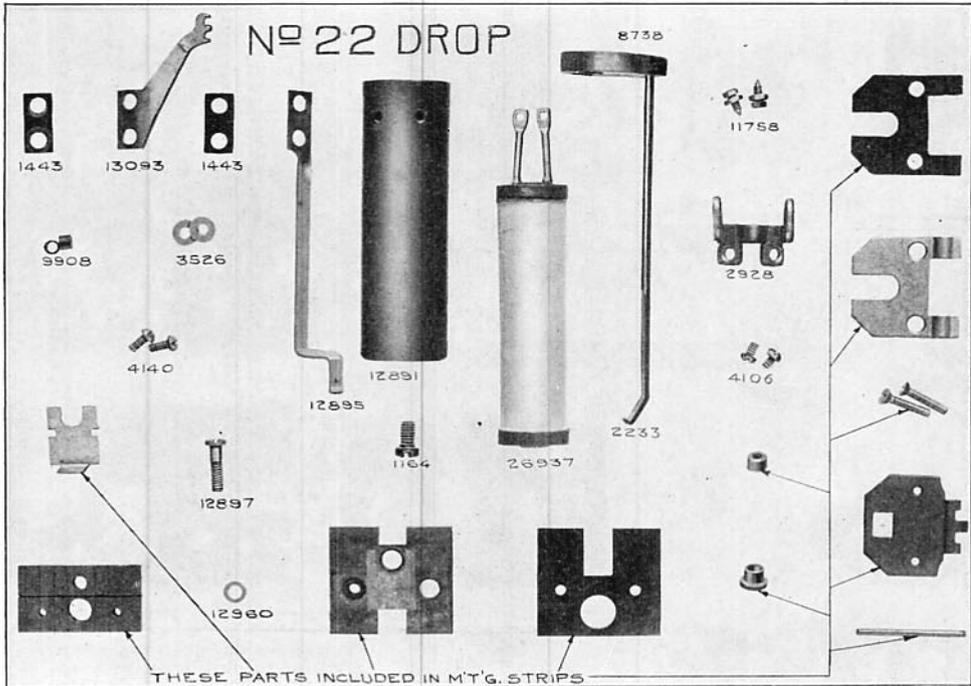
Seventy-eight

In Ordering From These Plates, Specify Page Number and Catalogue Number.



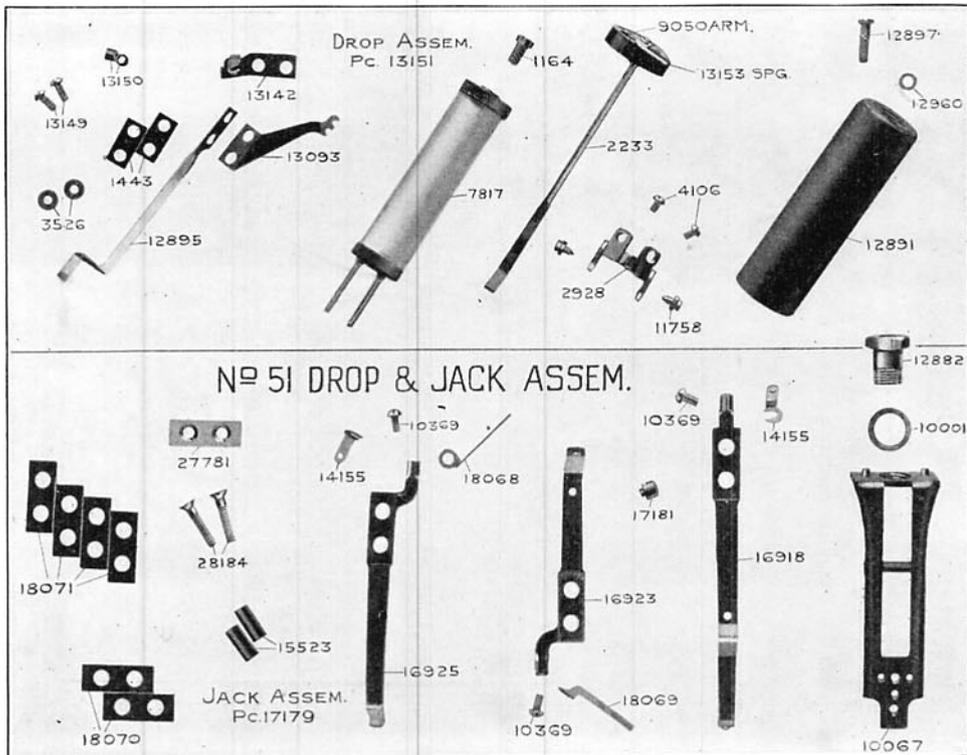
Cat'l 3—Plate No. 26—Type No. 3—Drop and Jack  
Piece No. 025 and Piece No. 030 washers are used for adjusting Piece No. 1074

Piece No. 1443 replaced by Piece No. 13446; Piece No. 9908 replaced by Piece No. 13150;  
 Piece No. 4140 replaced by Piece No. 13149; Piece No. 8738 replaced by Piece No. 14993



**Cat' 3—Plate No. 27—Code No. 22—Drop**

Piece No. 1443 replaced by Piece No. 31446; Piece No. 13150 replaced by Piece No. 19107; Piece No. 12882 by Piece No. 29293



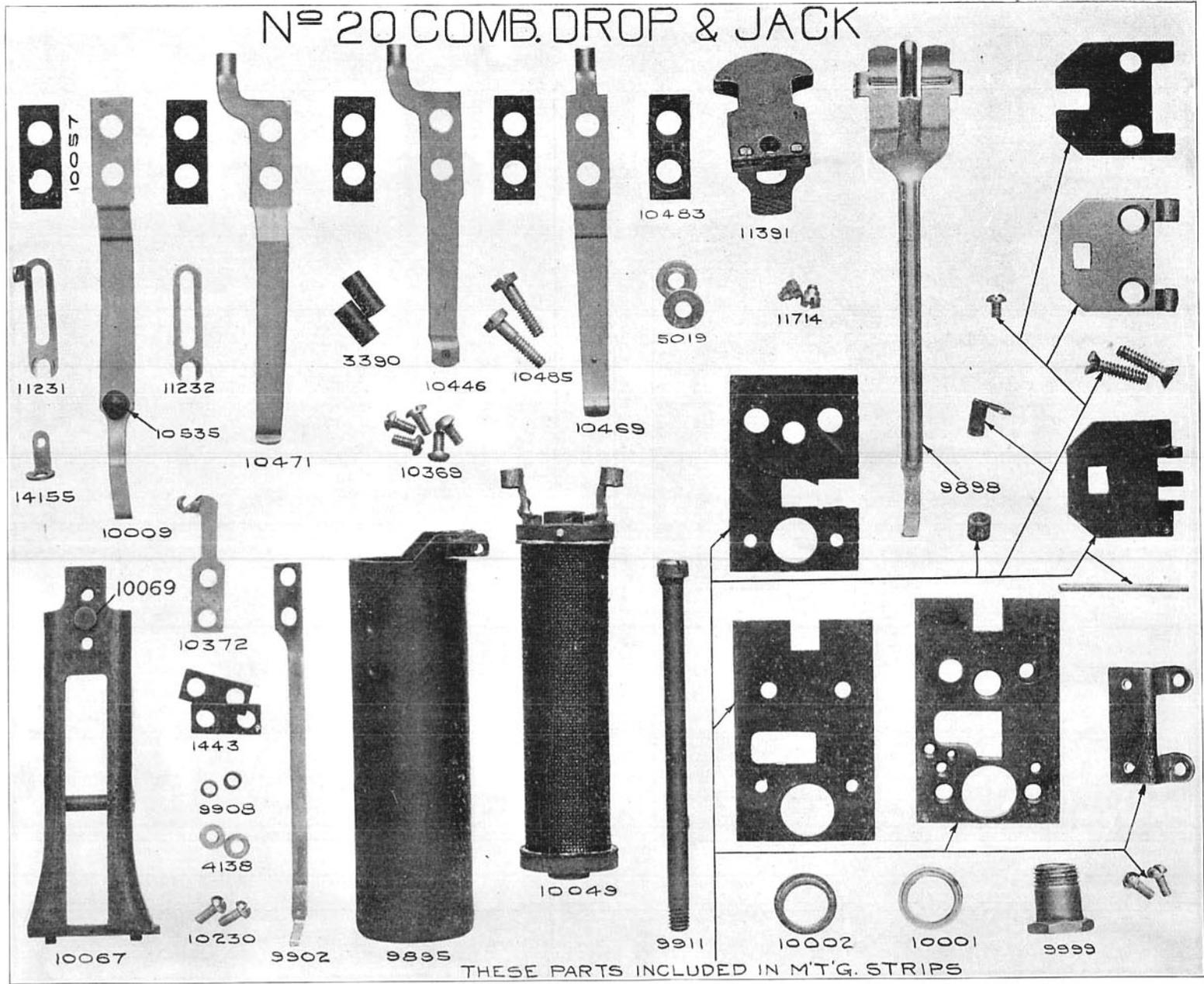
**Cat' 3—Plate No. 28—Code No. 51—Drop and Jack**

**In Ordering From These Plates, Specify Page Number and Catalogue Number.**

# N<sup>o</sup> 20 COMB. DROP & JACK

*Eighty*

In Ordering From These Plates, Specify Page Number and Catalogue Number.

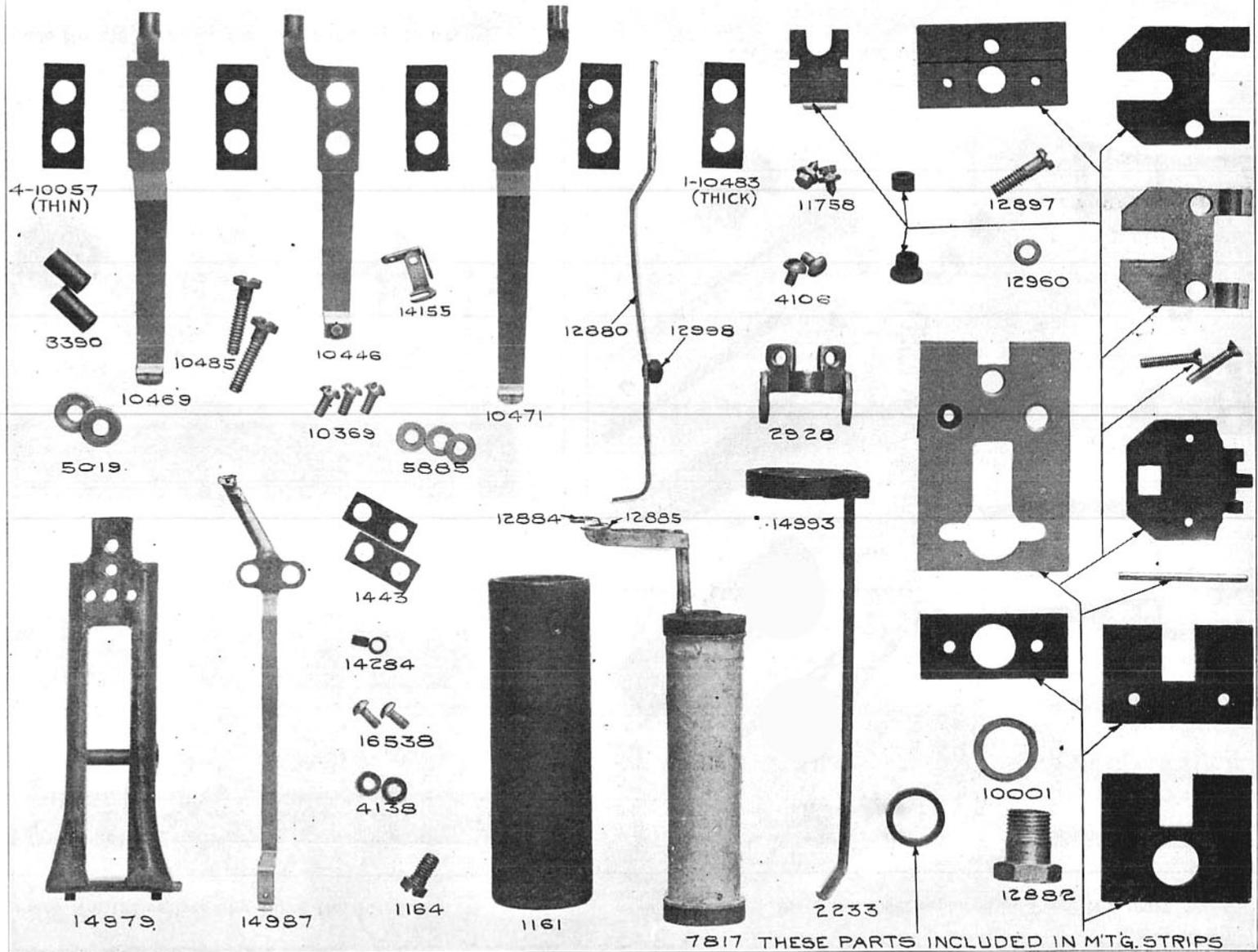


THESE PARTS INCLUDED IN M'T'G. STRIPS

Piece No. 12882 replaced by Piece No. 29293

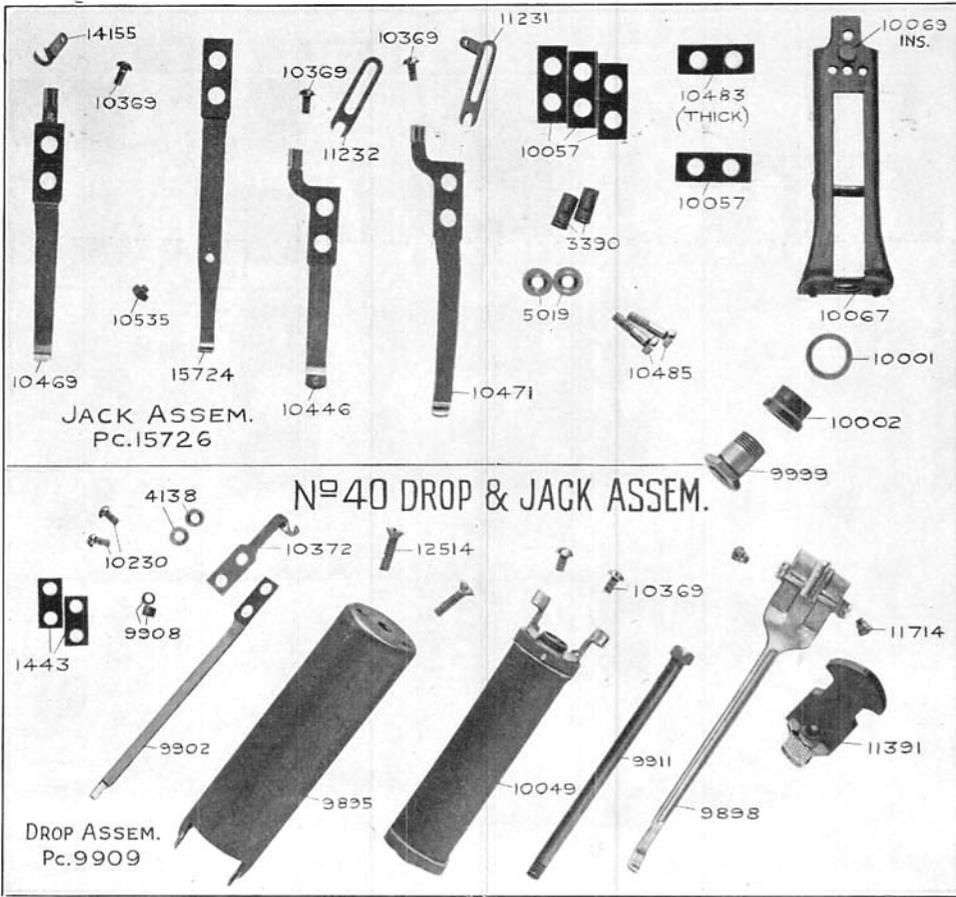
# N<sup>o</sup> 29 COMB. DROP & JACK

In Ordering From These Plates, Specify Page Number and Catalogue Number.



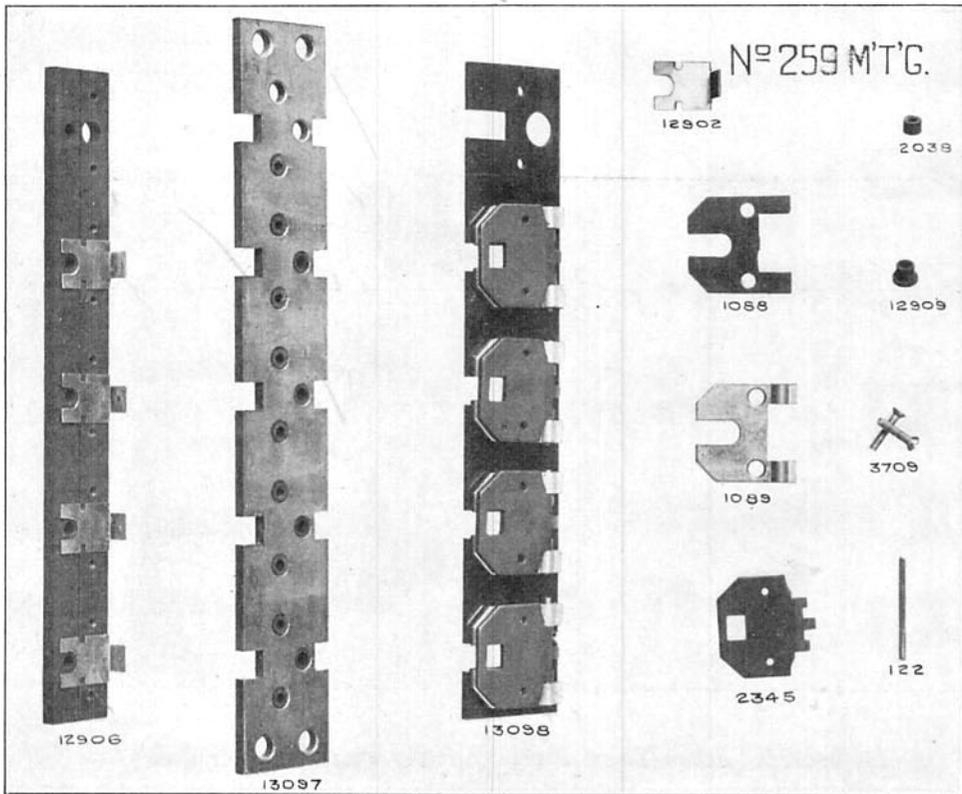
Cat' 3—Plate No. 30—Code No. 29—Combined Drop and Jack

Piece No. 10067 replaced by Piece No. 10077



Cat' 3—Plate No. 31—Code No. 40—Drop and Jack

Piece No. 122 replaced by Piece No. 30452

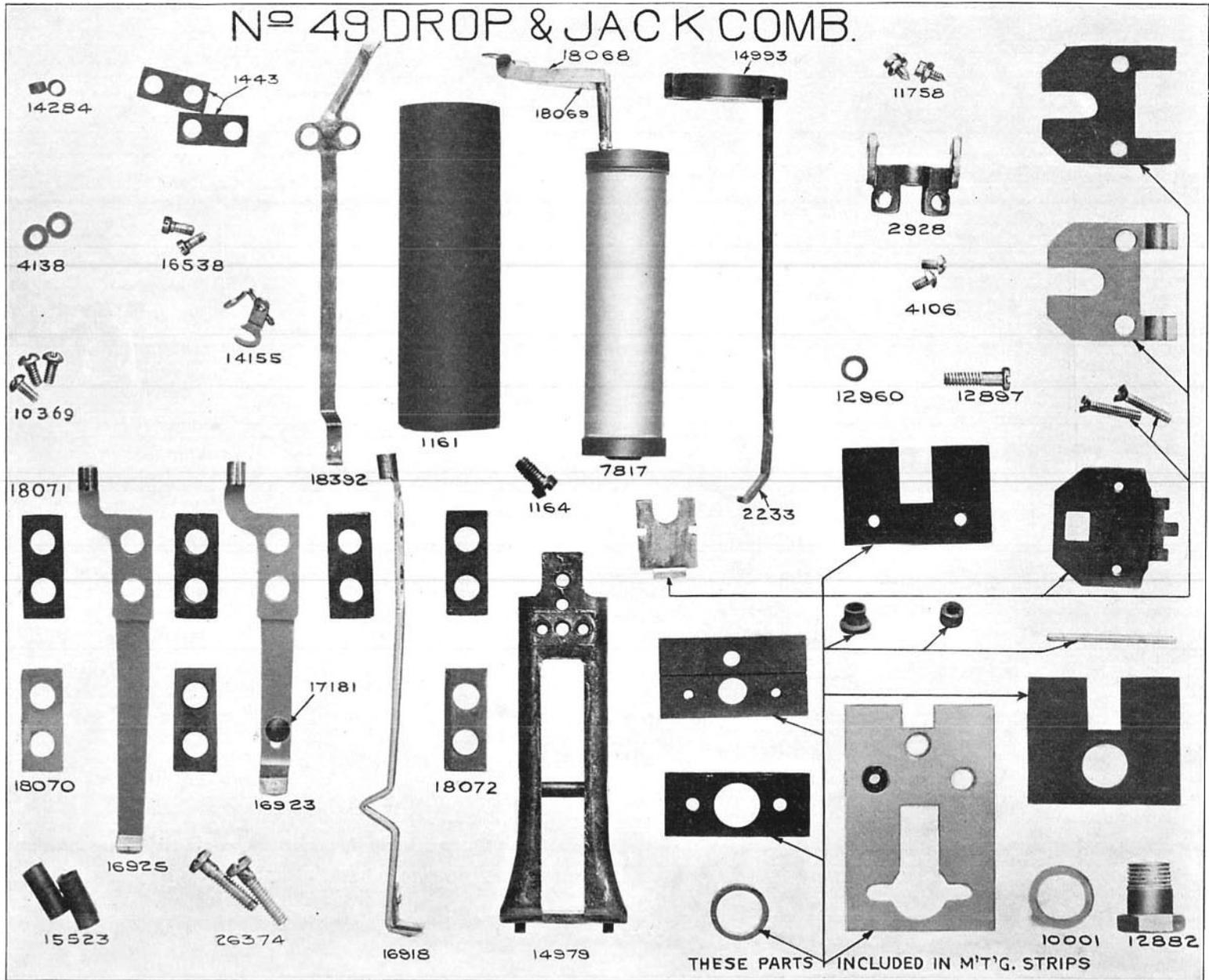


Cat' 3—Plate No. 32  
Code No. 259 Mounting for No. 22 and No. 59 Drops

Eighty-two

In Ordering From These Plates, Specify Page Number and Catalogue Number.

# Nº 49 DROP & JACK COMB.



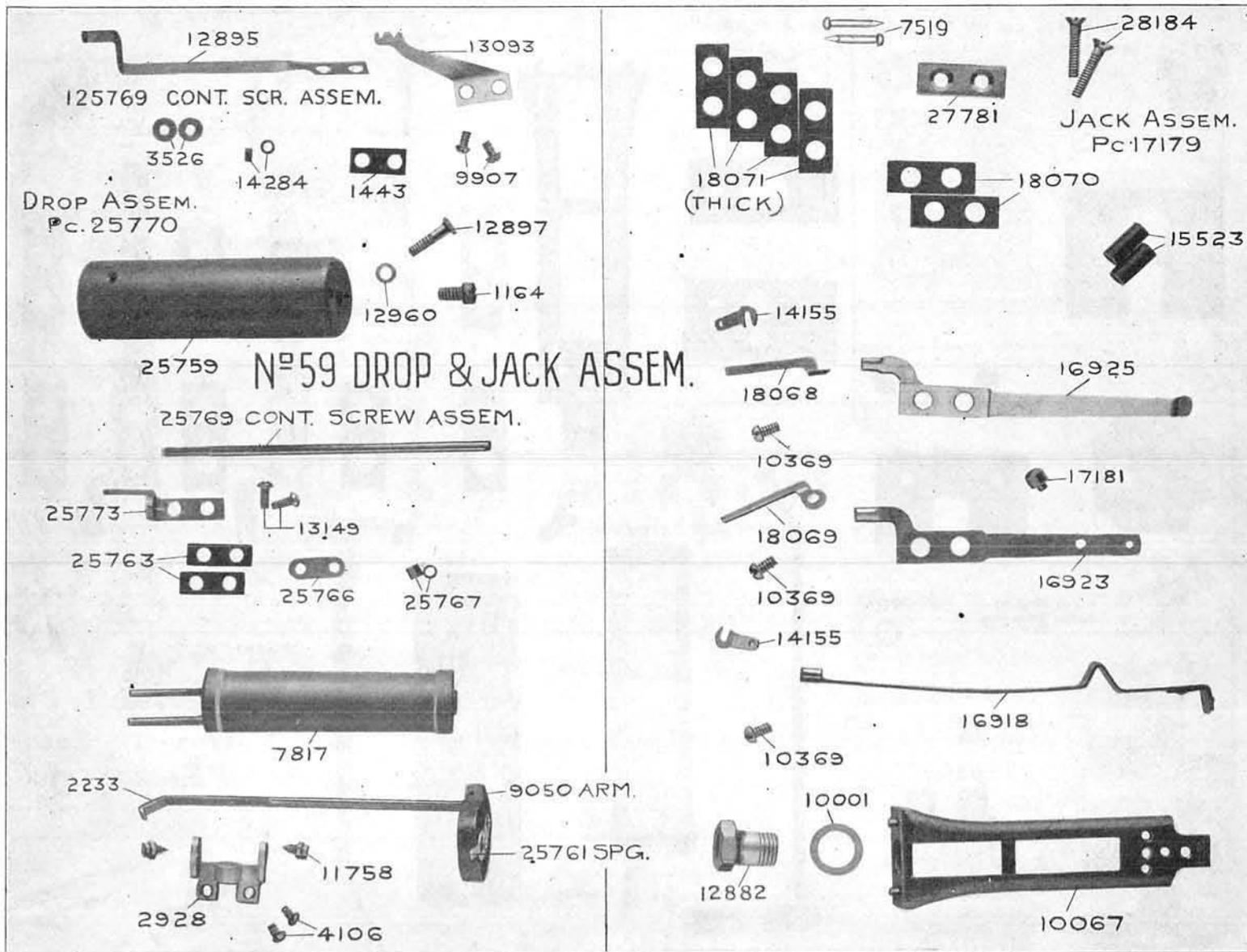
In Ordering From These Plates, Specify Page Number and Catalogue Number.

Eighty-three

Piece No. 12882 replaced by Piece No. 29293; Piece No. 1443 replaced by Piece No. 31446; Piece No. 25763 replaced by Piece No. 17795

Eighty-four

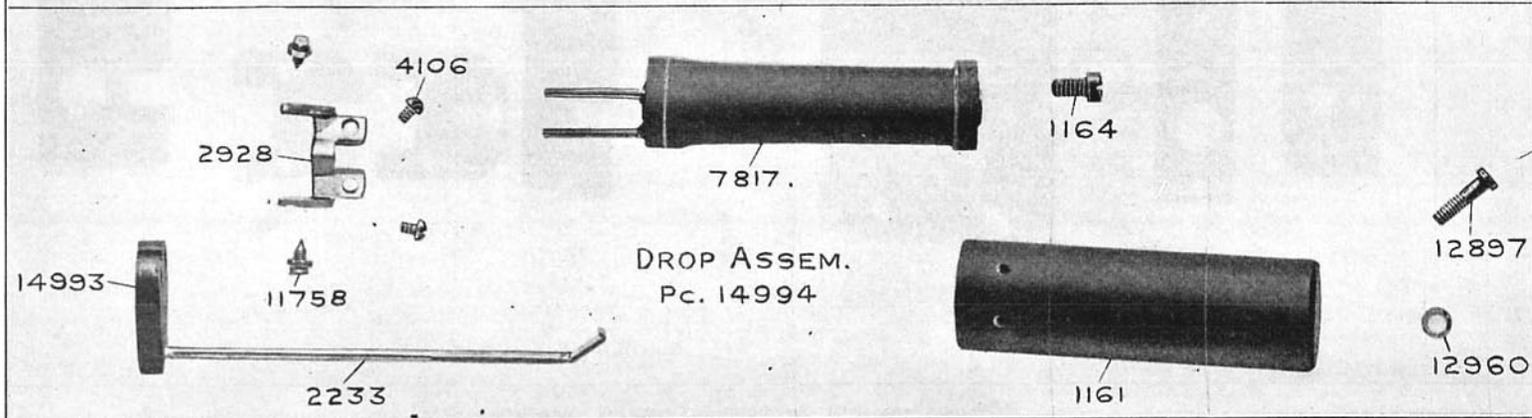
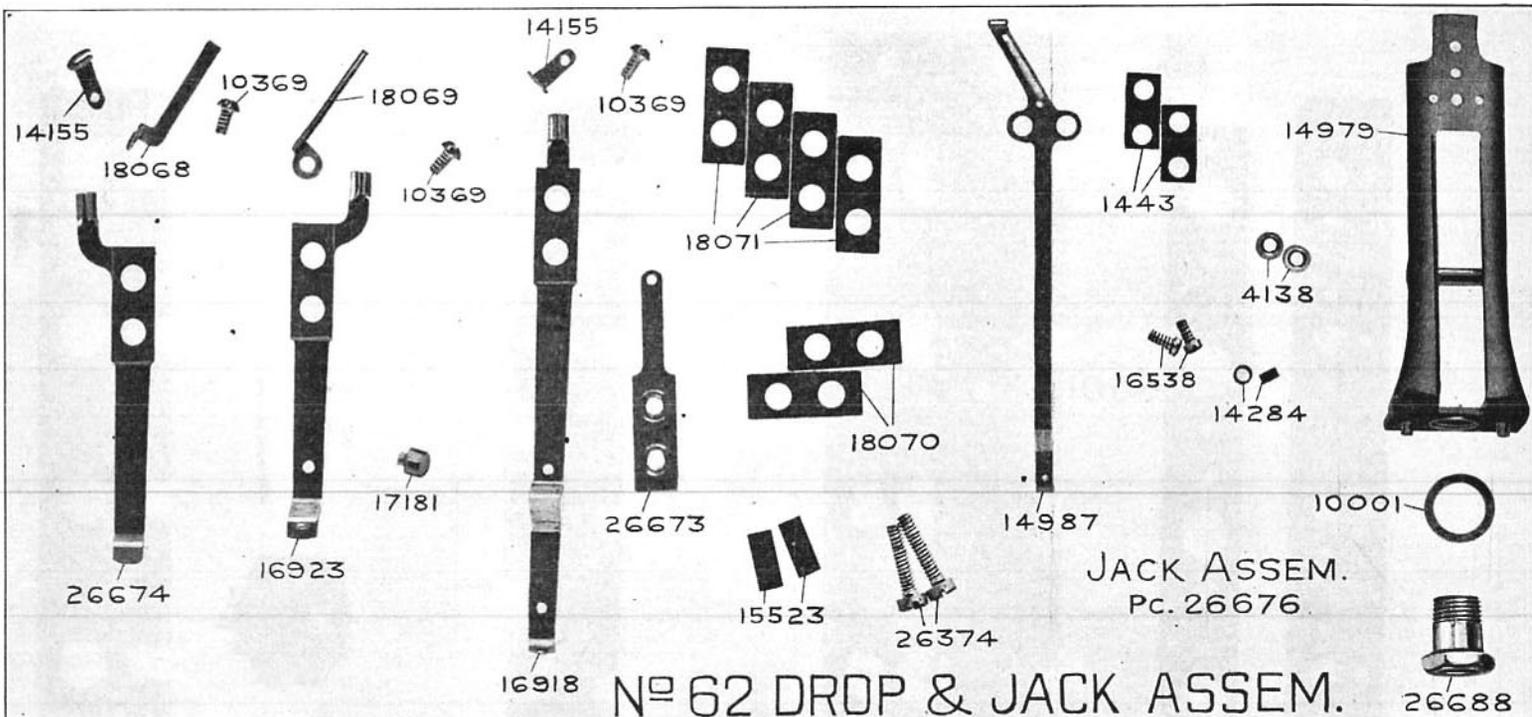
In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 34—Code No. 59—Drop and Jack

Piece No. 14979 replaced by Piece No. 14978; Piece No. 26673 by Piece No. 27438; Piece No. 26374 by Piece No. 28184; Piece No. 1161 by Piece No. 12891  
 The only difference between the No. 62 and No. 49 Drop and Jack is in the thimbles  
 Plate No. 33 shows No. 49 Drop and Jack assembly

In Ordering From These Plates, Specify Page Number and Catalogue Number.



Eighty-five



Piece No.

replaced by Piece No. 17744 wire.

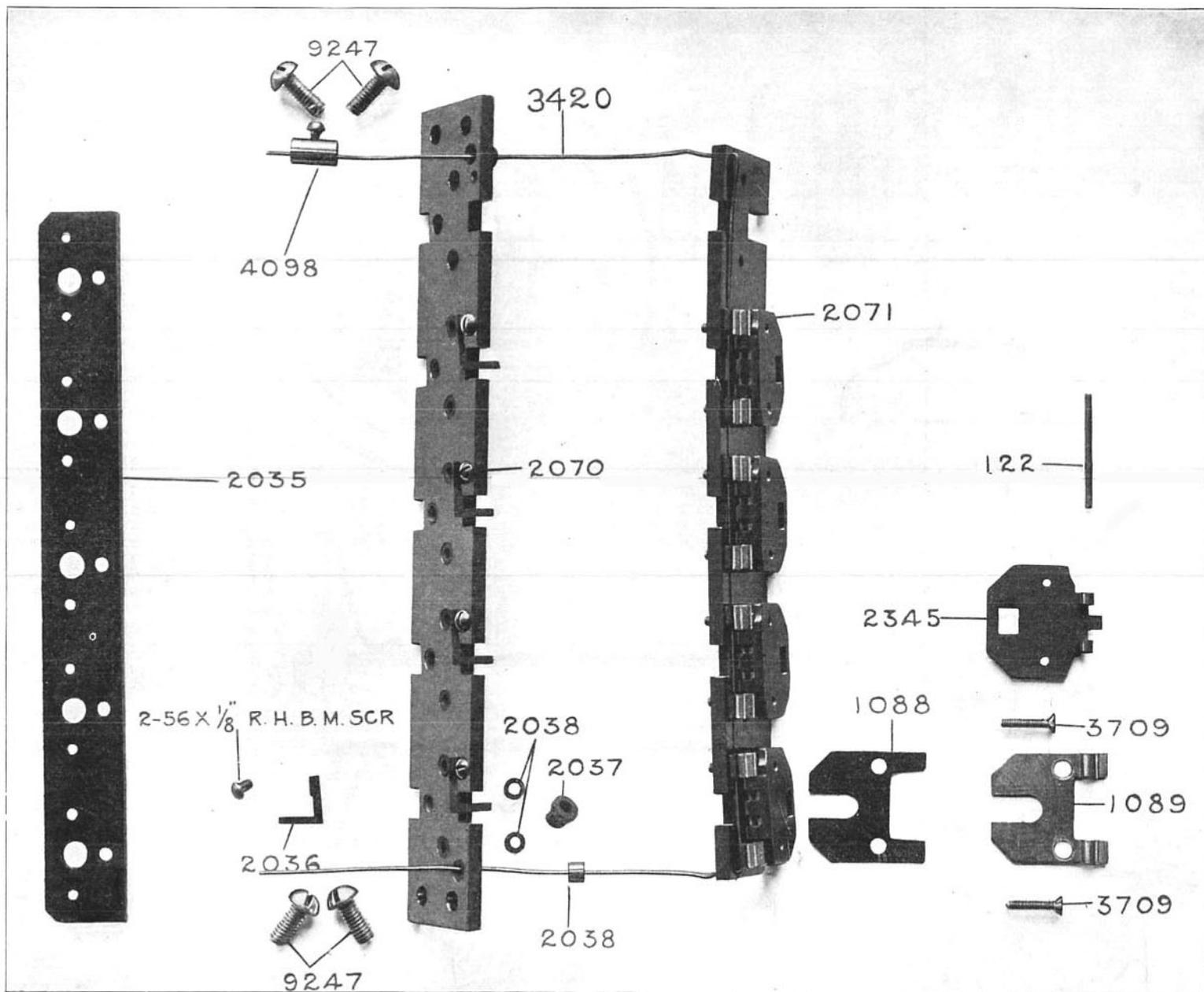
(1) Piece No. 122 pin replace

(2) Piece No. 30452 pins

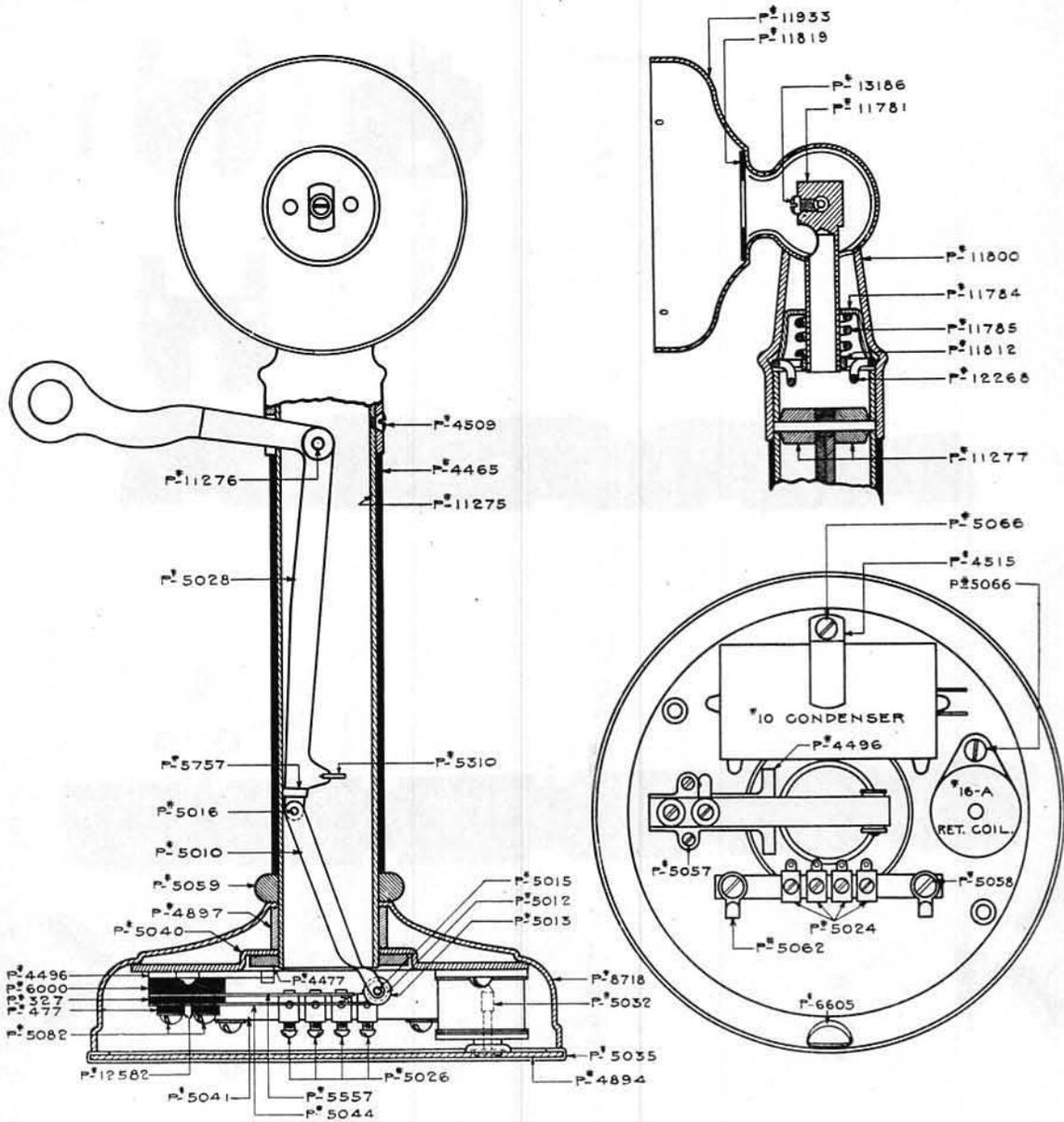
Piece No. 9247 replaced by Piece No. 12995

In Ordering From These Plates, Specify Page Number and Catalogue Number.

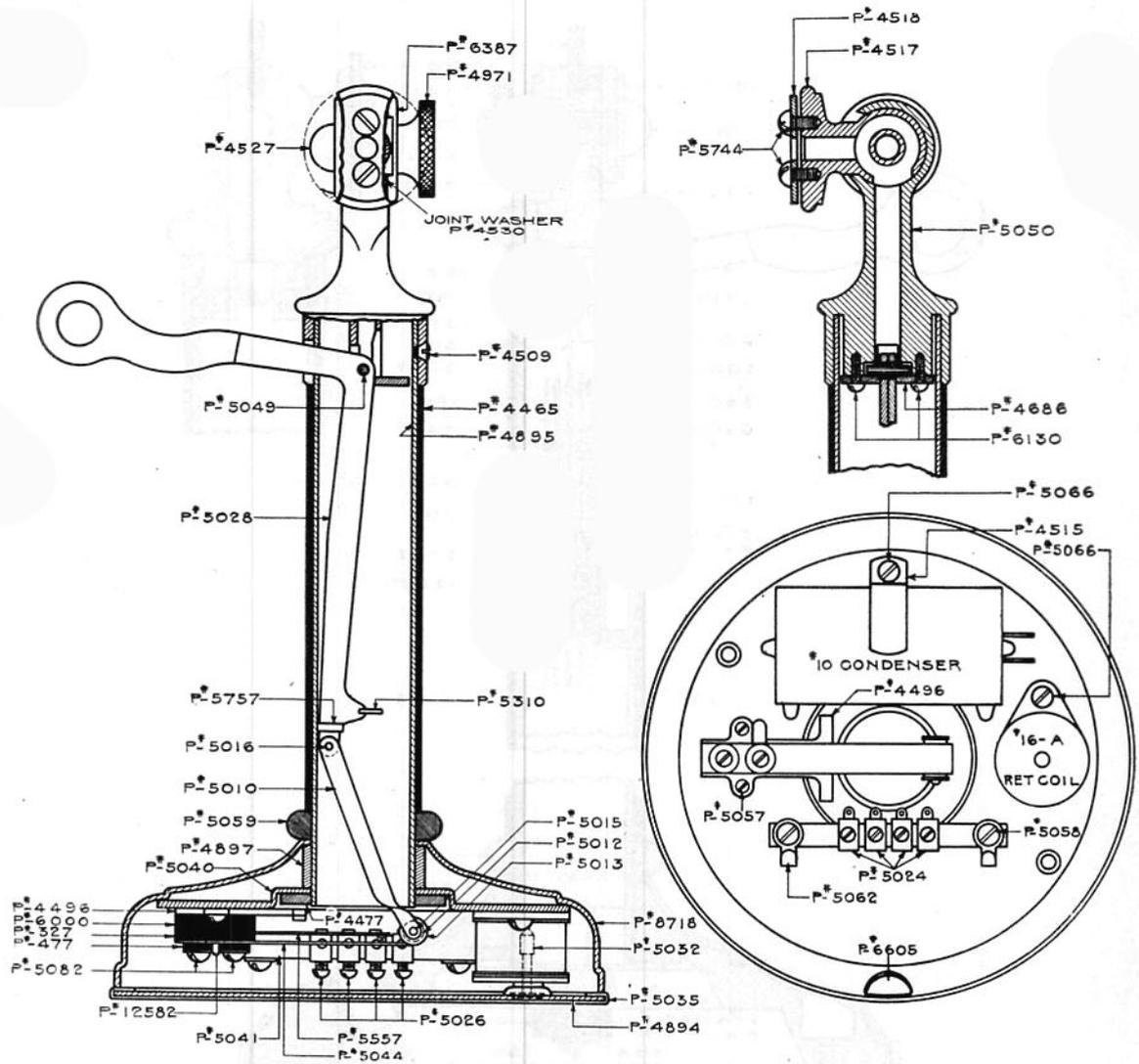
Eighty-seven



Cat'l 3—Plate No. 37—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 $\frac{1}{8}$  R. H. B. M. Scr.)

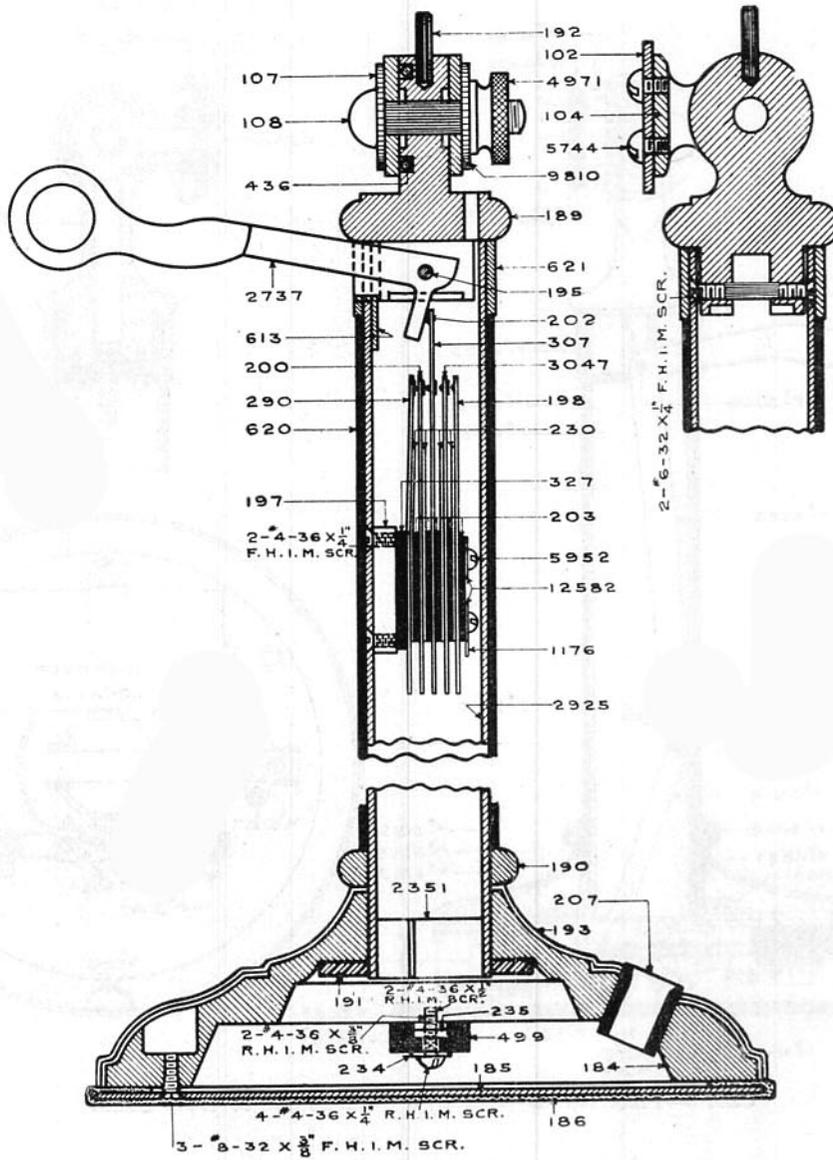


Cat'l 3—Plate No. 38—No. 39 Type Desk Stand  
 Piece No. 8718 is finished in two ways  
 When nickel plated it is Piece No. 6606  
 When black enameled it is Piece No. 8057  
 Piece No. 5959 replaced by Piece No. 15707



Cat' 3—Plate No. 39—Old Type Nos. 28 and 39 Desk Stand

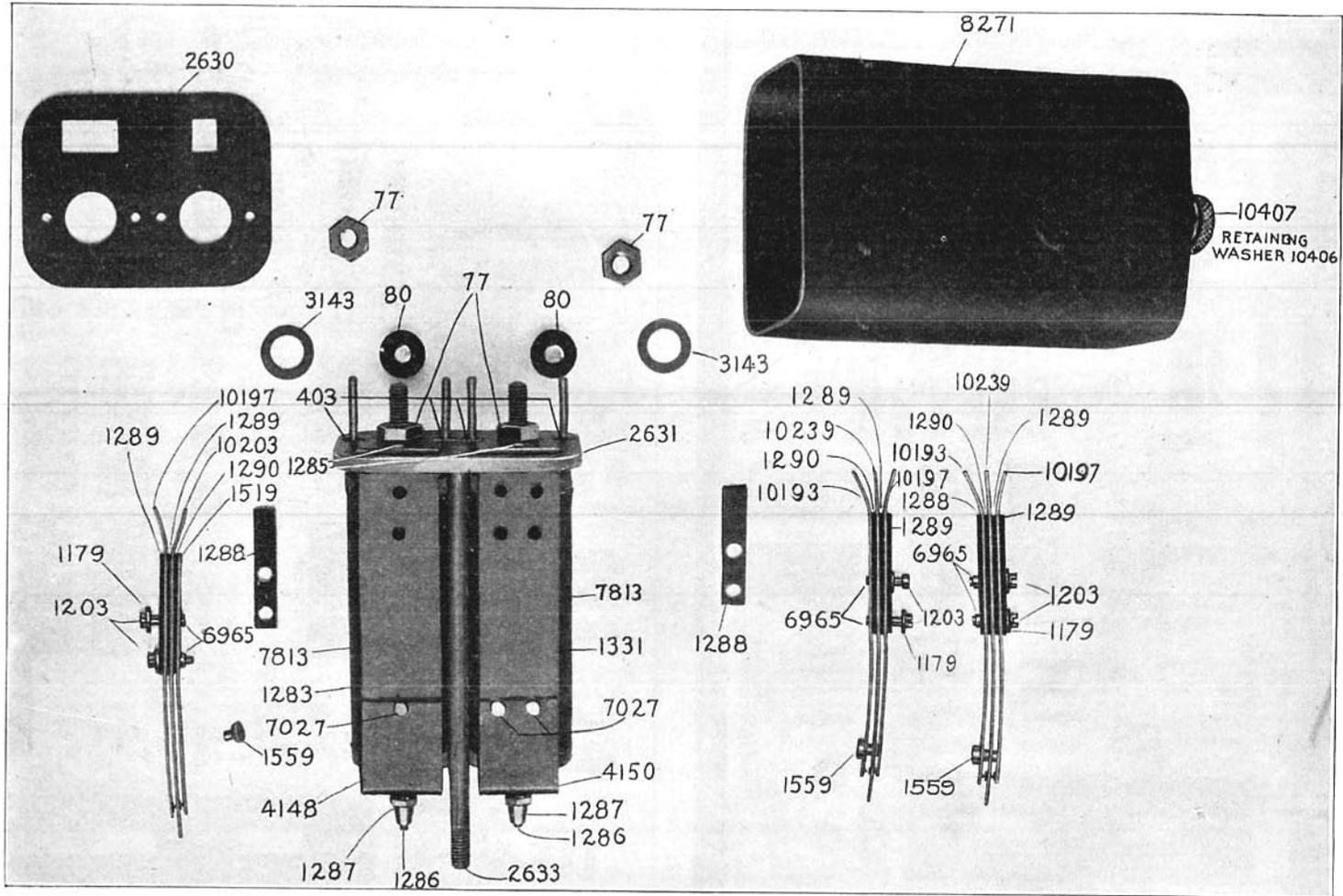
In Ordering From These Plates, Specify Page Number and Catalogue Number.



Cat'l 3—Plate No. 40—Old Type Nos. 4 and 9 Desk Stand

Pc. No. 1288 replaced by 2 Pc. No. 1289  
 Pc. No. 10203 replaced by Pc. No. 1527

Pc. No. 10193 replaced by Pc. No. 1293  
 Pc. No. 10239 replaced by Pc. No. 1294  
 Pc. No. 10197 replaced by Pc. No. 1295

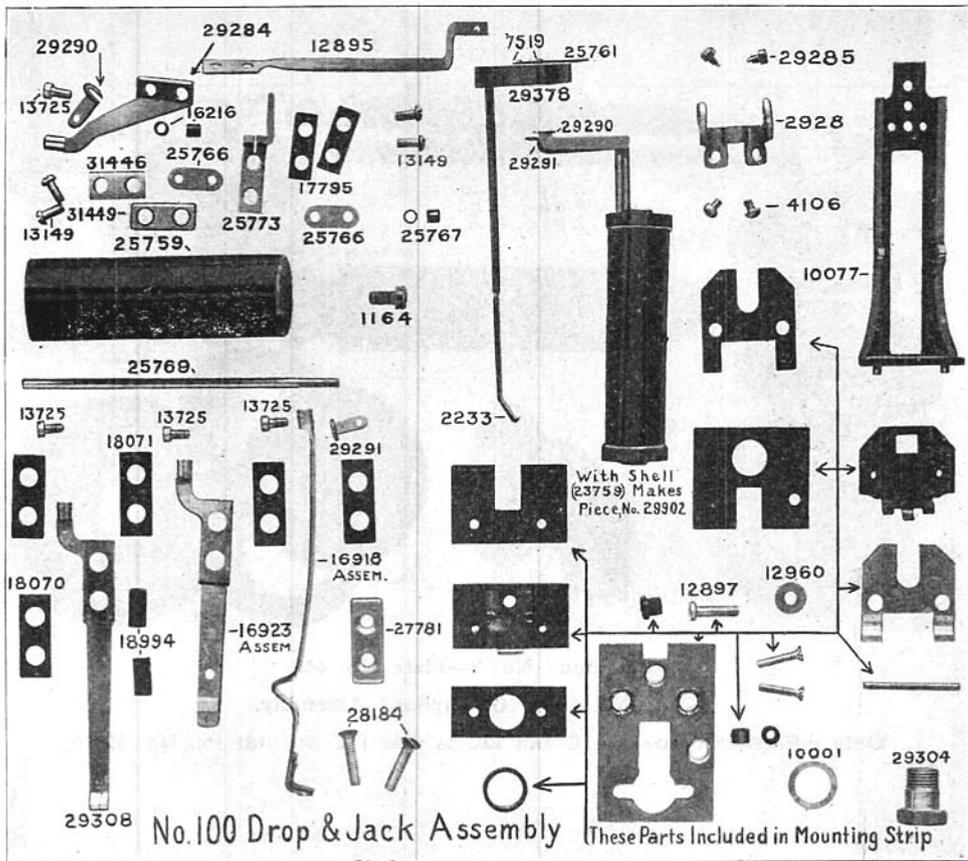


Cat'l 3—Plate No. 41—No. 72 Type Relay

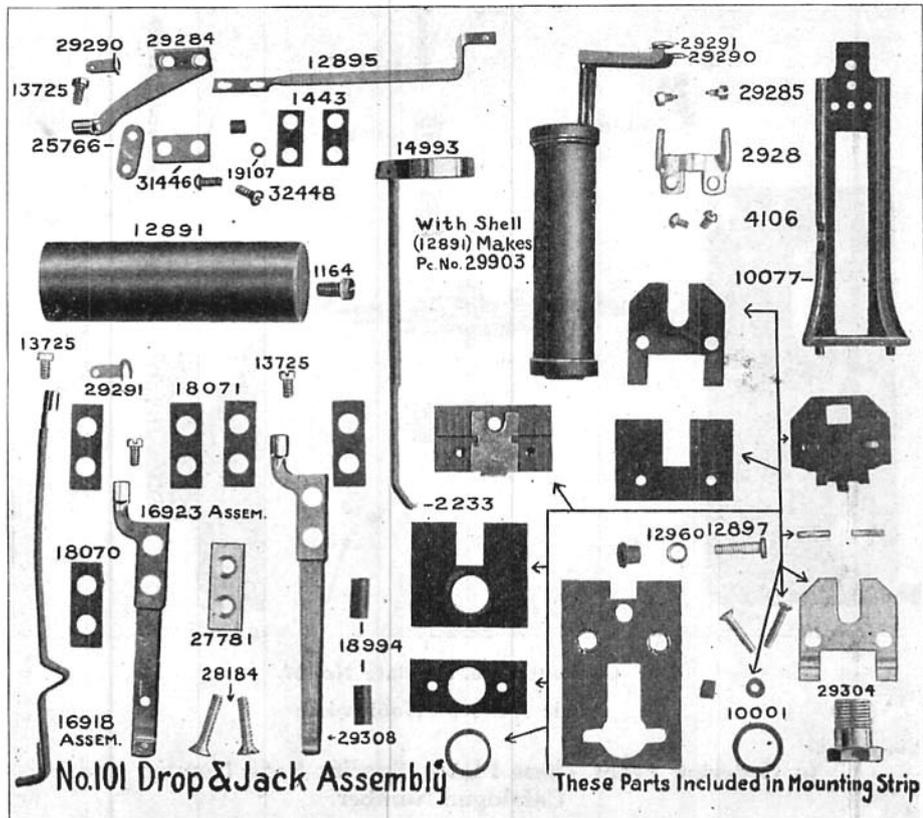
In Ordering From These Plates, Specify Page Number and Catalogue Number.

Ninety-one



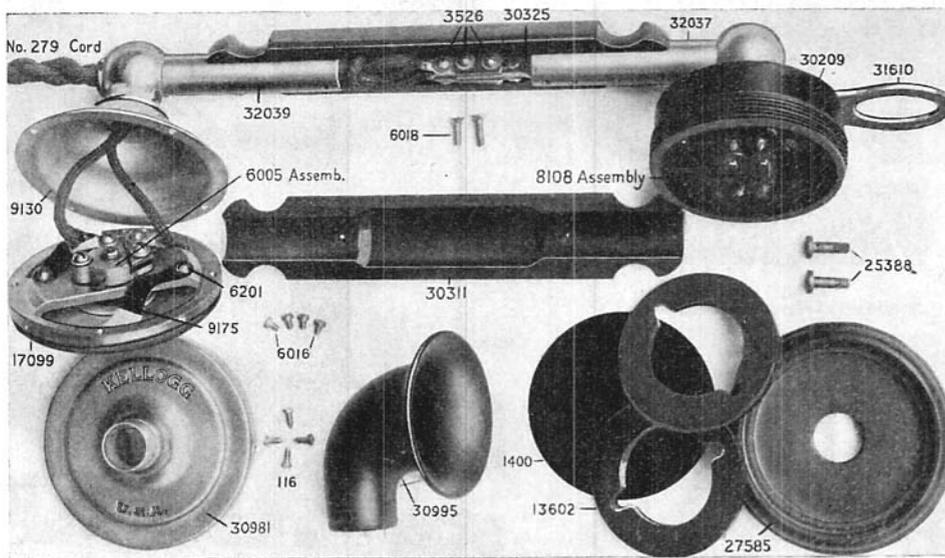


Cat. No. 3, Plate No. 44, No. 100 Drop and Jack Assembly



Cat. No. 3, Plate No. 45, No. 101 Drop and Jack Assembly.

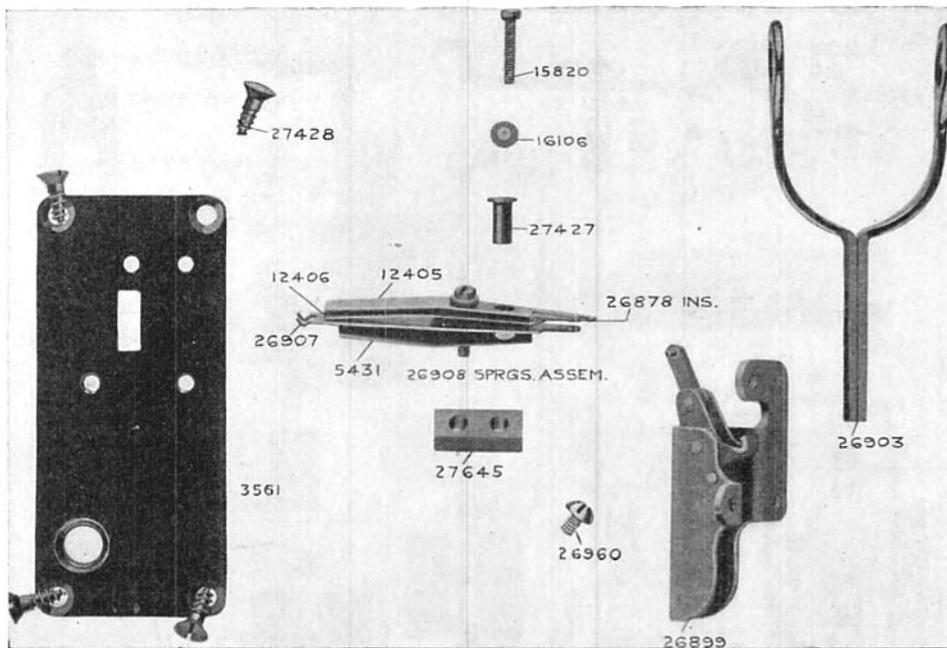
In Ordering From These Plates, Specify Page Number and Catalogue Number.



Catalogue No. 3—Plate No. 46.

Code No. 12-C Grabaphone Assembly.

Only difference between 11C and 12C is that 11C has not Pc. No. 31610.



Catalogue No. 3—Plate No. 47.

Code No. 103—Hookswitch

*Ninety-four*

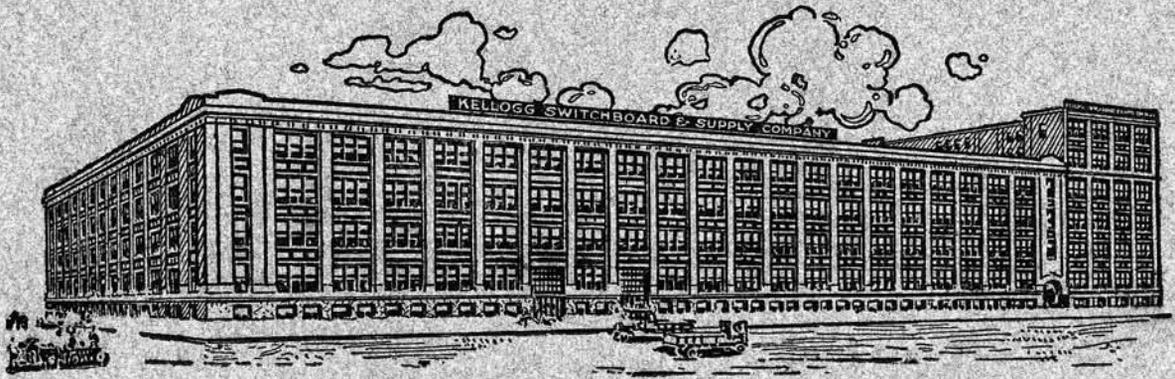
**In Ordering From These Plates, Specify Page Number and Catalogue Number.**

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THE FACTORY BEHIND THE PHONE



## *General Telephone Apparatus Circa 1912*

Contains a listing of all the subscriber telephone apparatus of the period. Also an overview of PBX, local and toll switch boards and an extensive listing of apparatus parts.

Printed in booklet form, 7.5 X 10 inches, gutter bound, 97 pages on 20 pound coated stock using the letterpress method. This piece was two hole punched on the left side. Part of a catalog set containing 13 booklets and several single sheet brochures ranging in dates from 1914 to 1918 and bound under a separate hard cover using Chicago screws.

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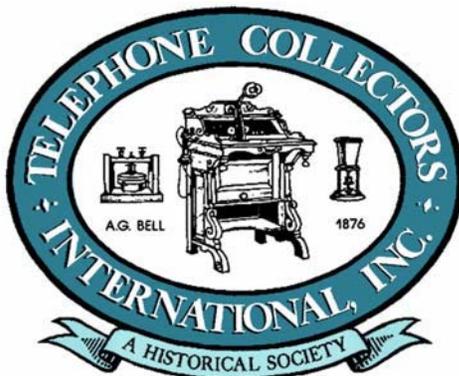
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