

SWITCHBOARDS TELEPHONES APPARATUS SUPPLIES



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*Lucas, now
in cal.
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Spencer

CATALOG NUMBER 91



Customer Information

Guarantee

We guarantee our goods to the extent that we replace within one year from date of invoice that goods which proves defective when used for the purpose manufactured, but no goods can be credited unless our consent has been obtained before they are returned.

Terms

Our terms are 30 days net from date of invoice with the exception of a few items of construction material which carry a discount for cash within ten days from date of invoice. The Terms are clearly noted on acknowledgment of order. 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. 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.

Orders

Orders should be written on order blanks, or on separate sheets, to avoid delay to both order and reply.

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 catalog number to save delay. Also please mention number of the catalog.

Claims for Breakage and Non-Delivery

Our goods are carefully packed by experienced packers, and each article is checked three times before reaching the packing case.

Receipts from the transportation company clearly specify that shipments were received in good con-

dition and we, therefore, do not hold ourselves responsible for any loss or damage sustained in transit.

Claims for non-delivery, etc., should be made promptly against the transportation company.

If we are notified of such claims, we will gladly lend our assistance to secure a satisfactory adjustment for the customer.

On parcel post shipments claims are to be made to us as we insure the material and make adjustments.

Claims

Claims for shortage should be made promptly upon receipt of goods and should be accompanied by the packer's ticket which is placed in each case, or freight receipt with agent's notation covering shortage. No claims will be entertained five days after receipt of shipment.

Claims for clerical errors should be accompanied by a reference to our invoice number.

Returning Goods

No goods should be returned for credit or exchange without receiving a written authorization from us.

Long experience has shown that proper understanding of each case saves transportation expense, delays and misunderstandings and avoids returning satisfactory goods because of mistaken impression, etc.

Name and address of shipper should be marked plainly on all packages returned for credit, exchange or repairs, and a proper notice of shipment should be sent to the Kellogg Company. We stand ready at all times to rectify mistakes we make, and without cost to our customers, but under no circumstances should goods be returned without first consulting us for shipping instructions.

No credit for labor expense involved in the repair of defective or damaged goods will be allowed. If goods are defective, the measure of damage is the price of the defective goods only.

Marine and Parcel Post Insurance

Unless otherwise directed, we reserve the right to insure against non-delivery all shipments made by steamer or parcel post, for which a nominal charge will be made to cover cost of this service.

Kellogg

KELLOGG

SWITCHBOARDS

TELEPHONES

APPARATUS

SUPPLIES



CATALOG NUMBER 91

KELLOGG Switchboard & Supply COMPANY
1066 West Adams Street, CHICAGO

COLUMBUS
163 N. Fourth Street

KANSAS CITY
308 W. 6th Street

SAN FRANCISCO
246 First Street

A Few Reasons for the Long, Active Life and Dependability of Kellogg Instruments

Kellogg Hookswitches are of the short compact type with removable hook. The simple, sturdy design makes this a highly efficient hookswitch. The contact metal springs are of the correct length for proper tension and are equipped with special contacts. The escutcheon plate is heavily black enameled. Kellite is used exclusively for insulation purposes.

Kellogg Receivers are of the bipolar non-adjustable type. Permanent magnets are of the correct form and of lasting strength. Pole pieces are made of carefully annealed Norway iron and held securely by bolts that fasten the supporting bridge in place. The diaphragm made of perfectly flat ferrotype metal of the proper thickness is held in accurate position to respond freely and accurately to the voice currents. In design the Kellogg Receiver secures loudness and clearness of tone and excellent articulation.

Kellogg Transmitters are of the solid back reverse type. Specially designed to give the best results in long distance as well as local service. The diaphragm is made from hard drawn aluminum with carbon retaining cup formed in the center of its face. Highest grade carbon of correct size, insuring minimum battery consumption, is used and will not pack. The small number of parts, accurately made from the best material obtainable insures long life and minimum chances for trouble.

Kellogg Condensers for magneto telephones have a one-half M. F. capacity. This allows the receiver to be off the hook with-

out crippling the ringing service of the heavily loaded lines.

Kellogg Induction Coils are wound to the proper resistance, so they will step up the out-going currents the necessary amount to carry them over long distance lines without distortion, but will not reduce the strength of the incoming voice currents.

Kellogg Ringers do not need adjusting. They are the most sensitive ringers made. Cores and armatures are made from the highest grade annealed Norway iron. Spools are carefully insulated and wound with Kellogg enameled copper wire. The thin strip of metal between pole pieces and armature prevents any possible tendency towards sticking. Length of stroke and armature air gap are correct, and remain so during the entire life of ringer. Gongs are made of the best material obtainable, rich in tone, will not crack or become dead through service; they are of the concentric type, and heavily black enameled.

Kellogg Generators are "built like a watch." They have a larger armature and greater winding space than other types known of. The field magnets are built with great care. Kellogg's method of forming magnets, shapes them accurately without injury. The magnet bars are thoroughly protected against rust. The end plates are made of pressed brass and all springs properly insulated. Wheels and gears are accurately cut and machined. The generator handle is strongly constructed of one piece. The minimum number of parts used insures great reliability and long life in all types of service.

Kellogg

MAGNETO MASTERPHONES

No. 700 Desk Masterphone



Possessing all of the latest achievements in modern telephone instruments, the Masterphone meets every requirement for good transmission and reception, low maintenance costs, durability and beauty.

The Kellogg No. 700 Masterphone consists of a molded Kellite handset and cradle base. The ease with which transmitter and receiver units can be changed, and hook switch adjustments made, insure good instrument performance at all times.

When used with any standard magneto bell box arranged for the conventional three-conductor circuit, it forms a complete desk set.

Standard Desk Set Boxes

Code No. F2328 3 Bar Set 100 OHM Ringer

The No. F2328 desk set box is recommended for business and residence service. It can be furnished with a biased ringer for 4-party negative and positive pulsating ringer when desired.

Code No. F2326 Harmonic 3 Bar Set 1000 OHM Ringer
30-42-54-66 Cycles

The No. F2326 desk set box is identical to the No. F2328 except equipped for 4-party harmonic ringing systems. In ordering, please specify number of cycles on which ringer is to operate.

Code No. F2361 Heavy Duty 5 Bar Set 1600 OHM Ringer

The No. F2361 desk set box is recommended for use on long heavily loaded rural lines. It can be furnished with a 2500-ohm ringer instead of 1600-ohm when specified.

Code No. F2370 Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser

The No. F2370 desk set box is similar to the No. F2361 except equipped with a 1/2-MF. condenser in the receiver circuit.

This condenser keeps ringing current from passing through the receiver when it happens to be off the hook. On long farm lines equipped with these phones, it is possible to "ring through" even though a number of receivers are down. If desired, a 2500-ohm ringer can be furnished instead of 1600-ohm.

Code No. F2374 Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser and Secret Calling Button

The No. F2374 desk box is similar to No. F2370 except provided with a secret calling feature, consisting of a push button and a special generator capable of delivering two kinds of ringing current, pulsating and alternating. When the button is normal the generator delivers alternating current to the line ringing all of the bells and throwing the "drop" at Central. By pressing the button while turning the crank, pulsating current is delivered which throws the "drop" at central, but does not ring the other bells on the line. This telephone can be used on either a grounded or metallic line regardless of the other telephones on the line and no change is required at the central office. If desired, a 2500-ohm ringer can be furnished instead of a 1600-ohm ringer.

Code No. F2376 Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser and Grounding Key

The No. F2376 desk set box is arranged for calling central secretly by ringing over one side of the line and through the "drop" to ground. It can only be used on two-wire metallic lines which have all the telephones equipped with push buttons and with the "drop" at central disconnected from one side of the line and wired to ground. If desired, a 2500-ohm ringer can be furnished instead of 1600-ohm.

No. 3809M Wall Masterphone



The Kellogg No. 3809M wall Masterphone consists of a standard Kellogg oak cabinet and a molded Kellite handset suspended on a special Masterphone hookswitch. The F27C handset is the same as used with the No. 700 Masterphone. This wall Masterphone is carried in stock equipped as listed below. Battery-saver is not supplied with these sets unless specified.

Code No. 3809M 3 Bar Set 1000 OHM Ringer

This set can be furnished with a biased ringer for 4-party negative and positive pulsating ringer when desired.

Code No. 3812M Heavy Duty 5 Bar Set 1600 OHM Ringer

This set can be furnished with a 2500-ohm ringer instead of a 1600-ohm when specified.

Code No. 3816M Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser

The condenser is in the receiver circuit and functions similar to F2370 desk set box. Can be furnished with a 2500-ohm ringer instead of 1600-ohm when specified.

Code No. 3820M Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser and Secret Calling Button

The special generator furnished delivers both pulsating and alternating current. This set can be used on either grounded or metallic lines regardless of other telephones on the line and without necessitating changes at the central office.

Code No. 3824M Heavy Duty 5 Bar Set 1600 OHM Ringer
With Condenser and Grounding Key

Grounding key is for calling central secretly. This telephone cannot be used on grounded lines and is only suitable for metallic lines on which all sets are of this type and with one side of the drop at central office wired to ground.



No. F9827 Extension Masterphone

The Kellogg F9827 Extension Masterphone is an ideal two-wire magneto unit, consisting of a small steel box and a molded Kellite handset. The F27-C handset is the same as that used with the No. 700 Masterphone and is suspended from a specially designed hookswitch which assures positive action.

This unit is small, neat, durable and convenient, and gives perfect transmission and reception. Because of its small size, the F9827 set can be installed almost anywhere.

A mounting space of only 4x5 1/2 inches is required for this compact unit. The box is made of drawn steel, finished in durable black enamel. It contains the hookswitch, induction coil, condenser, and connecting rack.

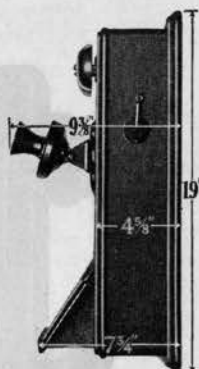
Kellogg

MAGNETO TELEPHONES



Closed View

Shipping Weight
1 telephone to a box
3-Bar Gen. Type,
26 lbs.
5-Bar Gen. Type,
29 lbs.



Side View

Shipping Weight
2 telephones to a box
3-Bar Gen. Type,
46 lbs.
5-Bar Gen. Type,
53 lbs.



Open View

Compact Type-Wall Telephone

Code F 2809

3-Bar Set—1000 OHM Ringer

This telephone is designed especially for lines in town having one or more telephones and for lightly loaded farm lines. It is equipped with the same long distance transmitter and sensitive Kellite shell receiver used on all Kellogg telephones. The ringer is of the non-adjustable, non-sticking type. The powerful generator is of the 3-bar type with a current output large enough for all service requirements except long and heavily loaded farm lines. This style of telephone can also be furnished with higher resistance ringers and with condenser, if required. No battery saver is furnished unless specified.

Code F 2808

3-Bar Set—1000 OHM Biased Ringer

Same as the F 2809 except equipped with a biased ringer for four-party negative and positive selective ringing system.

Code F 2807

Harmonic 3-Bar Set

30-42-54-66 Cycles

This instrument has the same equipment as code No. F 2809 except for the ringer which is of the four-party harmonic type for use in connection with four-party harmonic ringing systems. In ordering, specify number of cycles on which ringers are to operate.

4-Bar Generator Sets

Four-bar generator sets are available in any of the following telephones, but the saving over the cost of a five-bar set is so small that the larger generator with its extra power is recommended.

Code F 2312

Heavy Duty 5-Bar Set—1600 OHM Ringer

This instrument is equipped with a powerful five-bar generator capable of delivering the necessary voltage and current for the longest and most heavily loaded farm lines. The ringer is of the famous 1600 ohm sensitive non-sticking type. Transmitter, receiver and induction coil are the same high standard used in all Kellogg telephones and give equally efficient transmission on long distance as well as local connections. A battery saver is furnished without extra charge.

Code F 2859

Heavy Duty 5-Bar Set—2500 OHM Ringer

Same as F 2812 except equipped with a 2500 ohm ringer for lines already equipped with this resistance.

Code F 2816

Heavy Duty 5-Bar Set

1600 OHM Ringer with Condenser

This telephone is the same as the No. F 2812 described above with the addition of a 1/2 M.F. condenser in the receiving circuit. The duty of this condenser is to keep ringing current from passing through the receiver when the receiver happens to be off the hook. On long farm lines equipped with a number of telephones, it is possible to ring through even though a number of receivers are down, providing they are equipped with these condensers. A battery saver is furnished without extra charge.

Code F 2880

Heavy Duty 5-Bar Set

2500 OHM Ringer with Condenser

Same as F 2816 except equipped with a 2500 ohm ringer.

Code F 2820

Heavy Duty 5-Bar Set

1600 OHM Ringer with Condenser and Secret Calling Button

This instrument has the same equipment as No. F 2816 but is furnished with a push button and a special generator capable of delivering two kinds of ringing current, pulsating and alternating. When the button is not pressed the generator delivers alternating current to the line which rings all of the bells and throws the drop at Central. By holding the button down while turning the crank, pulsating current is delivered which throws the drop at Central, but does not ring the other bells on the line. This telephone can be used on either a grounded or metallic line regardless of the other telephones on the line and no change is required at the Central office. A battery saver is furnished without extra charge.

Code F 2860

Heavy Duty 5-Bar Set

2500 OHM Ringer with Condenser and Secret Calling Button

Same as F 2820 except equipped with a 2500 ohm ringer.

Code F 2824

Heavy Duty 5-Bar Set

1600 OHM Ringer with Condenser and Grounding Key

This telephone is arranged for calling Central secretly by ringing over one side of the line and through the drop to ground. It can only be used on two wire metallic lines which have all telephones equipped with push buttons and with the drop disconnected from one side of the line and wired to ground. This telephone is not recommended except for lines that are already equipped with instruments of this same type. A battery saver is furnished without extra charge.

Residence Type-Wall Telephone

Code F 1809

3-Bar Set

1000 OHM Ringer



Backboard Dimensions
7 1/2" x 10"

Shipping Weight,
20 lbs.

This instrument is exactly the same as code No. F 2809 except for the cabinet and is equipped with a 3-bar generator and 1000 ohm ringer. Battery savers are not furnished with this instrument, unless specified.

This is an excellent set where batteries can be located in the basement or other out of the way place and where wall space is at a premium.

Heavy Duty 5-Bar Set

This style can be furnished in other combinations of ringer resistance and generators on special order. For rural telephones, however, the compact sets containing a battery compartment are usually preferred.

MAGNETO TELEPHONES

Desk Sets



Shipping Weights
Stand only, 4 lbs.
3-Bar Desk Set Box,
only 14 lbs.
5-Bar Desk Set Box,
only 17 lbs.

Dimensions
Length, 10 1/4 inches
Width, 8 inches
Height, 6 inches

Code F 9 3-Bar Set—1000 OHM Ringer

This set consists of a No. F 118 desk stand in black enamel finish equipped with three conductor brown mercerized cord and a No. F 2328 quarter-sawn oak desk set box containing a 3-bar generator, 1000 ohm ringer and induction coil. This set has been standard for years and is recommended for business and residence service except for heavily loaded rural lines. This set can be furnished with biased ringer for four-party negative and positive pulsating ringing when desired.

Code F 7 Harmonic 3-Bar Set—1000 OHM Ringer 30-42-54-66 Cycles

This set consists of a No. F 118 desk stand and No. F 2326 desk set box. It has the same equipment as code F 9 except for the ringer which is of the four-party harmonic ringing systems. In ordering specify number of cycles on which ringers are to operate.

Desk Sets with 4-Bar Generators

Four bar generator sets can be furnished in any of the following desk telephone combinations but the saving over the cost of 5-bar equipment is so small that the purchase of the larger generator with its extra power is recommended.

Code F 12 Heavy Duty 5-Bar Set—1600 OHM Ringer

This set consists of an F 118 black enameled desk stand and F 2361 desk set box equipped with a powerful 5-bar generator, 1600 ohm non-adjustable ringer and induction coil. It is identical in equipment with the No. F 2812 wall set and will give splendid service on long and heavily loaded rural lines. It can be furnished with a 2500 ohm ringer instead of 1600 ohm, when it is so ordered.

Code F 16 Heavy Duty 5-Bar Set 1600 OHM Ringer with Condenser

This set has the same equipment as code F 12 with the addition of a 1/2 M.F. condenser in the receiver circuit. The duty of this condenser is to keep ringing current from passing through the receiver when the receiver happens to be off the hook. On long farm lines equipped with a number of telephones, it is possible to ring through even though a number of receivers are down, providing they are equipped with these condensers. If desired, a 2500 ohm ringer can be furnished instead of 1600 ohm.

Code F 20 Heavy Duty 5-Bar Set 1600 OHM Ringer with Condenser and Secret Calling Button

This set consists of an F 118 desk stand and F 2374 desk set box. It is the same as F 16 with the exception of the secret calling feature which consists of a push button and a special generator capable of delivering two kinds of ringing current, pulsating and alternating. When the button is not pressed the generator delivers alternating current to the line which rings all of the bells and throws the drop at Central. By holding the button down while turning the crank, pulsating current is delivered which throws the drop at Central but does not ring the other bells on the line. This telephone can be used on either a grounded or metallic line regardless of the other telephones on the line and no change is required at the Central office. If desired, a 2500 ohm ringer can be furnished instead of 1600 ohm.

Code F 24 Heavy Duty 5-Bar Set 1600 OHM Ringer with Condenser and Grounding Key

This telephone is arranged for calling Central secretly by ringing over one side of the line and through the drop to ground. It can only be used on two wire metallic lines which have all telephones equipped with push buttons and with the drop disconnected from one side of the line and wired to ground. This telephone is not recommended except for lines already equipped with instruments of this same type. If desired, a 2500 ohm ringer can be furnished instead of 1600 ohm.

Residence Type-Wall Grabaphone



Code F 1809 G 3-Bar Set 1000 OHM Ringer

This instrument is equipped with a 3-bar generator and 1000 ohm ringer but uses a grabaphone instead of the regular transmitter and hand receiver. It is an unusually convenient set when located near a desk or table and in this manner takes the place of a desk telephone.

Residence type grabaphone sets can be furnished with biased ringer for four-party negative and positive selective systems or with harmonic ringer in either 30, 42, 54 or 66 cycles. Also available in 5-bar equipment or any other combination if desired.

Residence Grabaphone

Grabaphone Desk Sets



Shipping Weight—3-Bar Box only, 14 lbs.
Stand and Grabaphone, 5 lbs. 5-Bar Box only, 17 lbs.

Code F 9 G 3-Bar Set—1000 OHM Ringer

This instrument consists of a black enameled stand No. F 115-A with a F 11-C grabaphone and No. F 2328 desk set box containing 3-bar generator and 1000 ohm ringer. This set is becoming rapidly more popular for offices and homes. Its great convenience lies in the ability of the user to move about without getting away from the transmitter and allows the free use of the right hand for writing. It also forces the user to talk direct into the transmitter which is located directly in front of the lips when the receiver is at the subscriber's ear. This set is recommended for all local service and for lightly loaded farm lines. It can be furnished with biased ringer if specified.

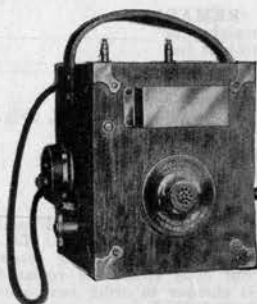
Code F 7 G Harmonic 3-Bar Set—1000 OHM Ringer 30-42-54-66 Cycles

This is the same instrument as code F 9-G except for the ringer which is of the harmonic type for four-party harmonic ringing systems. In ordering this set, specify number of cycles on which ringers are to operate.

Any of the 5-bar heavy duty sets can be furnished with desk grabaphone if desired.

Heavy Duty Desk Sets

The F 115-A desk stand with F 11-C grabaphone can be used with any one of the different sized desk set boxes shown on page 3.



Test Set

Code 1016

This test set is a complete portable telephone. Is strongly built and will talk and ring over the longest and most heavily loaded line. It is equipped with a powerful 4-bar generator, 1600 ohm ringer, long distance transmitter, head receiver, induction coil, hookswitch and two No. 4 dry cells. The cabinet is oak heavily reinforced with metal corners. A good, sturdy, all around set for the Linemen.

Weight, not packed, 15 lbs. Height, 8". Width, 7". Depth, 8 3/4".

Kellogg

MAGNETO TELEPHONE PARTS

In ordering parts for telephones if there is any doubt as to the proper number it would be well to send in the code number of the telephone which will be found stamped in the woodwork. On Desk Telephones the box is numbered and the desk stand also bears a number stamped on the side of the switchhook. If no numbers are available send a sample of the parts wanted or give as complete a description as possible.

As new and better materials have become available and as the art of Telephony and Manufacture in general has progressed, Kellogg parts have been improved always with a view to furnishing better equipment to replace worn out parts as well as for the manufacture of new equipment. Therefore, it will sometimes be possible to order parts for old Kellogg Telephones which are stronger and better designed than the ones originally furnished with the instruments. Stampings of steel and brass have replaced many of the castings of the past; Kellite and Micarta replace hard rubber, composition and other of the older insulating materials. Better methods of insulating and treating coil windings have been developed.

It has been the aim of the Kellogg Company to so design the improved equipment that much of the new can be incorporated in the old at a substantial saving.

It sometimes happens that it is poor economy to try to prolong the life of telephone equipment past a certain point and good financial policy then indicates the purchase of modern up-to-date telephones. If there is any question the Kellogg Company will welcome the opportunity to be of service in helping to determine which course is best to follow.



No. 42
Transmitter Arm
Over-all Length, 4 1/2"



Code No. 50
Transmitter Arm
Over-all
Length, 2 3/4"



Oak Cabinet
Extension Bell

CODE No.	RESISTANCE	REMARKS
37 SA	1000 Ohms	Straight line
37 SD	1600 Ohms	Straight line
37 SG	2500 Ohms	Straight line
37 BA	1000 Ohms	Bias
37 HB	Harmonic	Frequency 30, 42, 54, 66
37 HA	Harmonic	Frequency 33 1/2, 50, 66 2/3, 16 2/3.

Arms, Transmitter

Code No. 42

The No. 42 transmitter arm was formerly used on Kellogg compact wall telephones and can be used on a large variety of instruments. A handsomely finished, pressed steel arm with adjustable hinge. Net weight, 8 ounces.

Code No. 50

Code No. 50 transmitter arm used on standard magneto telephones with sloping writing shelf. A desirable arm also for hotel and residence telephones. Net weight, 7 ounces.

Bells, Dxtension

The No. 37 type extension bell consists of a neat quarter-sawn oak box with ringer and two binding posts. No condensers furnished. Net weight, 3 lbs.

Coils, Induction

See Page 22

Code No. 28 C

The No. 28C induction coil is a universal local battery coil for use in any magneto telephone. Terminals are provided for either soldered or screw connections. Burned out coils should be replaced with new ones, as it is cheaper to order new ones than to have the old ones torn down and repaired. Net weight, 4 1/2 ounces.



No. 28C
4 1/2" Over All
Heads, 1" Square

Code No. 100-A



No. 100-A

The coil and connecting rack are combined for compactness and simplicity. All wires terminate at the connecting rack. Terminals are clearly marked. Occupies a space of only 4 1/4 x 1 1/8 inches, 1 3/8 inches deep. Net weight, 7 ounces.

Condensers

See Pages 22, 23

Code No. 28



No. 28
Height, 2 27/64"
Width, 1 1/4"
Thickness, 1 1/8"

For telephones used on long party lines the No. 28 condenser in the receiver circuit is of great benefit as it enables other telephones to ring by when the receiver is off the hook. The No. 28 condenser is furnished with a mounting ear and can be fastened in place in any magneto telephone with a single screw. Nearly all Kellogg telephones have a small punching or loop so that this condenser can be installed even when not furnished with the telephones. On other makes it can be added by putting in a third receiver binding post, connecting the condenser between the new post and one of the old ones and then removing the receiver cord tip from the old post to the new one. Net weight, 3 ounces.



No. 67
Height, 3 1/8". Width, 1 1/2"
Thickness, 1 3/8"

Code No. 67

It is sometimes desirable to place a condenser in series with the ringer of magneto telephones in order to have a clear line of all battery leaks for testing purposes. These are not regularly furnished in Kellogg magneto telephones on account of the small demand. Net weight, 6 ounces.

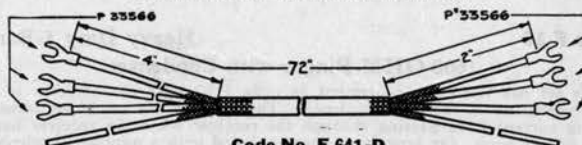
Cords

See Pages 24, 26

Kellogg desk stand and receiver cords are of the new type wet-proof construction. A specially compounded insulation is used that prolongs their useful life. It absolutely seals the heavy, eighteen-strand tinsel against moisture and oxidation. Naturally, the tinsel retains its original flexibility and conductivity, thus enabling it to withstand the constant twisting, jerking and bending that cords are subjected to. Long field tests under the most trying conditions have proven this.

The heavy eighteen-strand tinsel conductor with its moisture-proof compound is protected by a tough cotton outer braid. The overall braid is of brown mercerized cotton.

Desk Stand—Three Conductor

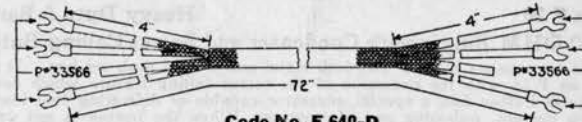


Code No. F 641-D

The F 641-D cord, 72 inches in length, has spade tips on both ends. Tracer colors, brown, black and orange. Fits Nos. F 84, F 110, F 115 stands.

Code No. 641-D

The 641-D cord is the same as F 641-D except having pin tips.



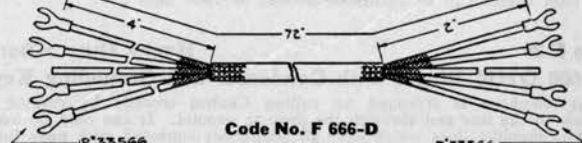
Code No. F 640-D

The F 640-D cord, 72 inches in length, has spade tips on both ends. Tracer colors, green, orange and red. Fits Nos. F 115-A, F 118, F 118-B, F 135, F 138 and F 301 stands.

Code No. 640-D

The 640-D cord is the same as F 640-D except having pin tips.

Four Conductor



Code No. F 666-D

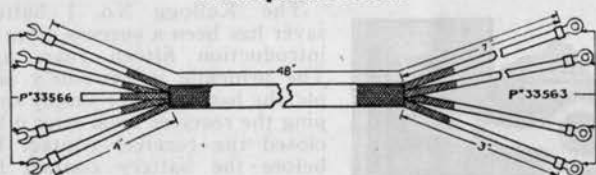
The F 666-D, 72 inches in length has spade tips on both ends. Tracer colors brown, black, red and orange. Fits Nos. F 28 and other four conductor stands arranged for flat tips.

Code No. 666-D

The 666-D cord is the same as F 666-D except having pin tips.

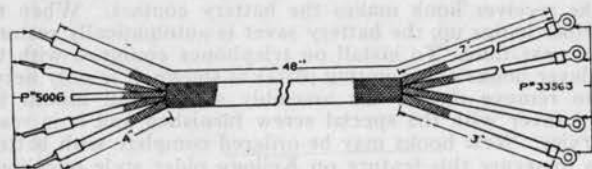
MAGNETO TELEPHONE PARTS

Grabphone Cords



Code No. F454-G

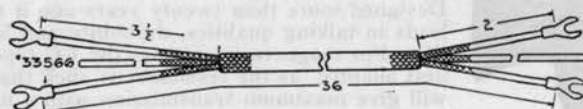
The F 454-G cord, 48 inches in length, has spade tips on the box end and closed tips on the grabphone end. Tracer colors, brown, black, red and orange. Used on standard Kellogg No. F 11 and F 12 grabphones.



Code No. 454-G

The 454-G cord, 48 inches in length, has pin tips on the box end and closed tips on the grabphone end. Tracer colors, brown, black, red and orange. Used on Kellogg No. 11 and 12 grabphones.

Receiver Cords

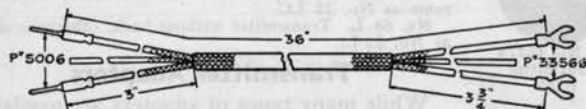


Code No. F644-TR

The F 644-TR cord, 36 inches in length, has spade tips on both ends. Tracer colors brown and black. Fits F 41-A and other standard receivers.

Code No. 644-TR

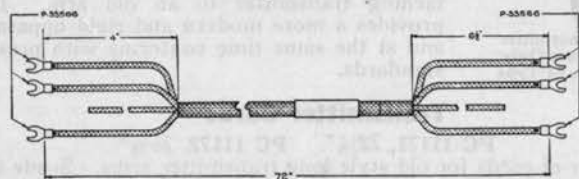
The 644-TR cord is the same as F 644-TR except having pin tips on both ends.



Code No. F642-TR

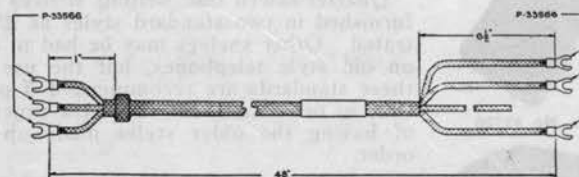
The F 642-TR cord, 36 inches in length has pin tips on receiver end and spade on the stand end. Tracer colors, brown and black.

Masterphone Cords



Code No. F674-D

The F 674-D cord, 72 inches in length has spade tips on both ends. It is a three-conductor cord with red, yellow and green tracer colors. Fits Nos. 700 and 725 Masterphones.



Code No. F673-G

The F 673-G cord, 48 inches in length has spade tips on both ends. It is a three conductor cord with red, yellow and green tracer colors. Fits the No. F 27 handset.

Key Boxes

Code No. 8



No. 8

The No. 8 key box consists of a standard No. 1028 single throw key having 2 make and break springs, mounted in a black ebony finished wood box. Dimensions, 5½" high, 3¾" wide and 1¾" deep. All springs are wired to binding posts, making it a very simple matter to make the necessary connections.

This box is used to connect the telephone to either of two lines or to connect either of two telephones to a single line. Net weight, 12 ounces.

Code No. 9

The No. 9 key box is similar to the No. 8 except equipped with a standard No. 1030 double locking key having two sets of make and break contacts on each side. It is used to connect the telephone to either of three lines or to connect either of three telephones to a single line.

Generators

See Page 24



No. 15

Kellogg generators are built with extreme care and accuracy and with a little care and occasional oiling, should last for years. The magnets are made of the finest tungsten magnet steel. Every shipment of this steel is carefully tested in the laboratory before being made into magnets. The magnets after being formed are given a special treatment to secure the proper degree of hardness. The armature is of the shaftless type, giving liberal winding space. All parts are carefully machined and held to the closest possible limits, insuring a smooth running powerful generator. End plates and gears are brass and springs are of heavy German silver.



No. 53

Code No.	No. of Bars	Weight	Remarks
15	3	6½ lbs.	Lines in town
22	4	8 lbs.	Farm lines
53	5	9 lbs.	Farm lines
59	5	9 lbs.	Farm line pulsating and alternating current.

Generators with pulsating and alternating current springs for telephones with secret calling button can also be furnished if desired.

Hinge



Piece No. 37778 is the standard telephone hinge, being 1½" long, 1¼" overall width. Screws which are not furnished unless specified are Piece No. 7865.

Cabinet Lock



Standard cabinet lock for all types of wood telephones, code No. 14.

Number Plates

See Page 24

Code No. 87

Can be lettered by the user as desired. Fits over and is held in place by the threads of the transmitter mouthpiece.



No. 87

Code No. 88

Can be lettered by the user as desired. Held in place by two of the transmitter back screws.



No. 88

Binding Posts

Code No. 11



No. 11

The No. 11 binding post is of white nickel finish, the end being tinned for soldering. The mounting screw which is furnished is a 5x½" round head, wood screw, plated.

Code No. 63



The No. 63 is white nickel in finish, the end being tinned for soldering. It is provided with a clip which takes a regular spade or spike tip. Mounting screw which is furnished is No. 6x½" flat head wood screw, plated.

These binding posts are the ones most commonly used. If interested in other styles write for complete list.

Kellogg

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MAGNETO TELEPHONE PARTS

Receivers

See Page 26



No. F 41 A

The Kellogg Code F41A receiver has long bipolar type magnets, brass retaining cup, and moisture-proof receiver cord with heavy tinsel conductors.

The Kellite shell is highly polished and the cord hole in the end of the case is rounded out, which prevents excessive wear on the cord. The ear cap securely holds the diaphragm and receiver in the shell and is shaped to perfectly fit the orifice of the ear and has no objectionable lettering around the edge.

The shell and cap are of a standard size so that many other makes of receivers will fit the shell perfectly.

The magnets are made of a special grade steel and treated with a rust-proof finish.

The cord terminal posts are so designed that either spade or spike tip cord tips can be used. The cord is thirty-six inches long, consisting of heavy tinsel strand, braided and thoroughly insulated and protected from moisture by a special moisture-proof covering. The overall braid is heavy, which protects the conductors against breakage due to bending and stretching. The cord is regularly supplied with spade tips on both ends, but can be supplied with spike tips if desired.

Pc. 27944, Kellite receiver shell only. Pc. 32307, cap only.

Ringers—Straight Line



No. 78

The Kellogg No. 78 ringer has black enameled brass gongs with adjustable gong posts but non-adjustable armature. This ringer is built for maximum efficiency and the armature adjustment cannot be changed. The greatest care is maintained in securing this adjustment so that the ringer will respond to the weakest currents but will not freeze or stick. The coils are wound with specially insulated wire on correctly

proportioned spools. This ringer may be mounted on wood of any thickness without affecting the gong adjustment. Net weight, 1 1/4 lbs.

Code No.	Resistance	Remarks
78 A	1000 Ohm	Straight line
78 D	1600 Ohm	Straight line
78 G	2500 Ohm	Straight line

Biased

The No. 79 type biased ringer of the adjustable type is used for four party selective system using positive and negative pulsating current. Net weight, 1 1/4 lbs.

Code No.	Resistance	Remarks
79 A	1000 Ohm	Biased
79 D	1600 Ohm	Biased
79 G	2500 Ohm	Biased

Harmonic



No. 73

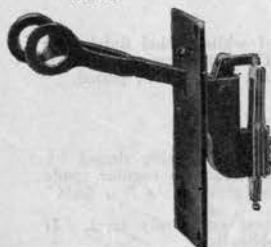
Kellogg harmonic ringers are equipped with a positive gong adjustment. Once set, the adjustment remains so indefinitely.

Brass gongs heavily black enameled are of the center mounted type securely mounted on the gong posts.

The adjustment is made at the base of the gong post with the aid of a screw driver and a special wrench furnished with the ringer when specified, and only requires a few minutes' time. Net weight, 1 1/4 lbs.

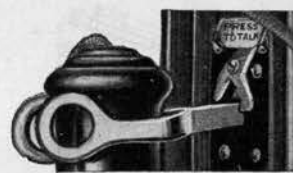
Code No.	Resistance	Frequencies				Parties
		1	2	3	4	
73 A	1000 Ohm	30	42	54	66	
72 A	500 Ohm	33 1/3	50	66 2/3		16%
72 A	2500 Ohm					

Hook Switch



The Kellogg No. 103 hookswitch is mounted on a handsomely black enameled steel frame and escutcheon. The springs are of heavy German silver and assembled with a steel reinforcing spring, insuring positive contact. Kellite Dilecto insulations are used. The hook is easily removed by simply pushing the springs forward. When advisable to replace hooks in old style telephones the purchase of this hookswitch is recommended. For rural lines it may be installed complete by boring holes large enough to admit the springs and then fastening in place with four screws.

Battery Saver



No. 1

The Kellogg No. 1 battery saver has been a success since its introduction fifteen years ago. The principle is extremely simple, the battery saver simply stopping the receiver hook after it has closed the receiver contact but before the battery contact has been closed. It is possible for the subscriber to listen to market re-

ports or other conversations without using high priced dry cells. When he wishes to talk he simply presses the stop lever and the receiver hook makes the battery contact. When the subscriber hangs up, the battery saver is automatically restored for the next time. To install on telephones equipped with the short lever hooks on mounting plates as shown, it is only necessary to remove one of the assembly screws and mount the battery saver with the special screw furnished and it is ready for service. New hooks may be ordered complete with battery savers to secure this feature on Kellogg older style telephones or those of other makes. Net weight, 30 ounces.

Transmitters

See Page 26

The reverse type Kellogg transmitter requires little description—"it talks for itself." Designed more than twenty years ago it still leads in talking qualities, durability and long life. For magneto telephones the LC type is best adapted, as the resistance is such that it will give maximum transmission with a minimum consumption of batteries. For extreme long distance work the L type can be used but requires the replacing of batteries at more frequent intervals.

No. 22 LC. Complete with standard black enameled back, pc. 46279, Bakelite mouthpiece, pc. 29779.

No. 22 L. Complete with standard black enameled back, pc. 46279, Bakelite mouthpiece, pc. 29779.

No. 64 LC. Transmitter without back, otherwise same as No. 22 LC.

No. 64 L. Transmitter without back, otherwise same as No. 22 L.



Complete Transmitter No. 22 Type



Pc. No. 46279 Transmitter Back



Transmitter Front Only No. 64 Type

Transmitter Adapters

While many types of adapters are available for attaching Kellogg transmitters to other makes of telephone arms, they are not recommended for general use. Experience has proven that it is more satisfactory to use the Kellogg transmitter with the No. 42 arm attached than it is to use an adapter for attaching transmitter to an old arm. This provides a more modern and rigid apparatus and at the same time conforms with present standards.

Transmitter Cords

PC 11171, 22 1/8". PC 11172, 26 1/8".

Pair of cords for old style long transmitter arms. Spade tips on one end, other end bare. They can be used on shorter arms by cutting back to desired length.

Writing Shelves

Quarter-sawn oak writing shelves are furnished in two standard styles as illustrated. Other shelves may be had to use on old style telephones, but the use of these standards are recommended if possible in order to avoid the extra expense of having the older styles made up to order.



Pc. No. 43720



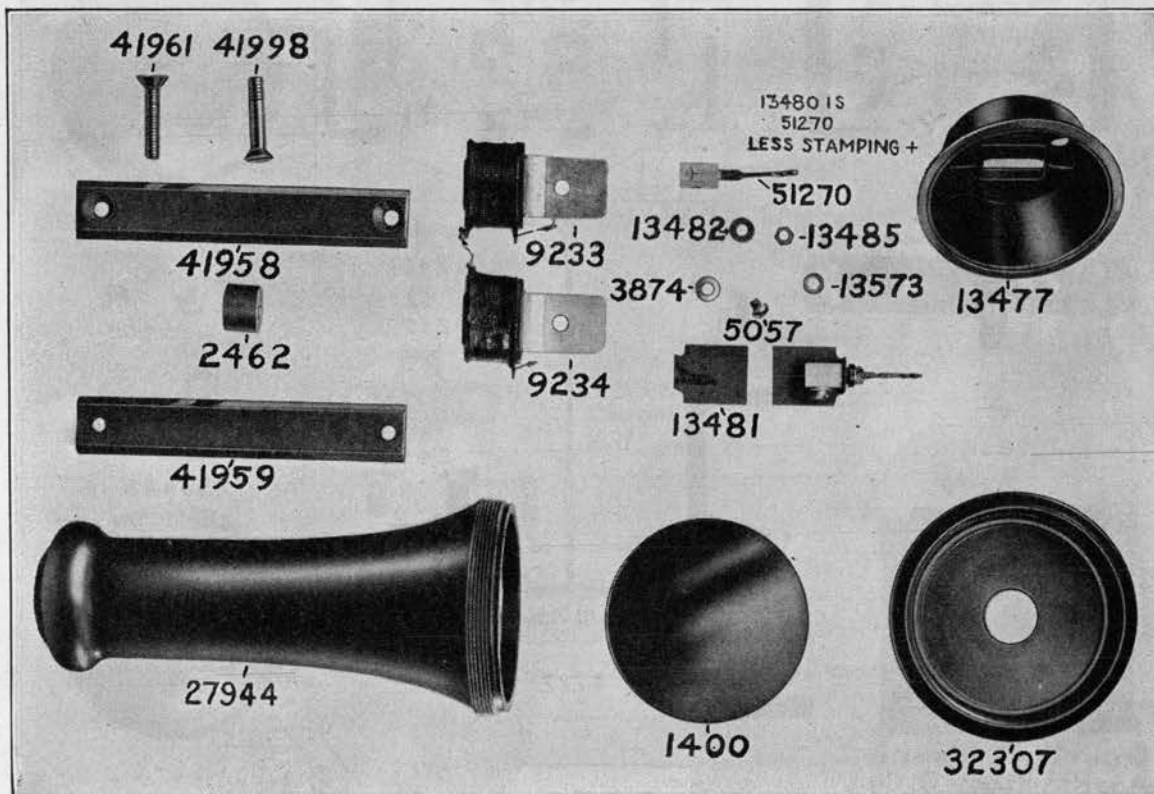
Pc. No. 26743

PC 26743. Writing shelf, two brackets.

PC 43720. Writing shelf, single bracket as used on standard telephones. Extra sloping.

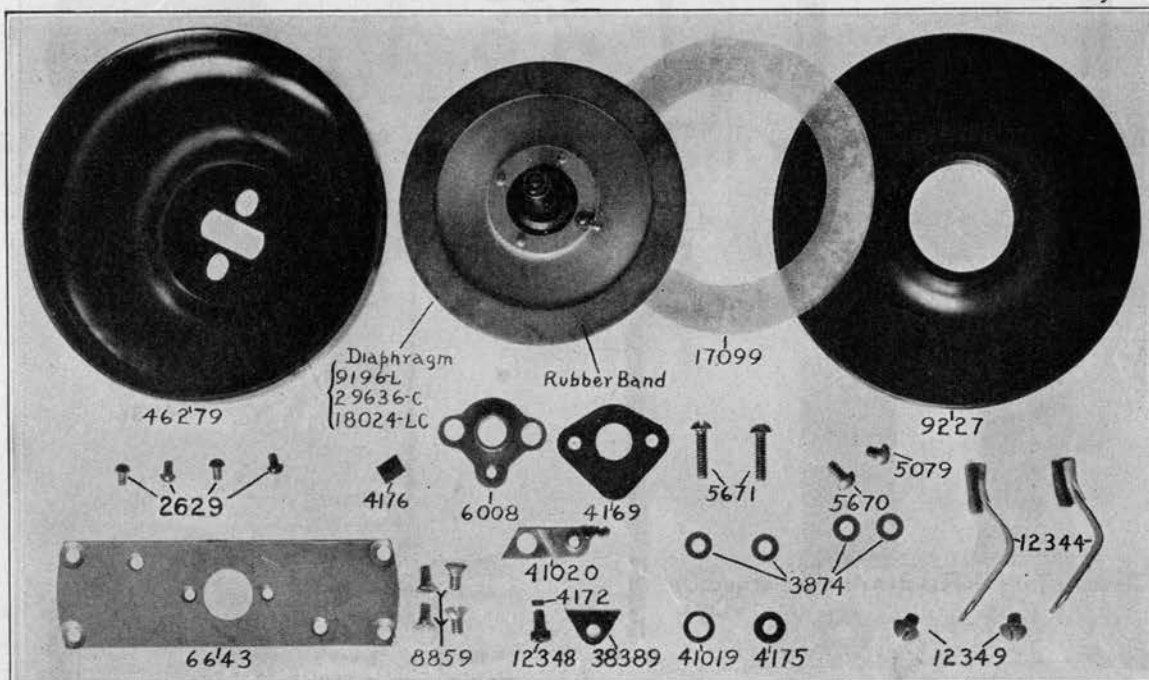
Kellogg

PIECE PARTS



F-41-A Kellite Shell Receivers

Parts are interchangeable with 26-A and 32-A receivers

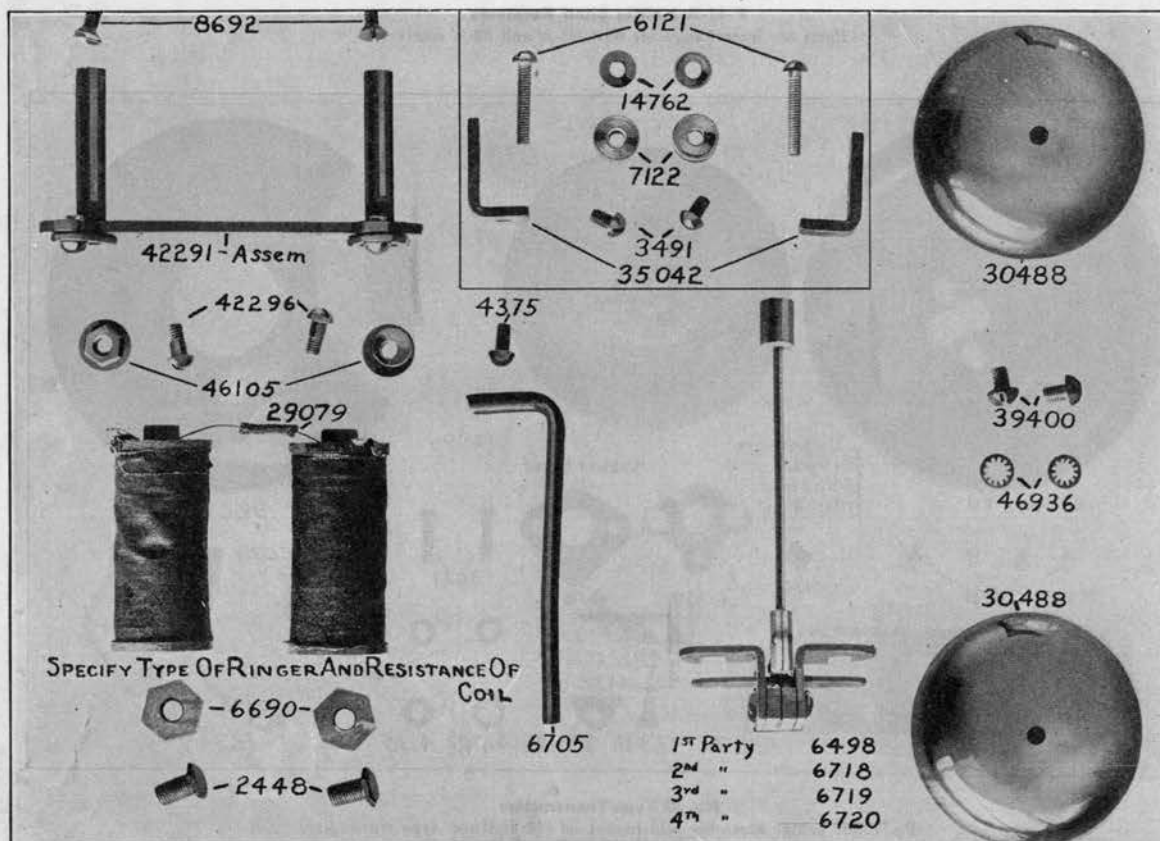
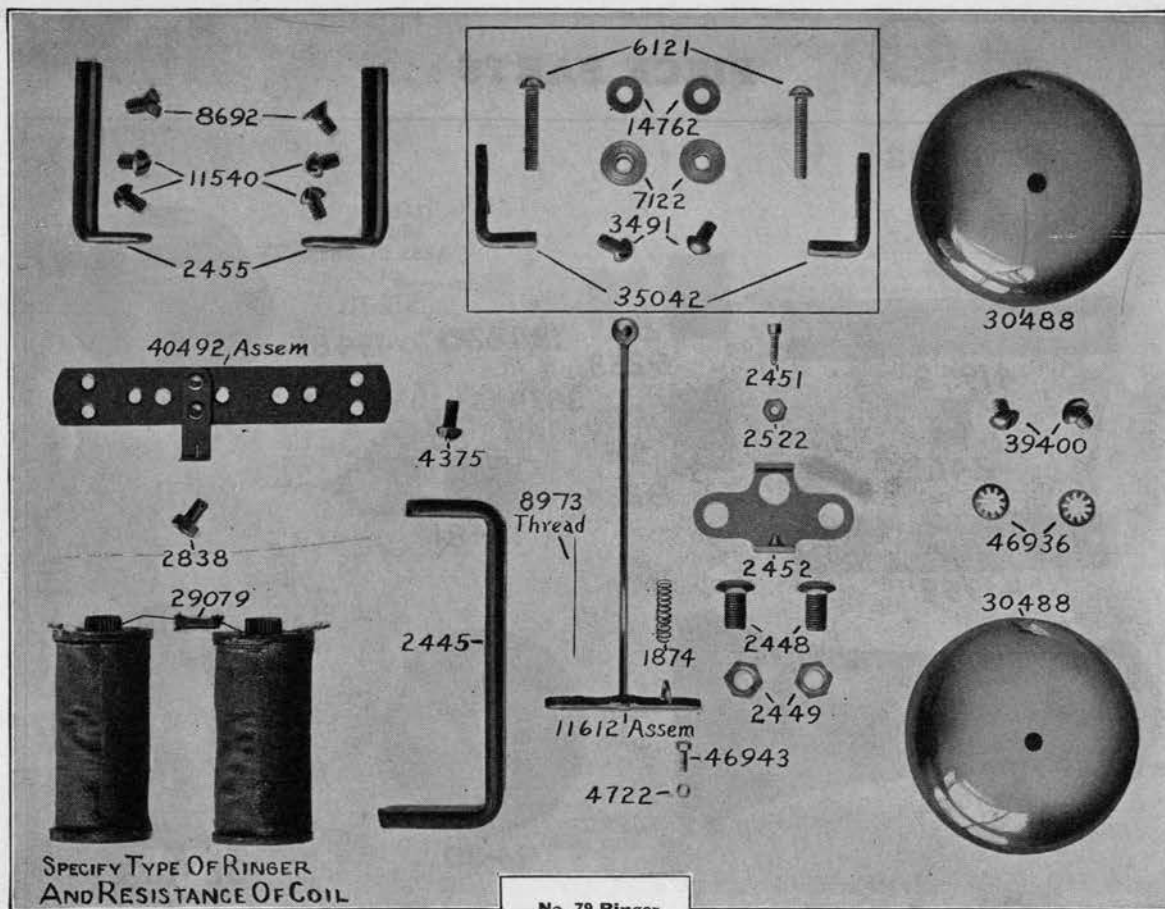


No. 22 Type Transmitter

Pc. 12341 bridge assembly will mount on old and new type transmitter
If nickel plated transmitter is desired order Pc. 10259 back and Pc. 9164 front, otherwise same as above.

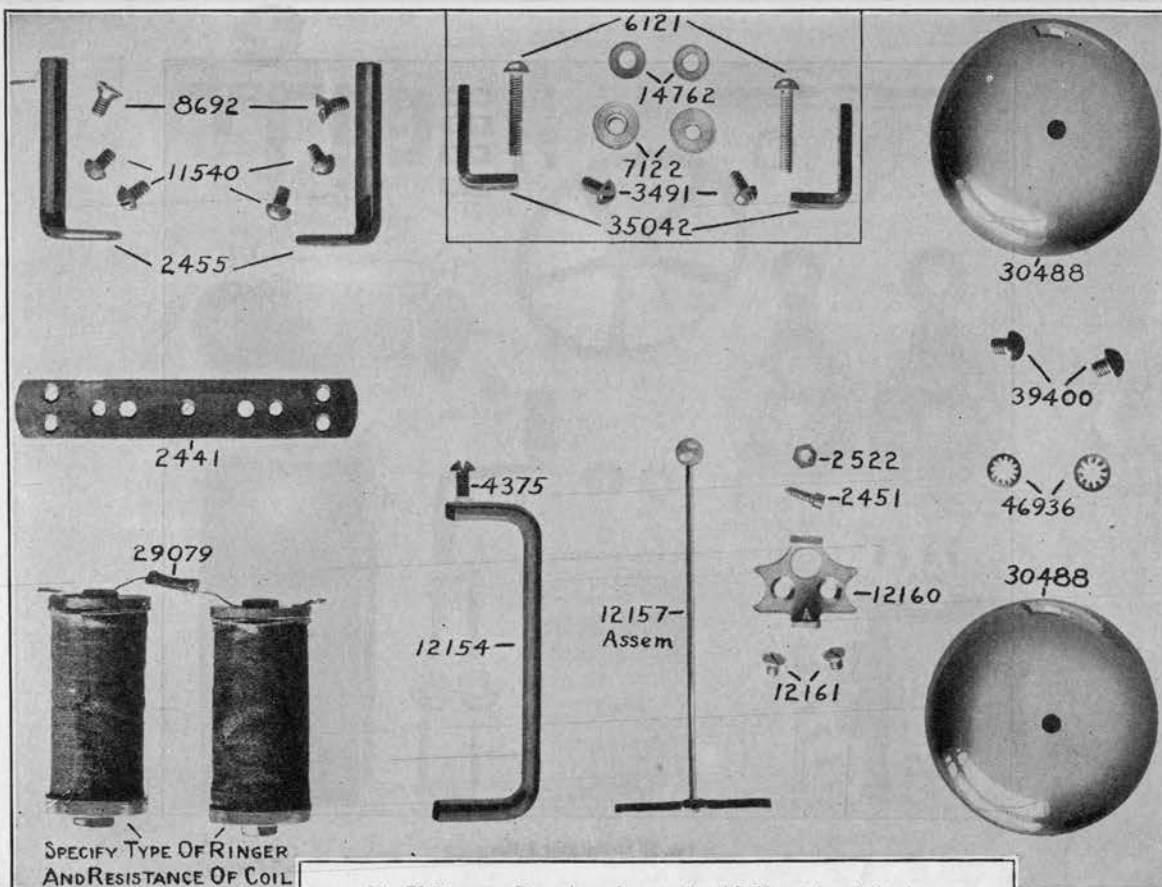
Kellogg

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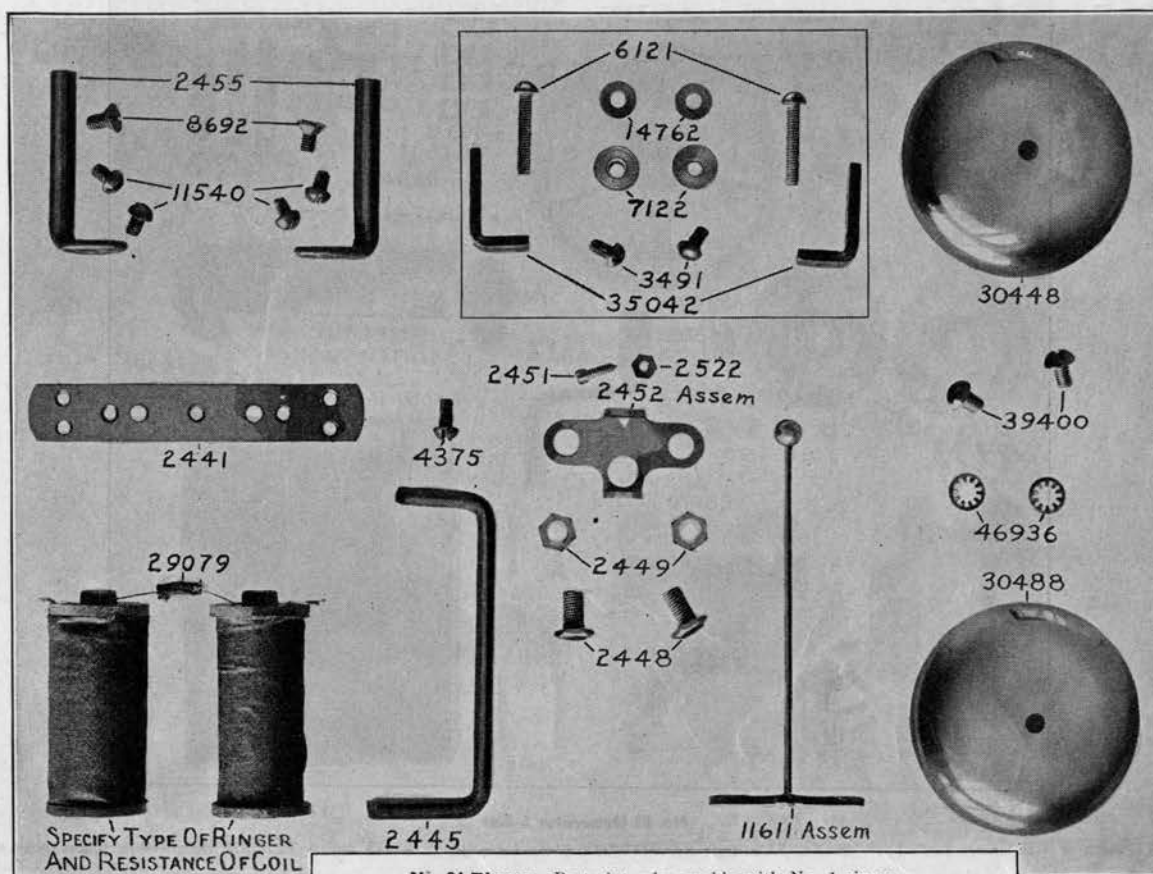


No. 72 Ringer for 33½, 50, 66½ and 16½ cycles 1st to 4th party respectively.
No. 73 Ringer for 30, 42, 54 and 66 cycles. Vibrator assemblies Pc. 15193, Pc. 15194, Pc. 15195, Pc. 15196, 1st to 4th party respectively.

Kellogg



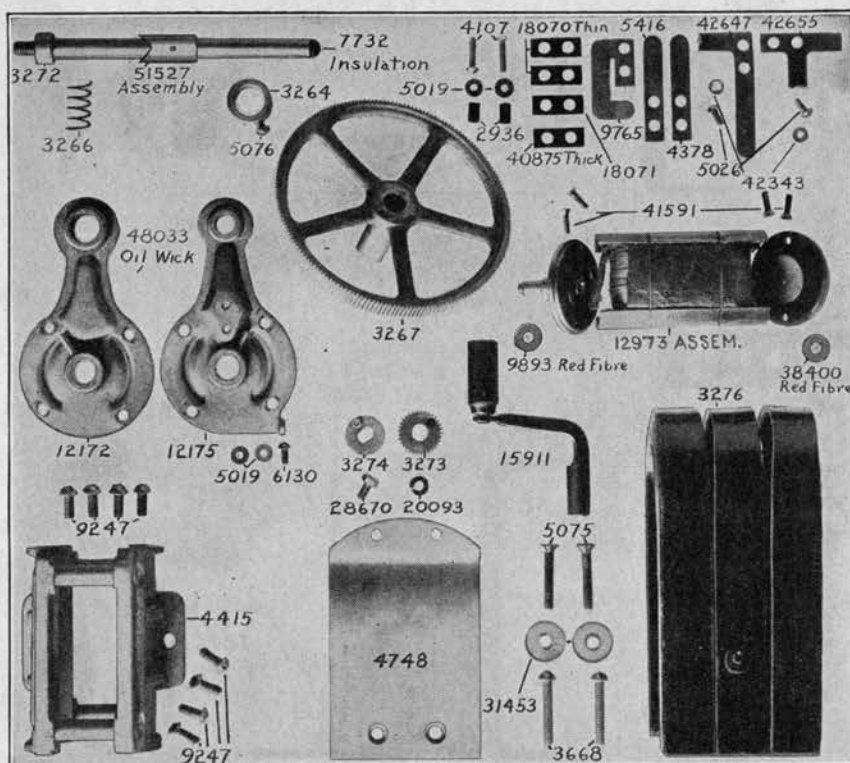
No. 78 Ringer. Parts interchangeable with Nos. 45 and 51 ringer.



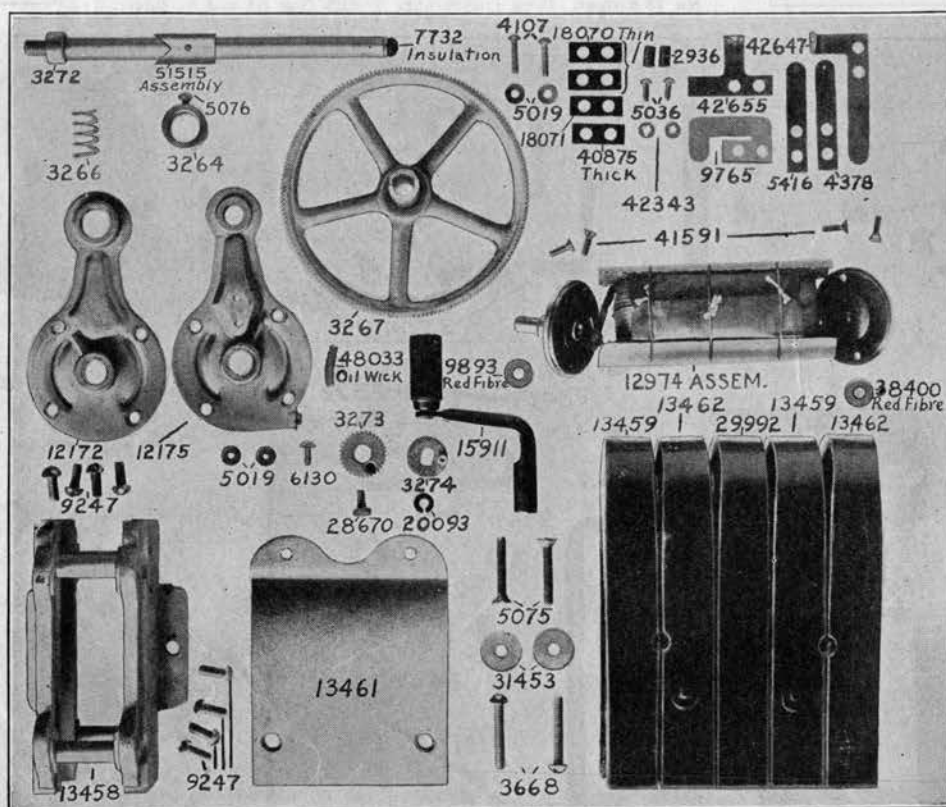
No. 84 Ringer. Parts interchangeable with No. 1 ringer.

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No. 15 Generator 3-Bar



No. 53 Generator 5-Bar

No. 22 Generator 4-Bar uses same parts as No. 53 except Pc. 3281 pole piece instead Pc. 13458 and 4 Pc. 3276 magnets in place those shown

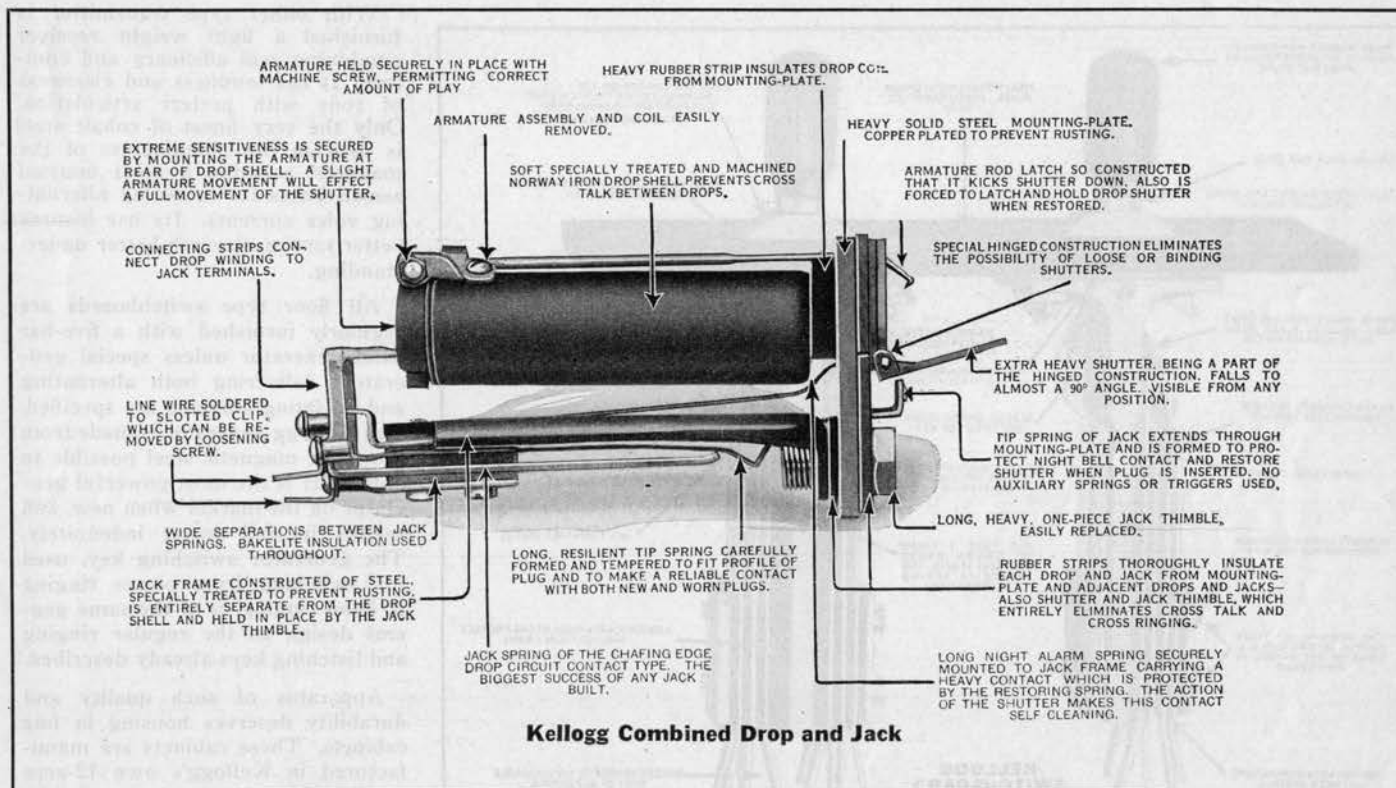
MAGNETO SWITCHBOARDS

The universal popularity of Kellogg magneto switchboards is due to their extremely simple, sturdy construction, and ease of operation.

The simplicity of circuits and of apparatus design, combined with good mechanical construction, insure a trouble-free switchboard, requiring little attention to keep in 100 per cent operating condition. No one feature has been over-emphasized at the expense of others. No efficiency has been sacrificed to gain trick design merely for sales purposes. Every feature and function

is scientifically proportioned to the part it has to play in efficient telephony. Each piece of apparatus is manufactured in the Kellogg plant and guaranteed against inherent defects for one year.

It is true that in switchboards, as well as every other mechanical assembly, there are one or more points that bear the brunt of service. In magneto switchboards, for example, the drops and jacks and keys receive the hardest use. The efficiency of the entire switchboard depends upon these essential parts. For that reason, their superior design is described in detail.



Combined Drops and Jacks

Because magneto lines are not always in the best condition, Kellogg has concentrated on the design and manufacture of a sensitive drop and a positive jack that is simple and rugged in construction, and has high resistance against lightning and sneak currents. The Kellogg line drop and jack are combined into one unit, an original Kellogg development. When the line drop falls, the operator in answering the subscriber, by inserting her plug in the jack associated with that line drop, automatically restores the drop.

The armature assembly of the Kellogg drop is simple. The long lever principle provides maximum action at the shutter with a minimum air gap at the armature. With this small air gap between the armature and the coil, sensitive and positive operation is insured with a minimum current flow.

Drop shutters are firmly hinged, eliminating pins which work loose and fall out. Shutters fall by gravity; but the Kellogg armature latch is designed to push the shutter down and prevent "sticking."

Extra heavy insulators separate the drop and jack from the mounting plate, reducing the possibility of lightning and sneak current damage to a minimum.

Kellogg jacks are simple and efficient. A long, combined tip and restoring spring of evenly tempered nickel silver is the only spring making contact with the plug.

This spring is long and resilient, placing the heaviest wear on the inexpensive and easily replaced jack thimble. It serves the triple purpose of completing the tip side of the connection, removing the drop coil from across the line, and restoring the drop shutter to its normal position.

The night alarm circuit is completed by the action of the drop shutter against a long German silver spring. This spring is protected from accidental injury and so arranged as to give perfect operation throughout the entire life of the switchboard.

Supervision

Modern magneto switchboards make use of either double drop or double lamp supervisory cord circuits. With either type of cord circuit, the operator sees at a glance which one of the connected lines is re-calling.

Kellogg

MAGNETO SWITCHBOARDS

Double lamp supervision is fast replacing double drop supervision because of its greater speed and accuracy. The lighting of a supervisory lamp immediately attracts the eye of the operator because it is located on the keyshelf where it can be more readily seen. This key shelf location permits the supervision to be placed closer to the cord with which it is associated, thereby eliminating the possibility of the operator taking down or cutting in on the wrong pair of cords.

Machine ringing current can easily be supplied from the simple power equipment which lights the lamps and furnishes continuous battery to the operator's transmitter. This is another reason for the increasing popularity of Kellogg lamp supervision switchboards.



Suspended
Type
Transmitter

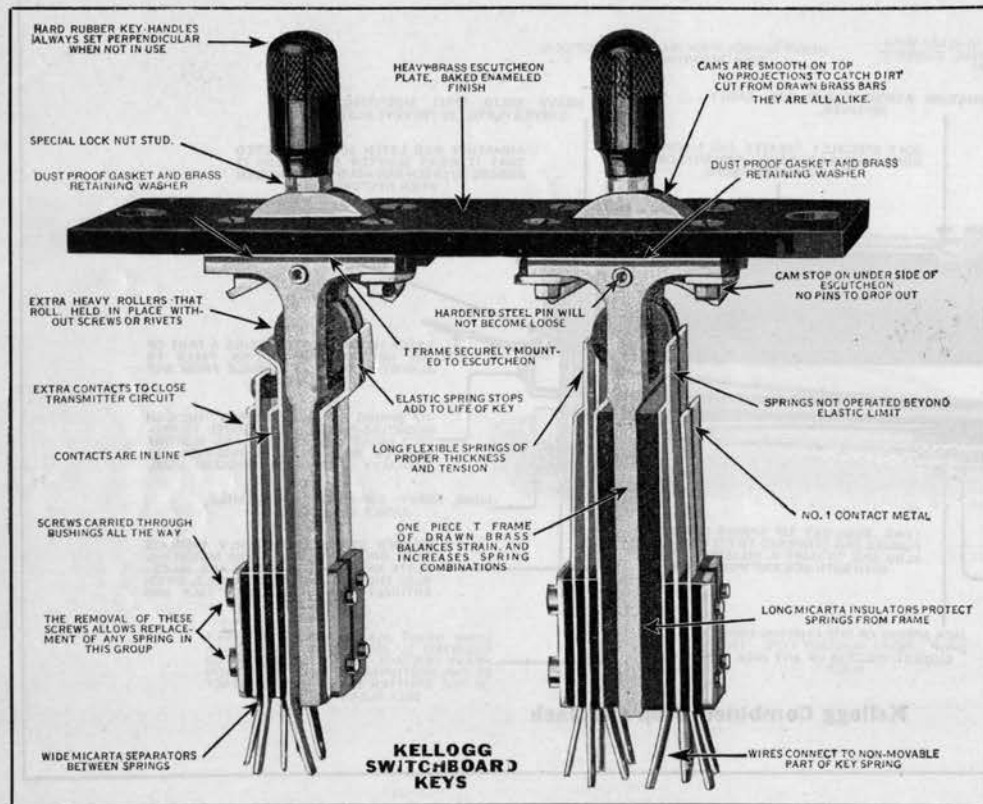
and contacts are protected from dust with a felt cushion placed between the frame and escutcheon.

The operator's equipment for each floor type switchboard comprises: transmitter, induction coil, head receiver, hand generator, generator switching key and, in switchboards arranged for more than one operator, a "position switching key" which when operated enables one operator to handle both positions. Kellogg switchboards are furnished complete—with either the suspended or breastplate type operator's transmitter, depending on the purchaser's preference.

With either type transmitter is furnished a light weight receiver combining real efficiency and comfort. It has loudness and clearness of tone with perfect articulation. Only the very finest of cobalt steel is used in the manufacture of the magnets, assuring a most unusual sensitiveness for incoming alternating voice currents. Its use insures better service, through better understanding.

All floor type switchboards are regularly furnished with a five-bar hand generator unless special generators delivering both alternating and pulsating currents are specified. The Kellogg generator is made from the finest magnetic steel possible to obtain. It is the most powerful generator on the market when new, and retains its full power indefinitely. The generator switching key, used for switching from power ringing to hand ringing, is of the same general design as the regular ringing and listening keys already described.

Apparatus of such quality and durability deserves housing in fine cabinets. These cabinets are manufactured in Kellogg's own 12-acre woodworking plant, where only the finest lumber is used. Artisans with years of experience on fine wood-



Keys

Kellogg keys are designed with a full knowledge of the requirements of rural service. Kellogg engineers realize that magneto service is very heavy and competent repair service is not always obtainable. For this reason, Kellogg keys are built on a heavy cast brass frame that cannot rust, warp, nor twist. There are no intricate springs and levers to get out of order and cause trouble. Lightning discharges are always heaviest on long rural lines, and for this reason, Kellogg keys are insulated with heavy micarta strips and bushings.

The long resilient springs, of nickel silver, permit the greatest breadth of action without breakage. They are operated by a smooth acting cam equipped with pivoted rollers. The rollers contact with the springs so that there is practically no wear on these vital parts. The springs



Breast Plate
Type
Transmitter

work give the same care and attention to the building of Kellogg switchboard cabinets as Kellogg engineers give to the equipment that goes into them. All cabinets, unless otherwise specified, are made of well-seasoned quarter sawed oak, with a medium dark finish.

The following pages are devoted to the several types of magneto switchboards. Because of the long life of Kellogg switchboards, the purchaser is cautioned to select a board with at least fifty per cent additional capacity to accommodate the future growth of his exchange for many years to come. Only the present requirement of lines and cords need to be equipped at the time of purchase, and the additional equipment may be added as required.



Repeating Coil

Kellogg

MAGNETO SWITCHBOARDS

Type 9-B Switchboard

To meet the demands of exchanges too small to justify the expense of the floor type cabinet, the Kellogg Company has designed a complete line of wall type switchboards illustrated on this page. These wall switchboards are of the unit type. Should they ever become filled to capacity, another wall switchboard can be placed alongside, or the drops and jacks and plugs, being of standard construction, can be used in a Kellogg floor type switchboard.

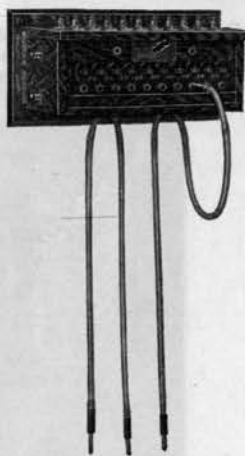
The 9-B is the smallest of the Kellogg wall type switchboards. Its operation is just as positive and just as dependable as the largest magneto board. Its capacity is limited, however, to ten drops and jacks with night alarm, two cord circuits and two supervisory or listening-in jacks. Code night alarm contacts, causing the night alarm bell to give a signal to correspond to the code rings on the bell, may be had if desired.

The use of this type switchboard is recommended where the requirements will not exceed ten lines. Gas, power, railway, and mining companies find this switchboard indispensable for inter-communicating purposes. Once installed, it operates for many years with but little attention.

The line wiring terminates on binding posts on the top of the cabinet to which the outside lines are fastened. Through special design, the line binding posts include air gap lightning arresters.

The operator's set, which is furnished only when specified, and which may consist of any standard magneto telephone with hand generator and bell box, is connected to the two binding posts on the side of the switchboard cabinet.

Shipping weight approximately twenty-five pounds.



Type 17-B Switchboard

This type switchboard has a greater capacity than the 9-B. It is wired for 34 lines, 6 single drops supervisory cord circuits, night or code alarm, and provided with an 8-foot cable extending from the top of the cabinet. The switchboard may be partially equipped to care for present traffic requirements, and as future growth demands it, equipment can be added up to its total capacity.

The drops and jacks are mounted ten per strip. They are of standard design, which permits them to be interchanged with those of any Kellogg floor type magneto switchboard.

This board has found much favor among managers of small exchanges because of its dependability and easy operation.

The cabinet is hinged on one side so that the face equipment may be swung away from the wall, permitting adjustments and connections to be made with ease. All parts are standard and may be replaced on order.

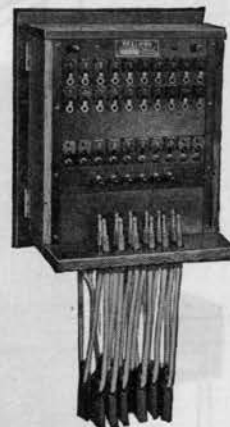
The 17-B, as illustrated, is not furnished with operator's equipment unless specified. Two binding posts are located inside the cabinet to which any standard magneto telephone can be connected.

Shipping weight approximately fifty-five pounds.

* * *

The Kellogg 17-C wall switchboard is the same as the 17-B except that it is equipped with a suspended type operator's set with a hand generator mounted in a separate cabinet. This type makes a very desirable, complete, and compact switchboard unit.

Shipping weight approximately sixty-five pounds.

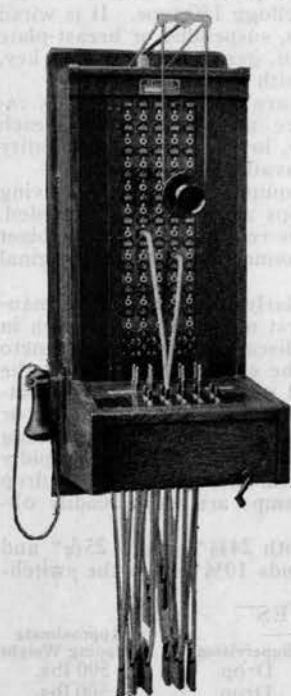


Type 7-A Switchboard

When a 50 line magneto switchboard is required and lack of available space will not permit a floor type cabinet to be used, the Kellogg 7-A wall magneto switchboard is the popular choice because of its compactness and fine performance. The cabinet, mounted on the wall, swings outward from the back panel, permitting connections and inspection to be made with ease.

Standard drops and jacks are used and mounted five per strip. The 7-A switchboard is wired for fifty drops and jacks, regular or code night alarm, five single drop supervisory cord circuits, hand generator and twelve feet of cable. With this type of switchboard, as in all other Kellogg switchboards, equipment may be installed as required up to the ultimate capacity to take care of future growth.

The lines are brought out of the cabinet in a fifty pair, braid covered, wax core cable. The operator's equipment consists of a standard suspended type transmitter with either the hand or the headband type receiver. All circuits are arranged for connecting to either metallic or grounded lines.



Shipping weight approximately two hundred fifty pounds.

Type 29-B Switchboard

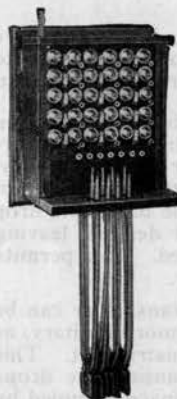
Kellogg engineers designed this switchboard to meet the specific requirements of rural exchanges and switching centers where an audible line signal is desired. It differs from other Kellogg magneto wall switchboards and eliminates the operator of being in immediate attendance at all times.

A bell is wired across each line and operates similar to that of a telephone bell. This enables the operator to tell, without being at the switchboard, whether a party line subscriber is signaling her or another party on the same line.

The capacity of this board is limited to 15 lines, 5 connecting cord circuits, and night alarm. It may be equipped with as many cord circuits as desired up to its total capacity. The line equipment is in units of three each, permitting the switchboard to be equipped with 3, 6, 9, 12 or 15 lines.

An 8-foot cable extends from the top of the board. The cabinet is hinged at the side, permitting it to swing outward from the back panel. The operator's instrument cord may be connected to any standard magneto telephone. Night alarm equipment is furnished which consists of a buzzer and switch, and may be located wherever desired, near or apart from the switchboard. The buzzer will operate when any of the switchboard drops fall, providing the night alarm switch is closed.

Shipping weight approximately fifty-five pounds, fully equipped.

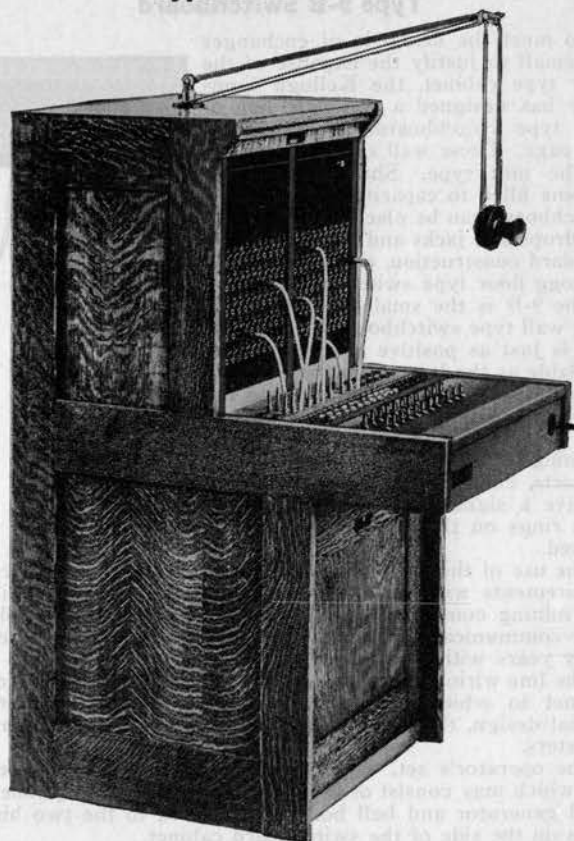


MAGNETO SWITCHBOARDS

Type 50 Switchboard



Type 150 Switchboard



This is the smallest floor type switchboard manufactured by the Kellogg Company. All problems of design and engineering have been considered from the standpoint of the operating company, with the result that the Kellogg floor type switchboard is simple, inexpensive to maintain, is durable, and renders a grade of service which is not excelled by any other magneto equipment.

A special Magneto Switchboard Bulletin, No. 121, more completely describes the details of Kellogg floor type magneto boards. A copy of this bulletin will be sent free upon request.

The Kellogg type 50 switchboard is wired for fifty lines, ten drop supervision cord circuits, suspended or breast-plate operators equipment, hand generator, generator switching key, night or code night alarm, and equipped with twelve feet of cable. This switchboard is arranged for single or double drop supervision. It may be partially equipped if desired, leaving the additional equipment to be added as needed. This permits the switchboard to grow with the community.

Either the breast-plate or suspended type transmitter can be furnished. However, the breast-plate type is more sanitary, as it allows each operator to have a separate instrument. This type of switchboard has two panels for mounting the drops and jacks in strips of five, and if desired, the space occupied by one strip may be used for a pigeonhole or for a cash drawer which fits the pigeonhole. This type switchboard is recommended in preference to the wall switchboard of the same number of lines, when space is available. The over-all dimensions are: depth 24 $\frac{3}{4}$ ", width 18 $\frac{3}{4}$ ", and height 3' 9 $\frac{1}{4}$ ". The key shelf extends 10 $\frac{1}{4}$ " from the switchboard, giving sufficient room for the operator to write toll slips.

The Kellogg type 150 magneto switchboard has been designed for exchanges requiring the floor type board of a larger capacity than 50 lines.

All of the advantages and simplicity of the smaller switchboards have been retained in the Kellogg 150 type. It is wired for 100 or 150 lines, 15 cord circuits, suspended or breast-plate operator's equipment, hand generator, generator switching key, night or code alarm, and equipped with 12 feet of cable.

Kellogg floor type switchboards are built to customer's requirements. Standardized parts are used in equipping each board, which assures quick delivery, low price due to quantity production, and replacement parts available on order.

This cabinet may be partially equipped if desired, leaving space and wiring for additional drops and jacks when needed. If greater capacity than 150 lines is required, another cabinet of the same type may be used in connection with the original unit.

This switchboard appeals particularly to the exchange manager who wishes to employ the latest methods of operation in his magneto switchboard without discarding present magneto telephones and without incurring the expense of bringing the line construction up to the standard required for common battery service. Associated with each cord circuit, either drop or lamp signal type of supervision can be furnished. With Kellogg lamp supervision, an operator can handle her calls more rapidly than she can when the switchboard is equipped with drop supervision, due to the fact that lamps are more readily observed.

The over-all dimensions are: Depth 24 $\frac{3}{4}$ ", width 25 $\frac{1}{8}$ " and height 4' 3 $\frac{3}{4}$ ". The key shelf extends 10 $\frac{1}{4}$ " from the switchboard, giving ample writing room.

CAPACITIES

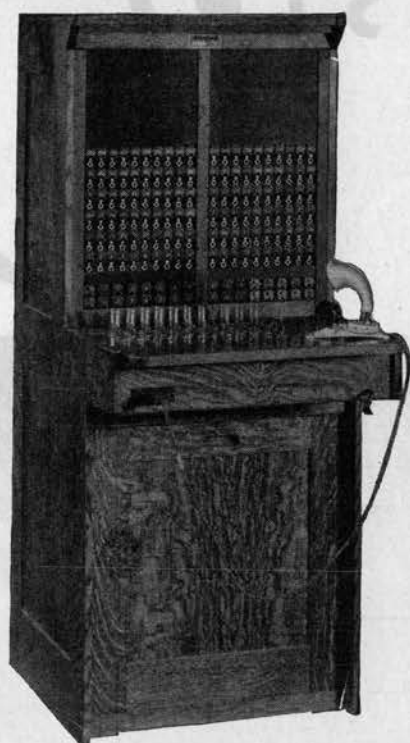
Code No.	Lines Wired	Cords Wired	Supervision	Approximate Shipping Weight
50	50	10	Drop	350 lbs.

Code No.	Lines Wired	Cords Wired	Supervision	Approximate Shipping Weight
150-A	100	15	Drop	500 lbs.
150-B	150	15	Drop	500 lbs.
150-AL	100	15	Lamp	600 lbs.
150-BL	150	15	Lamp	600 lbs.

Kellogg

MAGNETO SWITCHBOARDS

Type 200 Switchboard



The largest standard single position Kellogg magneto switchboard is the 200 type. This board has an ultimate capacity of 200 lines, though it may be purchased with 150 or even 100 lines wired. The price is figured according to the number of lines wired and the equipment placed in it.

The 200 type, when purchased with wiring for 200, 150 or 100 lines, is completely wired for 15 cord circuits, suspended or breast-plate operator's equipment, hand generator, generator switching key, night or code alarm, and equipped with twelve feet of cable. The cord circuits can be equipped with lamp or drop supervision of either the single or double type.

Double lamp supervision is recommended for this type switchboard, as greater facility is provided for handling the large number of lines.

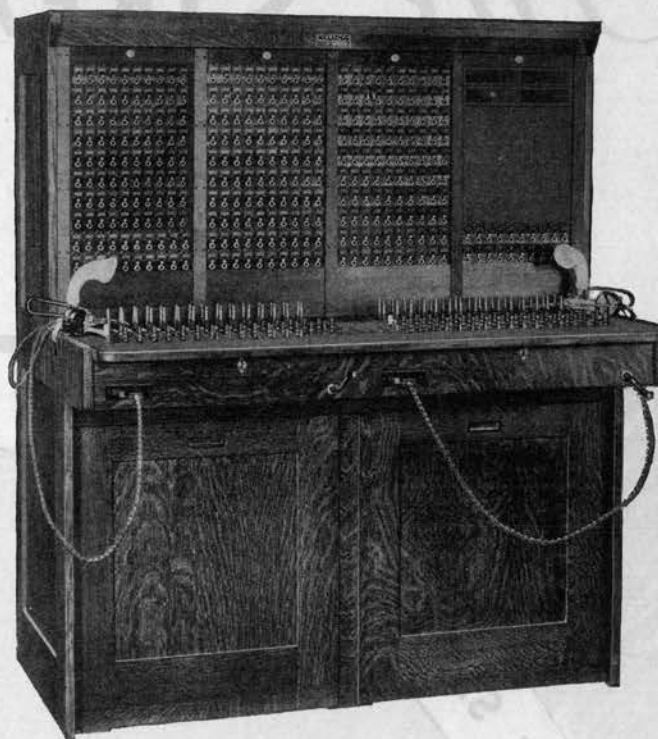
With its low key shelf and large capacity, this switchboard presents a most attractive unit for any exchange desirous of giving the very best magneto service. This switchboard is designed to accommodate the addition of another position when traffic conditions require the use of a second operator.

The over-all dimensions are: depth 24 $\frac{3}{4}$ ", width 24 $\frac{1}{8}$ ", height 4' 11". The key shelf extends 10 $\frac{1}{2}$ " from the cabinet.

CAPACITIES

Code No.	Lines Wired	Cords Wired	Supervision	Approximate Shipping Weight
200-A	100	15	Drop	500 lbs.
200-B	150	15	Drop	500 lbs.
200-C	200	15	Drop	500 lbs.
200-AL	100	15	Lamp	600 lbs.
200-BL	150	15	Lamp	600 lbs.
200-CL	200	15	Lamp	600 lbs.

Type 400 Switchboard



The 400 type Kellogg switchboard is a two position section developed for larger magneto exchanges.

In recent years, much progress has been made in building magneto switchboards that enable the operators to handle more calls quickly and easily, giving better service.

Kellogg engineers have incorporated various new ideas and improvements in this switchboard. It is arranged for four panels with drops of ten per strip, allowing an ultimate capacity of 400 lines, and wired for either 300 or 400 lines. Each position is also wired for 30 double drop or double lamp supervisory cord circuits, hand generator, generator switching key, night alarm and control keys, and equipped with 12 feet of cable extending from the cabinet.

In addition to the supervisory lamps associated with each cord pair, a large red pilot lamp is used which remains lighted until the operator has given proper attention to all disconnect and recall signals. Improvement of line and supervisory pilots, lamp signal key shelf supervision, and the distribution of rural lines in front of the local positions, naturally speeds operator's handling time. This allows more calls to be handled with greater care and ease.

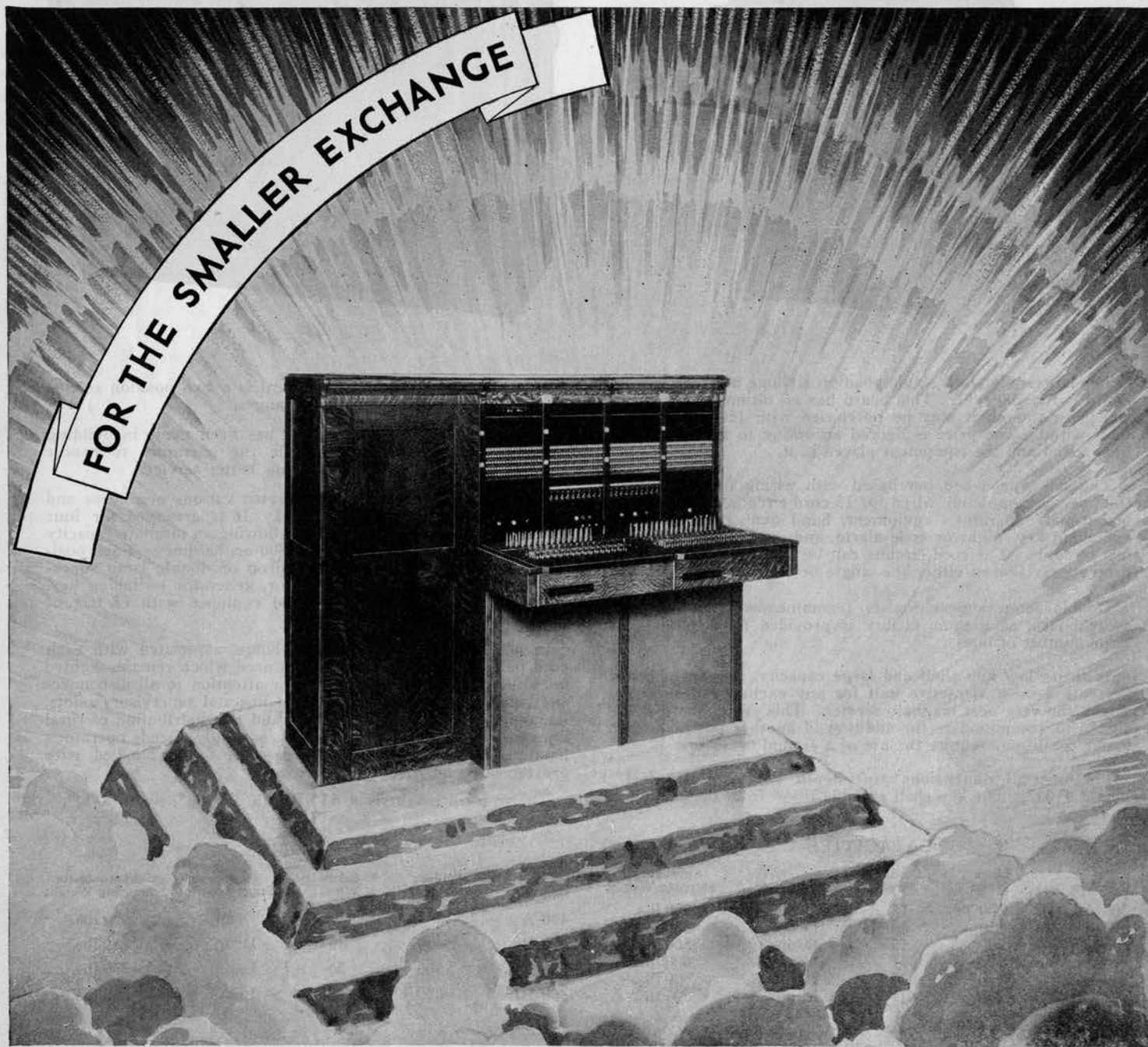
The over-all height is 4' 11", width 3' 11 $\frac{1}{8}$ ", depth 34 $\frac{3}{8}$ ".

CAPACITIES

Code No.	Lines Wired	Cords Wired	Supervision	Approximate Shipping Weight
400-A	300	30	Drop	650 lbs.
400-B	400	30	Drop	650 lbs.
400-AL	300	30	Lamp	750 lbs.
400-BL	400	30	Lamp	750 lbs.

Kellogg

The GREATEST *O*



opportunity FOR THE

SMALLER EXCHANGE OWNER

6-800 Masterbuilt

TO convert a magneto exchange into common battery is always a great event—long to be remembered by everyone concerned. The cutover is only the beginning of new possibilities, new opportunities, and new interesting methods. It means a new life for the exchange.

Common battery service today is understood by subscribers in even the smallest town. There is no mystery connected with it. From an operating standpoint—common battery equipment is simple, fast, reliable and profitable. Maintenance is low, and the savings and earnings are attractive.

The barrier that has stood in the way of many magneto exchanges from converting to common battery (that of high first cost and installation) has now been overcome by the development of a Masterbuilt switchboard, designed especially for

smaller exchanges. This equipment is known as the 6-800 Masterbuilt.

It provides for an economical investment that can retire itself within a reasonable period from the possible savings and increased earnings, and at the same time give *real* "big city" service.

The positional equipment of a 6-800 Masterbuilt board is extremely simple and flexible. The key-shelf, connecting rack and relay gate are fully equipped and wired into a complete positional unit at the factory. It may be arranged for toll, local, rural or mixed traffic. Each unit is interchangeable with any other positional unit.

The 6-800 Masterbuilt has many other advanced engineering features that will be gladly explained by your Kellogg representative. Write for a copy of Masterbuilt Bulletin No. 181.

WIRE CHIEF'S TEST SETS

The Junior Test Cabinet



It is expensive for the smallest magneto or common battery exchange to be without the service of a test cabinet. It will earn its cost many times each year. Simplicity in design and construction is an outstanding feature of all Kellogg test sets.

The Kellogg Junior Test Set is for use in magneto and small common battery exchanges where a simple, compact, and inexpensive testing arrangement is all that is needed. It is assembled in a turret type cabinet of medium dark finished quarter-sawed oak, measuring 13½ inches high, 10 inches wide and 6 inches deep.

Standard practice includes a No. 267 Weston panel mounted voltmeter reading from 0 to 30 volts. If preferred, this same meter can be furnished with an additional scale of 0 to 3 volts graduated in ohms for direct reading resistance measurements.

Two trunks, one to the switchboard and one to a test shoe at the main frame, are wired on all sets. A third trunk for test clips can be had if desired.

Tests can be made through the switchboard or from the main frame "out" on the line side, or "in" on the switchboard side.

Tests can be made for shorts and ground on either side of the line, and also for condenser "kicks" on open or common battery line.

A ringing and listening key is furnished, but no operator's telephone. This test set will connect and operate with any standard telephone, which can be used as a wire chief's or operator's instrument.

An order wire key for connecting the wire chief direct with the operator, for handling the test trunk cords at the switchboard, is equipped on request.

All wiring for outside connections is terminated on binding posts and fuse bars, conveniently located in the rear of the cabinet. All apparatus and wiring is accessible from the rear through a full size removable panel.

When placing an order or asking for prices be sure to state whether the single or double scale voltmeter is desired, and if it is to be used with a magneto or common battery switchboard; also if the order wire key is wanted. When a separate trunk for test clips is desired, this should be stated, as well as stating whether four or five frequency ringing is used and a ringing key desired.

The Senior Test Cabinet



The senior test outfit is assembled in a turret type cabinet suitable for mounting on a desk or table and measures 14½ inches high by 18½ inches wide and 13½ inches deep.

The voltmeter used is the Weston No. 24 type. This voltmeter sets flush with the face of the cabinet and has a scale of 0 to 30 and 0 to 150 volts. It has no ohm scale calibration, but the low scale has a resistance of 10,000 ohms and 50,000 ohms on the high reading.

When specified this cabinet can be equipped with the same circuit and apparatus used in the Junior type; however, standard practice includes a larger, more complete and flexible circuit arrangement. This circuit includes all the necessary apparatus and additional refinements for testing in the small and medium sized universal and common battery exchanges.

A resistance coil and shunt key is included for decreasing the resistance of the voltmeter to permit easy reading on low resistance line, or other circuits, under test. A key for connecting the voltmeter to the test circuit is standard equipment.

A key is furnished for cutting the voltmeter battery off and a voltmeter reversing key for testing for foreign currents. A voltmeter ground key is used for testing for grounds and foreign currents; a test trunk reversing key will locate grounds on either the tip or ring side of the line. Another key will set up the testing apparatus for both "in" and "out" test from the M.D.F. Keys for connecting common battery and magneto test trunks, a flash key for flashing the line lamp on common battery trunks, keys for ringing and listening and connecting talking battery to common battery are furnished.

Other refinements include a key for reading the test battery, a key for connecting a bridge or howler (the bridge or howler not furnished), and a continuous ringing key. A two-way trunk to the local board is furnished with a lamp signal and an answering key.

Standard equipment includes a complete operator's telephone of the desk stand type. It has an anti-side tone induction coil and head receiver with head band and suitable hook. A night alarm buzzer and cut off key is also standard equipment. All apparatus, including binding posts, is housed inside the cabinet, accessible through a full panel, hinged rear door.

No test shoe and cord for the main frame or trunk equipment for the switchboard are furnished with the cabinet. They are to be ordered separately.

General practice calls for single party ringing only; therefore, all orders or requests should state what type of ringing is used on the main switchboard, as a small additional charge is made for party line master keys.

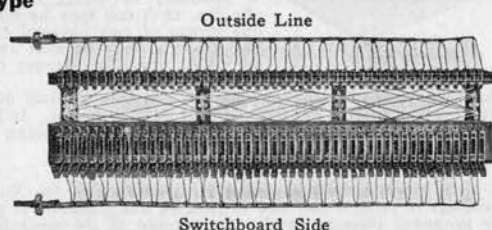
MAGNETO SWITCHBOARD APPARATUS

Arresters and Cross-Connecting Equipment

Every switchboard should be protected from lightning by some form of carbon lightning arrester for each incoming line. Where there is danger from electric light and power circuits, best practice calls for the use of a fuse or heat coil sneak current protector in addition to the carbon arrester which is intended as a protection against lightning. ALL PROTECTIVE APPARATUS SHOULD BE WELL GROUNDED. This ground should be made by means of a heavy insulated copper wire not smaller than 14 B & S gauge well secured to a water pipe or soldered to a ground cone such as shown on page 50.

Every exchange requires some means of cross connecting in order that subscribers moving from one part of town to another can do so without changing their old number. For example, this can be done by attaching the cable pair of drop No. 1 on the switchboard to the corresponding number on the arrester. The line wires or cables can likewise be permanently connected to the line wire side of the line terminals or distributing block, which is also numbered from 1 up. Then by attaching one end of a jumper wire to the line side of the arrester the other end can be connected to the terminal of any line selected; thus No. 40 drop can be made to work on No. 1, or No. 49 or any other line desired.

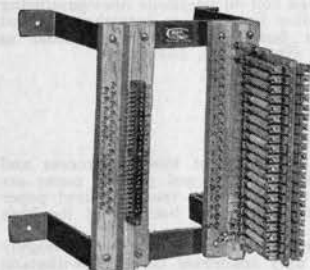
No. 6 Type



No. 6 type combination lightning arrester and cross connecting rack. This type ranges from 5 to 25 metallic lines or 10 to 50 grounded lines. It is so arranged that any line can be cross connected to any switchboard drop. Uses No. 11 fuses and carbon arresters. Over-all length 32 1/4 inches.

Code No.	Capacity	Overall Length	Shipping Weight
6	25 pair	32 1/4 inches	10 lbs.
9	10 pair	13 3/4 inches	5 lbs.

Code No. L 9

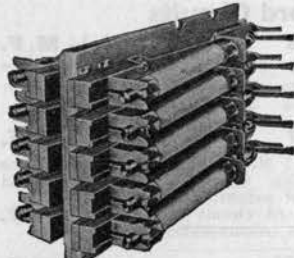


No. L 9

The L 9 is a small distributing frame designed to carry the H 36 or the No. 100 protector. Distributing strips of hard maple are mounted on two heavy steel brackets with sufficient room to make it accessible. Made in 20, 40, and 60 pair capacities. Width 9 1/2 inches, depth 15 inches. Furnished less protectors but including line terminals.

Code No.	No. of Pairs	Length, Inches	Weight
1050	20	12	1 lb.
1052	40	27	4 lbs.
1054	60	42	32 lbs.

Code No. H 36



No. H 36 Protector

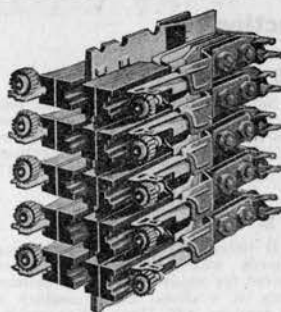
Designed to protect circuits where heat coils are not required. The fuses and lightning arrester carbons are mounted on metal plates of the same length as those used for heat coil protectors and may be mounted on the same frame.

Standard carbons, one plain and one grooved, and "U" shape celluloids .005 thick are provided.

Furnished with wood or composition fuses, the latter being approved by the Underwriters. Sections 1 1/2 inches wide and 5 1/2 inches deep.

Code No.	Section	Fuses	Length	Weight
1200	10 pair	A 46 wood	5 1/2 inches	2 lbs.
1201	20 pair	A 46 wood	10 1/2 inches	4 lbs.
1202	10 pair	A 45 composition	5 1/2 inches	20 lbs.
1203	20 pair	A 45 composition	10 1/2 inches	21 lbs.

Unless otherwise ordered 1 ampere composition fuses will be sent.



No. 100 Protector

Code No.	Section	Length	Weight
1230	10 pair	5 1/2 inches	2 1/2 lbs.
1231	20 pair	10 1/2 inches	5 lbs.
1232	No. 100 heat coils		
1234	No. 100 test plugs		

Code No. 100

Protector

This newest design protector is equipped with wire wound, self soldering heat coils and carbon block arresters.

When the heat coil melts or blows from an overcharge of lightning or electric current, it opens the circuit and grounds the line. To reset the protector simply push the switchboard spring back over the heat coil. No coil to change, turn or resolder.

Sections are 2 inches wide and 3 1/2 inches deep.

Code No. L 10

Main Distributing Frame

This is a floor type of frame to be used in mounting H 51 Central Office Protector.

It is designed to replace the old wooden fire hazard wall frames, and consists of two vertical upright angle iron supports with cross pieces, wall braces, jumper rings for top and bottom and necessary bolts. Additions may be made to right or left side. The top cross piece is drilled to attach a cable bracket to the switchboard. The vertical uprights are 6 feet 9 inches in height. The frame is 16 inches wide and braces are 18 inches long. All steel parts are finished in aluminum.

Code No. H 51

Protector

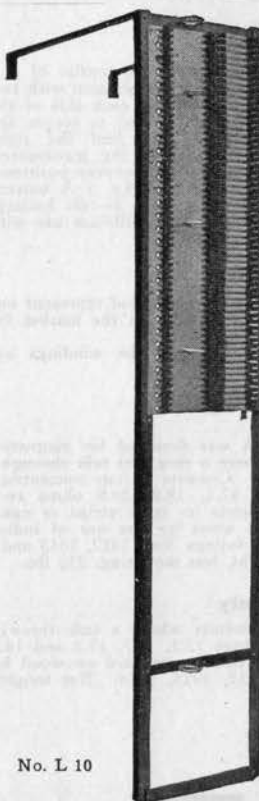
The H 51 Protector, in sections of 10 pairs each are installed as required.

H 51 Protector is a combination of line terminals and central office protector.

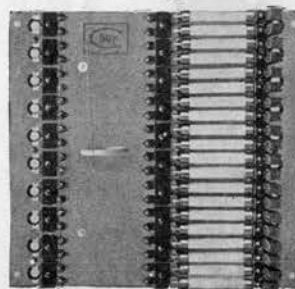
The base is of metal, aluminum treated.

Carbons ground on a copper ground strip that runs the length of the mounting plate, with provisions to make the ground continuous.

Fuses are composition type A 12 of 1 ampere capacity. Standard grooved carbons and "U" shape dielectrics are used.



No. L 10



No. H 51 Protector

Cat No.	Description	Length, Inches	Width, Inches	Depth, Inches	Net Weight
1260	L 10 Frame 50 pair	61	12	18	16 lbs.
1040	H 51 Protector 10 pair sections	12	11 1/4	2	45 lbs.

Kellogg

MAGNETO SWITCHBOARD APPARATUS

Coils—Induction

See Page 6

C code No. 28 C



No. 28 C

The No. 28 C induction coil is a universal local battery coil for use in magneto switchboards using dry cells or primary batteries. Terminals are provided for either soldered or screw connections. Replaces Nos. 14 A and 14 C. Net weight, 4½ ounces.



No. 7 D

Code No. 7 D

The No. 7 D induction coil is used on magneto switchboards when a third or tertiary winding is desired for monitoring. The primary has a resistance of 4 ohms, the secondary 90 ohms and the tertiary 435 ohms. Net weight, 12 ounces.

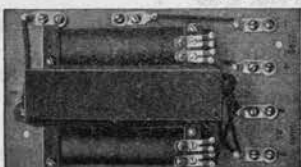


No. 81 A

Code No. 81 A

Similar in construction to No. 28 is the No. 81 A induction coil but used with battery feed coils where operator's sets on magneto switchboards are supplied from storage battery. The primary has a resistance of 4 ohms and the secondary 37.5 ohms. Net weight, 4½ ounces.

Operators Feed Coils



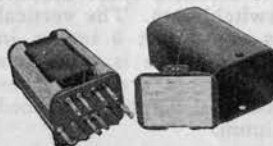
Nos. 3 A-4 A

These feed coils each consist of a 2 M.F. condenser in combination with two retardation coils one in each side of the circuit. They are wound to secure the proper impedance, to feed the right amount of current to the transmitter, and prevent cross talk between positions. Net weight, 1½ lbs. No. 3 A battery feed coil—for use with 24-volt battery. No. 4 A battery feed coil—for use with 32-volt battery.

Coils—Repeating

The repeating coils listed below replace all former types and represent our latest development in coils and are superior to any now on the market for both ringing and transmission efficiency. The cores are made of Silicon steel laminated, and the windings are completely enclosed in heavy cross-talk proof cases.

Ring and Talk Through



Nos. 19 A-20 A

The No. 19 A was designed for magneto cord circuits where a ring and talk through coil is required. Consists of four concentric windings 15.3, 17.1, 18.8, 20.9 ohms respectively. Mounts on relay strips or can be mounted on wood by the use of individual angle mountings Nos. 1012, 1013 and 1014. Net weight, less mounting, 2¾ lbs.

Talk Through Only

The No. 20 A was designed for magneto circuits where a talk through coil is required. Consists of 4 concentric windings 12.1, 13.7, 15.2 and 16.6 ohms respectively. Mounts on relay strips or can be mounted on wood by the use of individual angle mountings Nos. 1012, 1013, 1014. Net weight, less mountings, 2¾ lbs.

Mountings



No. 1014



No. 1012



No. 1013

Code No.
1012
1013
1014

Mounts On
Right
Left
Roof

Weight
6 ounces
6 ounces
6 ounces



No. 16 A

Non Ring-Through

A non ring-through repeating coil formerly used in magneto cord circuits. Has 2 concentric windings 16 and 20 ohms. Used anywhere a non ring-through coil is desired for wood mountings. Net weight, 3 lbs. Height, 3¾ inches. Width, 3¾ inches. Depth, 2½ inches.

Phantom and Drainage Coils

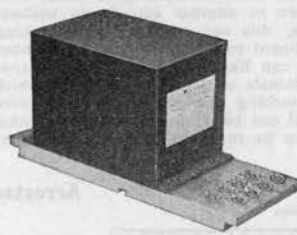
Proper Protection for These Coils Listed Under Arresters in Supply Section



No. 17 F

Code No. 17 F

Having 2 windings in parallel this coil is particularly adapted for grounded phantom work because of the separate windings being less subject to lightning damage. Net weight, 3 lbs. Height, 3¾ inches. Width, 3¾ inches. Depth, 2½ inches.



No. 18 A

Code No. 18 A

The No. 18 A phantom coil was designed to meet the urgent need of a coil which could be introduced at the center of a physical circuit to obtain an intermediate phantom or for any other location where a perfectly balanced coil is required.

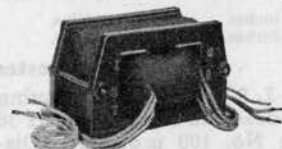
This coil is arranged to mount on standard coil racks. The coil is perfectly balanced on either half. This means that if necessary to bridge on a phantom, the No. 18 A coil may be introduced at the center of two physical circuits and the phantom may be split and operated in either direction without interference on the physical circuits.

The transmission loss to telephone values is less than one-half mile, No. 19 gauge cable having a mutual capacity of .054 M.F. per mile. It has greater ringing efficiency than any other coil on the market. Net weight, 12 lbs.

Code No. 18 B

The No. 18 B repeating coil is similar in appearance to the No. 18 A. It has two windings in tandem and two in parallel, and therefore is particularly adapted for grounded phantom work. On account of the separate windings it is less subject to lightning. Talk and ring-through efficiency practically same as the No. 18 A. Will stand harder usage than the 17 F. Net weight, 12 lbs.

Insulating Transformer



No. 19 B

The 19 B transformer is well balanced and has a break down test of 7,500 volts. Can be used either as an insulating transformer or drainage coil on telephone lines paralleling high tension lines. It is furnished without cover or base and can be mounted as desired. Net weight, 16¾ lbs.

Condensers

See Page 6

Kellogg condensers are manufactured by the most modern process and are of the best materials obtainable. Special tin foil and paraffin paper are used in the construction of all condensers, rather than the metallized paper process, which is not satisfactory for telephone use because of its high resistance.

The tin foil type of construction is more expensive, but is thoroughly reliable and free from trouble and is the only condenser that will withstand high frequency currents, such as auto, ignition and radio work. It is well known that where an ordinary condenser fails the installation of a Kellogg will prevent further trouble.

Kellogg is prepared to furnish condensers for special work providing the quantity is large.

Condensers for Cord Circuits

Code No. 68

1½ M. F.

No. 68 is a ½ M.F. condenser being 3½" high, 1½" wide and 1½" thick. Arranged for wood mounting. Net weight, 6 ounces.



Nos. 66, 67, 68

Code No. 67

1 M. F.

No. 67 is a 1 M.F. Condenser using the same can as the No. 68 and arranged for wood mounting. Net weight, 6 ounces.

For best cord circuit transmission 2 M.F. condensers are recommended.

Code No. 66

2 M.F.

No. 66 Condenser is a 2 M.F. of the same dimensions as the No. 67 and 68. Arranged for wood mounting. Net weight, 7 ounces.



No. 64

Code No. 64

2 M. F.

No. 64 Condenser has a capacity of 2 M.F. and arranged to mount on regular relay strip mountings. It is 2 57/64" high, 1 17/32" wide and 1 1/32" high. Standard for Kellogg magneto boards. Net weight, 6 ounces.

MAGNETO SWITCHBOARD APPARATUS

Condensers—Power



Code No. 24 $\frac{1}{2}$ M.F.
For a $\frac{1}{2}$ M.F. high break down condenser the No. 24 is recommended. It is used in the Kellogg No. 36 type pole changer. Net weight, 11 ounces.

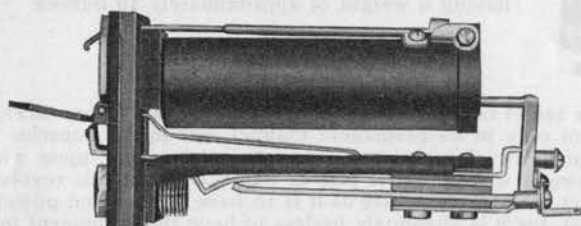
Code No. 25 1 M.F.
For a 1 M.F. high break down condenser the No. 25 is recommended. It is used in the No. 9, 23 and 30 dry battery pole changers. Net weight, 12 ounces.



No. 36

Code No. 36 2 M.F.
A 2 M.F. condenser arranged for wood mounting having dimensions $5\frac{1}{4}$ " high, $2\frac{3}{4}$ " wide, and $1\frac{1}{8}$ " thick. Used on No. 36 type pole changer. Net weight, 14 ounces.

Drops and Jacks



No. 1 Jack
The jack is of the single line spring construction with a chafing knife edge drop circuit contact. This simple construction makes possible the use of an extra strong combined tip and restoring spring.

The sleeve line conductor uses the frame of the jack and the sleeve thimble provides a long surface contact. This sleeve thimble is of the removable type, permitting easy replacement when the thimble has become too badly worn for proper operation.

No. 2 Night Alarm
The regular night alarm spring is mounted on the jack, which simplifies construction and maintenance. The alarm does not close.

No. 3 Drop
The drop shutter has been changed to punched hinge construction, using a stationary hinge pin which is a part of the shutter. There is no loose pin to work out. When the new shutter is released, it falls to a 65° angle. The new hinge construction provides a durable adjustment of the drop.

No. 4 Mounting
The mounting strip is practically unchanged. The new drops with mountings can be placed in any board.

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 the plug may be worn.

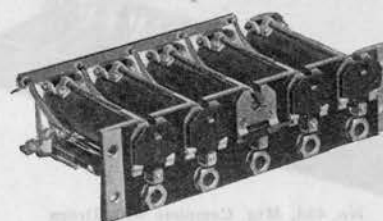
The Jack springs catch the plug firmly and are so tempered as to give fine service on the busiest toll and rural lines. All iron work is permanently protected against rust and scaling.

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

Net weight, 5 per strip complete, $2\frac{1}{2}$ lbs., 10 per strip 4 lbs.
In ordering give board number if Kellogg, otherwise name of manufacturer and dimensions of present mountings.

Code No.	Drop Resistance	Remarks
300 A	100 ohms	with armature contact
300 C	1000 ohms	with armature contact
300 E	500 ohms	with armature contact
301 A	100 ohms	without armature contact
301 C	1000 ohms	without armature contact
301 E	500 ohms	without armature contact

Drop and Jack Mountings

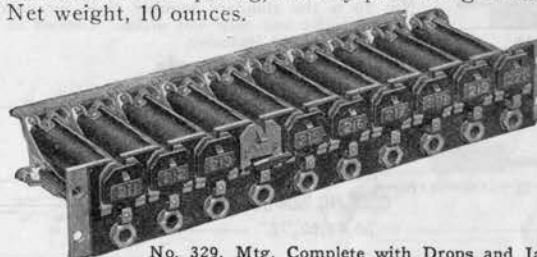


No. 257, Mtg. Complete with Drops and Jacks

Code No. 257
No. 257 mounting strip is the standard 5 per strip. It will mount the No. 29, 101 and 301 type D. & J. The mounting center is $6\frac{1}{4}$ ". Length of face $5\frac{3}{4}$ ", over-all length $6\frac{1}{4}$ ". Width of strip $1\frac{3}{8}$ ". Net weight, 10 ounces.

Code No. 333
No. 333 mounting strip is of the same construction as the No. 257 except being drilled for adjustable night alarm. Mounts Nos. 59, 100 and 300 type. Net weight, 10 ounces.

Code No. 395
No. 395. Similar to No. 257 except has 2-piece No. 28421 adapters to cover end spacing, thereby permitting flush mounting. Net weight, 10 ounces.



No. 329, Mtg. Complete with Drops and Jacks

Code No. 329
No. 329 standard 10 per strip mounting that mounts the Nos. 29, 101 and 301 D. & J. Mounting center is $10\frac{3}{4}$ ", length of face $10\frac{1}{4}$ ", length over-all $11\frac{1}{8}$ ". Width of strip $1\frac{3}{4}$ ". Net weight, 1 lb.

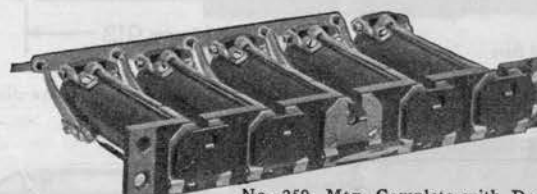
Code No. 426
No. 426 standard 10 per strip for the Nos. 59, 100 and 300 type D. & J. Similar to No. 329 except drilled for adjustable night alarm. Net weight, 1 lb.

Clear Out Drops

The Kellogg ring-off drop 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 rustproof construction and are fitted with contacts for night alarm or pilot lamp signals, the same as are the drops used in the line circuits. Net weight, 5 per strip complete $2\frac{1}{4}$ lbs., 8 per strip $2\frac{3}{4}$ lbs.

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

No. 51 E drop is standard for all types Kellogg magneto board. The drop coil has a resistance of 500 ohms.



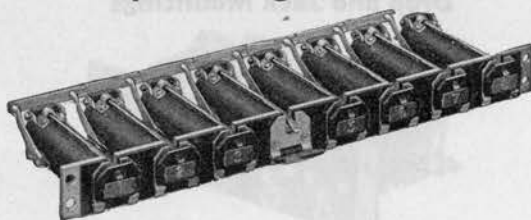
No. 259, Mtg. Complete with Drops

Code No. 259
The No. 259 is the standard 5 per strip mounting. It also mounts the 22 type. Mounting center is $6\frac{1}{4}$ ". Length of face $5\frac{3}{4}$ ", length over-all $6\frac{1}{4}$ ", width of strip 1". Net weight, 2 ounces.

Kellogg

MAGNETO SWITCHBOARD APPARATUS

Drop Mountings—Continued



No. 433, Mtg. Complete with Drops

Code No. 433

The No. 433 is the standard 8 per strip mounting. It also mounts the 22 type. Mounting center $10\frac{3}{8}$ " length of face $10\frac{1}{4}$ " length over all $10\frac{3}{8}$ ". Net weight, 10 ounces.

Combined Ringers—Drops and Jacks

Combined ringers and drops for use in switchboard work where a drop shutter is not sufficient to signal the operator can be furnished.

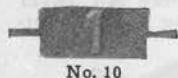
The No. 3 A has a resistance of 1000 ohm, the No. 3 D 1600 ohm, and the No. 3 E 2500 ohm.

No. 141 mounts in same space as standard 5 per strip combined drop and jack mounting. Mounting center $6\frac{1}{4}$ " length of face $5\frac{7}{8}$ " width $3\frac{1}{2}$ ". Mounts 2 combined ringer and drop with 2 jacks.

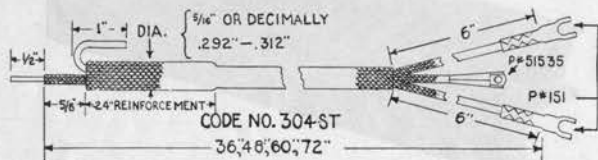
No. 455 mounts in same space as standard 10 per strip drop and jack mounting. Mounting center $10\frac{3}{8}$ " length of face $11\frac{3}{8}$ " width of strip $1\frac{3}{4}$ ". Mounts 3 combined ringers and drops also 3 jacks.

Number Plates

No. 10 is the standard number plate for combined drop and jacks and clear out drops. Carried in stock numbered 1 to 999 inclusive.

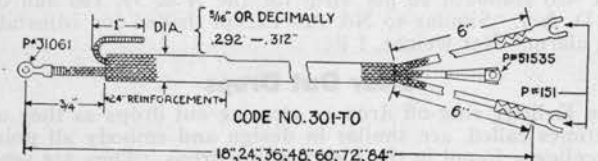


Switchboard Cords



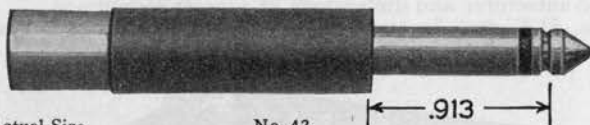
The No. 304 ST steel and tinsel cord solves the problem of reducing the high cost of switchboard cordage. It consists of two spiral steel conductors wrapped over braided tinsel. The round steel conductors are practically unbreakable giving the cord a wonderfully long life, while the tinsel lowers the resistance of the steel conductors, making a most satisfactory cord from a transmission standpoint. Diameter at plug end $\frac{1}{8}$ inch, the decimal equivalent of which is .292 to .312 inch. Tracer colors tip white, sleeve blue. Fits Nos. 3, 17, 42, 70, 130 and 187 plugs.

The No. 353 ST steel and tinsel cord fits Kellogg plug 168; also W. E. No. 47. Furnished in 36, 48, 60 and 72 inch lengths.



Code No. 301-TO is our standard two conductor tinsel cord having a diameter at the plug end of $\frac{1}{8}$ inch, the decimal equivalent of which is .292 to .312 inch. Fits Kellogg plugs Nos. 3, 15, 17, 42, 35, 70, 109, 112, 130, 168 and 187. Tracer colors tip conductor white, sleeve blue. Used on 9-B switchboard.

Plugs



Actual Size
Code No. 42

No. 42 is the standard two conductor switchboard having a sleeve diameter of .2495 inch. Net weight, 2 ounces.



Actual Size
Code No. 168

The No. 168 replaces Western Electric No. 47 plug. Sleeve diameter .2495. Net weight, 2 ounces.

Cord Fasteners



No. 4

No. 4 cord fastener, brass d u l l nickel plated.



No. 5

No. 5 cord fastener, steel hot tin plated.

Cord Hooks



No. 2

No. 2 brass cord hook made from No. 11 B & S gauge brass. Bent to form loop to prevent cord from slipping off.

Cord Weight

No. 9 cord weight is made of steel and lead, having a weight of approximately 10 ounces.



No. 9

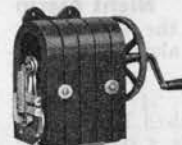
Generators

(See Page 7)

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-magneto 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 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 current is generated.

The Kellogg armature is of the shaftless type, which permits the use of the correct amount of iron and wire to secure the most powerful results.

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



No. 72

All danger from rust and from short circuits caused by small pieces of loose nickel scale are eliminated by giving the generator magnets a heavy coating of special blue paint. The gear, pinion, field and screws are all nickel plated, dull finish.

Code No. 72

The No. 72 is the standard 5 bar generator used in magneto switchboards. Net weight, 9 lbs.



No. 63

Code No. 63

The No. 63 is the inverted 5 bar generator used with extension shaft. Net weight, 9 lbs.

Generator Extension Shafts

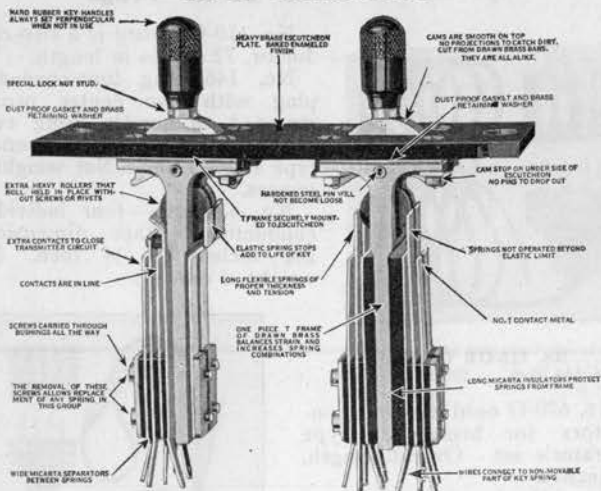


Code No.
9
14
17
15911

Length
24 inches
12 $\frac{1}{4}$ inches
20 $\frac{3}{8}$ inches
Generator Crank

MAGNETO SWITCHBOARD APPARATUS

Keys—Switchboard



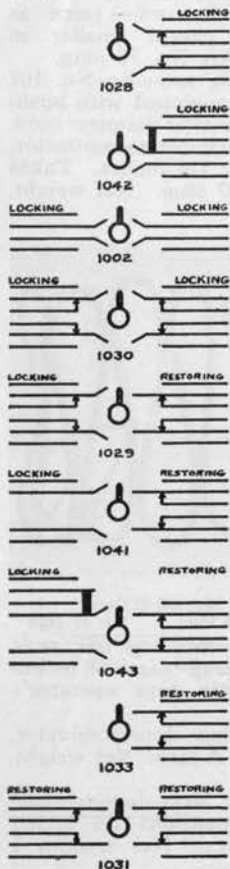
Kellogg cam keys are built on a perfect center line or T frame, making it possible to assemble any number of spring combinations of either the locking, restoring or both locking and restoring types, which are always interchangeable with each other.

All bushings, insulations and rollers are made from Kellite Dilecto, which will not carbonize or break down under high voltage and which will stand up under the most rigid and persistent usage.

The T frame, typical of Kellogg cam keys, and the assembling screws are made of brass. The springs are made of German silver with special contacts, eliminating the possibility of corrosion and giving perfect talking and ringing connections in every operation.

The scientific basis on which Kellogg keys are constructed, with proper distribution of wear, insures long life and positive contacts.

Keys mounted on escutcheons should be ordered so that the first key mentioned on the order will be the key nearest the operator when installed, and so that all locking keys are farthest from the operator. Net weight, 3 1/2 ounces.



Single Locking

Code No. 1028

Two sets of make and break contact. For switching purposes.

Code No. 1042

Three sets of make contacts. Listening key with battery contacts.

Double Locking

Code No. 1002

Two sets of make contacts on each side.

Code No. 1030

Two sets of make and break contacts on each side.

Locking and Restoring

Code No. 1029

Two sets make and break contacts on restoring as well as locking side.

Code No. 1041

Two sets make contacts locking side, two sets make and break contacts restoring side. Ringing and listening.

Code No. 1043

Three sets make contacts locking side two sets make and break contacts restoring side. Ringing and listening with battery contacts.

Single Restoring

Code No. 1033

Two sets make and break contacts. Ringback key.

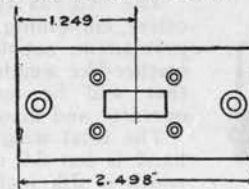
Double Restoring

Code No. 1031

Two sets make and break contacts each side. Ring and ringback.

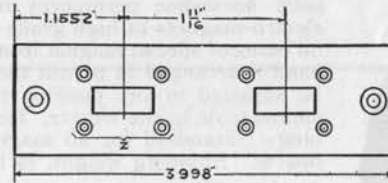
Key Escutcheons

Escutcheons are made of brass black enameled. Mounting screws not furnished unless specified then charged for extra.



Code No. 1021

An individual escutcheon mounting any of the No. 1000 Type Keys.



Code No. 1012

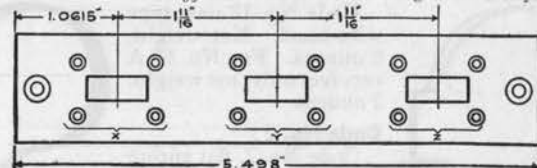
No. 1012 escutcheon is 1 1/8 inches in width. Arranged for 2 keys.

Code No. 1013

No. 1013 escutcheon is 1 inch in width arranged for 2 keys.

Code No. 1026

No. 1026 escutcheon is 1 3/8 inches in width. Arranged for 2 keys.



Code No. 1030

No. 1030 escutcheon is 1 3/8 inches in width. Arranged for 3 keys.

Code No. 1065

No. 1065 escutcheon is 1 3/8 inches in width. Arranged for 2 keys less hole Z.

Keys—Old Style

On old switchboards where only one or two new keys are required the following old style keys are listed. However it is recommended that if more keys are to be replaced, that a complete set of new style "T" frame keys listed above be ordered and that the keyshelf be cut to fit the new style escutcheon which mount side to side.

Single Locking

Code No. 28

Same spring combinations as No. 1028.

Single Restoring

Code No. 33

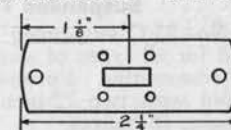
Same spring combination as No. 1033 key.

Locking and Restoring

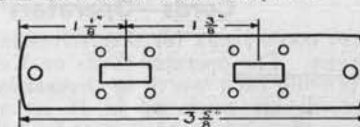
Code No. 41

Same spring combination as No. 1041 key.

Escutcheons—Old Style



These escutcheons are made of brass nickelplated.



Code No. 301

No. 301 single mounts old style keys only. 3/4 inches in width.

Code No. 303

No. 303 double mounts old style keys only. 3/4 inches in width.

Kellogg

MAGNETO SWITCHBOARD APPARATUS

Receivers—Operators'

Code No. 65 A

The No. 65 type operator's receiver, combining real efficiency and permanent, satisfying service, with feather-like weight, is an equipment that will be appreciated by the operator and manager alike.

The total weight of receiver and band is but 3.9 ounces. The total width is $2\frac{1}{8}$ inches and the depth or thickness $\frac{7}{8}$ inches. Terminals are entirely enclosed within the shell; solid horseshoe permanent magnet, and electro-magnets of high grade wire wound on cores of special magnet iron. The head band is arranged to permit the receiver to be adjusted in any position that is most comfortable to the wearer. Resistance 100 ohms. Standard for all magneto switchboards. Shipping weight, $\frac{1}{2}$ lb.

Code No. 46 A

No. 46 A is the standard formerly used on all magneto switchboards. Resistance 140 ohms. Replaced by 65 A receiver. Shipping weight, 12 ounces.

Code No. 12

Code No. 12 new type wire band. Net weight, 6 ounces. For No. 65 A receiver only; net weight, 2 ounces.

Code No. 2

Code No. 2, flat spring steel, black enamel with leather cover. For one receiver only.

Transmitter—Operators'

Breastplate Type

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.

The No. 1076-C transmitter is standard for all types of switchboard using the breastplate type of transmitter. The breastplate is constructed of aluminum, white celluloid veneered; the mouth-piece is of hard rubber, heavily white enameled. Transmitter shell is aluminum. Net weight, 10 ounces.

Suspended Type

The No. 55-C suspended type transmitter is standard for all types of switchboard using this style of transmitter. Furnished in black enamel finish and with two 72-inch transmitter cords. Net weight, 18 ounces.

Cords—Operators'



No. 65 A



No. 46 A



No. 12



No. 2



No. 1076, Breast Plate Transmitter

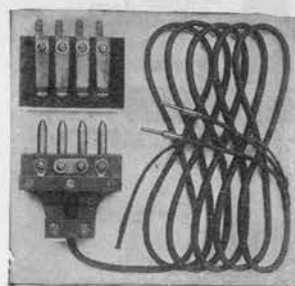


No. 55 C

Kellogg operator cords speak for themselves in giving long, uninterrupted service. The operator cords on Kellogg switchboards are well proving their worth to thousands of users.

The operator cords are made up of 18 strands of tinsel, twisted together in three ropes of 6 strands each, which are covered with two wraps of silk, impregnated with moisture-proof compound. Over this, is placed one braid of plain cotton and then a brown mercerized overall braid.

Operators'—Cords—Jacks—Plugs



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

No. 670-O cord has four conductors for breastplate type operator's set. Overall length, 68 inches.

No. 145 plug four-conductor plug for breastplate type operator's set. Net weight, 3 ounces.

No. 43 jack—four individual conductors. Face dimensions $2\frac{1}{4}$ inches by $\frac{1}{2}$ inch. Net weight, 3 ounces.

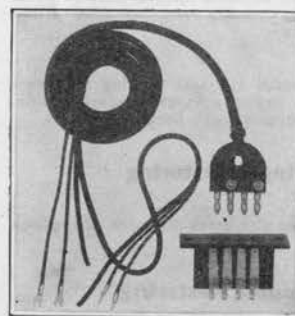


No. 26-OR and No. 237-OR Cords
No. 107, 75 Plugs No. 24 Jack

No. 67-O cord has four conductors. Overall length, 68 inches. For breastplate operator's set.

No. 25 plug—four-conductor. Fits No. 57 jack. Net weight, 3 ounces.

No. 57 jack—four-conductor. Face diameter 2 inches. Net weight, 4 ounces.

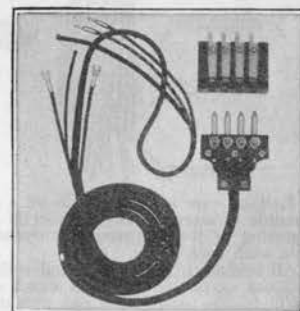


No. 672-O Cord
No. 182 Plug No. 325-A Jack

No. 110-OR cord is a two-conductor, 72 inches in length.

No. 146 plug four-conductor plug with two center prongs strapped to permit using two-conductor cord for suspended type transmitter. Net weight, 3 ounces.

No. 43 jack—four individual conductors. Face dimensions, $2\frac{1}{4}$ inches by $\frac{1}{2}$ inch. Net weight, 3 ounces.



No. 670-O Cord
No. 145 Plug No. 43 Jack

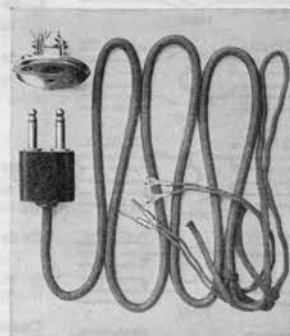
No. 26-OR cord has two conductors, 72 inches in length. Diameter .285.

No. 107 plug—two-conductor. Net weight, $2\frac{1}{2}$ ounces.

No. 237-OR cord—same as No. 26-OR except smaller in diameter. Fits No. 75 plug.

No. 75 plug same as No. 107 plug except equipped with bushing to take smaller diameter cord.

No. 24 jack—two-conductor, face diameter $1\frac{1}{4}$ inches. Takes No. 75 or 107 plug. Net weight, 4 ounces.



No. 433-O Cord
No. 25 Plug No. 57 Jack

No. 672-O cord has four conductors. Overall length 68 inches for breastplate type operator's set.

No. 182 plug—four-conductor, Fits No. 325-A jack. Net weight, 3 ounces.

No. 325-A jack—four-conductor, face dimensions $1\frac{1}{8}$ inches by $3\frac{1}{2}$ inches. Net weight, 1 ounce.

Kellogg

MAGNETO SWITCHBOARD APPARATUS

Tools

400
268
76
740
128
8.65



No. 4—Key spring adjuster and contact scraper.



No. 8—Flat wrench for adjusting drop armature.



No. 9—Flat wrench for adjusting ringers.



No. 10—Flat wrench for adjusting ringers.



No. 12—Socket wrench for sleeve of comb. D. & J. and removing No. 72 type relay shell with hexagonal nut.



No. 15—Spanner wrench for nuts for mounting drop and comb. drop and jack mountings.



No. 16—Socket wrench for stop nuts on No. 1000 type cam keys.



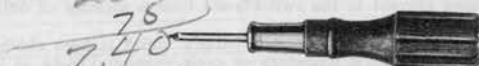
Cable with Lead Colored Paint Braid



Cable with Lead Sheath

Kellogg switchboard cables are manufactured from the best grades of selected raw materials by Kellogg's specially designed machinery, and are furnished in several styles and sizes.

The wires are tinned, thoroughly annealed, and are of not less than 98 per cent pure copper, evenly coated with tin. Only the best grade of silk and cotton wrappings are used for insulation. After the insulation is applied the twisted pairs are formed into a cable and covered with several wraps of heavy manila paper and then thoroughly saturated with beeswax. This cable is regularly furnished with double silk and cotton insulation over tinned wire, with cotton over all braid covering, saturated with lead colored fireproof paint.



No. 22—Screwdriver for hollow screws on plugs.



No. 42—Switchboard cable skinner.



No. 50—Plug gauge for gauging worn No. 42 plugs.



No. 51—Jack gauge for gauging worn jacks taking the No. 42 plug or plugs of simi ar size.



No. 57—For adjusting No. 555 relay on Nos. 6 and 7 converters.



No. 70—For removing receiver cap from F 27 Masterphone.

Switchboard Cable

A standard color code is used so that each pair of wires can be identified. Small sizes, such as 11, 21 and 26 pairs can be shipped in boxes up to 500 foot lengths. Above 500 feet, reels are required. Large sizes, such as 41, 51 and 102 pairs can be shipped in boxes up to 250-foot lengths. Above 250 feet, reels are required. When cable reels are furnished they will be charged for. Full credit will be allowed for their return in good condition, prepaid to Kellogg's factory.

ROUND TYPE—22 B & S GAUGE

Code No. Lead Colored Fireproof Paint Over Braid	No. of Pairs	Diameter
65 A	11	25/64
149 A	13	13/32
127 A	16	13/32
42 A	21	15/32
112 A	26	15/32
63 A	51	5/8
62 A	102	15/16

LEAD COVERED—22 B & S GAUGE

Code No.	No. of Pairs	Diameter Inches	Thickness of Sheath
120 L	11	29/64	1/16"
148 L	13	15/32	1/16"
144 L	16	17/32	1/16"
121 L	21	33/64	1/16"
147 L	26	19/32	1/16"
146 L	51	3/4	5/64"
145 L	102	1-1/16	3/32"

Kellogg

MAGNETO POWER APPARATUS

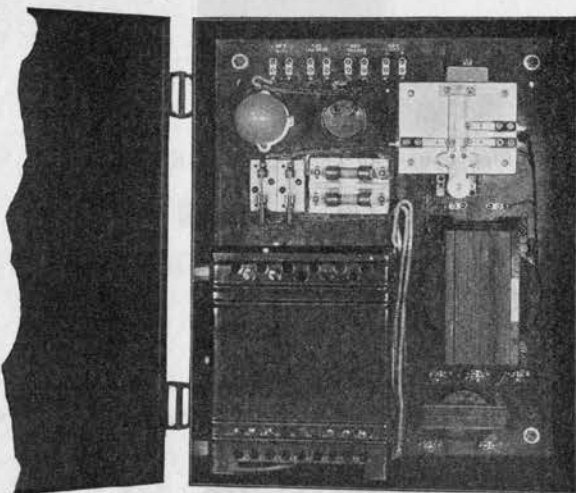
For Exchanges Having 110-Volt, 60 Cycle Current

Magneto telephone exchanges having 110-volt, 60-cycle current may furnish ringing and talking current to the switchboard from a number of different power installations:

First, a pole changer operated by a storage battery which is kept charged by a rectifier; second, a new style frequency or cycle changer known as the "Telering" supplying ringing current only; third, a motor generator set supplying ringing current only.

Since the arrival of trickle charging, rapid progress has been made in developing storage batteries and rectifiers for use in magneto exchanges. They are now the preferred source of supply for both ringing current and operator's battery. The use of an eleven-cell battery in a magneto exchange provides battery for the operator's telephone circuit, lamp supervision on the cord circuits, night alarm circuit, and pole changer for ringing purposes.

No. 1-A Power Unit



The No. 1-A Power Unit, with a set of storage batteries, forms a complete power installation for P.B.X., magneto, or small common battery switchboards. It is an ideal arrangement for an office handling 3,000 or less calls a day. This power unit does not interfere with radio reception.

The 1-A Power Unit combines in one compact cabinet the charger, pole changer, transformer, filter equipment, necessary fuses, switches, and condensers. This unit is completely wired and eliminates the use of a power board. All of the equipment is mounted on a wood backboard inside the black enameled steel cabinet. The dimensions of this wall mounting cabinet are 20 inches long, 16 inches wide, and 8 inches deep. The door is fastened to the box by two spring hinges and held shut by a friction door catch. Two conduit knockout holes are provided at the top, one for the entrance of the commercial current and the ringing leads to the switchboard; the other for direct current leads to the storage battery. Binding posts for these connections are conveniently located near the top of the mounting board and suitably marked.

The Westinghouse Rectox (dry) charger operates from 110-115 volts, 50-60 cycle, single phase, alternating current. The direct current charging rate is variable from approximately 100 milliamperes to 1 ampere by means of slide band resistors.

The Kellogg pole changer is very simple in construction and requires little attention. The three contact springs, two ringing and one operating, are easily adjusted and hold fine adjustments indefinitely. Their contacts are of pure platinum.

Ringing current of the proper voltage and amperage is delivered by the transformer. The retardation coil prevents the pole changer "noising up" the battery.

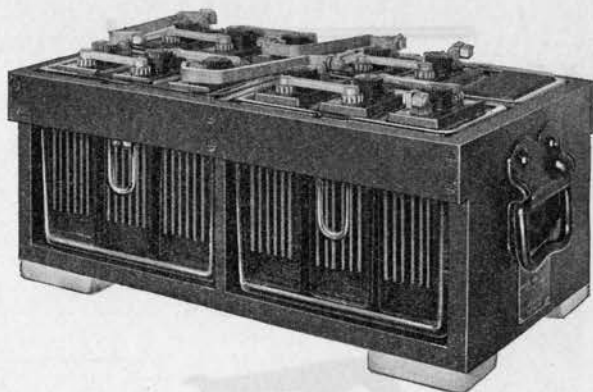
Exide BTE Sealed Type Batteries

Two sizes of sealed Exide batteries are listed for trickle charging service—the BTE-5, with a capacity of 14 ampere hours (at the 8-hour rate of discharge), and BTE-7, with a capacity of 21.6 ampere hours.

They are assembled in 3 compartment glass jar units of rugged construction, mounted in a wood crate. The crates are painted with acid resisting paint and equipped with pressed steel handles and porcelain insulator skids.

These batteries consist of eleven cells, made up of four 3-cell units with one cell blocked out. They can be furnished in one eleven-cell crate, or in one 6 and one 5-cell crate. The center cell of each group is equipped with indicator balls, and the terminal cells are equipped with bolt connectors for

Exide Batteries (Continued)

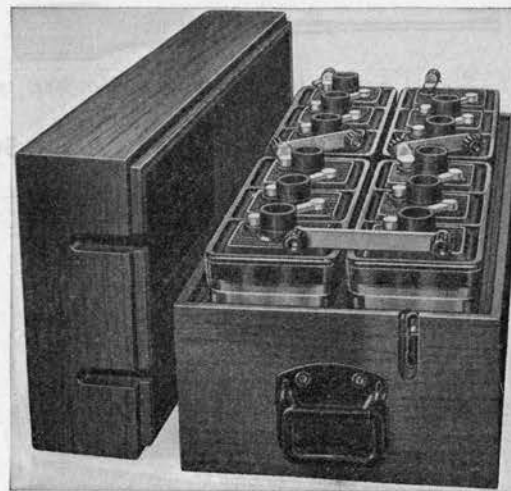


making the charge and discharge connections. The gravity of the electrolyte used in these batteries is low (1.220 specific gravity), which adds to the life of the battery, while the generous sediment space below the plates is a guarantee against trouble caused by accumulated sediment in the bottom of the jar.

These batteries are equipped with spray proof vents, which allows them to be placed in the same room with the switchboard apparatus. The units of each crate are connected with lead tape, which is also used for connecting the two units of battery when the batteries are ordered assembled in two crates. No initial charge is required.

Cat. No.	Amp. Cap. 8-hr. rate		DIMENSIONS		
			Length	Width	Height
BTE-5	14	1 crate	22 in.	12 in.	10 in.
BTE-7	21.6	2 crates	12 in.	12 in.	10 in.

Philco UX Sealed Type Batteries



The sealed type batteries are assembled in finely finished cabinets made of seasoned oak and provided with sturdy handles. The cabinet can be supplied with either oak or mahogany finish. Each cabinet is equipped with a protecting cover and provided with slots through which the built-in gravity indicators are visible. By this means both the acid level and the state of charge can be told at a glance. Special non-corrosive terminals, patented funnel vents, ample sediment space and many other such improvements which have a tendency to prolong the life of the batteries while reducing the maintenance to the minimum.

The sealed type UX batteries are of the drydynamic (dry-charged) type and only need be filled with electrolyte when put into service. No initial charge is required.

Model No.	No. of Cells	Amp. Cap. 8-hr. Rate	DIMENSIONS		
			High	Wide	Long
522-UX	11	1½	9¾ in.	9 in.	19 1/8 in.
922-UX	11	3	9¾ in.	10½ in.	23¾ in.

MAGNETO POWER APPARATUS

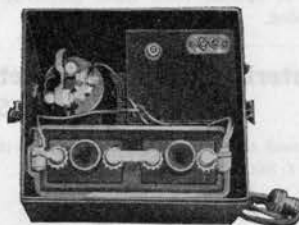
Fansteel CB-I-F Rectifier Unit



This Fansteel Rectifier was developed for charging 24-volt storage batteries by the trickle-charge method. It differs from other chargers in that it does not depend on bulbs or vibrators, but upon the chemical characteristic of the elementary metal—tantalum. This metal when placed in an acid electrolyte with another metal such as lead, becomes a one-way conductor of electricity, allowing current to flow from the lead to the tantalum, but not back.

The rectifying electrodes are the tantalum and the lead. The electrolyte in the rectifying cell is sulphuric acid of 1.200 gravity, the same grade used in telephone storage batteries except that a special salt of iron and cobalt has been added to stabilize the cell and diminish sediment in the jars. A coat of oil on top of the electrolyte prevents rapid evaporation of water, acid spray, and fumes. There is also a built-in filter circuit which eliminates all trace of A.C. hum. This is an ideal charging unit for a magneto switchboard battery.

Operator's Battery Fansteel CAB-4 Power Unit



The CAB-4 power unit consists of a small Fansteel charger and a sealed type, 4-volt Exide battery, operating from 110-volt, 60-cycle A.C. current. It provides a constant battery supply for the operator's telephone circuit and night alarm, year after year without interruption. This is a popular unit with those who do not want to rely on dry cells or primary batteries.

With this unit, supplying a continuous, uniform current flow to the operator's set, transmission of the highest quality is assured at all times. The charger has a direct current output of from 25 to 250 milliamperes. The 2-cell, 4-volt battery has a capacity of 14 ampere hours.

The CAB-4 power unit is large enough to furnish current for 2 or 3 operators' transmitters. It has sufficient battery reserve for approximately 4 days, should the commercial current fail. This unit is enclosed in an attractive steel case, 9½" deep, 8½" wide, and 8½" high.

This power unit will pay for itself in a short time by the saving in dry cells or other batteries of the primary type. The only attention required is the addition of water to the battery and rectifying cell, 2 to 3 times a year.

Telering Model Ex-3

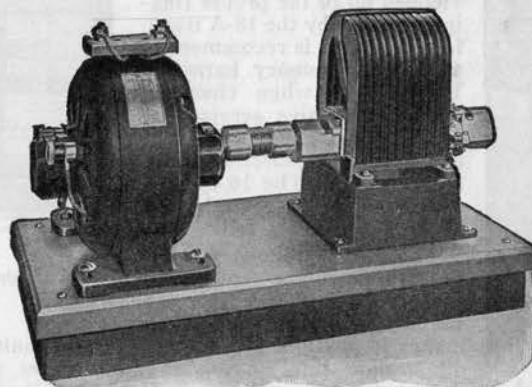


The TELERING is a simple, economical and dependable ringing machine for converting commercial 60-cycle alternating current to 20-cycle telephone ringing current. It can also be furnished for 50-cycle commercial current. The manufacturer states that Telering absolutely will not interfere with radio reception.

The TELERING has only one vibrator and a single contact, with the result that the machine requires practically no attention. The output ringing current is maintained at a constant voltage, which will not break down cable or key insulation. Lamps are located in the circuit to protect the Telering from damage by short-circuited ringing leads. This unit is capable of ringing any exchange from a large Central Office down to a small P.B.X. Only one model is used for any sized load. A standard tungsten lamp, same as those used for general illuminating purposes, regulates the maximum output.

For extremely heavy loads this lamp can be as large as 200 watts, and for small P.B.X.'s a 10-watt lamp is sufficient. The standard machine is equipped with a 50-watt lamp. The current consumption is only a few watts, and the monthly cost of operation is much less than a dollar.

Motor Generator Sets



Type MSW3 Motor Generator

Exchanges in a position to secure electric light service will find the motor-driven magneto ringer an economical addition to their equipment. It can be attached to an electric light socket, and will ring with uniformity under a 10% rise and fall in service voltage. This equipment will handle exchanges up to 1500 subscribers, delivering 80-volt, 19-cycle ringing current. A motor generator set requires minimum attention and will cost no more to operate than a 100-watt electric light lamp.

Only standard sets are listed, but special motors can be supplied to operate from 25, 30, 40 or 50-cycle circuits. Where only two or three-phase circuits are available, it will operate from any one phase of these circuits. An attachment can be supplied to furnish pulsating current.

Cat. No.	Generator	Current Required for Motor
310081	MSW3	115-volt direct
310082	MSW3	230-volt direct
310087	MSW3	110-volt, 60-cycle alternating
310088	MSW3	220-volt, 60-cycle alternating

Kellogg

MAGNETO POWER APPARATUS

Material for a Single Frequency Pole Changer

The Kellogg single frequency pole changer No. 36-A is equipped with a simple vibrator which changes the direct current, supplied by the storage battery, to 20 cycle alternating current, and a transformer which steps it up to the proper ringing potential of 100 volts.

The cabinet of this pole changer is of high grade oak, designed for mounting vertically upon the wall. All of the equipment is securely fastened on a heavy oak backboard, and wired to convenient terminals. The hinged, glass door cover protects the apparatus. It is easily opened, permitting free access for inspection and adjustment.

Dimensions: 25 inches long, 9½ inches wide and 5½ inches deep.



No. 36-A
Pole Changer

Five Frequency Harmonic Pole Changer 16, 30, 42, 54 and 66 Cycles

Selective ringing service is rapidly becoming an economic necessity in most telephone exchanges with 50 or more residential telephones. The No. 19 pole changer is designed especially for this type of service. The simple vibrators change the direct current supplied by the storage battery to frequencies of 16, 30, 42, 54 and 66 cycles alternating current. This current is then stepped up to the proper ringing voltages by the 18-A transformer set. It is recommended that five frequency harmonic be installed when changing over to selective service because four frequencies are available for selective four-party ringing. The 16 cycle is then used for all straight line ringing, including toll.

This fifth frequency adds but a trifle to the cost of the equipment, does not increase the cost of operation, and makes it possible to have one ringing unit for all straight line ringing and four other units mounted in the same case, for use exclusively as four-party ringing.

The No. 19 pole changer consists of five vibrating units identical with the one used in the 36-A pole changer, except for the vibrator reeds and weights. All of the equipment is mounted on a slate backboard and wired to suitable terminals. A hinged, glass door is provided to protect the apparatus. All parts are of easy access for inspection and adjustment upon opening the door.

Dimensions: 29½ inches long, 9¾ inches wide, 6½ inches deep.

All pole changers are carefully tested and adjusted before leaving the factory so, when installed, no adjustments should be necessary. If adjustments are required, they can be made easily, as all springs are provided with adjusting screws.

The No. 18-A transformer set used in conjunction with the 5 frequency pole changer consists of five efficient, heavy duty ringing transformers mounted in an oak cabinet having a hinged door. All wiring is brought to the base and soldered to suitable terminals. Provision is made for fusing each individual transformer.

Cabinet dimensions: 37½ inches long, 10¾ inches wide, 5¾ inches deep.



No. 19
Net Weight
58 lbs.

No. 18-A
Transformer
Set
Net Weight
125 lbs.

Material for a Complete Single Frequency Installation

- 1 set of batteries (see note) choice of
 - BTE-5 —1½ Amp. (Exide)
 - BTE-7 —3 Amp. (Exide)
 - 522-UX—1½ Amp. (Philco)
 - 922-UX—3 Amp. (Philco)
- 1 Charger, CB.1-F Rectifier
- 1 No. 36-A pole changer.
- 1 No. 454 D.P.S.T. knife switch.
- 1 No. 3325 Noark fuse cutout base.
- 2 No. 25003 Noark 3 ampere fuses (one extra).
- 1 No. 9402 porcelain lamp receptacle for each position.
- 1 No. 25 watt 110 volt mazda lamp for each position.
- Necessary length of No. 14 B.R.C. wire from rectifier to storage battery, from battery to switch, from switch to pole changer.
- Necessary length of No. 1618-B duplex dry braid interior wire from pole changer to switchboard.
- If the operator's transmitters and the night alarm are to be supplied from the storage battery it will be necessary to add:
 - 1 No. 81-A induction coil for each operator's position.
 - 1 No. 3 battery feed coil for each operator's position.
 - 1 No. P.R.XXX 300 ohm vibrating bell 3-inch, night alarm for the switchboard.
 - 1 No. P.R.XXX 300 ohm buzzer if switchboard is equipped with a code alarm.
 - 1 No. 25003 Noark 3-ampere fuses.
 - 1 No. 3327 Noark Double Fuse Cutout Base.
 - 1 No. 41-A Pole Changer noise retardation coil.
 - Necessary lengths of No. 14 B.R.C. wire from storage batteries to the switchboard.

NOTE—

For exchanges using a one or two position magneto board, with either drop or lamp supervisory cord circuits, and handling 2000 calls or less a day, the 1½ ampere size battery is ample. However, if the switchboard transmitters are to operate from these batteries, the 3 ampere size battery is recommended.

Material for a Complete Harmonic Installation 16, 30, 42, 54, 66 Cycles

Based on 2500 calls in 24 hours with battery having 36 hours' capacity.

- 1 Set of batteries (Choice of)
 - BTE-7—3 Amp. (Exide)
 - 922-UX—3 Amp. (Philco)
- 1 Charger, CB.1-F Rectifier.
- 1 No. 19 Pole changer.
- 1 No. 19 Pole changer (for emergency use).
- 1 No. 18-A Transformer set.
- 5 No. 9402 porcelain receptacles for each switchboard position.
- 5 No. 15 Watt, 110 volt Mazda lamps for each position.
- 1 37300 Power board including necessary switches and fuses.
- Necessary lengths of No. 14 B.R.C. wire from rectifier to storage battery from battery to transformer.
- Necessary lengths of No. 122 cable 12 wire twist from each pole changer to switches, from switches to the transformer set.
- Necessary lengths of No. 105 cable 7-wire twist from transformer set to the switchboard.

Material for Complete Operators' Transmitter Battery

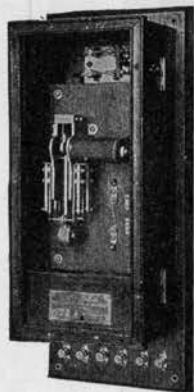
If the operators' transmitters and night alarm are to be supplied from the storage battery, it will be necessary to add the following equipment:

- 1 Exide B.T.M. ¾ ampere pole changer noise killer battery.
- 1 No. 23-A Retardation Coil.
- 1 No. 81-A Induction Coil for each operator's position.
- 1 No. 3 Battery Feed coil for each operator's position.
- 1 No. P.R. XXX 300-ohm vibrating bell 3 inch, night alarm for the switchboard.
- 1 No. P.R. XXX 300-ohm buzzer, if switchboard is equipped with a code alarm.
- Necessary length of No. 14 B.R.C. wire from storage batteries to the switchboard.

Kellogg

MAGNETO POWER APPARATUS

For Exchanges Having No Light Current Available Straight Line Ringing



No. 23 Pole Changer
Net Weight 9 3/4 lbs.

The Kellogg No. 23 pole changer is a complete self contained ringing unit for telephone exchanges having no light current available. This efficient pole changer delivers 20 cycle alternating current, for ringing standard polarized bells. It is operated with two sets of batteries. One set consists of 16 dry cells connected in series for operating the pole changer vibrators. The other set of 60 dry cells is connected in series and supplies the ringing current. This makes a total of 76 dry cells with a voltage range of from 75 to 110 volts.

The cabinet is of high grade oak, designed to mount in a vertical position on the wall. All equipment is fastened to the backboard and wired to terminals at the base of the panel. A hinged, glass door cover protects the apparatus. When it is opened all equipment is exposed and readily accessible for inspection and adjustment.

Dimensions: 18 1/4 inches long, 7 5/8 inches wide, 5 1/2 inches deep.

All pole changers are carefully tested and adjusted before leaving the factory. When installed no adjustments should be necessary. If adjustments are required, they can be easily made, as all contact springs are provided with adjusting screws. To protect the pole changer contacts a 15 watt 110-volt mazda lamp should be installed in the line side of the ringing leads in each position of the switchboard.

A complete installation requires the following equipment:

- 1 No. 23 pole changer.
- 1 No. 454 D.P.S.T. porcelain base knife switch (start pole changer).
- 76 No. 6 dry cells.
- 1 9402 porcelain lamp receptacle (1 per position).
- 1 15 watt 110-volt mazda lamp (1 per position).
- No. 14 B.R.C. wire for connecting batteries to pole changer.
- No. 618-B duplex wire for connecting pole changer to switchboard.

For the operator's transmitter and night alarm the installation of five No. 75 Thomas A. Edison primary batteries is recommended. They give long uninterrupted service, many times the life of a dry cell, maintain a constant voltage and require no attention.

Four Party Selective Ringing

The Kellogg No. 30 pole changer is similar to the No. 23 except arranged to deliver alternating and both positive and negative pulsating current. With this pole changer it is possible to ring both straight and biased ringers.

A complete installation requires the following equipment:

- 1 No. 30 pole changer.
- 1 No. 454 D.P.S.T. porcelain base knife switch (start pole changer).
- 76 No. 6 dry cells.
- 3 9402 porcelain lamp receptacle (3 per position).
- 3 15 watt 110-volt mazda lamp (3 per position).
- No. 14 B.R.C. wire for connecting batteries to pole changer.
- No. 59 cable 5 wire twist for connecting pole changer to switchboard.

For operator's transmitter and night alarm, five No. 75 Thomas A. Edison primary batteries are recommended.

For Exchanges Having 110-Volt Direct Current



No. 9
Net Weight 25 lbs.

The complete unit for this system requires a No. 23 pole changer (described above) and a No. 9 auxiliary apparatus panel. The panel has the necessary equipment to safely use 110-volt direct current in place of dry batteries. It is equipped with a resistance coil to furnish proper voltage to operate the vibrator and with the necessary lamps, condensers, and fuses to protect the equipment in case of shorts and grounds.

Dimensions: 20 1/2 inches long, 9 1/4 inches wide, 5 1/2 inches deep.

A complete installation requires the following equipment:

- 1 No. 23 pole changer.
- 1 No. 9 auxiliary apparatus panel.
- No. 14 B.R.C. wire for connecting direct current to panel and to pole changer.
- No. 1618-B duplex for connecting pole changer to switchboard.

For Exchanges Having 32-Volt Storage Battery Current Available From a Home Lighting Plant



No. 36-B Pole Changer
Net Weight 38 lbs.

The Kellogg No. 36-B pole changer is a complete self contained ringing unit arranged to operate from 32 volts of direct current as supplied by storage batteries usually furnished with home lighting equipment. It delivers 20 cycle, 100 to 110-volt alternating current for straight line ringing, and code or divided tip and sleeve ringing on party lines.

The cabinet is of high grade oak designed for mounting in a vertical position on the wall. All of the equipment is securely mounted on a heavy oak backboard, and wired to terminals. A hinged, glass door cover protects the apparatus. When it is opened all parts are of easy access for inspection and adjustment.

Dimensions: 25 inches long, 9 1/4 inches wide, 5 1/2 inches deep.

This pole changer is carefully tested and adjusted before leaving the factory so that when installed no adjustments should be necessary. If adjustments are required, they can be made easily as all springs are provided with adjusting screws.

Kellogg pole changers require very little attention as they have but three spring contacts (two ringing and one operating) that maintain their adjustment for a long period of time.

The current is taken direct from the storage battery, converted by the vibrator into alternating current and stepped up through the transformer to the proper ringing voltage. To protect the pole changer contacts a 15-watt 110-volt mazda lamp should be installed in the line side of the ringing leads in each position of the switchboard.

For a complete installation the following equipment is necessary:

- 1 No. 36-B pole changer.
- 1 No. 454 D.P.S.T. porcelain base knife switch (start pole changer).
- 1 No. 9402 porcelain lamp receptacle (1 per position).
- 1 15 watt 110-volt mazda lamp (1 per position).
- 1 3325 Noark fuse cutout base.
- 2 No. 25003 Noark 3 ampere fuses (one extra).
- No. 14 B.R.C. wire for connecting batteries to pole changer.
- No. 1618-B duplex wire for connecting pole changer to switchboard.

If the operator's transmitters and the night alarm circuit are to be supplied from the storage battery, it will be necessary to add the following equipment:

- 1 No. 81-A Induction Coil for each operator's position.
- 1 No. 4 battery feed coil for each operator's position.
- 1 No. 41-A pole changer noise retardation coil.
- 1 No. PR XXX 300 ohm buzzer if switchboard is equipped with night alarm.
- 1 No. 25003 Noark 3-ampere fuse.
- 1 No. 3327 Noark double fuse cut out base (replacing No. 3325).
- No. 14 B.R.C. wire from storage batteries to the switchboard.

For Exchanges Having 110-Volt, 25 Cycle Alternating Current



No. 2
Net Weight 20 lbs.

Magneto exchanges having this type of current can be very easily supplied with ringing current by transforming the 110 volts 25 cycle lighting current to 90 volts.

The No. 2 apparatus panel converts the twenty-five cycle lighting current into ringing current. It is equipped with a combination fused switch for turning the current on and off and for protection in case of shorts. The standard No. 11-A transformer is securely mounted on a heavy wood back panel. No other equipment is required.

Dimensions: 18 inches long, 9 3/4 inches wide, 5 1/2 inches high. Net weight 20 pounds.

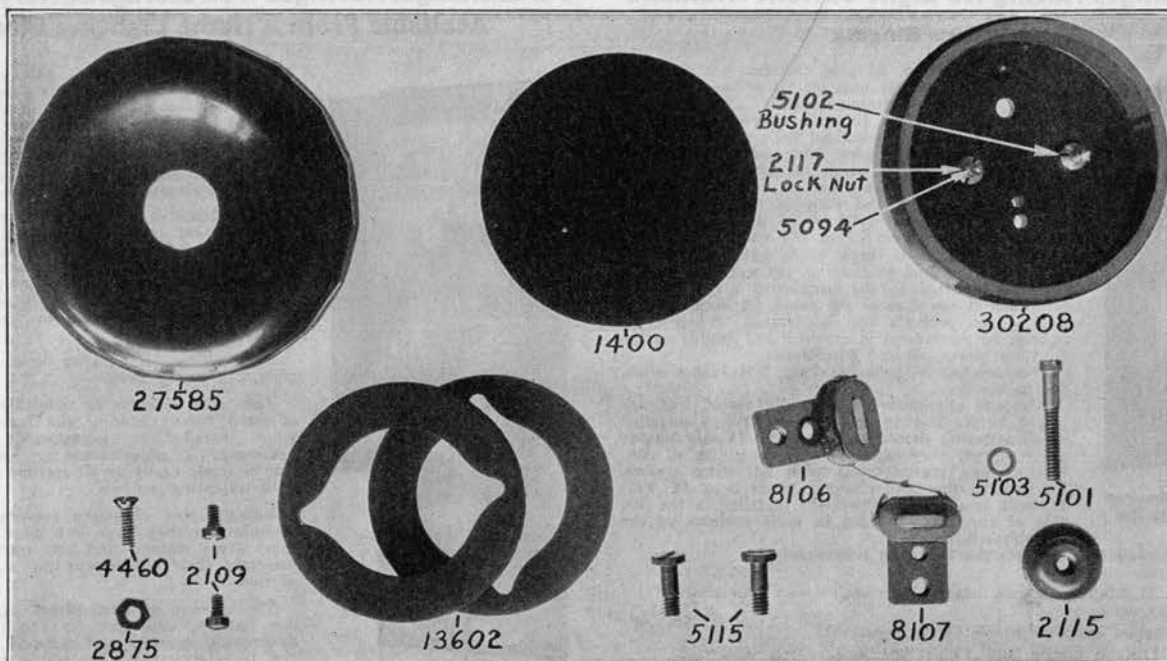
For a complete installation order the following:

- 1 No. 2 apparatus panel.
- 1 9402 porcelain lamp receptacle for each position.
- 1 15 watt 110 volt mazda lamp for each position.
- No. 14 B.R.C. wire for connecting direct current to panel.
- No. 1618-B duplex for connecting panel to switchboard.

For operator's transmitter and night alarm, five No. 75 Thomas A. Edison primary batteries are recommended.

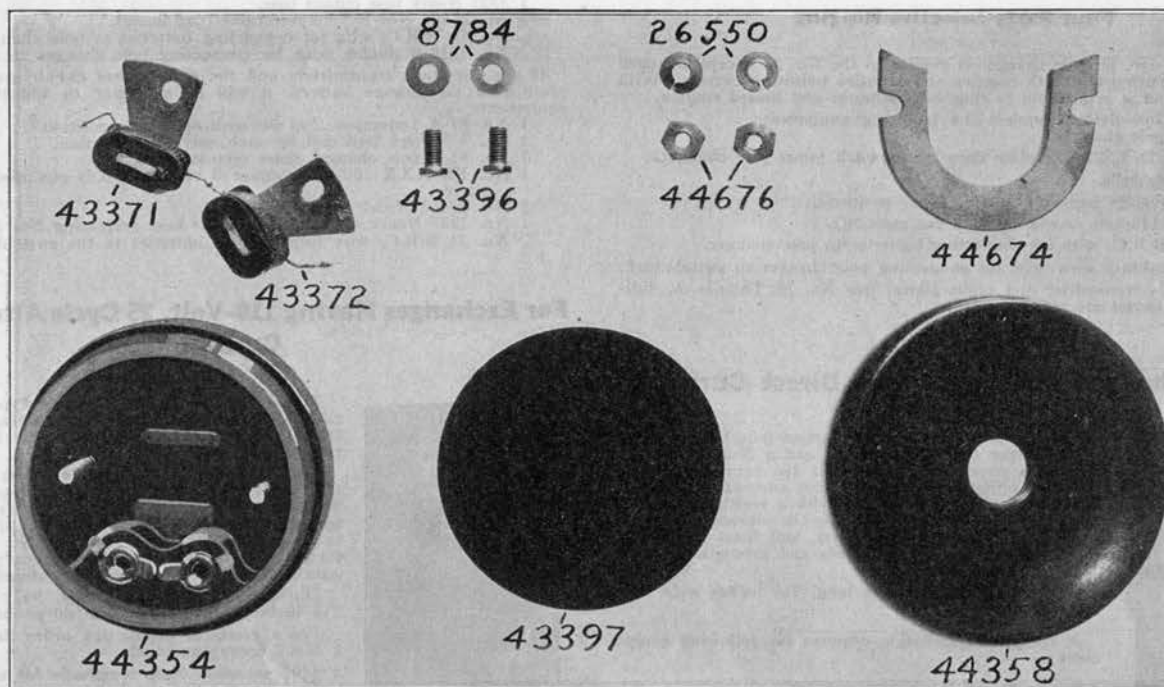
Kellogg

PIECE PARTS



No. 46 A Receiver

Parts are interchangeable with No. 14A receivers except when used on No. 1016 test set, in which case use Pc. No. 5086 cap and Pc. No. 5085 shell to fit special hook switch on test set.

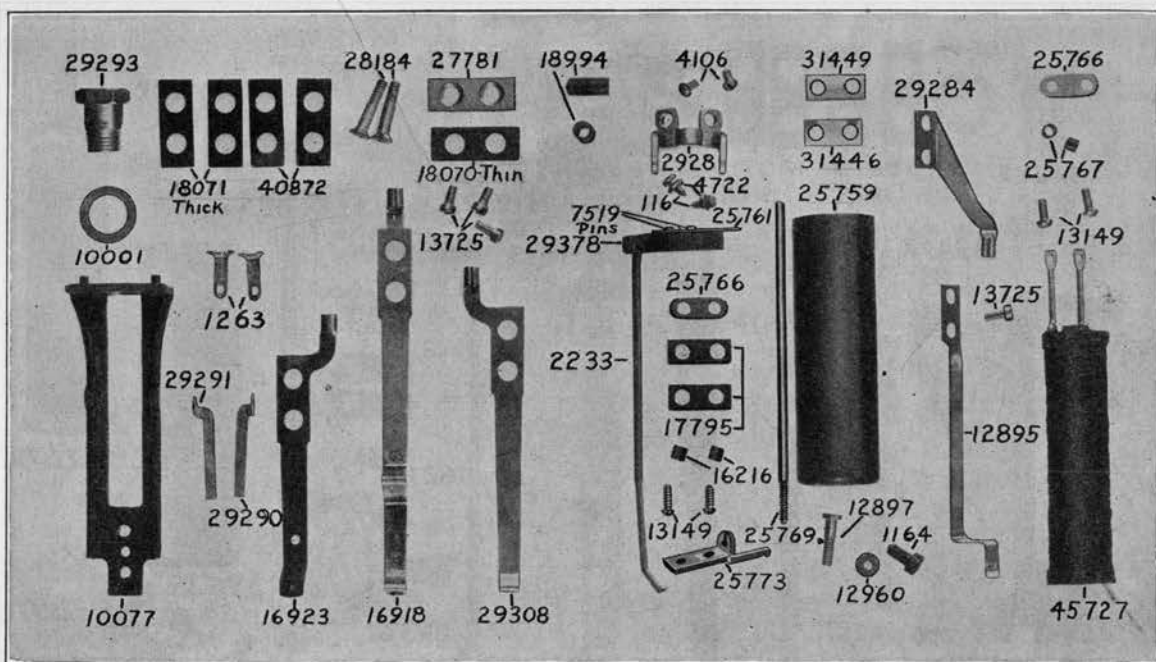


No. 65 A Receiver

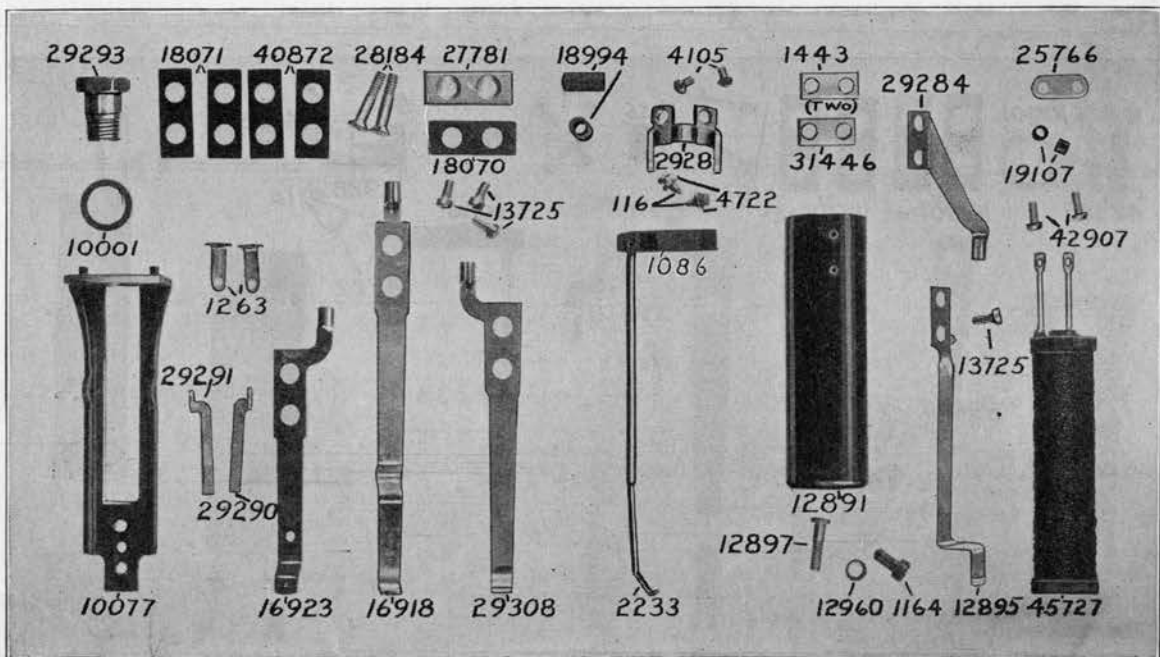
On Pcs. Nos. 43371 and 43372 the resistance of 50 ohms per coil must be specified.
Magnets, coils, diaphragm, screws, washers and nuts interchangeable with No. 54 A receivers. Cap for 54 A receiver is Pc. 43360. If new body is desired order Pc. 44354 and Pc. 49358 together with yoke No. 45171, which will make the 54 A receiver into a No. 65 A.

Kellogg

PIECE PARTS

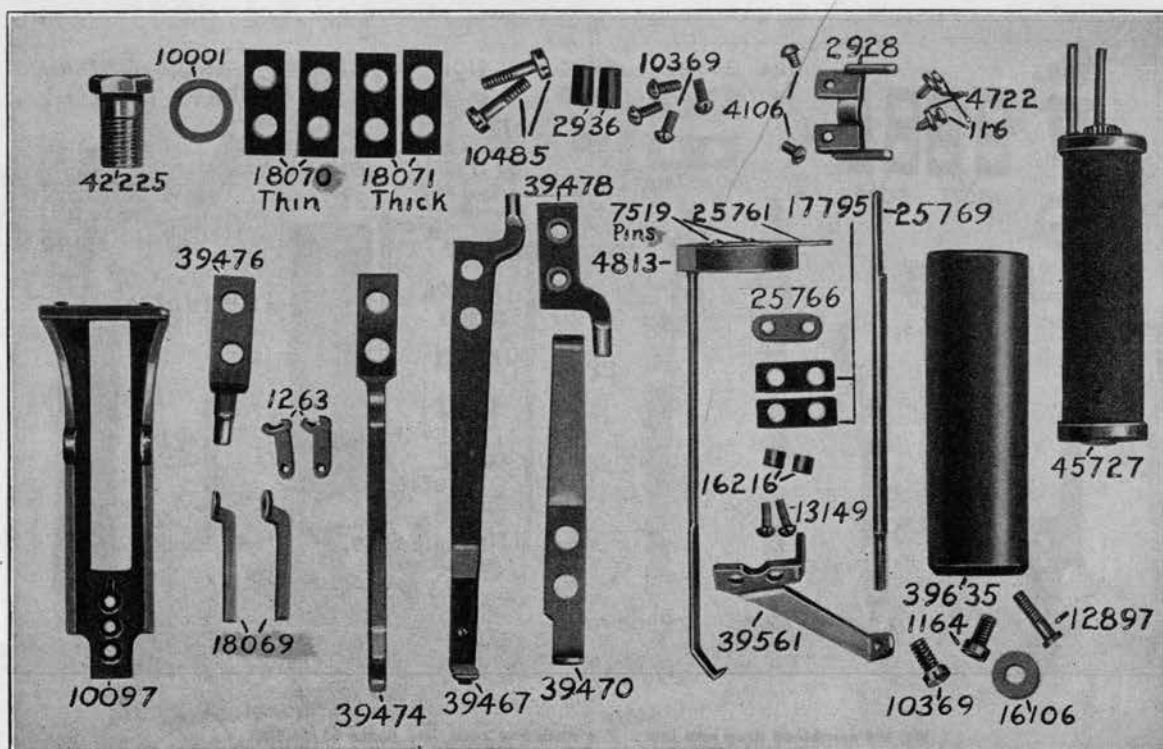


No. 100 combined drop and jack. For mounting parts, see pages 35 and 36.

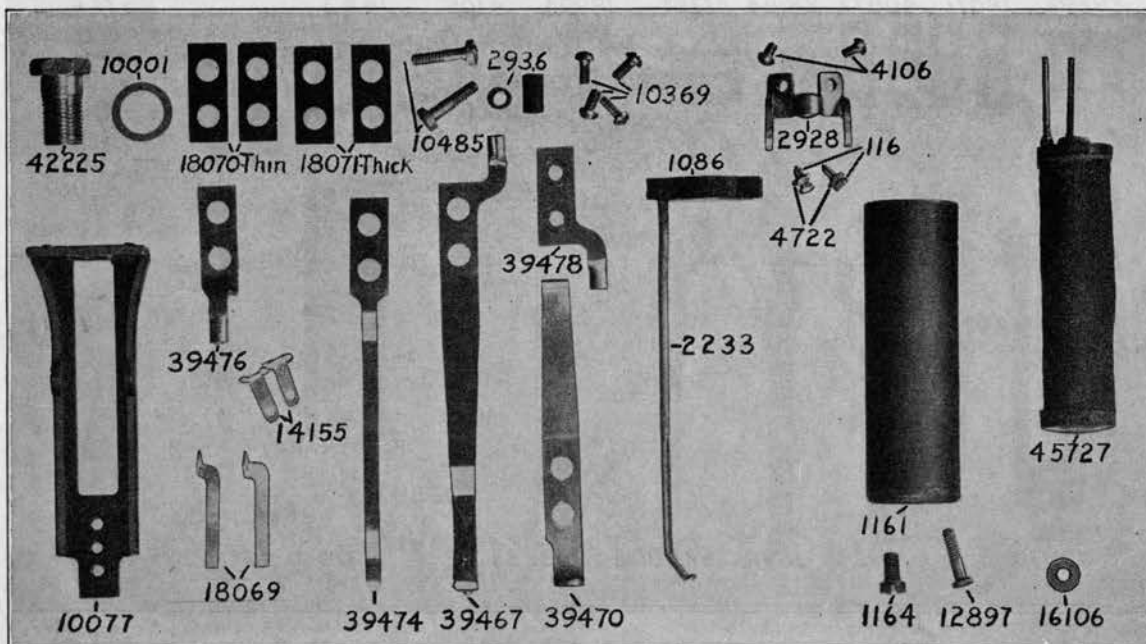


No. 101 combined drop and jack. Parts for drop shown above are same as used on No. 51 clearing out drop. For mounting parts, see pages 35 and 36.

PIECE PARTS

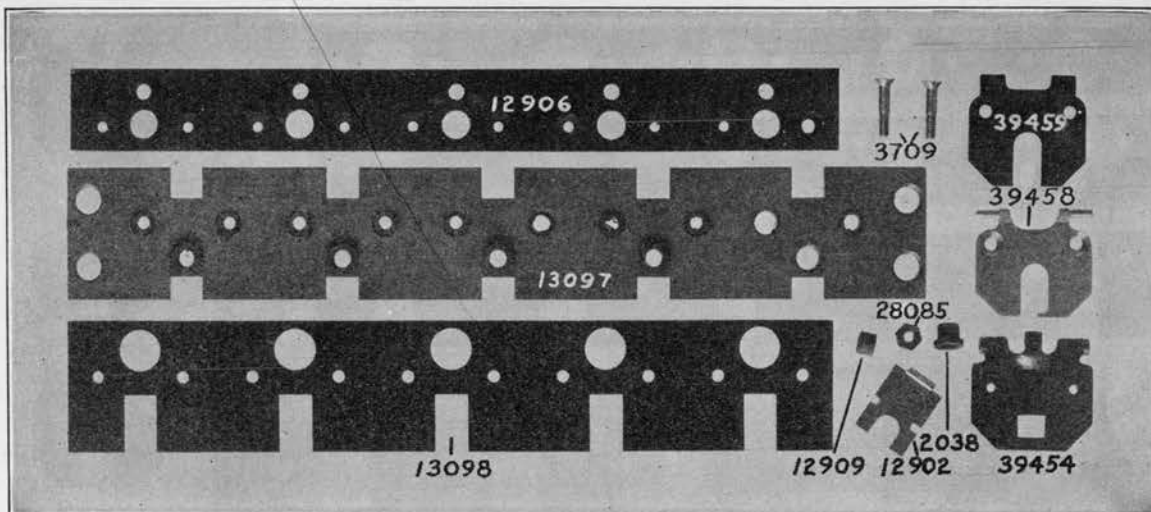


No. 300 combined drop and jack.
For mounting parts, see pages 35 and 36.

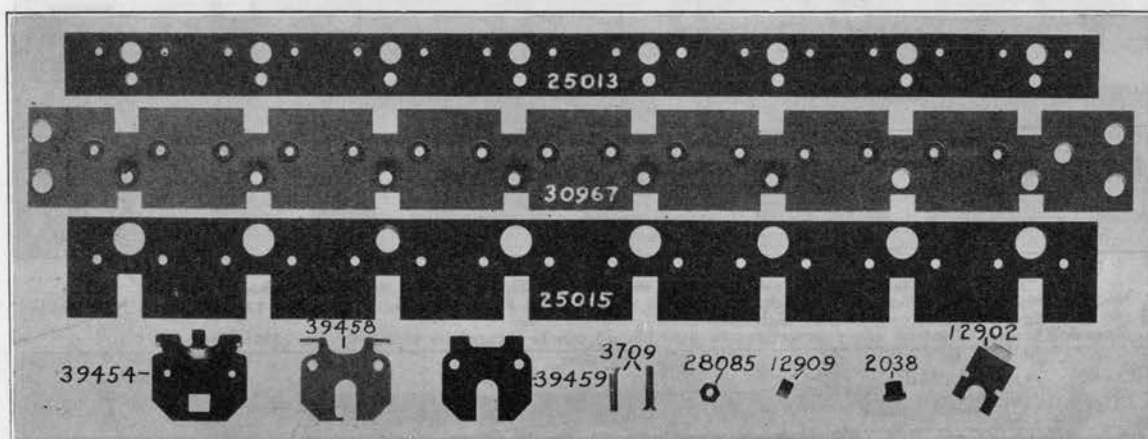


No. 701 combined drop and jack.
For mounting parts, see pages 35 and 36.

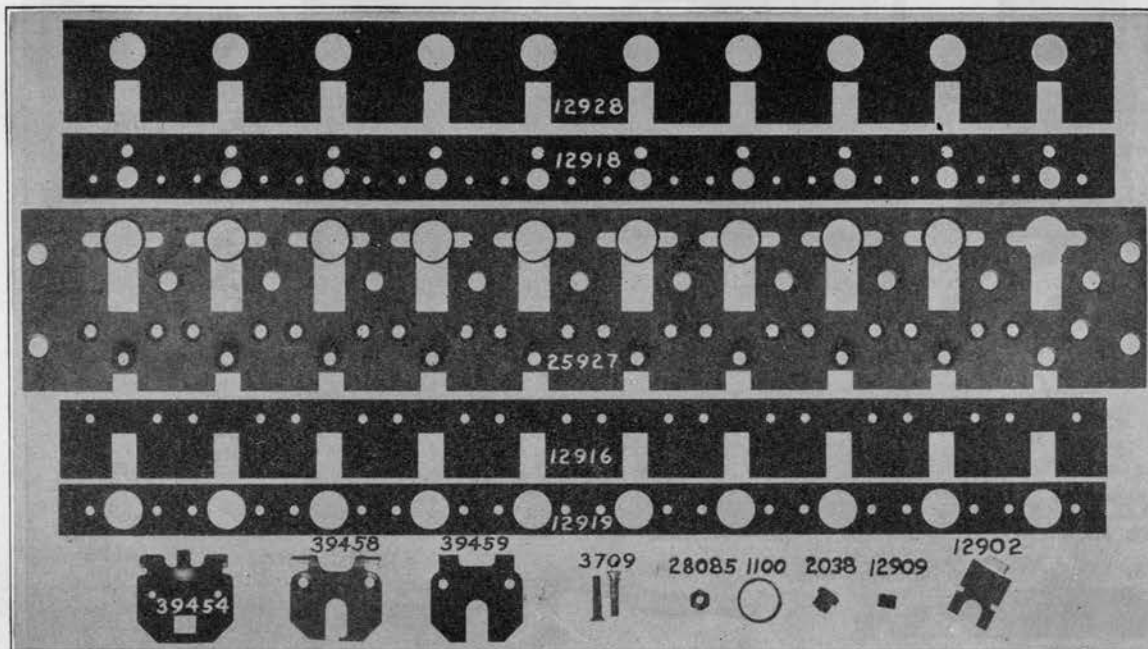
Kellogg



No. 259 drop mounting mounts Nos. 22 and 51 type drops



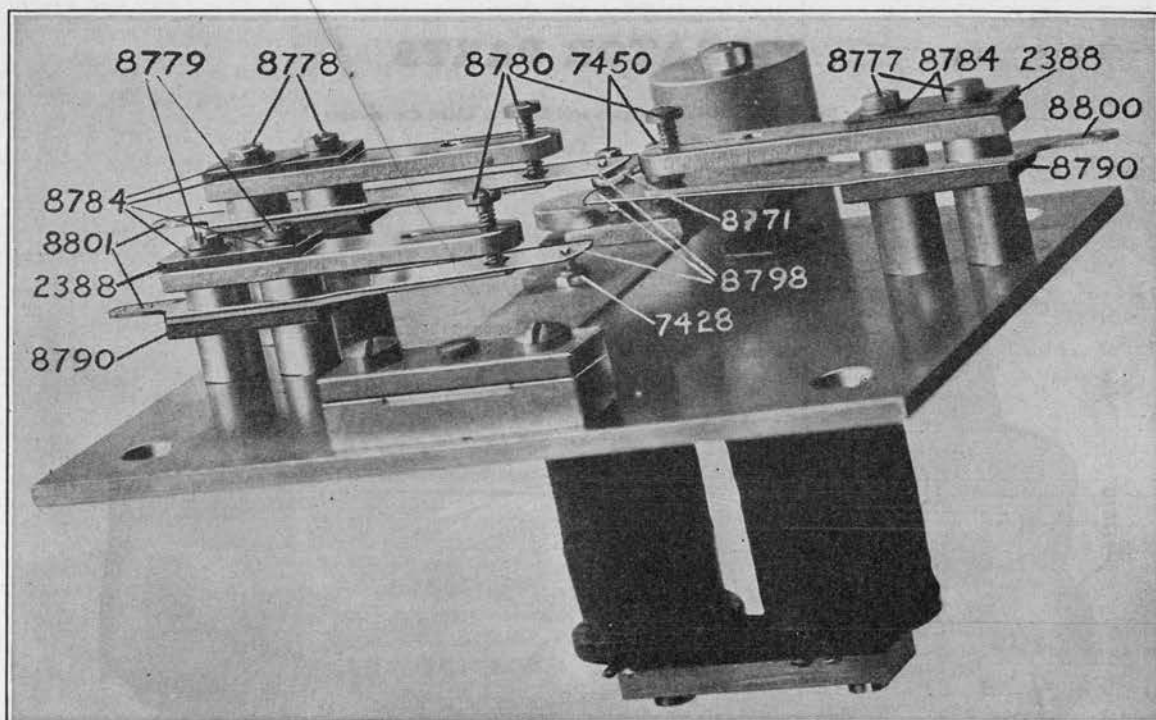
No. 433 drop mounting mounts Nos. 22 and 51 type drops



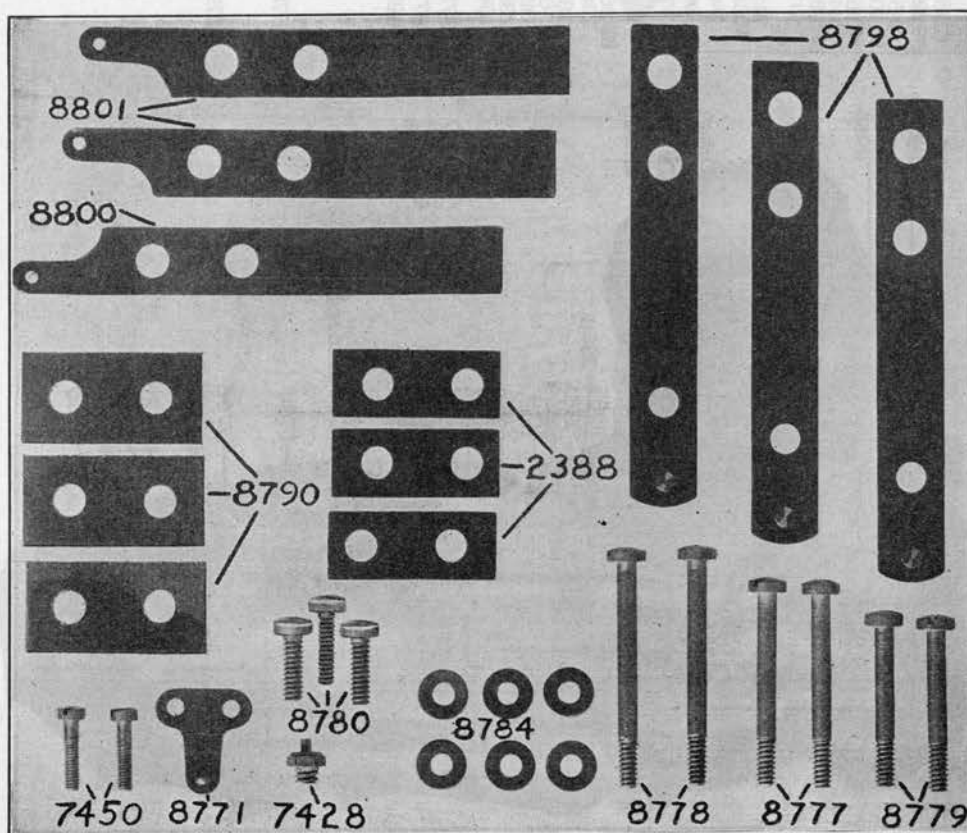
No. 329 drop and jack mounting mounts Nos. 29, 101, and 301 drop and jacks.

No. 426 drop and jack mounting uses same parts as the above except Pc. 29350 insulation instead Pc. 12928. Mounts Nos. 59, 100 and 300 drop and jacks with code ringing night alarm.
Mounting screws to mount above mountings to Switchboard can be secured by specifying Pc. 12995 screw.

Kellogg



Vibrator Assembly. Used on Nos. 13, 29, 36 A, 36 B and all harmonic pole changers.

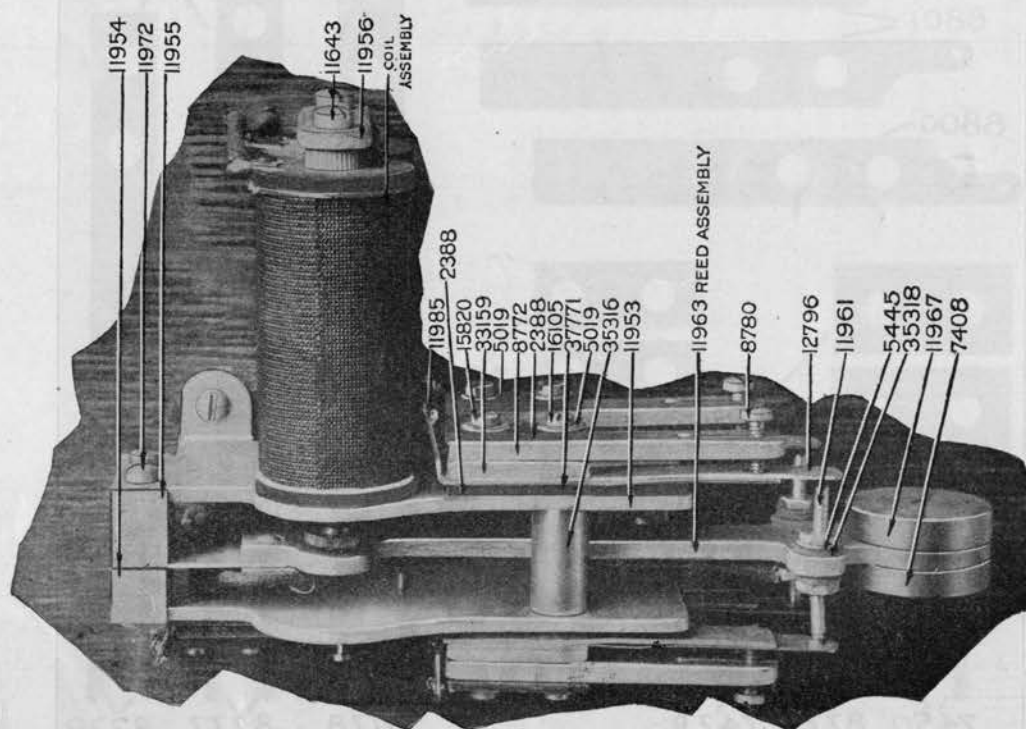
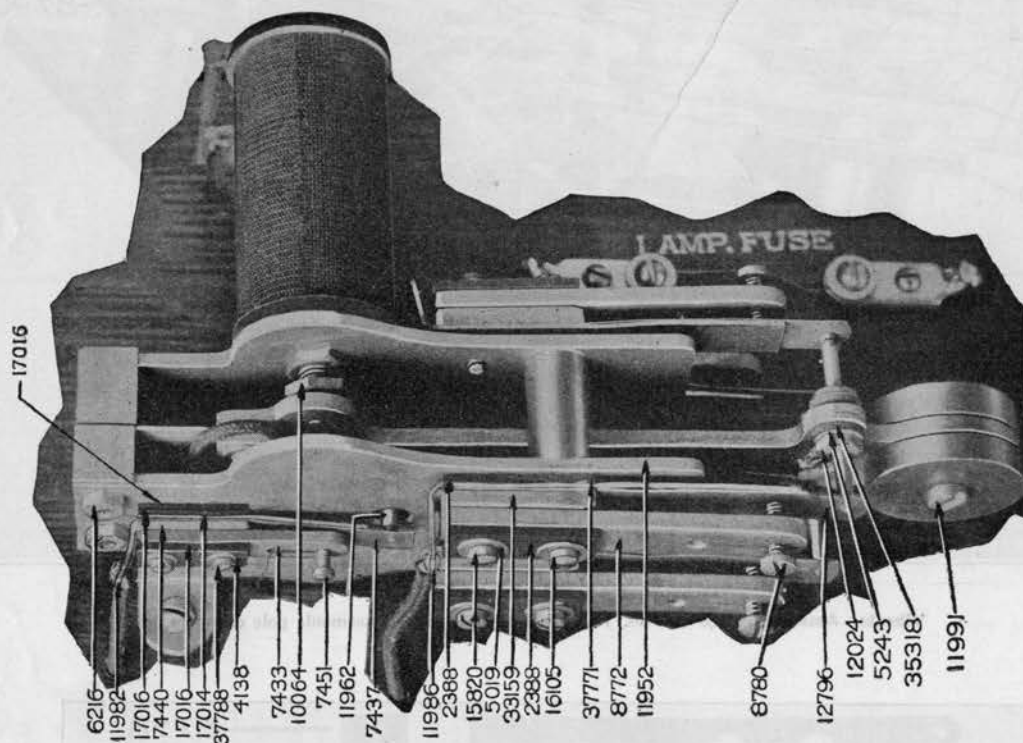


Vibrator Spring Assembly

Kellogg

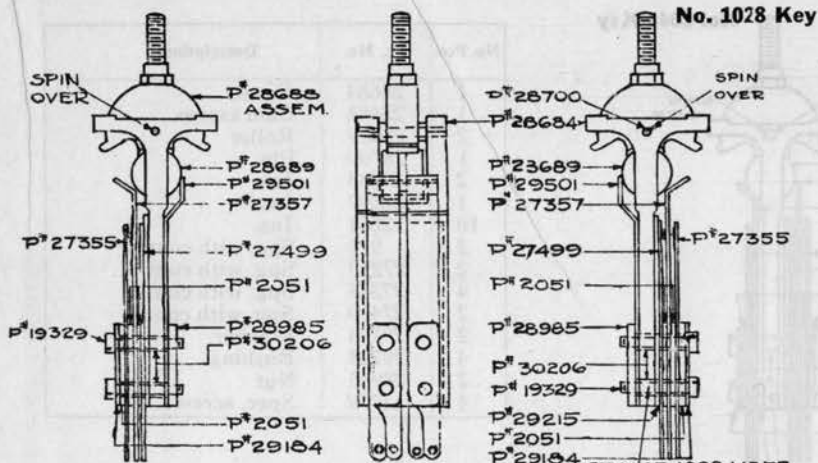
VIBRATOR PARTS

For Dry Battery Pole Changers and Electric Light Convertors



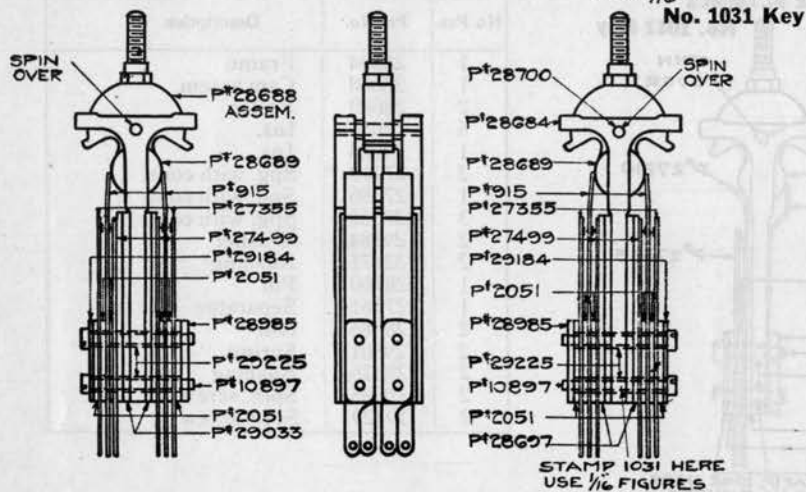
Piece numbers of parts for Nos. 9, 23 and 30 Pole Changers. Nos. 6 and 7 convertors are the same. Nos. 6 and 7 convertors use Pc. No. 35323 coil assembly. Nos. 9, 23 and 30 Pole Changers use Pc. No. 51060 coil assembly.

Kellogg



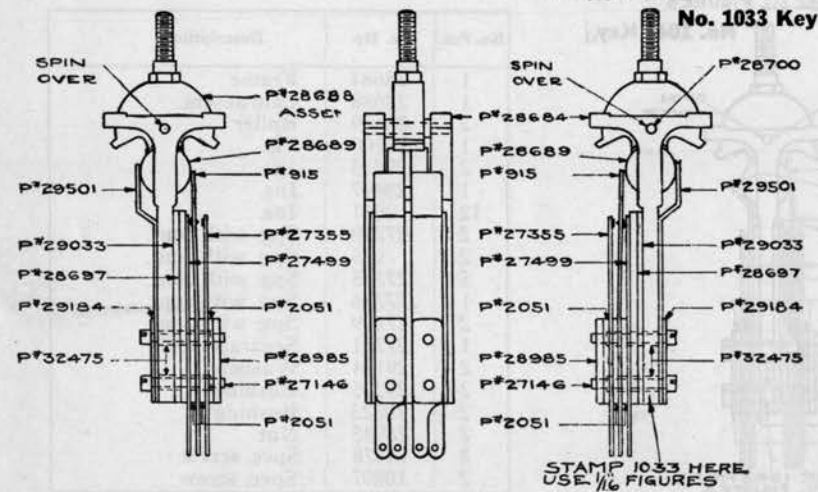
No. 1028 Key

No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
6	2051	Ins.
1	29215	Ins.
2	27357	Spg. with cont.
2	27355	Spg. with cont.
2	27499	Spg. with cont.
2	29184	Washer
1	28700	Pin
2	28985	Nut
2	29501	Springs
4	30206	Bushing
4	19329	Spec. screw



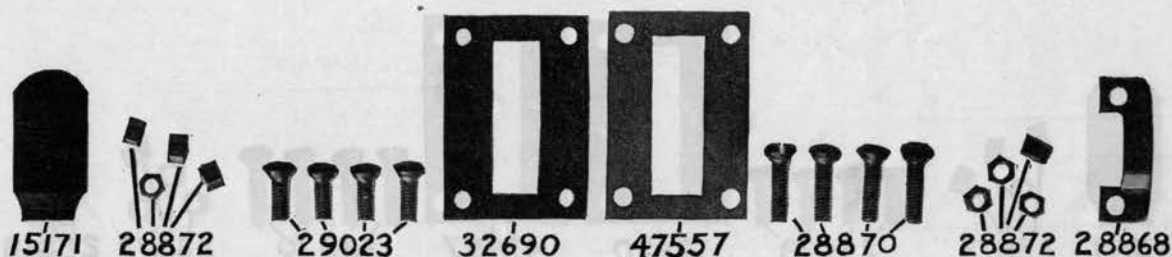
No. 1031 Key

No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
1	28700	Pin
12	2051	Ins.
2	28697	Ins.
2	29033	Ins.
4	915	Spg. with cont.
4	27499	Spg. with cont.
4	27355	Spg. with cont.
2	28985	Nut
4	29225	Bushing
2	29184	Washer
4	10897	Spec. screw



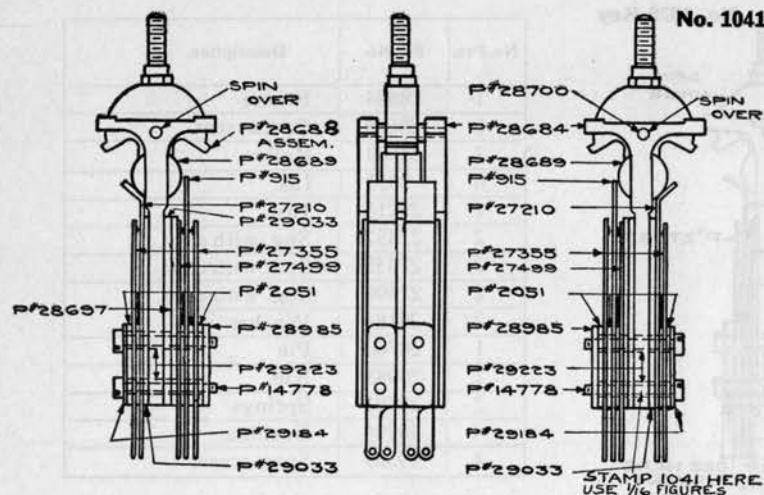
No. 1033 Key

No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
1	28700	Pin
1	28697	Ins.
1	29033	Ins.
6	2051	Ins.
2	915	Spg. with cont.
2	27355	Spg. with cont.
2	27499	Spg. with cont.
2	29184	Washer
2	32475	Bushing
2	28985	Nut
2	29501	Springs
4	27146	Spec. screw



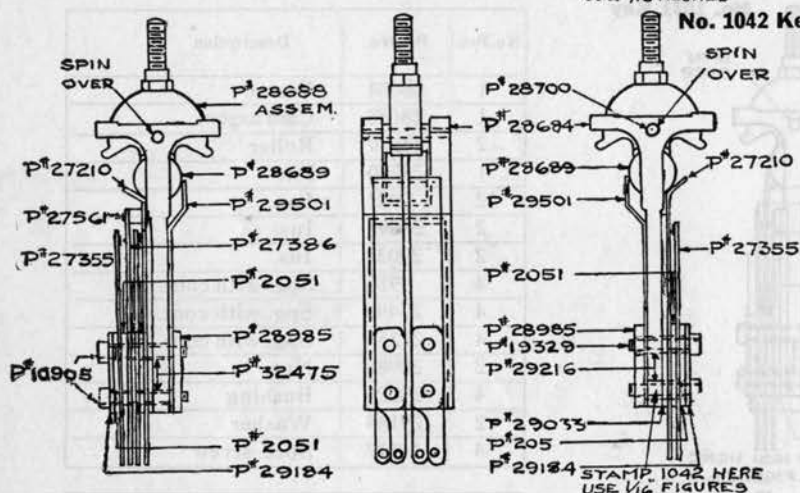
Kellogg

No. 1041 Key



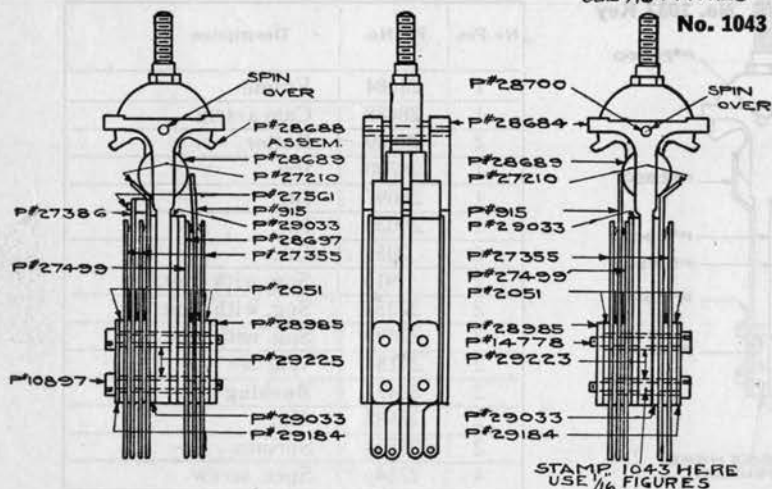
No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
1	28700	Pin
2	29033	Ins.
1	28697	Ins.
10	2051	Ins.
2	915	Spg. with cont.
2	27210	Spg. with cont.
4	27355	Spg. with cont.
2	27499	Spg. with cont.
2	29184	Washer
4	29223	Bushing
2	28985	Nut
4	14778	Spec. screw

No. 1042 Key

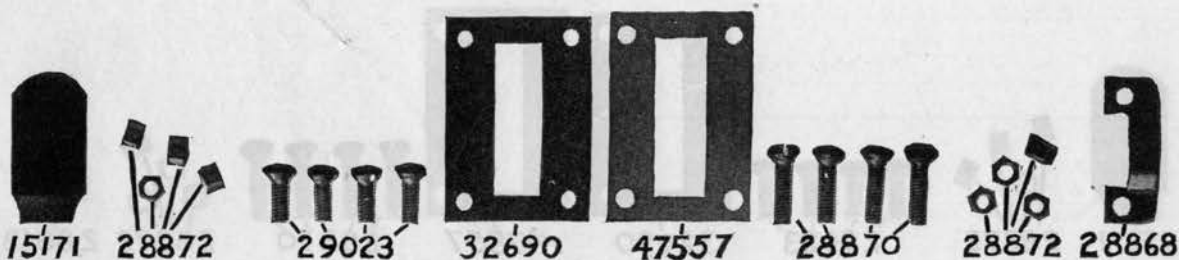


No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
6	2051	Ins.
1	29033	Ins.
2	27210	Spg. with cont.
1	27386	Spg. with cont.
3	27355	Spg. with cont.
2	29184	Washer
2	32475	Bushing
1	28700	Pin
1	27561	Separator
2	28985	Nut
2	29501	Spring
2	29216	Bushing
2	10905	Spec. screw
2	19329	Spec. screw

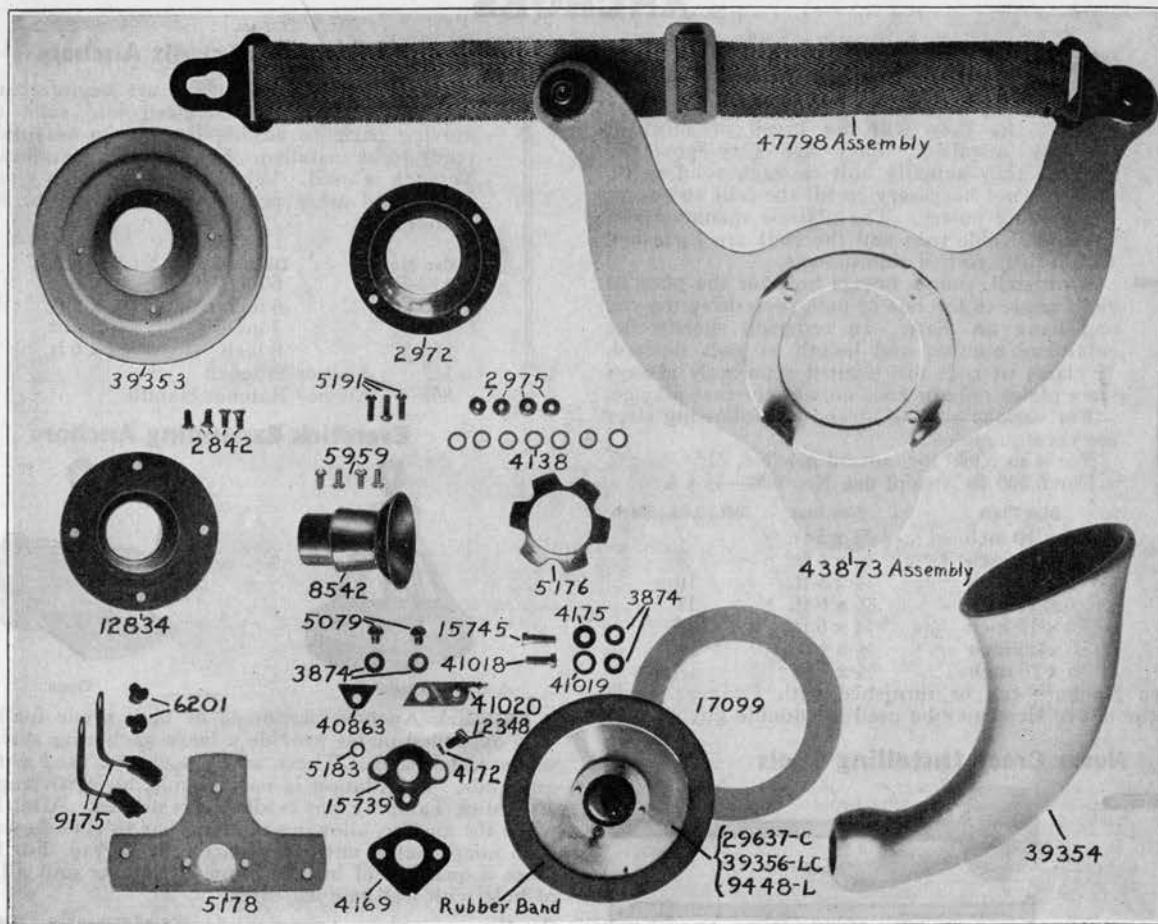
No. 1043 Key



No. Pcs.	Pc. No.	Description
1	28684	Frame
1	28688	Cam assem.
2	28689	Roller
1	28700	Pin
2	29033	Ins.
1	28697	Ins.
12	2051	Ins.
2	27210	Spg. with cont.
2	915	Spg. with cont.
5	27355	Spg. with cont.
1	27386	Spg. with cont.
2	27499	Spg. with cont.
1	27561	Separator
2	29184	Washer
2	29223	Bushing
2	29223	Bushing
2	28985	Nut
2	14478	Spec. screw
2	10897	Spec. screw

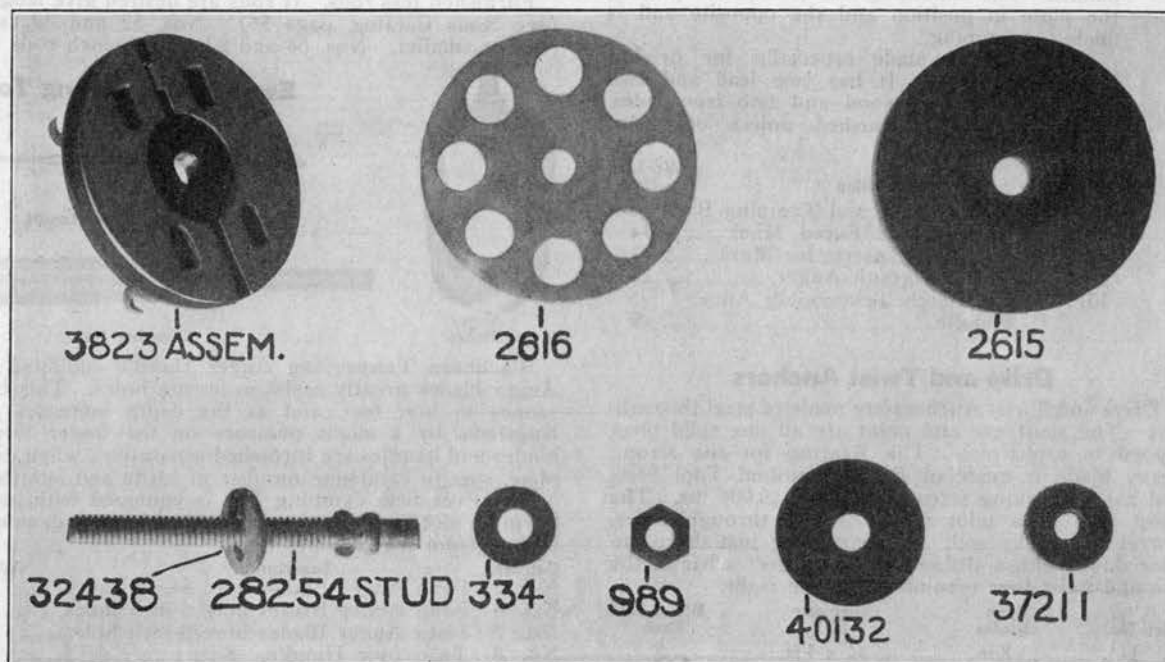


Kellogg



No. 1076 Transmitter

Pc. 43674 breastplate assembly includes Pc. 43873 and 47798. No. 76 transmitter parts are interchangeable, except use Pc. 29776 mouthpiece, Pc. 32549 transmitter front, Pc. 5175 assembly including Pc. 2979 band, 2980 clasp and 2982 buckle.

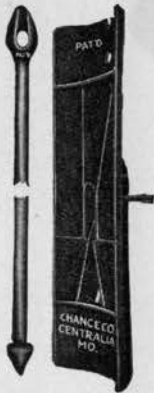


No. 3 Arrestor

Kellogg

ANCHORS

Never Creep Anchors



Nevercreep is an appropriate name for these anchors, as they will not creep or move if properly installed. They are very powerful because they actually bolt through solid earth, and it is not necessary to fill the hole to secure the holding power. The plate is manufactured from malleable iron and the rods are furnished with a drop forged thimble-eye.

To install, simply bore a hole for the plate at right angle to the line of pull, then drive the rod and hang on plate. In ordering specify the catalogue number and length of rods desired. If plates or rods are wanted separately always state plates only or rods only as the case may be.

For various sizes of strand the following sizes are recommended:

For 4 to 6,000 lbs. strand use No. 615— $\frac{5}{8}$ x 6.
For 6,000 lb. strand use No. 620— $\frac{5}{8}$ x 6.

Rod	Plate	Cat. No.	Size Plate	Size Rod	Wt., Lbs., Each
		510— $\frac{1}{2}$	5 x 10 inch	$\frac{1}{2}$ x 5 ft.	7
		510— $\frac{1}{2}$	5 x 10 inch	$\frac{1}{2}$ x 6 ft.	8
		615— $\frac{1}{2}$	6 x 15 inch	$\frac{1}{2}$ x 5 ft.	10
		615— $\frac{1}{2}$	6 x 15 inch	$\frac{1}{2}$ x 6 ft.	11
		615— $\frac{5}{8}$	6 x 15 inch	$\frac{5}{8}$ x 6 ft.	14
		620— $\frac{5}{8}$	6 x 20 inch	$\frac{5}{8}$ x 6 ft.	16
		620— $\frac{5}{8}$	6 x 20 inch	$\frac{5}{8}$ x 7 ft.	17

Nevercreep Anchors can be furnished with Twineye Rods and any of the above sizes may be used for double guying.

Never Creep Installing Tools



The Heavy Auger is equipped with a quick action dumping mechanism and telescoping handle. The Installing Bar is used for placing the plate in position and the opposite end is made for tamping.

The Maul is made especially for driving Nevercreep Rods. It has two lead and two iron faces, or two wood and two iron faces. Wood faces are furnished unless otherwise specified.

Cat. No.	Description	Wt. Lbs. Each
1575	10 ft. Installing and Tamping Bar..	9
1576	Wood or Lead Faced Maul.....	14
1577	Extra Wood Inserts for Maul.....	1
1578	Heavy Telegraph Auger.....	28
1579	Quick Catch Telescoping Auger Handle.....	9

Drive and Twist Anchors

Drive and Twist Anchors are made of steel through-out. The shaft eye and point are all one solid piece dipped in asphaltum. The Bearing for the strong heavy blade is made of Black Diamond Tool Steel and has a breaking strength of over 10,000 lbs. The point acts as a pilot when driving through roots, gravel and rocky soil. For installing just drive anchor down with a sledge and then insert a bar in the eye and twist four revolutions to the right.

Cat. No.	Span Blades	Diameter Rod	Wt., Lbs. Each
1	8 in.	$\frac{3}{4}$ x 4 ft.	8
2	12 in.	$\frac{7}{8}$ x 5 ft.	12
3	12 in.	$\frac{7}{8}$ x 6 ft.	15

Matthews Scrulix Anchors

Matthews Scrulix Anchors are manufactured of high carbon steel and are screwed into solid earth. No moving parts to adjust, nothing to assemble, shipped ready to be installed. For ordinary installation No. 567 Wrench is used. When screwing down close to walls, fences and other projections use the No. 865 Ratchet Handle.

Cat. No.	Diameter	Size Rod	Wt., Lbs. Each
612-R	6 inch	$\frac{1}{2}$ x 6 ft.	7 $\frac{1}{2}$
658-R	6 inch	$\frac{5}{8}$ x 6 ft.	9 $\frac{1}{2}$
758-R	7 inch	$\frac{5}{8}$ x 6 ft.	11
858-R	8 inch	$\frac{5}{8}$ x 6 ft.	13
567	Anchor Wrench		30
865	Anchor Ratchet Handle		16

Everstick Expanding Anchors



Closed



Open

Everstick Anchors are made of high grade malleable iron. The expanded plates provide a large anchoring surface against undisturbed earth. These anchors can be used with standard guy rods. Installation is very simple, an earth auger and the Everstick Tamping Bar is all that is needed. After boring hole place the anchor, allowing tamping bar to slide down over rod; then tamp anchor until plates are fully spread. For best results place a quantity of broken stone on anchor and fill in balance of hole with well tamped earth.

Cat. No.	Size Expanded	Wt., Lbs., Each
52	Two-Way 5-inch	5 x 9 in. 4
62	Two-Way 6-inch	6 x 11 in. 7 $\frac{1}{2}$
82	Two-Way 8-inch	8 x 15 in. 13 $\frac{1}{2}$

Furnished less rods. If rods are desired give length and size (see Rods Catalog, page 56). Nos. 52 and 62 take $\frac{5}{8}$ -inch rods or smaller. Nos. 64 and 82 take $\frac{3}{4}$ -inch rods or smaller.

Everstick Installing Tools



Auger Blades



Telescopic Auger Handle



Tamping Bar

Blackburn Telescoping Auger Handle equipped with Iwan Auger blades greatly assist in boring holes. This handle telescopes to four feet, and as the depth increases the handle lengthens by a slight pressure on the finger lever. Auger blades and handles are furnished separately; when desired complete, specify catalogue number of blade and length of handle.

The Everstick Tamping Bar is equipped with an iron shoe having a slot to fit over rod. With this arrangement it cannot bounce from the rod.

Cat. No.	Description	Wt., Lbs., Each
No. 5	Iwan Auger Blades bore 5-inch holes.....	4
No. 6	Iwan Auger Blades bore 6-inch holes.....	6
No. 8	Iwan Auger Blades bore 8-inch holes.....	7
No. 8	Telescopic Hand'le, 8-ft.	17
No. 10	Telescopic Handle, 10-ft.	20
9-Foot	Everstick Tamping Bar.....	20

Kellogg

ANCHORS, EXTENSION ARMS

Dryvin Anchors



Dryvin expansion Anchors are used for mounting to brick or masonry, fixtures such as corner brackets, house brackets, cable clamps, etc. Installed very quickly. The above masonry twist type drill point and holder—used like a star drill are recommended. Insert shield in mounting hole of fixture. Expand by driving nail into the shield.

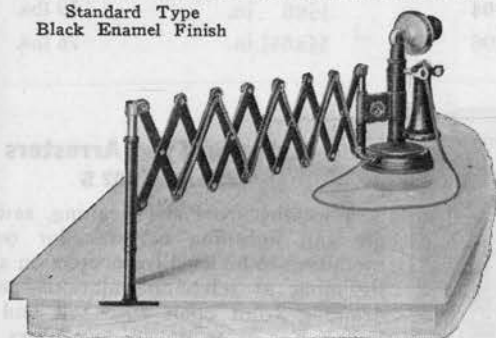


Cat. No.	Diameter Inches	Length Inches	Size Drill Inches	Wt., Lbs per 100
3678	$\frac{1}{8}$	$\frac{7}{8}$	$\frac{1}{8}$	1.2
1410	$\frac{1}{4}$	1	$\frac{1}{4}$	2 $\frac{1}{4}$
1414	$\frac{1}{4}$	1 $\frac{1}{4}$	$\frac{1}{4}$	2 $\frac{3}{4}$
5614	$\frac{1}{8}$	1 $\frac{1}{4}$	$\frac{1}{8}$	5 $\frac{1}{2}$
5624	$\frac{1}{8}$	2 $\frac{1}{4}$	$\frac{1}{8}$	6 $\frac{3}{4}$
3820	$\frac{3}{8}$	2	$\frac{3}{8}$	10 $\frac{1}{2}$
1224	$\frac{1}{2}$	2 $\frac{1}{4}$	$\frac{1}{2}$	18

Sold and packed in standard packages of 100, including nails.

Sperry Telephone Extension Arm

Standard Type
Black Enamel Finish



The Standard Type Sperry Arm operates out and in horizontally. When ordering be sure to specify catalogue number of mounting desired. On orders not specifying the No. 2 mounting will be furnished.

Cat. No.	Length Extended	Wt., Lbs. Each
8—Standard	26 inches	5 $\frac{1}{2}$
10—Standard	30 inches	6
12—Standard	34 inches	6 $\frac{1}{4}$
14—Standard	38 inches	6 $\frac{1}{2}$
16—Standard	42 inches	7

Minute Clamp

The Minute Clamp fits around the barrel of the telephone and is furnished with all Standard and Universal Telephone Arms, unless otherwise specified. It requires no tools or screws to attach and is quick and simple in operation.



No. 20 Clamp

The No. 20 Clamp fits all telephones with cylindrical barrels and is only furnished on orders when specified.



No. 21 Clamp

The No. 21 Clamp is used for the old automatic telephone with the convex barrel, and is only furnished on orders when specified.



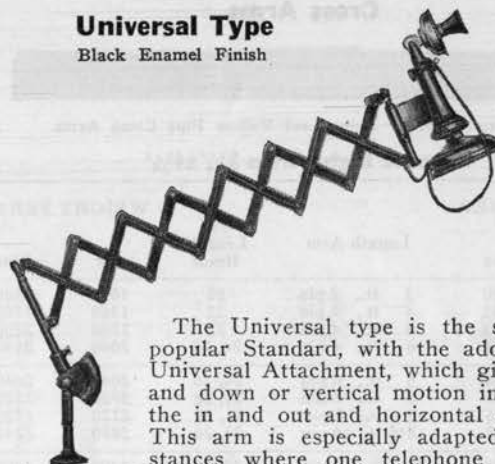
Universal Attachment

The Universal Attachment fits any Sperry Standard Arm. It is inserted between the arm and the mounting and serves to give the arm the up and down motion as well as the horizontal movement. This attachment is furnished separately and permits any Standard Type Arm to be made into a Universal Type.



Universal Type

Black Enamel Finish

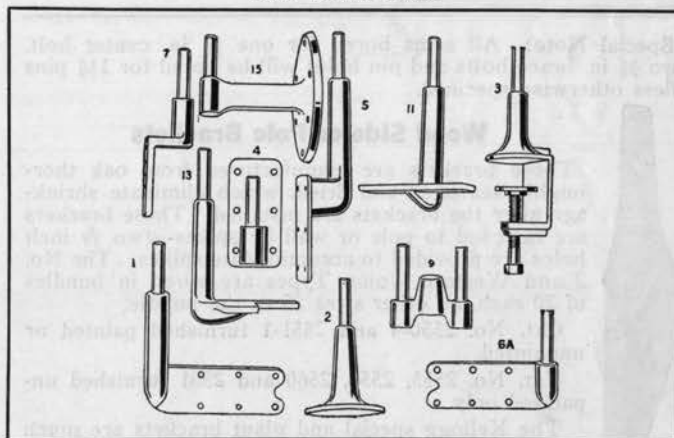


The Universal type is the same as the popular Standard, with the addition of the Universal Attachment, which gives it an up and down or vertical motion in addition to the in and out and horizontal side motion. This arm is especially adapted to circumstances where one telephone is used by several persons, it may be also used in a standing as well as sitting position. It may be adjusted to any position and automatically stays put.

Cat. No.	Length Extended	Wt., Lbs. Each
8—Universal	26 inches	8
10—Universal	30 inches	8 $\frac{1}{2}$
12—Universal	34 inches	8 $\frac{3}{4}$
14—Universal	38 inches	9
16—Universal	42 inches	9 $\frac{1}{2}$

Sperry Arm Mountings

Black Enamel Finish



The mountings illustrated above have been especially designed so that Sperry Arms can be installed in the most convenient place or position. Any of these mountings may be used with either the Standard or Universal type so when ordering pick out the mounting most suited for your needs and order by catalogue number.

Cat. No.	Description
1	Used on side of roll-top desk.
2	Used on the top of the desk.
3	Clamps to edge of a flat-top desk.
4	Used on a wall or partition.
5	Used on side of a flat-top desk.
6A	Used on side of roll-top desk.
7	Used on side of a flat-top desk.
9	Fits any mounting and holds two brackets.
11	Fastens to under side of desk or table top with screws.
13	Fastens under table or desk at corner.
15	Fastens to the wall or partition.

NOTE: Mountings No. 6-A and No. 15 designed especially for the Universal Arms.

Kellogg

CROSS ARMS, ARRESTERS

Cross Arms



McCormick Fir or Long Leaf Yellow Pine Cross Arms

Electric Light Arms 3 1/4" x 4 1/4"

STOCK NUMBER		Length Arm		Use Length Brace	WEIGHT PER 100	
Fir	Pine				Fir	Pine
5800	5860	3 ft., 2 pin		20	1020	1320
5801	5861	4 ft., 4 pin		22	1360	1760
5802	5862	5 ft., 4 pin		22	1700	2200
5803	5863	6 ft., 4 pin		24, 26	2040	2640
5804	5864	6 ft., 6 pin		24, 26	2040	2640
5805	5865	8 ft., 6 pin		24, 26	2720	3520
5806	5866	8 ft., 8 pin		24, 26	2720	3520
5807	5867	8 1/2 ft., 10 pin		24, 26	2890	3740
5808	5868	10 ft., 8 pin		30, 32	3400	4400
5809	5869	10 ft., 10 pin		30, 32	3400	4400
5810	5870	10 ft., 12 pin		30, 32	3400	4400

Pony Telephone Arms 2 3/4" x 3 3/4"

Cat. No.	Size	Wt. per 1000
5819	5879 24 in., 2 pin	20 500 650
5820	5880 30 in., 2 pin	20 625 812
5821	5881 36 in., 2 pin	20 750 975
5822	5882 42 in., 4 pin	22 875 1137
5823	5883 62 in., 6 pin	22 1300 1680
5824	5884 82 in., 8 pin	22 1700 2220
5825	5885 102 in., 10 pin	22 2125 2762
5826	5886 120 in., 12 pin	22 2500 3250

Special Note: All arms bored for one 5/8 in. center bolt. Two 3/8 in. brace bolts and pin holes will be bored for 1 1/4 pins unless otherwise specified.

Wood Side or Pole Brackets

These brackets are manufactured from oak thoroughly seasoned and dried, which eliminate shrinkage after the brackets are installed. These brackets are fastened to pole or wall by spikes—two 1/2 inch holes are provided to accommodate spikes. The No. 2 and Western Union Types are wired in bundles of 20 each, all other sizes 25 to the bundle.

Cat. No. 2550-4 and 2551-1 furnished painted or unpainted.

Cat. No. 2555, 2558, 2560 and 2561 furnished unpainted only.

The Kellogg special and giant brackets are much stronger due to their short shank feature; they are obtainable only from the Kellogg Co. and are recommended wherever Nos. 9, 10 or 12 insulators are used.



No. 1

Cat. No.	Size	Wt. per 1000
2550-4	1 1/2 x 2 x 10	500 lbs.
2551-1	1 1/2 x 2 x 12	700 lbs.
2555	2 x 2 3/8 x 12	1,100 lbs.
2560	1 1/2 x 2 x 10	700 lbs.
2561	2 x 2 3/8 x 12	1,100 lbs.

Western Union
Kellogg Special
Kellogg Giant

Wood Pole Steps

Wood pole steps furnished in plain, painted and creosoted oak for butt steps on cable terminal, or any stepped pole.

Cat. No.	Size	Weight per 1000
2556	1 1/2 x 2 x 7	500 lbs.
2662	1 3/4 x 2 5/8 x 7	700 lbs.



Wood Insulator Pins

Cat. No.	Size	Description	Weight per 1000
1760	1 1/4 x 8 in.	No. 1 Grade Locust	325 lbs.
1761	1 1/2 x 9 in.	No. 1 Grade Locust	450 lbs.

Put up in bags containing 250 pieces.



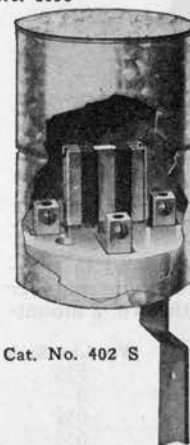
Kellogg Special

Western Union Galv. Steel Pins

With Wood Tops

Cat. No.	Description	Wt. per 100
1190	1/2 x 9 1/4 in.	74 lbs.
1191	5/8 x 9 1/4 in.	106 lbs.
1193	1/2 x 5 1/4 in.	53 lbs.
1194	1/2 x 6 in.	59 lbs.
1196	5/8 x 6 1/4 in.	76 lbs.

No. 1190



Cat. No. 402 S

Exterior Type Arresters

Cat. No. 402 S

A weatherproof self-cleaning, sawtooth, air gap lightning arrester for outdoor mounting to be used for protection against lightning at telephone stations and for draining from open wire toll and rural lines. For protection of two wires.

Consists of two P 495 sawtooth discharge blocks and two P 197 carbons mounted on porcelain base with galvanized bracket and cover. Length, 8 1/2 inches over bracket. Net weight, 1 pound.

Cat. No. 202

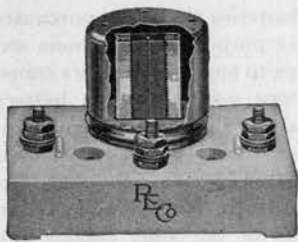
A self-cleaning sawtooth air gap lightning arrester, with capacity for ten wires, to be used out-of-doors and for draining lines of lightning at the cross arms, without grounding the lines. All five pairs of lightning arresters can be connected to one pair of wires, if desired. The lightning arresters are mounted in a cast-iron



housing to protect them from the weather and from sharpshooters and rock throwers. The arresters should be mounted on the crossarm out of the lineman's way. Consists of ten sawtooth metal discharge plates normally placed .010 inch from the carbon ground. Spring washers are provided on all bolts and screws to keep arrester parts and screw connections from working loose. Size 7 x 2 5/8 x 5 1/4 inches. Std. pkg. 25. Weight 6 1/2 lbs.

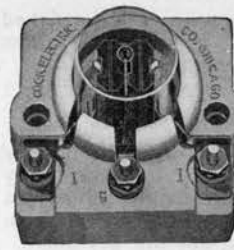
Kellogg

ARRESTERS AND PARTS



Cat. No. 977 AA

Cat. No. 977 AA
The No. 977 AA lightning arrester is a metal sawtooth air gap discharge protector to be used for protection against lightning where crosses with electric circuits are not likely to occur. It is enclosed by a brass screw cover. Consists of two P 197 and two P 495 sawtooth discharge blocks. Weight, $\frac{3}{4}$ lb. Size $3\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{4}$ inches.



Cat. No. 2

Cat. No. 2

No. 2 arrester is to be used for protection against lightning when crosses with electric circuits are not likely to occur. It is a very durable, compact, and efficient arrester. It may be converted into a fuse type by the addition of contact springs to the brass binding posts, and adding the line end fuse mount and the fuses (See B 13 substation arrester described below).

The No. 977 A lightning arrester is the same as above except that it is equipped with four P 197 carbon blocks and two P 312 "U" shaped mica dielectrics.

Cat. No. 977-A



Cat. No. 977 DD

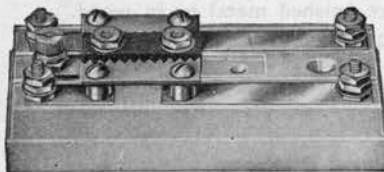
Cat. No. 977 DD

This is a metal sawtooth air gap discharge protector to be used for protection against lightning and crosses with electric current. The lightning arresters are enclosed by a brass cap.

Consists of two No. 27 blow-rite tubular wood fuses, 7 amperes, $4\frac{3}{4}$ inches between shoulders, two P 197 carbon blocks, and two P 495 metal sawtooth discharge blocks. The fuses are interchangeable with those used in cable terminals. This is a very convenient feature which makes it necessary to carry on hand only one type fuse.

Cat. No. 977 D

The 977 D is the same protector equipped with four P 197 carbon blocks and two P 312 "U" shaped mica dielectrics. Weight, $1\frac{1}{4}$ lbs. Size, $7\frac{1}{2} \times 3\frac{1}{2} \times 2\frac{1}{4}$ inches.



Cat. No. 975 B

Cat. No. 975 B

A self-cleaning sawtooth air gap protector to be used for protection against lightning, and where crosses with electric circuits are not likely to occur. Consists of two adjustable sawtooth metal

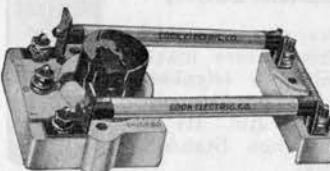
discharge plates normally placed .005 inch from the carbon ground. Can be supplied with or without "all over" metal cover. Cover shipped only when specified. Weight, 15 oz. size, $5 \times 2 \times 1\frac{1}{2}$ inches.

True Gap Discharger

The True Gap discharger is designed to relieve telephone circuits from high potential without permanently grounding the line. It is of rugged construction, accurately made, and free from maintenance expense. The discharger is used with a carbon block. A heavy brass discharger is moulded into a bakelite block the size of an ordinary carbon. On the top of this bakelite block is a metal cap anchored to the discharger blade. The discharge surfaces are completely inclosed so no dust can accumulate. The True Gap is recommended for use in pole cable terminals, sub-station protectors, and farm line arresters.



Cat. No. 4500



Cat. No. B 13

Cat. No. B 13

Designed to carry either a long or a short fuse, the porcelain being in two pieces, one carrying clips for the line end of the fuses only, and the other carrying clips for the instrument end of the fuses, and also carbons. Carbons are standard type, chemically treated, and are practically self-cleaning.

Regularly furnished with 3-ampere A 9 composition tubular fuse, $4\frac{3}{4}$ inches long between shoulders. Weight, $1\frac{1}{2}$ lbs.

Self-Cleaning Sawtooth Discharge Blocks



Cat. No. 495

A self-cleaning sawtooth discharge block designed to replace the line carbon and mica separator of existing and new lightning arresters and cable terminals.

The cut shows the self-cleaning discharge block, with carbon ground block ready for insertion in a lightning arrester. Carbon ground blocks of various shapes and thicknesses adapt the discharge block to fit any lightning arrester or cable terminal which uses $\frac{3}{8} \times 1\frac{1}{4}$ carbon or copper blocks.

Carbon Blocks



No. 2080



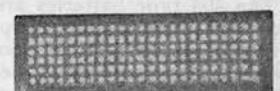
No. 2081

All Cook carbon arrester blocks are specially treated under their patented process, which eliminates carbon dust and makes them self-cleaning under ordinary conditions.

Celluloid Dielectrics



No. 2090



No. 2091

Celluloid dielectrics are widely known and favored because of their uniform thickness and high insulating qualities. The "U" shaped dielectrics are furnished by us as standard on all Cook equipment shown in this catalog.

Kellogg

BATTERIES, BELLS

Dry Batteries

Columbia, Victor and French Dry batteries are furnished with Fahnestock or Screw connections. Specify type when ordering. Write for special battery agreement.



No. 6 Columbia Gray Label Batteries

This is a medium low current, long life battery made for telephone service, door bells, and any other low current drain service. Initial amperage, 18 to 22 amperes, 1½ volts. Size 2½ x 6 inches. Standard package 50. Weight 230 lbs. per 100.

No. 6 French Telephone Battery

Made with internal protective coating which reduces shelf deterioration. This feature makes this battery especially serviceable in telephone work. Initial amperage 18 to 22 amperes, 1½ volts. Practically no action when battery is idle. Its life is exceedingly long. Size 2½ x 6 inches. Standard package 50. Weight 230 lbs. per 100.



No. 6 Victor Telephone Battery

The extra heavy zinc shell together with a fluted positive electrode insures a long life telephone battery. The uniform quality assures a low average in replacement cost. Initial amperage 18 to 22 ampere, 1½ volts, size 2½ x 6 inches. Standard package 50 cells. Weight, 230 lbs. per 100.



Columbia 04 Battery

This small oval battery is designed for use with Kellogg No. 1016 test set. Initial amperage 10 to 12 amperes, 1½ volts. Size 1¼ x 4 inches. Weight 11¼ ounces.



Battery Boxes

These battery boxes are for use with intercommunicating and desk or hotel types of local telephones. Also electric bell installations or wherever dry cell batteries are used. They are made of sheet steel finished in black Japan and are lined throughout with heavy insulating fibre, which protects the sides of the box and the edges of the holes.

No. 2 takes two No. 6 dry cells, No. 3 takes three No. 6 dry cells.



Cat. No. 2

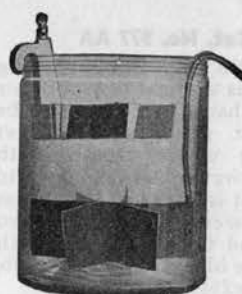
Edison Primary

The 403 type batteries are adaptable to Railway signal work, train dispatchers talking and ringing circuits, supervisory lamps, private branch exchanges, telephone switchboard, intercommunicating telephones and fire alarms. It is provided with a glass container and has 400 ampere hours' capacity.

The type "RR" cell is now obsolete, but renewals will still be furnished. By using the 400 type renewal and No. 403 cover and nuts they may be converted into type No. 403 cell with 400 ampere hour capacity.



"BSCO"
Type 403



Gravity

Gravity

Gravity batteries should be purchased for no other purpose in telephone exchanges than to supply operators transmitter battery where storage battery is unattainable. They are designed for closed circuit work of small consumption. Furnished in two sizes, Cat. No. 57, 5x7", and Cat. No. 68, 6x8". Battery consists of jar, zinc, copper and sufficient blue vitriol.

Loud Ringing Polarized Extension Bells

A loud ringing telephone extension bell for use on magneto lines. The standard finish of this bell is black enamel case and galvanized gongs. Shipping weight, approximately 10 lbs.

Not furnished with condenser.



Cat. No. 200010

Cat. No.	Description	Cat. No.	Description
200010	80 ohm	200025	1,600 ohm
200018	500 ohm	200030	2,000 ohm
200020	1,000 ohm	200032	2,500 ohm

Push Buttons

These push buttons are for use on buzzer circuits. They are furnished in either copper finished metal or in wood.



Cat. No.	Description
100	Wood
200	Copper

Bell and Buzzers

These iron box bells and buzzers are specially built for operation from two dry cells or from the 6-volt secondary circuit of a bell ringing transformer. The mechanism needs no adjustment due to the free action of the armature and the bell will operate perfectly on one, two or three dry batteries. The mechanism is rust proof being entirely copperized and the case is dust and bug proof.



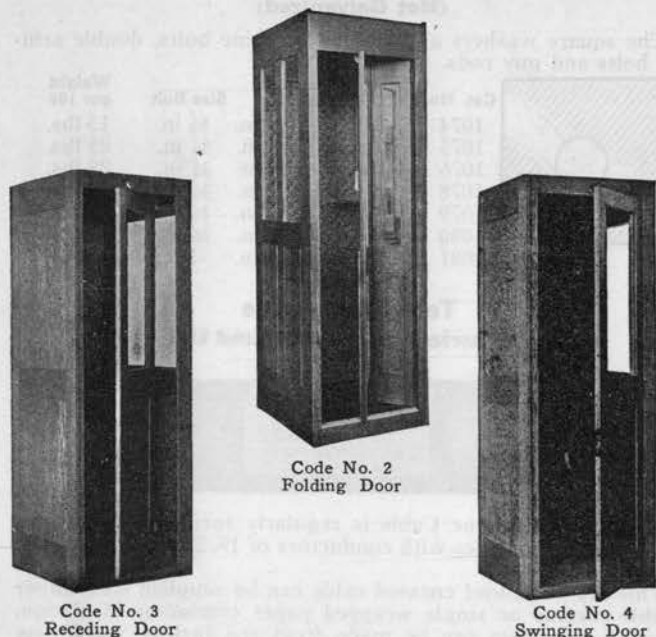
Cat. No.	Type	Gong	Resistance	Weight
222-3½	Marlo Bell	3 in.	3½ ohms	10 oz.
212-300	PRXXX Bell	3 in.	300 ohms	10 oz.
220-3½	Marlo Buzzer		3½ ohms	8 oz.
210-50	PRXXX Buzzer		50 ohms	8 oz.
210-300	PRXXX Buzzer		300 ohms	8 oz.



Kellogg

BOOTHES, BOLTS, BRACKETS

Booths



These telephone booths are durably constructed, spacious and of neat appearance. They are made throughout of genuine kiln dried selected plain white oak or birch, equipped with a reinforced back panel for mounting a wall telephone or coin collector. Also a writing shelf for desk telephones if desired. They can be furnished with either a sliding hinged or folding door. Also with glass in both sides, one side or door only. The door fastens securely making the booth as near sound proof as possible. Several of these booths may be placed adjoining each other. Such booths should be ordered without glass panels in sides.

Outside dimensions 83½ in. high, 28½ in. wide, 29½ in. deep.

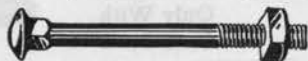
Inside dimensions, 80½ in. high, 27 in. wide, 27½ in. deep.

Door opening 77½ in. high, 23 in. wide. Finish, golden oak, light or dark mahogany. Shipped knocked down in a substantial crate ready for assembling. Shipping weight, 300 lbs.

Note—Specify finish, glass arrangement and type of door. Unless specified, oak finish with glass in door and right side furnished.

Carriage or Brace Bolts

(Hot Galvanized)



Standard carriage bolts are used for attaching the braces to cross arms on most overhead lines. It is customary to order bolts ¾ inch longer than the thickness of the cross arm or a bolt ¾x4 inches should be used in connection with a 3¼x4¼ inch cross arm. The ¾ inch carriage bolts used for this purpose are supplied with 1¼ inch thread. Length measured from inside of head to tip.

Size	Weight lbs. per 100	Size	Weight lbs. per 100
¾x3	13	¾x4½	18
¾x3½	15	¾x4¾	33
¾x4	17		

All bolts 6 inches and shorter have 1½ inch threads.

Machine or Cross-Arm Thru-Bolts (Hot Galvanized)



In order to determine the correct length in inches for a machine or cross arm through bolt it will be necessary to add the sum of the thickness of the cross arm and pole top and then allow about ¼ of an inch for washer and nut room. Length measured from inside of head to tip.

Size	Weight lbs. per 100	Size	Weight lbs. per 100
¾x3	14	¾x5½	22
¾x3½	15	¾x10	102
¾x5	19	¾x12	118

Lag Screws or Heel Bolts (Hot Galvanized)



Gimlet Point



Fetter Drive

Used to fasten the cross arm braces to the pole. The fetter drive type is the more popular as they may be driven in the pole without tearing the fibres of the wood and by adding a few turns with a wrench it is securely seated.

All sizes are made in either the fetter drive or gimlet point types.

Size, In.	Wt. Lbs. per 100	Std. Pkg.	Size, In.	Wt. Lbs. per 100	Std. Pkg.
¾x2½	9	1500	¾x4	12	1000
¾x3	10	1000	¾x4½	13	1000
¾x3½	11	1000			

House and Pole Brackets (Hot Galvanized)



No. 1200

The No. 1200 house bracket is made of 1½ x 1¼ inch stock, hot galvanized, having three 1½ inch mounting holes; when mounting to wood buildings use three 1½x16 galvanized RH wood screws, brick or masonry, three ¼x1 inch Dryvin lead anchors. Weight, per 100, 57 lbs. Code number does not include knobs or bolts.

The No. 1202 pole bracket is heavier, being made of 1¼x2 inch stock, also hot galvanized, having three 1½ inch mounting holes; when mounting to pole use three ¾x4 lag screws. Weight, per 100, 100 lbs.

The following table gives size of bolts required for mounting knobs on brackets:

- One 2-groove knobs—Use one 1½x2 galv. stove bolt.
- Two 2-groove knobs—Use one 1½x3½ galv. stove bolt.
- One 4-groove knobs—Use one ¾x3 galv. stove bolt.
- Two 4-groove knobs—Use one ¾x5½ galv. stove bolt.

Corner Brackets (Hot Galvanized)



No. 2584

The 2584 corner bracket is made of 1¼x1¼ inch stock, hot galvanized, and is eight inches in length, having two 1½ inch mounting holes. For mounting to wood buildings use two 1½" x 2" galvanized lag screws. For brick or masonry use two 1½" x 2" Dryvin lead anchors.

Kellogg

BRACKETS, BRACES, WASHERS, CABLE, CHAIRS

Pearl Drop Wire Brackets



These brackets are furnished complete with knob ready to install. The unbreakable wire screw hook and malleable castings are hot galvanized, insuring long life. To install screw in hook, hang on two-piece hook assembled into insulator.

No. 100 Single Groove for Electric and Radio Wires.

No. 200 Double Groove for Duplex Telephone Wires.

Flat Cross Arm Braces (Hot Galvanized)



The standard arrangement for bolt holes in flat cross arm braces is $\frac{1}{8}$ and $\frac{1}{4}$ in. hole drilled one inch from each end. These braces are put up in bundles of twenty.

Cat. No.	Length Inches	Wt., Lbs. per 100
7020	$1\frac{1}{2} \times \frac{3}{4} \times 20$	142
7022	$1\frac{1}{2} \times \frac{3}{4} \times 22$	156
7024	$1\frac{1}{2} \times \frac{3}{4} \times 24$	170
7026	$1\frac{1}{2} \times \frac{3}{4} \times 26$	184
7028	$1\frac{1}{2} \times \frac{3}{4} \times 28$	198
7122	$1\frac{1}{4} \times \frac{1}{4} \times 22$	184
7124	$1\frac{1}{4} \times \frac{1}{4} \times 24$	200
7126	$1\frac{1}{4} \times \frac{1}{4} \times 26$	217
7128	$1\frac{1}{4} \times \frac{1}{4} \times 28$	234
7130	$1\frac{1}{4} \times \frac{1}{4} \times 30$	250

Cross Arm Back Braces (Hot Galvanized)



Back braces are used for bracing cross arms at corners and terminal poles or any place subjected to heavy strain. They are made of flat and angle open hearth steel, fastened to the cross arm by $\frac{1}{2}$ inch carriage bolts and to the pole by $\frac{5}{8}$ inch through bolts.

Cat. No.	Size	Description of Material	Weight per 100
380	$1\frac{1}{2} \times \frac{3}{8} \times 6$ ft.	Flat	1150 lbs.
381	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8} \times 5$ ft.	Angle	900 lbs.
382	$1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8} \times 6$ ft.	Angle	1100 lbs.
383	$1\frac{3}{4} \times 1\frac{3}{4} \times \frac{1}{8} \times 9$ ft. 2 in.	Angle	1935 lbs.

Round Washers (Hot Galvanized)

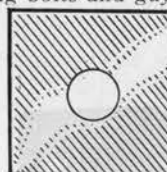
The round washers are used for carriage bolts and lag screws.



Cat. No.	Outside Diameter	Diameter Hole	Weight per 100
1085	$1\frac{1}{4}$ in.	$\frac{1}{2}$ in.	30 lbs.
1086	$1\frac{3}{8}$ in.	$\frac{3}{8}$ in.	42 lbs.
1088	$1\frac{1}{2}$ in.	$\frac{1}{2}$ in.	75 lbs.
1089	2 in.	$\frac{3}{4}$ in.	112 lbs.

Square Washers (Hot Galvanized)

The square washers are used on machine bolts, double arm-ing bolts and guy rods.



Cat. No.	Size	Size Bolt	Weight per 100
1074	2 x2 x $\frac{1}{8}$ in.	$\frac{5}{8}$ in.	13 lbs.
1075	$2\frac{1}{4} \times 2\frac{1}{4} \times \frac{1}{8}$ in.	$\frac{5}{8}$ in.	25 lbs.
1076	$2\frac{1}{4} \times 2\frac{1}{4} \times \frac{1}{8}$ in.	$\frac{3}{4}$ in.	25 lbs.
1078	3 x3 x $\frac{1}{8}$ in.	$\frac{3}{4}$ in.	45 lbs.
1079	3 x3 x $\frac{1}{4}$ in.	$\frac{5}{8}$ in.	58 lbs.
1080	4 x4 x $\frac{1}{8}$ in.	$\frac{3}{4}$ in.	84 lbs.
1081	4 x4 x $\frac{1}{2}$ in.	1 in.	215 lbs.

Telephone Cable For Aerial and Underground Use



Standard Telephone Cable is regularly furnished in various electrostatic capacities with conductors of 19, 22, and 24 B. & S. Gauge.

This dry core, lead encased cable can be supplied with either double reverse or single wrapped paper conductor insulation. Prompt shipments can be made from the factory warehouse at Phillipsdale, Rhode Island.

To take care of short length and emergency orders, Kellogg's Chicago warehouse carries in stock 10, 15, 25, 50, 75 and 100 pair, 22 B. & S. Gauge, double paper wrapped, also 50 and 100 pair, 22 B. & S. Gauge wool cable.

Chairs

Chairs shown below are for use with both the high and low keyshelf type of switchboard as well as for wire chief and chief operator's desk. Standard finish No. 9 Golden Oak. Shipping weight, crated, approx. 55 lbs. each.

The first range measurement indicates the distance of the seat from the floor when the chair is in its lowest position, while the second indicates the highest.

The No. 1110-C, 1104 chairs with cane seats are carried in stock in No. 9 Golden Oak finish.



Furnished
Only With
Cane Seats



Cat. No. 1104-C, 1114-C
Range 1104-C, 24—31.
Range 1114-C, 28—35.
Outside diameter of ring 17 inches. Height from floor to top of ring, 1104, 11 $\frac{5}{8}$ inches, 1114, 15 $\frac{1}{4}$ inches.

Cat. No. 1110-C
Range, 18—22 inches.
Outside diameter of ring 16 inches. Height from floor to top of ring, 2 $\frac{3}{4}$ inches.

CLAMPS, CLEATS, CLEANER, CLIPS

Cable Suspension Clamps (Hot Galvanized)



No. 1096

For temporary construction or for use on light lines, the cable suspension clamps may be used advantageously. It is suggested that a $\frac{5}{8}$ inch bolt with two nuts and two washers be used in mounting, putting on the clamp after the bolt is mounted in the regular manner, then fastening the clamp on the end of the bolt with the second nut and washer. This gives a small clearance between the clamp and the pole which is some advantage when working on the line.

Cat. No.	Description	Std. pkg.	Length	Wt. per 100
1095	1-Bolt	100	2½ in.	80 lbs.
1096	3-Bolt	150	6 in.	205 lbs.

No Slip Guy Clamp (Hot Galvanized)



No. 1033

Nos. 1030, 1031 and 1033 clamps are easily installed and have a holding power that will break the strand. They are made from half rolled open hearth steel plates $1\frac{9}{16}$ in. wide by $\frac{3}{8}$ in. thick. Equipped with $\frac{1}{2}$ in. bolts and will stand 10,000 lb. pull without breaking or stripping their threads.

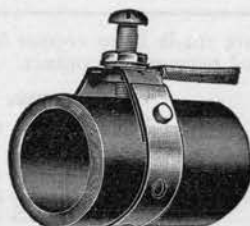
No. 1032 is a heavier and more expensive clamp made of plates 2 in. wide by $\frac{3}{8}$ in. thick equipped with $\frac{5}{8}$ in. bolts. Adopted by NELA and A. T. & T. Co. as their standard clamp.

All clamps fit seven-wire strand from $\frac{1}{4}$ in. to $\frac{1}{2}$ in., inclusive, and are furnished in the following sizes with plain or ridged groove:

Cat. No.	Size	Std. Pkg.	Weight per 100
1030	2 bolt 3 inch	200	110 lbs.
1031	3 bolt 4 inch	150	150 lbs.
1032	3 bolt 6 inch	75	285 lbs.
1033	3 bolt 6 inch	100	210 lbs.

Adjustable Ground Clamps

The most approved method of permanently making ground connections at subscriber's stations where water pipes are available and where it is inconvenient to solder ground wires onto ground rods.

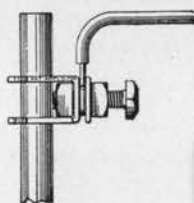


No. A-1

Cat. No.	What they fit
No. 0	$\frac{3}{8}$ and $\frac{1}{2}$ in. ground rods
No. A1S	$\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1 and $1\frac{1}{4}$ in. pipe

Shipping weight, per 1000
30 lbs.
55 lbs.

Kling Ground Clamps



A galvanized steel clamp for connecting ground wires to $\frac{1}{2}$ in. and $\frac{5}{8}$ in. iron or copper ground rods. Equipped with cup pointed set screw which insures a good contact, even on a rusty rod. Made in two sizes, $\frac{1}{2}$ in. for $\frac{1}{2}$ in. rods and $\frac{5}{8}$ in. for $\frac{5}{8}$ in. rod. Clamps should be attached before rod is driven. Shipping weight, $\frac{1}{2}$ in. 15 lbs. per 100, $\frac{5}{8}$ in. 17 lbs. per 100.

Fibre Cleats



Style No. 1



Style No. 2



Style No. 2-A

Fibre cleats are furnished in three styles—as per cut. These cleats furnish a neat and substantial method of permanently retaining interior wire in place, especially on lath and plaster walls where it is not desirable to fasten with nails or staples.

Bristle Brush Switchboard Jack Cleaners



Used on a revolving flexible shaft or wheel drill, for cleaning switchboard jacks. Brushes are furnished in 2 sizes. No. 32 diam., .249, it fits all jacks approximately $\frac{1}{4}$ in. diam. No. 22 diam., .221, fits all jacks using No. 201 Kellogg plugs. Carbon Tetrachloride liquid is an excellent cleaner to be used with the above brush, and also can be used for polishing switchboard plugs. Furnished in either 4 oz. or 8 oz. bottles.

Universal Dusters



Made entirely of wood. No chance for short circuits. Ideal for dusting out switchboard relay racks and places where cloths or brushes are liable to cause injury to contacts or disturb adjustment of relays.

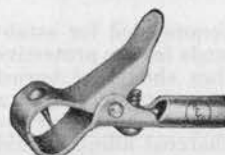
No. 1 Length, 20 inches.

Weight, each 10½ ounces.

Test Clips



No. 27



No. 2

These clips take a good firm hold and are constructed with a thin nose for tight quarters. The Nos. 27 and 28 are furnished with side jaws for bare wire testing. By using these clips in connection with a pocket-knife a contact can be made without skinning the insulation from wire.

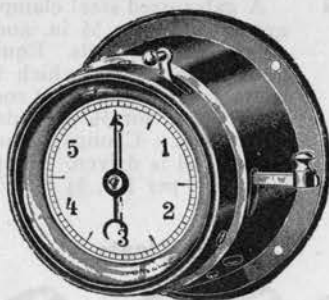
The insulated connector can be attached to the wire without the lineman coming in metallic contact with it. Connections are all of the screw type; the jaw $\frac{1}{8}$ inch spread and carrying capacity 10 amperes.

Cat. No.	Stock	Insulated or Bare Wire	Spread of Jaws	Amperage	Per C Wgt.
27	Copper	Bare	$\frac{5}{16}$ "	10	4 lbs.
28	Copper	Insulated	$\frac{1}{8}$ "	10	5½ lbs.
2	Nickel Silver	Bare	$\frac{5}{8}$ "	10	4 lbs.

Kellogg

COUNTERS, CONES, CONNECTORS

Chronoscope



An instrument for timing telephone calls. This instrument is the newest and most reliable device made for checking the time of toll messages.

The method of using same is very simple. The Chronoscope is provided with two levers. A single downward pressure on the side lever will wind the clock, set it going and start the hand.

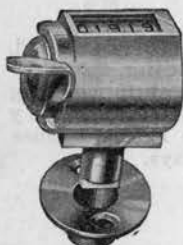
To stop the hand when through using the telephone, if interrupted, or line gets out of order, turn the top lever upward and the clock will stop. When telephone or line is in order again, press the upward lever downward and the instrument will record again the exact time the telephone has been used.

To set the hand back to the starting point, press the large lever on the side of instrument and the hand will fly back to the starting point, so that the instrument is always ready for use.

Metal Oxidized case 2½ inches. Diameter of dial, 2 inches. Six minute time. Bell on three and six minutes and stopper at any period.

Counter

No. 8 Straight Counter



Straight Counters

This counter is used in practically every telephone exchange throughout the country for making accurate traffic records.

The socket plate is intended to go flush into the keyboard slightly to the right of the operator and to remain there permanently. The counter can then be inserted and removed at will. This counter registers up to 100,000.

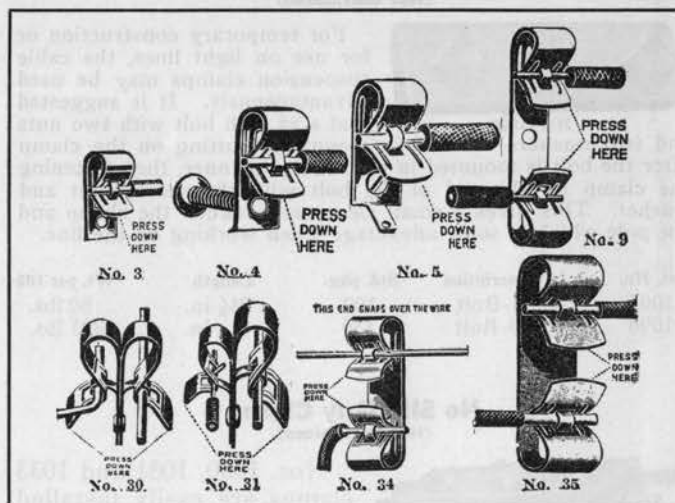
Paragon Ground Cones

These grounds are made of a perforated sheet of pure copper. The cone is filled with pea-sized charcoal or coke as desired. Furnished with five feet of No. 4 soft copper leading-in wire welded to the grounds.

These cones are especially recommended for establishing suitable central office grounds for the protective apparatus and switchboards. They should be buried at least five feet below the surface and preferably in a heavy clay sub-soil. Before refilling the hole after the cone has been set, the coke or charcoal filling should be well saturated by pouring water over and around the cone. The ground wire should not be smaller than No. 10 heavily insulated copper, well soldered to the lead-in wire, and run as straight as possible to the protector or other apparatus.

Cat. No.	Length Feet	Gauge Copper
3	1	21
4	2	21

Fahnestock Connectors

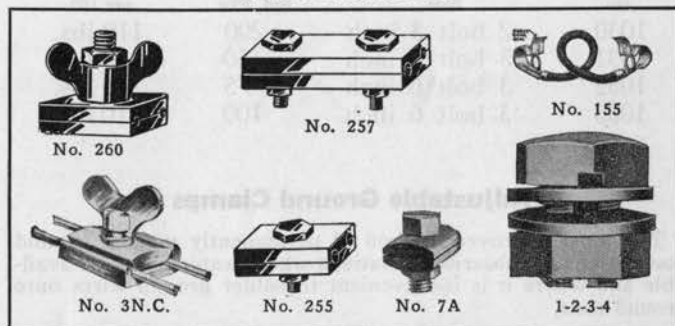


Fahnestock connectors are made of special copper bronze spring metal for different size of wire and for connecting an iron to iron wire, a copper to a copper wire, or an iron to a copper wire.

When ordering be sure and state whether they are to be used on iron wire, copper wire, or on iron to a copper wire; also state the size of wire and gauge. For outside construction work a copper wire should never be fastened directly to an iron wire. In such a combination the copper wire will destroy the zinc coating on the iron wire and in a short time rust the wire, making a poor connection. The use of the iron to copper connector eliminates this difficulty. See table below for size.

Type	Takes B & S Gauge Wire Number	Size Length	Width	Screw Holes
3	10	1 1/8 x 3/8		No. 8
4	10	1 x 3/8		No. 8/32 threaded
5	10	1 1/8 x 3/8		No. 8
9	10	2 1/8 x 3/8		No. 8
30		1 1/8 x 5/8		
31		1 1/8 x 5/8		
34	10	2 3/4 x 5/8		

Test Connectors



These connectors are made from copper bar, very easily installed and insure good permanent contact.

Cat. No.	Style	Size Wire	Wt., Lbs. Per 100
7-A	1 Bolt	10 x 17 B.&S. ga.	6 1/4
255	1 Bolt	10 x 17 B.&S. ga.	6 1/4
257	2 Bolt	10 x 17 B.&S. ga.	11
260	1-Bolt-Wing Nut	10 x 17 B.&S. ga.	10
300-NC	1 Bolt	8 x 13 B.&S. ga.	7 3/4
155	No. 6 Telephone Battery		2 1/2
1	Brass Bolt	17 or 18 B.&S. ga.	2
2	Brass Bolt	12 B.&S. or 14 N.B.S. ga.	2 1/2
3	Brass Bolt	10 B.&S. or 12 N.B.S. ga.	5
4	Galv. Iron Bolt	12 B.W.G. ga.	5 1/2
6	Steel Brass Bolt	Copper Drop to No. 12 B.W.G. Iron	11

Kellogg

EXTINGUISHERS, FUSES, GUY PROTECTORS, HANGERS

Pyrene Fire Extinguishers



Pyrene
with
Bracket

Pyrene Fire Extinguishers are the safest and most efficient type for electrical and all fires starting in oil, gasoline, shellac, paints, or other highly inflammable substances. Water only spreads oil fires and it is dangerous to use water on electrical fires.

Insurance companies recognize the value of Pyrene and grant a 15% reduction in automobile fire insurance when cars are equipped with Pyrene. Reduction in premium is also given for Pyrene equipment on other risks.

Pyrene Liquid will not injure switchboards, or any other electrical apparatus. It is a non-conductor of electricity. Always use Pyrene liquid in refilling Pyrene extinguishers.

Tested, approved and labelled by the Underwriters' Laboratories, Inc.



Pyrene Liquid

Fuse Wire

Blow-Rite Fuse Wire



Blow-Rite Fuse
Wire

Blow-Rite Fuse Wire is a copper alloy made especially for lining telephone fuses. It has great tensile strength and can be soldered without fear of burning the wire. It is rated at its exact blowing point and does not corrode or crystallize as ordinary fuse wire does.

Blow-Rite Fuse Wire is put up on 300-foot spools for use in relining telephone fuses.

Made in 1, 2, 3, 4, 5, 7 and 10 amperes blowing point.

Blow-Rite Terminal and Protector Fuses



Sizes and types for every kind of telephone protector. When ordering fuses specify the code number of the protector to insure selection of correct fuse.

Cat. No.	Material	Length over all	Wt., per 1000
6	Wood	4 3/8 in.	40 lbs.
27	Wood	5 1/4 in.	43 lbs.
29	Wood	3 1/2 in.	38 lbs.
A-7	Wood	5 1/4 in.	70 lbs.
A-46	Wood	3 1/2 in.	30 lbs.
A-9	Composition	5 1/4 in.	90 lbs.

Copper Terminal Fuses



Postal Type
No. 137—1 3/8 x 1/4 or 2 x 1/4 in.
No. 21—2 x 3/8 in.
No. 11—2 1/8 x 3/8 in.
No. 25—2 1/2 x 1/2 in.



Western Union Type
No. 19—2 x 3/8 in.
No. 8—2 1/8 x 3/8 in.
No. 22—2 1/2 x 1/2 in.

The workmanship is excellent, insuring 100 per cent good fuses.

When ordering specify code number and amperage. Fuses packed 50 per box.

Note: The enclosed type of fuse is recommended and all orders not specifying will be filled with that type. All of the above styles are carried in stock in the enclosed type in both 1/4 and 1/2 amperes.

U-Cable Guards and Straps

(Hot Galvanized)

"U" cable guards are made from 14 gauge sheet steel formed into U-shape for protecting telephone cables. The U-shape affords additional strength necessary against collision, and the rounded surface protects the pedestrian.

Cat. No.	Size In. Ft.	Std. Pkg. Quan.	Wt., Lbs. per 100
985	1 1/2 x 6	5	450
986	2 3/8 x 5	5	750
987	2 3/8 x 8	5	1225
988	3 3/8 x 5	5	1100
989	3 3/8 x 8	5	1750

Mounting Straps

	Size Steel Inches	Used with Cable Guard	Std. Pkg. Pkg.	Wt., Lbs. per 100
995	3/4 x 1/8	985	150	13
996	3/4 x 1/8	986-7	150	21
997	1 x 1/8	988-9	150	55

Guy Wire Protectors

(Hot Galvanized)

This guy wire protector is made of heavy gauge steel in semicircular form. While comparatively light and easy to handle for its length, the convex shape makes it unusually strong. Each protector is provided with a simple clamping device 18 inches from each end by which the protector is fastened securely to the guy wire, in any required position.

Just screw the nuts from protector in the desired position.

Furnished as follows:

Cat. No.	Length, Feet	Finish	Wt., Lbs. Each
1601	7	Galvanized	9 1/3
1603	8	Galvanized	10 1/3

Universal Messenger Hangers

(Hot Galvanized)

The curved groove in which the strand is secured makes this hanger particularly adaptable for curves and at the same time affords a secure hold for straight line work.

The upright section is furnished with two mounting holes, the upper one 3/8 inch in diameter and the lower one 1/8 inch in diameter. Either lag screws or machine bolts, or one of each, may be used in mounting the hanger on the pole. Manufactured in two sizes. No. 2 for 3/8 inch strand and smaller. No. 1 for 1/2 inch strand and larger; No. 1 weighs 300 lbs. per C. No. 2 weighs 240 lbs.

Guy or Jay Hooks

(Hot Galvanized)

The 1 3/4 x 3/8 x 4 in. one bolt Guy Hooks should always be recommended for use in connection with guys to keep them from slipping down. It is better to use a 1/2 in. or 5/8 in. thru bolt in preference to a lag screw, as they hold better and are not apt to tear the wood.

Cat. No.	Description	Weight per C
1016	1 1/4 x 1/4 x 3 in. 1 bolt	30 lbs.
1017	1 1/2 x 3/8 x 3 1/2 in. 1 bolt	75 lbs.
1018	1 1/2 x 3/8 x 6 in. 2 bolt	90 lbs.
1019	1 3/4 x 3/8 x 4 in. 1 bolt	90 lbs.

Kellogg

HOLDERS, KNOBS, INSULATORS, JACKS

Holders

Kellogg Guy Thimble Holder

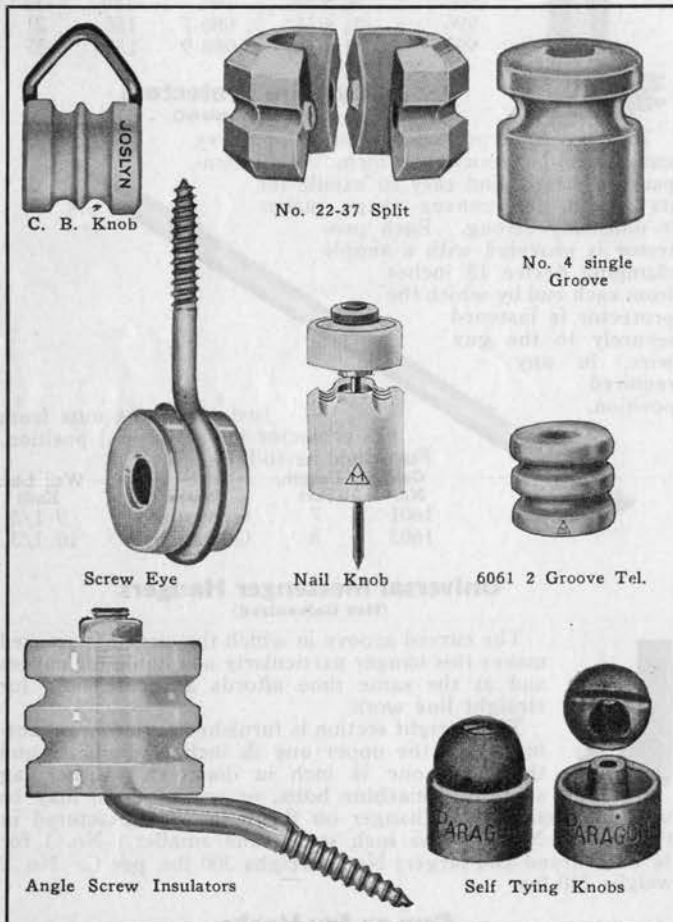


Showing
Thimble
Holder
in place

The use of a guy thimble in the eye of a standard anchor rod makes a larger and more uniform bend in the messenger or guy wire than can be obtained with the so-called Patented eye rods. The Kellogg holder eliminates the difficulty and danger incident to holding the thimble in place; with this device the guy can be pulled by fastening the fall rope of the blocks to a truck. After the guy is pulled the tool is easily removed by hand and the guy clamp bolted in place. Enables a crew of linemen to place anchor guys in one-half the time. Manufactured from heavy cast iron and covered with a heavy coating of black enamel and will last a lifetime. Shipping weight, 3 lbs.

Knobs

Porcelain Knobs

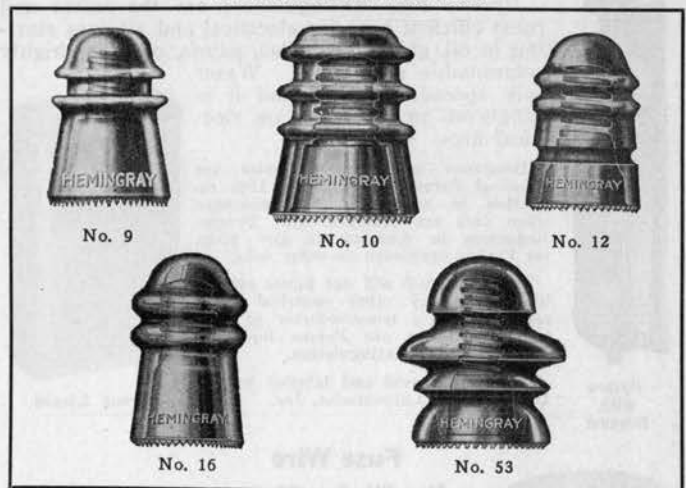


Cat. No.	Height	Diameter	Number Per Bbl.	Weight per 1000
6061	2 Groove Tel.	1½ in.	1900	221 lbs.
6062	4 Groove Tel.	2¼ in.	1000	395 lbs.
4	Single Groove	1½ in.	2200	230 lbs.
4	Double Groove	1½ in.	2000	225 lbs.
	Nail Knob	1¾ in.	2500	185 lbs.
	No. 22 Split Knob	1½ in.	1200	382 lbs.
	No. 37 Split Knob	1½ in.	1800	250 lbs.
	CB Knob			250 lbs.
	Insulated Screw Eye	1 in.		80 lbs.
	Self Tying Knobs			490 lbs.

Angle Screw insulators furnished less knobs.

Insulators

Screw Thread Glass Insulators



Cat. No.	Description	Std. pkg. Quantity per box	Wt., lbs. per 1000 pkd. in boxes
9	Single Groove Pony	250	632 lbs.
10	Exchange Line	250	692 lbs.
12	Double Groove Pony	250	688 lbs.
16	Long Distance New Style	175	1700 lbs.
53	One-Piece Transposition	50	2080 lbs.

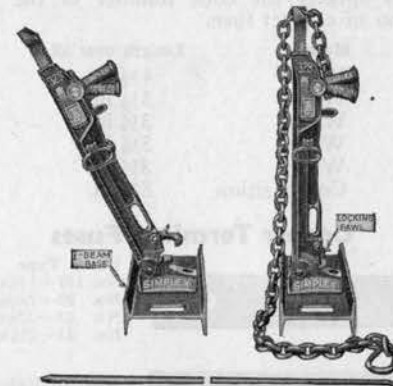
Porcelain Tubes

Unglazed



Length Under Head	Inside Diam.	Outside Diam.	No. Per Bbl.	Wt. Lbs. per 1000
3 in.	⅝ in.	⅞ in.	4500	65
4 in.	⅝ in.	⅞ in.	3600	80
6 in.	⅝ in.	⅞ in.	2000	120
6 in.	¾ in.	1 in.	1400	200
8 in.	¾ in.	1 in.	1200	210
10 in.	¾ in.	1 in.	1000	265

Pole Pulling and Straightening Jacks



No. 329 Simplex, 15 tons

This is the only jack designed and made especially for pulling, straightening and lowering telephone, telegraph, electric light, power and railway poles—also for municipalities and public utilities having pole equipment.

Present day efficiency standards of public utilities demand better, quicker and more economical methods of handling this pole construction and maintenance work than insured by ordinary labor with ordinary tools. The No. 329 Simplex handles every phase of pole work with unequalled efficiency, dispatch and economy.

Kellogg

MISCELLANEOUS

Bar Solder



Kellogg Special wiping solder is made to rigid specification and is recommended for all cable splicing.



Ordinary bar solder "Half and Half" also for cable splicing.

Kester Rosin Core Solder



Just the thing for soldering delicate electrical connections such as switchboards, instrument repairs and installations. It has two items in one—solder and flux. Solder is a hollow wire filled with rosin flux; as solder melts flux flows out on the job, insuring a perfect bond. Put up in 1, 5 and 10 pound spools.

Plain Wire Solder

Used for general line work in connection with some kind of flux. Same as list 111 only in wire form.

Allen Soldering Stick



A convenient form of soldering flux of the same quality as Allen paste, catalog Number 039534.

Allen Soldering Salts



A combination of several of the most efficient soldering agents in a convenient soluble form. Gives off no obnoxious gases. Very superior to the old-time acid.

Cat. No. 039547..... 1/2 lb. bottles
Cat. No. 039548..... 1 lb. bottles

Allen Soldering Paste



Will not corrode or injure surface to which it is applied. Ideal for soldering with torch or soldering copper.

No. 039538..... 2 oz. can
No. 039565..... 4 oz. can
No. 039539..... 8 oz. can
No. 039540..... 1 lb. can

Solderall



This material will join all metals except aluminum. Strength and durability equal to regular solder. Contains pure pulverized solder combined with non-corrosive flux, ready for instant use.



Marlin

Made from the best grade of long line Three-Ply American hemp selected material and thoroughly tarred. Furnished in 1 pound balls.



Kellogg Friction Tape

Kellogg Black Friction Tape

An excellent tape with good adhesive qualities and made to our specifications. Put up in 1/2 lb. rolls. Standard width, 3/4 in.



Manson Friction Tape

Manson Friction Tape

Put up in 1/2 lb. tins, width 3/4 in.

Okonite Tape

A rubber tape put up in 1/2 lb. packages, 3/4 in. wide and suitable for all telephone or electrical purposes.

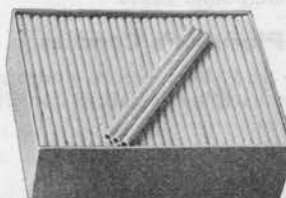
Lead Sleeves

Lead sleeves for making splices at cable junctions are furnished with a 1/8 in. wall, and the following table is furnished based on straight splices using No. 22 gauge conductors for convenience in determining the proper number of pounds to specify for each sleeve. These estimates are approximate only.

Straight Splice			
Size of Cable	Inside Diameter	Length	Weight of Sleeve
10-15	1 1/4 in.	16 in.	3.5 lbs.
25-30	1 1/2 in.	16 in.	4.25 lbs.
50-100	2 in.	18 in.	6.25 lbs.
100-150	2 1/2 in.	18 in.	7.75 lbs.
200	3 in.	20 in.	10.25 lbs.
300	3 1/2 in.	22 in.	12.75 lbs.
400	4 in.	22 in.	14.5 lbs.
600	4 in.	22 in.	16.6 lbs.

Length of sleeve is of course optional, according to splices. Sleeves cut to any length.

Paper Sleeves



Paper sleeves are used to insulate bare joints of cable construction where splices have been made, one sleeve used on each wire of each pair at junction making a compact and reliable insulation.

Diameter Inches	Used for Straight Splices	Standard Package	Weight lbs. per 1,000
1/8 x 3	22 ga.	175	1
1/8 x 2 3/4	22 ga.	175	1
1/8 x 3	19 ga.	110	1

Kellogg

TCI Library www.telephonecollectors.info

MISCELLANEOUS

Cotton Slewing

Cat. No.	Size, Inches	Yard per Lb.	Remarks
1	$\frac{1}{8}$	280	Furnished in 1 and 5 lb. spools
3	$\frac{3}{8}$	230	

Waxed Cotton Slewing

Cat. No.	Size Inches	Approx. Length Inches	Carton Contains
4	$\frac{3}{8}$	4	Appr. 350 pcs.

Cable Pastors

Small strips of white paper gummed on one side are provided for use in limiting the length of a wiped joint and giving it a neat and finished appearance. These strips are 2" x 11". Also furnished in rolls of 800 feet.



Metal Rim Tags—No. 32

Used for any purpose where it is found necessary to tag cable or wires as a means of designation after they have been tested out and assembled in groups, made of thin tough cardboard and bound with metal. Can be used over and over for the same purpose. One inch in diameter.

Insulating Cable Compound

For insulating and sealing pot-heads and cable terminals or for any purpose where insulation and protection from moisture of wires or current-carrying parts is desired. It is normally hard, forming into the mold or container, but when heated can readily be poured. Furnished in one-gallon cans. Will not run in temperature less than 190 degrees. Not shipped in less than one-gallon cans. Approx. weight, 10 lbs.

Paraffine

Commercially refined, white paraffine is used for "boiling out" paper insulated cables before splicing. Furnished in any quantity desired.

Yellow Wax



Faultless A-1 wax is ideal for impregnating or boiling out cable forms, cores of wool or silk and cotton cables to render them moisture resisting and prevent the insulation from fraying. Furnished in one-pound cakes.

Plumber's Candles

Used to apply to lead sheet before pouring on hot lead in making splices; also used by installers for illumination while working in dark places.

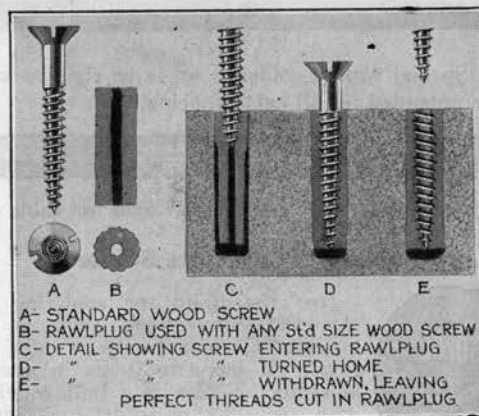
Cat. No.	Length	Diameter	Weight, each
3	7½ in.	1¼ in.	4 oz.
5	5½ in.	1¼ in.	3 oz.

Insulated Staples

For retaining interior telephone or bell wire on wood surface.

Cat. No.	Description	Length
1	For hardwood	½ in.
3	For general use	¾ in.
5	For hardwood	⅝ in.
6	For general use	¾ in.

Rawlplugs



Rawlplugs enable an ordinary screw to hold in any material. Made of stiffened, longitudinal, jute fibre strand so cemented that once in a position they never crumble or pulp, and are unaffected by heat, cold or moisture and impervious to decay. Use ordinary wood screws corresponding with the size of the Rawlplug. No. 8 plug takes a No. 8 screw, etc. Rawlplugs can be had in sizes from 1 to 22, and in ½, ⅝, ¾, 1, 1½, 2 inches in length. They come packed in boxes of 100 of a size or in a handy box of 100 plugs of assorted sizes. When ordering be sure to specify sizes of screw plugs they are to be used with.



Milonite or Perfection Nails

For use in installing interior telephone wire where a neat and workmanlike job is desired on woodwork around baseboards, casings and mouldings. Furnished only in boxes of 1000 each. Weight, 2 lbs. per 1000.

Cat. No.	Color	Diam. Head Inches	Length Inches
1877½	Dark Green	$\frac{1}{8}$	½
1882½	Oak Tan	$\frac{1}{8}$	½
1877¾	Dark Green	$\frac{1}{8}$	¾
1882¾	Oak Tan	$\frac{1}{8}$	¾
18777/8	Dark Green	$\frac{1}{8}$	7/8
18827/8	Oak Tan	$\frac{1}{8}$	7/8

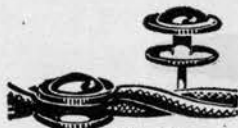
Eureka Insulated Nails



These nails consist of an oval head wire nail, reinforced by a top fibre disc and a flexible rubber bushing.

Cat. No.	Size	Color
31	⅝ in.	Gray
32	¾ in.	Gray

Eureka Fibre Insulators



The Eureka Fibre Insulator consists of a round head nail, reinforcing a top fibre disc, a flexible rubber bushing and a lower fibre disc. The twisted wire loop is placed between the disc and the nail driven, whereby the rubber bulges, giving a thick insulation and the wires are clamped between the discs.

Cat. No.	Size	Color
101-Oxidized	¾ in.	Gray

Kellogg

PAY STATIONS, RINGS



No. 11

No. 11 Pay Station

The No. 11 will fit any regular wall telephone in present use. Connected to the telephone by means of a mounting plate furnished with the pay station.

Weight, each, 17 lbs.

No. 11-A—Same as shown with extra large money drawer.



No. 14

No. 14 Pay Station

The No. 14 is designed for general portable business. Made to fit any make desk telephone. In ordering state type and make of desk to be used and fittings will be furnished accordingly. Has nickel, dime and quarter slots. Weight, each, 16 lbs.



No. 23-D

No. 23-D Pay Station

The No. 23-D station is very compact and includes all connections and switchhook. Upper compartment is hinged, allowing inspections without entering the money drawer or disconnecting any wiring, the repair man and inspector being confined to this section while the collector has the lower. Used with desk stand box; transmitter and receiver of regular set. Furnished without receiver and transmitter. Has nickel, dime and quarter slots. Weight each, 20 lbs.

National Cable Rings

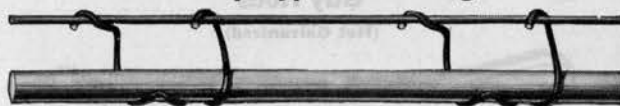


These rings grip the messenger with two prongs. With both prongs in place on the messenger, the ring forms a tension that holds the grip of the prongs on the messenger so tight they positively cannot slip. The harder the pull the tighter the grip. Wide opening between the two prongs makes National rings especially desirable for recliping. They are made of high carbon wire galvanized to stand the Standard Four Immersion Test. These rings can be furnished in the following sizes.

In ordering specify size of strand on which rings are to be used.

Size Inches	Size Strand Inches	Size Cable Pairs	Std. Pkg. Quan.	Wt., Lbs. per 1000
1½	⅝, ¾	5-50	2000	55
2 light	⅝, ¾	50-150	1000	62
2 heavy	⅝, ¾, ⅞	50-150	1000	80
2½	¾, ⅞, 1	150-300	1000	98
3	¾, 1	300-500	500	120
3½	1	500 and over	500	135

Never-Slip Type Cable Rings



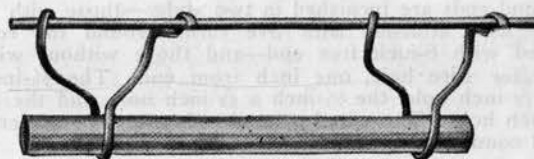
Four Bearing

Never-Slip Cable Rings are applied by hand, no tools being required. Rings fit ¼ to ½ inch strand. Never-Slip rings can be installed over or removed from an existing cable without injury to ring or strand. They can be salvaged if desired to use in another place, and require fewer rings per mile. It costs less to use Never-Slip rings.

1½, 2 and 2½ inch rings are usually spaced 24 inches on centers, while 3 inch and larger are spaced 20 inches apart. When ordering, specify size strand rings are to be used on. Packed 500 to sack.

Cat. No.	Size Inches	Size Cable Pairs	Wt., Lbs. per 1000
1½	1½	5-50	114
2-L	2	50-150	122
2-H	2	50-150	166
2½	2½	150-300	186
3	3	300-500	200
3½	3½	500 and over	224

Duplex Cable Ring



Two Bearing

The V bottom of the Duplex cable rings prevents lateral movement of the cable independent of ring, and the additional surface aids in supporting the cable more securely. Both suspension hooks grip the messenger wire. They are very easily clipped around an existing cable. The cable can be pulled from any direction. Smooth, galvanized finish. Specify size strand rings are to be used on.

Size Inches	Std. Pkg. Quan.	Wt., Lbs. Per 1000
1½	1000	76½
2	1000	88½
2½	1000	127½
3	500	139
3½	500	150

Bridle Rings

Galvanized and enameled bridle rings are both used for retaining wire in place without forming into hand-made cables or fastening with nails or staples. Each ring has a ¼-inch opening which eliminates threading wire through the eye, thereby preventing kinks and breakage of wire.

Style	Size, Eye Inches	Length of Shank	Opening	Weight per 1000
A	1⅝	1¼	⅝	160 lbs.
C	1¼	1¼	⅝	140 lbs.
E	⅝	⅞	⅝	48 lbs.
F	3	1⅞	⅝	540 lbs.

Drive Rings (Galvanized)

These Drive Rings are designed to accomplish the same purpose as the Screw Bridle Ring. They are easy to attach, being driven in with an ordinary hammer, and will hold securely.

Diameter of Eye	Wire Gauge	Over-all Length
½ in.	No. 11	2 in.
1¼ in.	No. 9	3 in.

Kellogg

RODS, PLATES, SEATS, SIGNS

Guy Rods

(Hot Galvanized)



Guy or Anchor Rods with welded eyes are furnished unless otherwise specified. Forged eyes can be furnished when requested.

Cat. No.	Size	Weight per 100	Diameter of Eye
1000	1/2x5	295	3/4 in.
1002	1/2x6	340	3/4 in.
1005	5/8x5	500	7/8 in.
1006	5/8x6	590	7/8 in.
1007	5/8x7	680	7/8 in.
1011	3/4x7	950	1 1/8 in.
1012	3/4x8	1080	1 1/8 in.
1015	1x10	2900	1 3/8 in.

Ground Rods

(Hot Galvanized)



Ground rods are furnished in two styles—those with No. 10 copper wire attached with five turns around the rod and soldered with 6-inch free end—and those without wire but drilled for wire hole, one inch from end. The 3/8-inch rod has a 1/8-inch hole, the 1/2-inch a 3/8-inch hole, and the 5/8-inch a 1/2-inch hole. The wired ground rods are to be preferred, as a good connection is assured at all times.

Plain Ground Rods

Cat. No.	Size	Weight per 100
1102	3/8x5	152
1103	3/8x6	196
1104	1/2x5	300
1105	1/2x6	360

Wired Ground Rods

Cat. No.	Size	Weight per 100
1098	1/2x5	340
1099	1/2x6	370
1100	5/8x6	665

Thimble Eye Guy Rods

(Hot Galvanized)



The Seyler No-Thimble Eye Guy Rods have been designed with the drop forged eye to eliminate the use of thimbles. The eye has a wide bearing surface that will not cut the strand, and is large enough to hold two or three strands if necessary.

Cat. No.	Size	Inside Diameter Eye	Std. Pkg. Quantity	Wt., Lbs. per 100
7406	1/2 in. x 6 ft.	7/8 in.	10	400
7416	5/8 in. x 6 ft.	1 in.	10	680
7418	5/8 in. x 8 ft.	1 in.	10	830
7426	3/4 in. x 6 ft.	1 1/8 in.	5	960
7428	3/4 in. x 8 ft.	1 1/8 in.	5	1245
7438	1 in. x 8 ft.	1 3/8 in.	3	2300
7440	1 in. x 10 ft.	1 3/8 in.	3	2600

Butt Plates, or Hub Guards

(Hot Galvanized)



Butt plates are used to protect the base of poles from injury by wheel hubs, etc. Holes are punched 3/8 in. diameter for 1/8 in. boat spikes or nails.

Cat. No.	Size	Weight per 100
1037	18x16x1/2 inch	1200 lbs.

Strain Plates

(Hot Galvanized)



Strain plates are used for the same purpose as pole shims; that is, to protect the pole where guy wires pass around it. The strain plates have been adopted by some companies in preference to shims, as they cost no more and are very easy to install.

Cat. No.	Size	Gauge Stock	Weight per 100
1034	4x8 inch	No. 14	90 lbs.

Pole Shims

(Hot Galvanized)



Pole shims (or strain plates) should always be used underneath guy wires to protect the wood. They are punched with 1/4-inch nail hole 3/4 inch from each end.

Cat. No.	Size	Weight per 100
1036	1 1/4 x 3/8 x 8 in.	60

Iron Pole Steps

(Hot Galvanized)

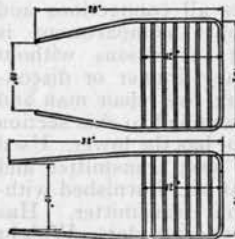


Used for stepping large expensive poles where companies prefer to furnish them in place of using climbers, as climbers cut into and spoil the surface. Especially used where poles are to be painted and where terminal is located.

Cat. No.	Size	Weight per 100	Per Keg
1116	1 1/8 x 9 in.	69	325
1117	5/8 x 9 in.	83	250
1118	5/8 x 10 in.	92	250

Pole Seats

(Hot Galvanized)



In spite of its light weight, this type of seat is very rigid and strong. The frame and braces are made of 1x1/2 inch channel iron and the cross bars on the seat are of 3/8 inch square bars with the edge up, which provides a rough surface and prevents slipping. There is sufficient space between the cross bars to prevent ice and snow from collecting. Each brace is secured to the pole by means of two 1/2 inch lag screws and the frame by means of two 5/8 inch lag screws. They are designed to fit a 10 inch diameter pole, but may be fitted to 8 or 12 inch diameter poles. The seat frame is made of steel.

Cat. No.	Seat Size	Wt. per 100
755-285	16 1/2 inch Wide Steel Frame Seat	1400
757-287	13 inch Wide Steel Frame Seat	1260

Pay Station Signs



No. 1—3 Colors



No. 2—3 Colors



No. 4—2 Colors

These signs are attractively made of porcelain enamel on 18 gauge steel plate and are guaranteed never to fade or tarnish from the effects of the weather. They will last a business lifetime.

Cat. No.	Colors	Size	Weight, ea.
1	Blue, White and Red	17x18 inches	5 1/2 lbs.
2	Blue, White and Red	8x18 inches	2 1/2 lbs.
4	Blue and White	8x18 inches	2 1/2 lbs.

Kellogg

SLEEVES, SWITCHES, SCREWS, JUNCTION BOXES

Double Tube Splicing Sleeves



The use of double tube sleeves is recommended for making all connections in straight line splices. Use copper sleeves for copper wire. Use tinned copper or tinned steel for iron wire. They are made accurately and very close to the size of wire for which they are intended. When twisted they draw snugly around the wire, forming an absolutely solid joint which air and moisture cannot penetrate. When ordering copper sleeves use B. & S. gauge in specifying. When ordering tinned copper use B. W. G. gauge.

Copper and Tinned Copper

B. & S.	B. W. G.	Full Length	Half Length	Full Length Ship. Wgt. Per 1000
10	12	4 3/4"	2 3/8"	45 lbs.
12	14	4 1/2"	2 1/4"	29 lbs.
14	16	4"	2"	20 lbs.
16	18	4"	2"	20 lbs.
17	19	4"	2"	17 lbs.

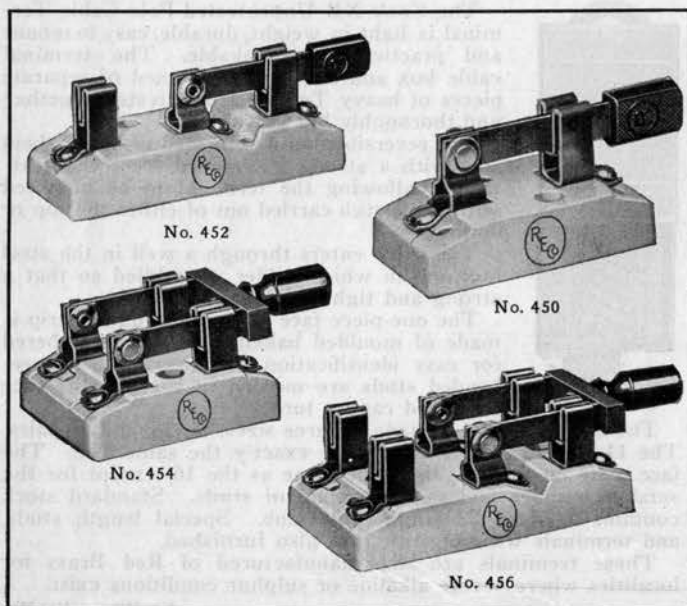
Tinned Steel Sleeves

10	5 1/2"	2 3/4"	53 lbs.
12	4 3/4"	2 3/8"	38 lbs.
14	4 1/2"	2 1/4"	30 lbs.
16	4"	2"	17 lbs.

Combination sleeves can also be furnished in standard sizes. To avoid errors when ordering specify kind and size of wire sleeves are intended for. When ordering steel sleeves use B. W. G. gauge.

Baby Knife Switches

Porcelain Base



Cat. No.	Style	Dimensions Inches	Std. Pkg. Quan.	Wt., Lbs. per 100
450	S.P.S.T.	2 7/8 x 1 1/4	100	37
452	S.P.D.T.	3 3/8 x 1 1/4	100	61
454	D.P.S.T.	2 7/8 x 2	100	63
456	D.P.D.T.	3 3/8 x 2	100	105

Wood Screws



Common wood screws are regularly made in both iron and brass with three styles of head—flat, round and oval.

The sizes are designated by length in inches and by diameter in numbers of the American screw gauge. The length measurement includes the head of the flat heads, about half the head of the round heads and the countersink portion of oval heads.

All standard sizes from 1/4 in. to 6 in. are carried in stock. Furnished in blued, bright or nickel. The following are carried in galvanized: 1 1/2 x 16 round head, 2 1/2 x 16 flat head, 3 x 16 flat head, 3 1/2 x 16 flat head, 3 1/2 x 18 flat head and 4 x 18 flat head.

Junction Boxes



This device permits a first-class splicing of lead-covered telephone cable in a simple and inexpensive way. The box is 10 inches in diameter by 18 inches high. It is made of steel galvanized with removable front, to allow ample room for making cable connections.

Self-soldering nozzles are provided, as specified. Customers should state the size of cable they wish to bring into the box, and the size they wish to bring out. Cable should be permanently soldered to nozzles, as described under the S-6 terminal. The bottom of the junction box should be filled with compound to a depth of one inch.



The removable front is fastened to the box, over a rubber gasket with machine screws, and should be set up so as to make the box air-tight. The box is mounted on the pole with a malleable iron bracket, and covered with a galvanized iron hood.

Where it is desired to distribute part of a cable only, the junction box can be used with any of Cook type S protected terminals. The terminal should be ordered with the junction box and will be furnished assembled in one unit with galvanized hood to cover both. Customers should state size terminal wanted and size of cable to be brought into junction box and the size or sizes to be brought out.

Junction Boxes

Cat. No.	Description	Wt., Lbs. Each
1885	Junction Box only, for use without terminal	27
1886	Junction Box, for use with terminal	27

Self-Soldering Nozzles

Cat. No.	Size Pair	Outside Diameter Nozzle, Inches	Opening Inches
1890	10	1	5/8
1891	15 or 20	1 1/4	3/4
1892	25	1 1/2	1
1893	30 to 50	1 3/4	1 1/4
1894	60 to 75	2	1 3/8
1895	75 to 100	2	1 1/2
1896	150	2 1/2	1 5/8

Kellogg

TERMINALS

Protected Type A-27

(Reliable)



A protected cable terminal with air-tight cable compartment to be used without pot-head for open wire distribution from lead covered aerial or underground cable. Arranged for mounting on pole and provided with hot galvanized steel cover and bracket. Fits pole without gaining.

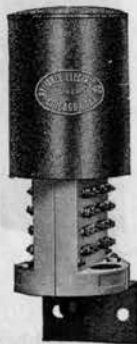
The treated maple protector mounting panels open wide to facilitate soldering. When specified these terminals are equipped with a No. 22 B. & S. gauge six-foot cable stub.

Each pair of protectors consists of two No. 27 tubular wood fuses, lined with five-ampere Blow-Rite fuse wire, two P197 carbon blocks and two P495 metal sawtooth self-cleaning discharge blocks. The fuse posts and carbon springs are phosphor bronze with contact points which bite into end pieces of the fuse.

Capacity Pair	Height	Weight Less Stub	Weight With Stub
11	13 in.	33 lbs.	37 lbs.
16	16 in.	35 lbs.	37 lbs.
26	23 in.	35 lbs.	68 lbs.
50	38 in.	71 lbs.	105 lbs.

Unprotected Type R

(Reliable)



An unprotected porcelain cable terminal to be used without pot-head for multiple tap distribution from lead covered cable. Arranged for mounting on pole and provided with galvanized iron cover.

The cable is brought into the terminal through a lead nipple and soldered to hollow lock nut binding posts which are embedded in the porcelain panels to prevent twisting and breaking of cable wires. When specified, these terminals are equipped with a No. 22 B. & S. gauge 6-foot cable stub.

Capacity	Height Over All	Net Weight Less Stub	Net Weight With Stub
5 pair	7¼ in.	4 lbs.	8 lbs.
11 pair	7¼ in.	4¼ lbs.	8 lbs.
16 pair	9¾ in.	6 lbs.	11 lbs.
21 pair	9¾ in.	6½ lbs.	11½ lbs.
26 pair	10¾ in.	8 lbs.	13½ lbs.

Unprotected Type GR

(Reliable)



A hot-galvanized cast iron cable terminal to be used without pot-head for multiple tap distribution from lead covered cable. Arranged for mounting on pole and provided with gravity cover.

The cable is brought into the terminal through a tinned brass nipple to which the sheath of the cable is soldered. The cable is protected from sharp bends by a bell-mouthed lead sleeve. The cable wires are soldered to terminals which are grooved into the maple panels to prevent turning and soldered to studs which are threaded for the heavy split lock nuts, with which drop wires are attached.

The wire openings at the bottom are just large enough to admit No. 17 B. & S. drop wires. The sides of the terminal are made a part of the cover to give plenty of room for dressing the bridge wires.

When specified these terminals are equipped with a No. 22 B. & S. gauge six-foot cable stub at top or bottom.

Capacity	Height Over All	Net Weight Less Stub	Net Weight With Stub
11 pair	8 in.	10½ lbs.	22½ lbs.
16 pair	10 in.	20 lbs.	25 lbs.
26 pair	12 in.	26 lbs.	34 lbs.

Protected Type S-6

(Cook)



The Cook S-6 Protected Pole Cable Terminal combines strength, light weight, rigidity, and perfect insulation. It is very compact and yet it has ample room for connecting both cable and jumper wires. No pot-head is required because of the self-soldering nozzle.

Fuses and carbons can be easily removed or replaced. Jumper connections can be readily made. Any circuit can be tested by removing a fuse and testing through the fuse holders.

Cable connections are made through hollow brass studs, set in hard rubber, which pass through the sides of the box. The outside ends of these studs are concave, and have sufficient solder to permit the copper wire to be permanently fastened by the touch of a hot soldering iron. The cable connections being made on the outside of the box can easily be inspected. On the jumper side, both screw and washer, and soldering connections, are provided for.

The S-6 terminal is equipped with Cook's standard tubular A-7, 5-amp. wood fuse, 4¾ inches between shoulders. The lightning arresters are grooved, treated carbons separated by celluloid dielectrics, U-shaped, .007 of an inch thick. True Gap Dischargers that will not ground the line can be furnished when desired.

Cat. No.	Capacity	Height	Wt. Each Less Stub Lbs.	Wt. Each With Stub Lbs.
1700	10 pair	14	15	20
1701	16 pair	17½	18	26
1702	26 pair	26½	26	32
1703	51 pair	39½	45	57
1880	102 pair (Twin 51 pair)	39½	100	115

Unprotected Type XB

(Cook)



The Cook XB Unprotected Pole Cable Terminal is light in weight, durable, easy to mount and practically unbreakable. The terminal cable box and bracket are formed of separate pieces of heavy Toncan Iron, riveted together and thoroughly hot galvanized.

The reversible hood is formed of heavy sheet zinc with a strong galvanized steel chain attached, allowing the terminal to be mounted with cable stub carried out of either the top or bottom.

The cable enters through a well in the steel box and in which solder is puddled so that a strong and tight connection is made.

The one-piece face plate and fanning strip is made of moulded bakelite, suitably numbered for easy identification of pairs. The square-headed studs are molded in the bakelite face plate and cannot turn.

The XB Terminal is made in three sizes, 11, 16, and 26 pairs. The 11 and 16 pair terminals are exactly the same size. The face plate on the 11 pair is the same as the 16, except for the smaller number and wider spacing of studs. Standard stock contains 6½-foot 22-gauge cable stub. Special length studs, and terminals without stubs, are also furnished.

These terminals are also manufactured of Red Brass for localities where severe alkaline or sulphur conditions exist.

Cat. No.	Description	Height Inches	Width Inches	Depth Inches	Net Wt. Without Stub	Net Wt. With Stub
3503	XB11—11 pair	12½	7	3½	5 lbs.	12 lbs.
3504	XB16—16 pair	12½	7	3½	5 lbs.	12 lbs.
3505	XB26—26 pair	15¼	7¾	3½	8 lbs.	22 lbs.

Specify whether stub is to be from top or bottom.

TESTING EQUIPMENT

Stewart Test Set



This test set tells which way and how far trouble is from the tester without opening the line or cutting the wire. It is equipped with a Detector Coil for use on insulated wire.

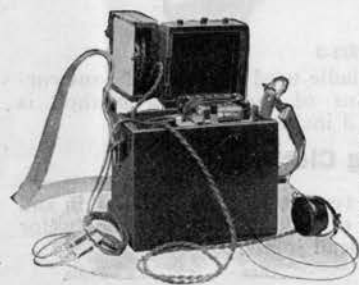
This Stewart Test Set is a complete portable telephone and talks up just as efficiently. It can be used as a complete local battery test set for telling trouble directions or as a common battery test set with transmitter in the external circuit. When desired, it can be used to furnish battery for testing on cable or other "dead" wire.

Both types of test sets come complete with all necessary cords and clips, receiver and head band, detector coil, full length shoulder strap and leather top cover.

"Midget Test Set" for light service, size $3\frac{1}{2}$ by $5\frac{3}{4}$ by $1\frac{3}{4}$ inches, weight 8 pounds.

"Heavy Duty Midget Test Set," size $4\frac{1}{2}$ by $6\frac{3}{4}$ by 8 inches, weight 12 pounds.

West Test Set



The Anderson Test Set is a reliable, compactly arranged trouble finder, and is a very efficient portable telephone. Trouble, such as shorts, crosses, grounds, or opens, can be quickly located without cutting the circuit to make the test. It is especially

valuable when used on lines which follow right-of-ways or where they leave the roads, as tests can be made every mile, or at points where the lines can be conveniently reached, thereby locating the trouble within a definite section. Shipping weight, 14 lbs.

Telefault-Matthews



The type L Telefault will find wet trouble of high or low resistance, grounds, crosses, split pairs and dead shorts. It will not "noise up" other working pairs. It only sends four volts out on a line. It has a tone test circuit which is more efficient than any other. The exploring coil and

receiver will tell whether power circuits are alive before touching them. Operates on one dry cell. Weight, 8 pounds.

Stewart Cable Tester



Locates shorts, crosses, grounds, and wet spots to an inch.

Operates on dry batteries.

As the Exploring Coil is neutral to the tone on the armor the Cable Tester is a success for locating water trouble. This patented feature is found in no other.

This instrument will pay for itself many times each year. Shipping weight, 18 pounds.

Stewart Detecto-Meter



Stewart Detecto-Meters are the most successful instruments made for locating bad joints, locating low resistance ringers, checking transmitters, receivers, induction coils, etc.

Reads resistance direct in ohms, the same as a volt-meter reads volts. Operates on one dry battery.

The instrument is also a 150-volt voltmeter and a battery tester.

It is portable, only weighing 4 lbs.

A very reliable, inexpensive instrument.

Stewart Direct Reading Test Cabinet



Reads resistance to trouble direct in ohms. Operates on 30-volts of battery. Can be furnished to operate on 24 volts battery for common battery exchange, if so ordered.

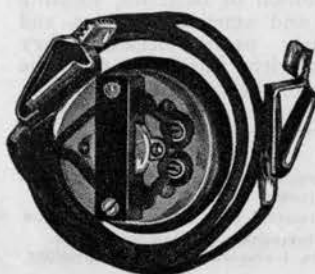
Any telephone man can install it in one hour's time, and anyone can use it. Push button marked Short, and it reads resistance to short. Button marked Ground L-1, reads resistance to ground on one side, and button marked Ground L-2 reads resistance to ground on other side.

Card furnished with each instrument gives distance for each reading on the different sizes of wire.

Furnished with 15-volt or 150-volt voltmeter scale as desired.

Shipping weight, 12 pounds.

Stewart Pocket Phone



This Pocket Phone is a combination transmitter and receiver in the same case, to be used as a common battery test set. It talks up as efficiently as a telephone, and when used as a receiver, it is a perfect receiver. Comes complete with cords and clips ready for use. Weight, 4 oz.

Kellogg

TESTING EQUIPMENT, TOOLS

Kellogg Volt-Ohm-Meter



Kellogg No. 279

A practical and accurate meter for testing armatures, dry cells, drop coils, fuses, heat coils, switchboard coils, transmitters and for countless other tests in and around the central office.

These volt-ohm-meters enable one to make tests that would ordinarily require the use of a voltmeter, an ammeter, a Wheatstone bridge, and a technical man familiar with their proper usage.

The low cost of these meters is quickly absorbed in the Magneto Exchange by the saving in dry batteries effected by elimination of high resistance transmitters. In addition there is the time saved in easily locating trouble.

The No. 279 volt-ohm-meter has a scale of 0 to 150 milliamperes, 0 to 3 volts and 0 to 1000 ohms.



Kellogg No. 280

The No. 280 volt-ohm-meter has a range of 0 to 3 volts and 0 to 30 volts, 0 to 10,000 ohms and 0 to 100,000 ohms.

Pocket Ammeters and Voltmeters



Cat. No. 34C Voltmeter

These instruments are especially valuable for indicating the strength and condition of batteries, locating ignition and starting troubles and particularly useful because they show polarity, this indicating the direction of the current.

Cat. No.	Reading
24	Ammeter—0.35 amperes, 1 ampere division
34C	Voltmeter—0.50 volts, 1 volt division
44	Voltammeter—0.35 amperes, 0.10 volts, 1 ampere and ½ volt divisions

Sheath Splitting Knives



No. 1515-1

A sturdy tool. Knife edge tempered and ground to a keen edge. The handles are made of leather and the weight per doz. is 6¾ lbs.

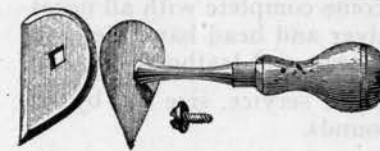
Cable Stripper Knives



No. 1560-2

For stripping heavy insulated wire and cable. Has hardwood handle, which fits the hand comfortably. Blade securely riveted in handle, but rivet is deeply countersunk, eliminating chance of shock. Length over all is 8½ inches, length of blade 3½ inches and weight per doz., 2¼ lbs.

Shave Hooks



No. 304

Used for scraping lead sleeves, pipe, cable ends, potheads, etc. The blade is fastened in place with a nut, so that it can be replaced when required. The pattern is half oval and weight per doz. is 2½ lbs.

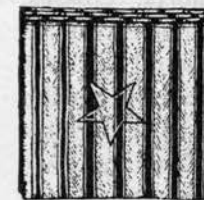
Pouring Ladles



No. 373-3

This is the standard type of ladle used for general construction where soldering by means of the pouring method is required. Diameter of bowl is 3 inches.

Wiping Cloths



No. 371

Made in two styles; one of moleskin and the other of ticking, used especially for wiping of lead joints.

Code No.	Size	Style
371-3	3x3	Moleskin
371-4	4x4	Moleskin
372-3	3x3	Ticking
372-4	4x4	Ticking

Melting Pots



No. 398-6

This pot is made of heavy cast iron to retain the heat as long as possible, provided with steel handle. The diameter across top of pot is 6 inches.

Turn Pins—Hardwood



No. 7700-2

For expanding ends of lead sleeves, pipe and pot heads.

Code No.	Size of sleeve expanded
7700-1	For 1 inch
7700-2	For 2 inch
7700-3	For 3 inch

Hardwood Dressers



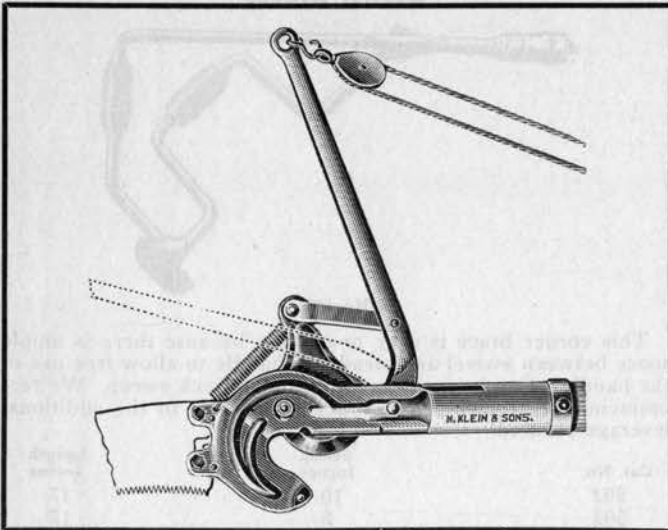
No. 296

No. 296. For shaping and dressing lead sleeving, pipe, potheads, etc.

Kellogg

TOOLS

No. 3628 Klein Tree Trimmer



This tool is entirely different than any other on the market. The entire head comprising hook and socket into which handle fits is sturdily constructed of pressed steel. The knife made of tempered tool steel is round in shape and arranged to rotate slightly with each cut thus providing the entire circumference of the blade for cutting and giving an edge more than three times the length of that on the ordinary blade.

The leverage makes this trimmer cut easily limbs up to 1 1/4 inch, both green and dry. So arranged that knife may readily be removed for sharpening or renewal.

Two threaded holes are provided for attaching saw.
Supersedes No. 3600 Klein Tree Trimmer.

Cat. No.	Size Overall	Weight
2628	12 1/2 inch	3 1/2 lbs.

Tree Trimmer Handles

Cat. No.	Size	Weight Each
3601-6	18 ft., 3 sections, brass ferrules.....	10 1/2 lbs.
3601-9	18 ft., 2 sections, brass ferrules.....	9 3/4 lbs.

Klein Tree Trimmers Saws



No. 913-12



No. 913-15

Teeth set to cut on up and down stroke. Readily attached to tree trimmer. The curved blade saw is particularly efficient and easy cutting even for large limbs.

Cat. No.	Size	Weight Doz.
913-12	12 in	4 1/2 lbs.
913-15	15 in.	6 lbs.

Cableman's Saw

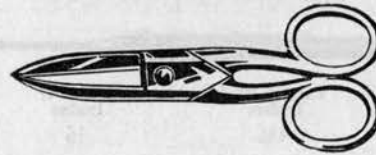


Cat. No. 24-14

This saw is arranged particularly for use on Cable work. One of these saws should be in every tool kit. Will also cut wood.

Length of blade is 14 inches and weight each 3/4 lbs.

Electricians' Scissors



No. 175-E-5

A scissor designed for the electrician and mechanic. Will stand continued hard service. Made of high grade steel properly tempered. Has a screw hinge, allowing adjustment. Nickel plated finish. The size is 5 inches and weight per doz. 2 lbs.

Electricians' Knives



No. 1550-2

1550-2 Double blade

Standard Blade Screw Driver



A superior quality driver. Blades of extra fine, special grade steel; every point given two severe turning tests before shipment. Selected hardwood handles finished in dead black, grooved and shaped for grip and comfort. Fastening of blades in handles by unique method, without pins; cannot loosen in use or even the usual abuse. Blades and ferrules finely polished. An extra strong, durable, well balanced tool.

Cat. No.	Length Blade Inches	Length Overall Inches	Wt., Lbs. per Doz.
90- 3	3	6 3/4	1 1/2
90- 4	4	9 1/4	2 3/4
90- 5	5	10 1/2	4
90- 6	6	11 3/4	4 1/4
90- 7	7	13	6
90- 8	8	14	6 1/4
90- 9	9	15	6 3/4
90-10	10	16 1/2	9 1/2

Cabinet Screw Driver



Same as standard style except light, slim blades. All lengths have about same size points. Blade same width all way back and slightly tempered entire length. Six in a box.

Cat. No.	Length Blade Inches	Length Overall Inches	Wt., Lbs. per Doz.
95- 4 1/2	4 1/2	8 3/4	1 1/2
95- 5 1/2	5 1/2	9 1/4	1 3/4
95- 6 1/2	6 1/2	10 1/4	1 3/4
95- 7 1/2	7 1/2	12	2 1/2
95- 8 1/2	8 1/2	13	2 1/2
95- 9 1/2	9 1/2	14	2 3/4
95-10 1/2	10 1/2	15	3
95-12 1/2	12 1/2	17	3 1/4

Ratchet Screw Driver



Save time and labor. No tiresome grip-and-let-go movement necessary. Right-hand Ratchet, Left-hand Ratchet and Rigid adjustments. Quickly changed by sliding shifter. Every blade given two severe twisting tests. Polished hardwood handles. Polished blades and nicked ratchet case.

Cat. No.	Length Blade Inches	Wt., Lbs. Per Doz.
10-3	3	3
10-4	4	3 1/4
10-6	6	4 3/8

Kellogg

TOOLS

Assembler Screw Driver



Cat. No.	Length Blade Inches	Diameter Inches	Wt. Oz. per Doz.
611-8	4½	⅛	12

Spiral Screw Drivers



These drive or draw screws by pushing on the handle or by a ratchet movement, or they can be made rigid as an ordinary screw driver. The movement is changed instantly by a simple shifter. Spindle can be locked closed. Three bits of different sizes furnished with each driver; of extra high quality steel and thoroughly tested. Metal parts nickel plated; hardwood handle polished.

Quick Return Style—Same as drivers above, but a spring added in the handle. Spring pressure keeps blade in screw slot and pushes handle back after each stroke. So driver can be used with one hand, if other is holding work or cannot reach. Quicker, handier and easier to use than other style. Bits and attachments same for both.

Cat. No.	Length with Bit, Closed, Inches	Wt., Lbs. per Doz.
30-A	13	12
130-A (Quick Return)	14¾	12¾

Automatic Drills

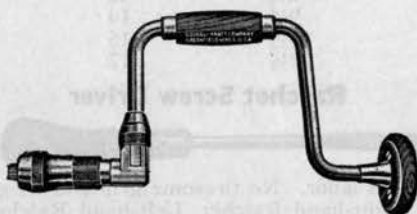


For rapidly boring holes in wood by pushing down on the handle, which is forced back by a spring. The drill point revolves backward on up stroke of handle, clearing the chips and freeing the point. Points are held in chuck so they cannot be pulled out.

Drill made of brass and steel, the outside nickel plated and polished. The handle is a magazine for holding the drill points. It is quickly closed and locked and when unlocked the drill points are forced up into plain sight. Eight drill points are included with each drill: ⅛, ¼, ⅜, ½, ⅝, ¾, 1, 1½-inch diameter. Extra points in wood boxes, either sets of eight, or dozen of one size.

No. 41. Capacity, holes ⅛ to 1½-inch diameter. Length including drill point 11¾ inches. Weight, per dozen, 8 lbs.

Ratchet Braces

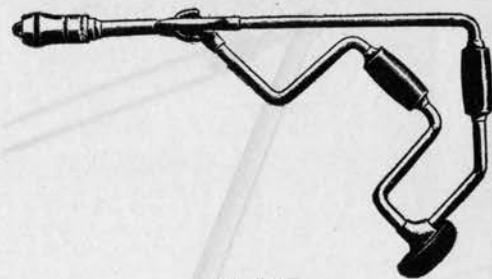


No. 5310

This Ratchet Brace is especially adapted for telephone work. The 10-inch sweep brace is most commonly used.

Cat. No.	Sweep Inches
5308	8
5310	10

Corner Braces



No. 502

This corner brace is easy to operate because there is ample space between swivel and steadying handle to allow free use of the handle. Can be furnished in 8 and 10-inch sweep. We recommend the 10-inch sweep brace on account of the additional leverage secured.

Cat. No.	Sweep Inches	Length Inches
502	10	17
503	8	17

Cross Arm and Pole Bit



A valuable addition to telephone companies' service car equipment. This single cutter tool having one outlying spur with one chip lifter has a very wide channel insuring proper elevation and clearance of chips. This style of head will bore very easily, smoothly and quickly through cross arms and poles. Twist, 12 inches long. Overall length, approximately 17 inches.

Cat. No.	Size Inches	Cat. No.	Size Inches
56-G-6	⅜	56-G-10	⅝
56-G-7	⅜	56-G-11	11
56-G-8	½	56-G-12	¾
56-G-9	⅞	56-G-14	⅞

Woodboring Brace Drill



The body of metal in the twist is sufficiently heavy to give strength but yet does not interfere with chip clearance. Length of twist varies from 2¼ to 4 inches and overall length from 4½ to 8 inches.

Cat. No.	Size Inches	Cat. No.	Size Inches
46-8	¼	46-16	½
46-10	⅜	46-18	⅝
46-12	⅝	46-20	¾
46-14	⅞	46-22	1

Bell Hanger Drill



This quality Bell Hanger Drill is made with 4½-inch twist and can be furnished in 12, 18, 24 or 30-inch lengths.

Cat. No.	Size Inches	Cat. No.	Size Inches
48-6	⅜	48-16	½
48-8	¼	48-18	⅝
48-10	⅜	48-20	¾
48-12	⅝	48-22	1
48-14	⅞	48-24	¾

Kellogg

TOOLS

Fibre Test Boards

Numbers that you can read. Numbers that will not wash off. Standard numbering.

Cat. No.	Numbering	Cat. No.	Numbering
810	1- 51	822	607- 657
811	51-101	823	657- 707
812	102-152	824	708- 758
813	152-202	825	758- 808
814	203-253	826	809- 859
815	253-303	827	859- 909
816	304-354	828	910- 960
817	354-404	829	960-1010
818	405-455	830	1011-1061
819	455-505	831	1061-1111
820	506-556	832	1112-1162
821	556-606	833	1162-1212

Side Cutting Pliers



No. 201 Pattern

The Lineman's Special Side-Cutting Plier is one of the most popular pliers in use today. Its handles are shaped to the curvature of the hand, a much desired feature. Powerful leverage and keen reinforced cutting knives make this plier adaptable for heavy cutting in telephone and telegraph work.

Cat. No.	Size in inches	Weight, lbs. per doz.
201-6 Kleins	6 inches	5
201-7 Kleins	7 inches	7½
201-8 Kleins	8 inches	12
201-9 Kleins	9 inches	12½

Side Cutting Pliers

With Sleeve Twister



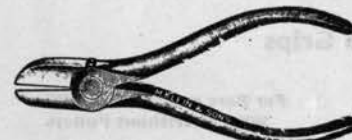
No. 212 Pattern

This plier is same as No. 201 series, with the addition of chambers for twisting double sleeve joints.

Cat. No.	Wt. per doz.	Size Sleeve Twister
212-6	5 lbs.	17 B. & S.
212-7	7½ lbs.	17 B. & S.
212-8	12 lbs.	10 B. & S.

Oblique Cutting Pliers

For Close Cutting



No. 202 Pattern

Electricians, telephone men and switchboard builders will find this particular oblique cutting plier one of the most useful in their kits. Cuts close, the narrow head permitting its use in confined places. The knives are perfectly fitted, so that they meet accurately at all points. This plier is of the lap joint type, and this superior feature makes it an advance over the old box joint method.

Cat. No.	Size in inches	Wt. lbs. per doz.
202-5 Kleins	5	4 lbs.
202-6 Kleins	6	4¼ lbs.

Long Oval Nose Pliers

Long Oval Nose Plier



No. 301 Pattern

Style 301-6 plier has been perfected to meet a long-felt want of the electrician and general mechanic. A special feature is its adaptability to stripping the ends of insulated wire. This tool is properly tempered and hardened, so that the jaw will not spring when pressure is applied.

No. 203-6 has the same features as the No. 301-6 series with the addition of the cutting knives. The knives are carefully fitted and the body of the plier is tempered and hardened, assuring true cutting.

Cat. No.	Size in inches	Weight, lbs. per doz.
301-6 Kleins (without cutter)	6	3 lbs.
203-6 Kleins (with cutter)	6	3 lbs.

Wire Splicing Clamps



No. 102-3

Forged from a select grade of tool steel properly hardened and tempered. Handles will not buckle when closed. Have polished heads and black handles.

No. 102-3—Standard Size

Used in telephone and telegraph line work, covering wide range of wires. Large hole can also be used in serving guy wire or messenger strand. Has six round holes accommodating all sizes of iron wire from 4 to 14 B. W. G. and all sizes of copper wire from 2 to 12 B. & S. gauge. Size in length, 10¾ in., weight per doz., 4¾ lbs.

No. 102-1 Baby Pattern

A handy vest pocket size adapted for telephone troublemen. Has fine round holes, accommodating all sizes of copper wire from 8 to 16 B. & S. gauge, and all sizes of iron wire from 10 to 18 B. W. G. Size in length 8 in., weight per doz. 4½ lbs.

Combination Wire and Sleeve Clamps

No. 132-12 Light Weight

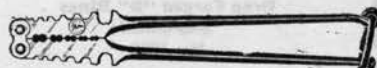


No. 132-12

Standard telephone clamp for general line and trouble work. Has four round holes, accommodating all sizes of copper wire from 6 to 12 B. & S. gauge, and all sizes of iron wire Nos. 8 to 14 B. W. G. The reverse side has four sets of chambers adapted for twisting double tube copper sleeve joints Nos. 8 to 14 B. & S. gauge, and iron sleeve joints Nos. 10 to 19 B. W. G.

Cat. No.	Size in Length	Weight per doz.
132-12 Kleins	9 in.	10¼ lbs.

No. 132-15 Heavy Weight



No. 132-15

Covers the range of bare wires telephone and telegraph linemen usually handle. The large hole also can be used in serving guy wire, or messenger strand. Has five round holes which will accommodate all sizes of iron wire Nos. 6 to 14 B. W. G. and all sizes of copper wire Nos. 4 to 12 B. & S. gauge. The reverse side has five sets of chambers adapted for twisting double tube copper sleeve joints Nos. 6 to 17 B. & S. gauge, and iron sleeve joints Nos. 8 to 19 B. W. G.

Cat. No.	Size in Length	Weight per doz.
132-15 Kleins	11¼ inches	15½ lbs.

The dies in the above clamps fit the sleeves snugly so the sleeve is not injured in twisting.

Kellogg

TCI Library www.telephonecollectors.info

TOOLS

Combination Steel Wrench For Lag Screws



No. 3109-20

These wrenches are forged from select bar steel. The slot is formed in a cross shape, and will fit machine bolts, nuts or lag screws, from $\frac{3}{8}$ inch to $\frac{5}{8}$ inch. The small end of the wrench is arranged for $\frac{1}{8}$ inch medium bolts or lag screws. The round hole allows the end of a bolt to come through as the nut is run on.

The jaw is wider at its upper end and when this wrench is put on a nut or bolt the tendency is to draw the bolt-head or nut into the wrench and prevent slipping off.

Cat. No.	Size in Length	Weight per doz.
3109-20 Kleins	13½ in.	20 lbs.

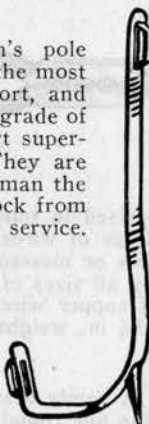
Eastern Climbers

In considering the manufacture of lineman's pole climbers, several points present themselves, and the most prominent to guide in output are safety, comfort, and longevity. They are produced from the very best grade of spring steel hardened and tempered under expert supervision, making them absolutely trustworthy. They are designed to fit the foot and limb, giving the lineman the greatest freedom of action and comfort. The stock from which they are produced insures long life and service. Furnished less strap, unless otherwise specified.

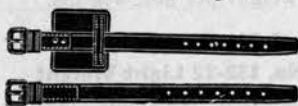
Code. No.	Style of loop	Weight, per pair
1900 Kleins	Riveted	3½ lbs.
1901 Kleins	Punched	3½ lbs.

Sizes 15½ to 17 inches carried in stock.

Lengths from 15 to 18 inches from the instep to the end of shank, by ½-inch variations, can be furnished.



Straps for Eastern Climbers



No. 5301-1

The set consists of two upper straps with 4x4 plain leather pads and two lower straps as shown in cut, made of select oak tanned harness leather, extra heavy "drop forged" roller buckles. Heel straps (over all), 22 inches long

by 1¼ inches wide; calf strap (over all), 22 inches long by 1¼ inches wide.

5301-1	Standard	15 lbs.
5301-2	Same as above, with sheep lined pads	16 lbs.
5301-3	Same as above, with felt lined pads	16 lbs.
5301-4	Straight strap without pad (2 straps)	6 lbs.
5301-5	Strap with plain pad (2 straps)	9 lbs.



DROP FORGED DEE RINGS AND BUCKLE

Tool Belts

Drop Forged "D" Rings
and Buckle
No. 5202

This belt is made of select harness leather. The top layer is 1½ inches wide, formed into six tool loops. It is provided with strong "D" rings securely sewed in and riveted to the main belt, which also passes through the "D" rings. This arrangement makes a strong, safe belt. They are made in lengths of 38, 40, 42, 44 and 46 inches. Always specify length. Sizes 38, 40 and 42 carried in stock.

Cat. No.	Sizes	Weight per doz.
5202	2¼ in.	22 lbs.
5204	3½ in.	24 lbs.

Safety Straps

Drop Forged Snaps
and Buckle
No. 5253



This style of safety strap is known as the standard type. These straps are cut out of selected harness leather, securely sewed, riveted and doubly reinforced. Only the best grade hardware is used. Snaps are of Imperial type, japanned. Strap may be shortened or lengthened by adjusting buckle.

Cat. No.	Description of Snap	Sizes in inches	Wt. per doz.
5250	Imperial	1¾ in. x 6 ft.	30 lbs.
5253	Roller	2 in. x 6 ft.	32 lbs.

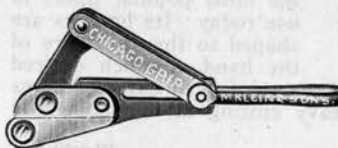
Tool Belt and Safety Strap

The tool belt in this outfit is the same as No. 5202. The safety strap is the same as No. 5250—1¾ inches wide and 6 feet long, and is provided with a strong snap at each end. Strap may be shortened or lengthened by adjusting buckle, or it may be detached from the belt. Outfit complete, weight 42 lbs. per dozen.



No. 5206-1-A

Chicago Grips Without Pulleys



No. 1613-20

Main body piece and lever are forged steel. Draw parts are of wrought steel. Gripping jaws are machined smooth. Rivets are machine turned and workmanship throughout is first class.

Once this grip seizes the wire it holds on with the tenacity of a bulldog. The harder the pull, the tighter the hold. It pulls straight without leaving kinks in the wire. It is handy to put on and holds itself in place by means of a spring acting on the compressing lever. A noteworthy feature is the arrangement of the draw link so that it does not hang down at right angles, and is therefore not in the way of the line when the grip is put on.

Cat. No.	Size of Wire Smaller Than	Weight, Each
1613-30	No. 6	1½ lbs.
1613-40	No. 0	2½ lbs.
1613-50	No. 0000	7½ lbs.

Chicago Grips for Messenger Strand and Large Diameter Cables

These grips are similar in construction to No. 1613 series, but are heavier. They can be modified to special order to accommodate strand and cable of larger diameters.

Cat. No.		Weight Each	Max. Opening
1628-6	For 6,000 lb. Messenger Strand	8½ lbs.	¾ in.
1628-16	For 16,000 lb. Messenger Strand	14 lbs.	1½ in.

Buffalo Grips

For Bare and Insulated Wire
With or Without Pulleys



No. 420A-1

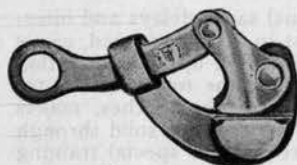
These pulleys are designed to fill the same requirements as stated under heading of "Chicago Grips."

Cat. No.	Size of Wire Smaller than	With or Without Pulley
420-1	No. 6	Without
420A-1	No. 6	With

Kellogg

TOOLS

Haven's Steel Grip



No. 1604-10

will not slip, heavy strain only making it grip the tighter.

Forged from crucible tool steel. The eccentric or dog is hand cut, hardened and tempered. All rivets are steel, machine turned. The handle and the eccentric allows instantaneous hold. A shake of the rope on the tackle disengages or releases the grip. It

Cat. No.		Can Be Used on Wire Size	Weight Per Doz.
1604-10	Kleins	No. 8 and smaller	12 lbs.
1604-20	Kleins	½ in. wire and smaller	30 lbs.
1625-20	Kleins	No. 4 to ¾ wire	69 lbs.

Klein's Self-Locking Block Tackle



No. 1802-30

saver for the man on the pole. To lock the load, simply pull the luff rope under the hook. To release, pull the rope. The blocks are arranged with spring guard snap hooks. When pulling up wire to make a splice, it may be used with two grips attached to the snaps, or with the drop forged hook to anchor to an insulator pin or any other convenient anchorage. Furnished with 25-foot ¾-inch manilla rope and detachable hook.

Designed for use with Chicago and Haven's grips. Consists of light steel shell, block galvanized, fitted with a snubbing hack to lock load in any position. This is a great time

Pulley Blocks

Malleable Iron Pulley Blocks



No. 369

Cat. No.	Sheave	Eye	Cat. No.	Sheave	Eye
368	Single	Single	370	Single	Double
369	Double	Single	371	Double	Double

Remarks: These pulleys come with a shell 2¼" in length and 1½" in diam. taking a rope ¾" in diam. and the sheave thickness is ½". Please order by number.

Wood Pulley Blocks



No. 26

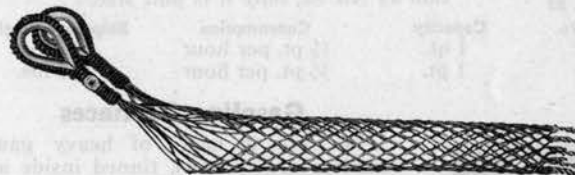
These are regular inside iron strapped blocks. Becketts are furnished in all single, one-half double and one-third triple blocks without charge. If a greater number is wanted an extra charge will be made. Furnished with single, double or triple sheave. Please be sure and specify catalog number, size of shell and number of sheaves when ordering.

Cat. No.	Shell Length	Size Rope	Diam. Sheave
26 Single	6"	¾"	3½"
26 Single	8"	1"	4¾"
27 Double	6"	¾"	3½"
27 Double	8"	1"	4¾"
28 Triple	6"	¾"	3½"
28 Triple	8"	1"	4¾"

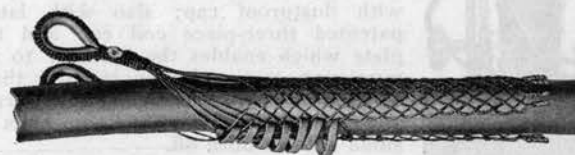
Cable Grips



Single Eye Grip



Double Eye Grip



Double Eye Split Grip

Used for handling all types of aerial and underground cable. The grip which takes hold at any point placed, applies an even pressure to all sides of the cable simultaneously, which increases as the strain is applied on the pulling eyes.

The single eye grip is used for attaching the pulling line to the end of the cable, the double eye for pulling slack or recovering old cable and the double eye split for shifting without interruption to the service. Made in diameters from ½ inch to 3½ inches inclusive. Single eye furnished in 24, 36, 48 and 60 inch lengths. Double eye type in 18, 24 and 36 inch lengths.

Cable Grip Size

¾ inch
1 inch
1½ inch
2 inch
2½ inch
3 inch
3½ inch

Fits Cable Diameter

¾ inch to 7/8 inch
1 inch to 1½ inch
1½ inch to 1¾ inch
2 inch to 2¾ inch
2½ inch to 2¾ inch
3 inch to 3¾ inch
3½ inch to 3¾ inch

Galvanized Wire Rope Thimbles



Wire rope thimbles should be used on all guy anchor rods to give the guy wire the reinforcement at rod eye and eliminate short kinks in bending.

Cat. No.	Size	Size Strand	Weight per 100
1057	¾ in.	¼-7/8	10 lbs.
1058	½ in.	¾-7/8	18 lbs.
1059	5/8 in.	½	36 lbs.

TORCHES

Gasoline Torches



No. 32
Cat. No.
32
38

Capacity	Consumption	Shipping Weight
1 qt.	$\frac{1}{2}$ pt. per hour	$5\frac{1}{2}$ lbs.
1 pt.	$\frac{1}{2}$ pt. per hour	$3\frac{1}{2}$ lbs.

This torch is fitted with back-flow burner, made of bronze, which super-heats the gas and produces a perfect blue flame of intense heat in wind or extreme cold. Hook for soldering iron cast in burner tube. Heavy gauge seamless drawn brass tank, reinforced, and has concaved brass bottom. Fitted with automatic brass pump with double spring check valve. No. 38 torch same in construction as No. 32, only it is pint size.

Gasoline Furnaces



No. 22

The tank is made of heavy gauge seamless drawn steel, tinned inside and out, making it absolutely rustproof and fitted with patented cushion protection band at base of tank. It is supplied with brass ears, elbows and tees, patented pump, large funnel and filler plug with dustproof cap; also with latest patented three-piece coil cup and top plate which enables the operator to remove top section by unscrewing three large brass nuts, exposing the burner and coil. There are no coil cup bugs or small nuts to burn off.

Cat. No.	Capacity	Shipping Weight
22	1 gal.	$9\frac{3}{4}$ lbs.
12	Same as No. 22 except fitted with air valve and bulb.	

Kerosene Furnace



No. 66

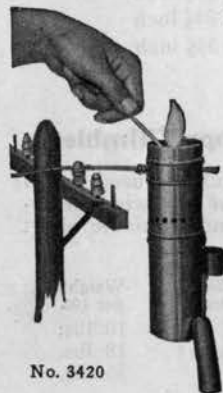
Made especially for heavy duty work and can be used for melting lead, tin, zinc, rosin, paraffin or insulating material.

The burner, with patented heater plug and two-way port, has a double powerful generator that superheats the fuel, producing perfect combustion under any condition.

Tank made of heavy seamless drawn steel, lead coated to resist rust. Bronze spider casting supports extra heavy uprights. Automatic safety valve, impossible to explode.

Cat. No.	Capacity	Pints	Wt., Lbs.	Each
66		7	16	

Staysalite Lineman's Alcohol Torch



No. 3420

The Staysalite torch is the invention of a practical, experienced telephone man. It stays lighted in the wind; it can be lighted and extinguished in a moment; it burns alcohol without odor or noise; it has no adjusting parts, therefore cannot get out of order; it can be carried on lineman's belt.

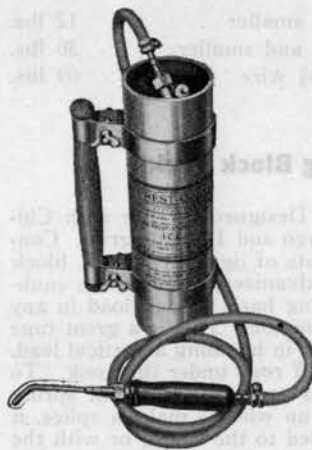
Cat. No.	Weight
3420	$1\frac{1}{4}$ lbs.

Prest-O-Lite Equipment

The use of Prest-O-Lite Gas as a fuel saves delays and interruptions. It furnishes an intense heat in a concentrated, easily controlled flame. No preheating, pumping-up or generating required. Just turn on the gas and light the torch. This, together with the lightness and balance of the torches, makes possible neater and stronger connections that are solid through and through. Experienced linemen require no special training to use Prest-O-Lite equipment.

The most popular outfits are listed below. Other styles and sizes can be furnished. Complete information will gladly be furnished when desired.

Prest-O-Lite No. 0-6120 Lineman's Outfit



No. 0-6120

The Prest-O-Lite No. 0-6120 Lineman's Outfit is for use where open flame work only will be encountered. Particularly suitable for wire splicing. In addition, it may also be used for light brazing. The Prest-O-Lite 0-6120 Lineman's Outfit consists of the following:

- 1—Cat. No. O-2343 MC Tank with gas and key
- 1—Cat. No. A-6103 Torch
- 1—Cat. No. A-3321 MC Handle Assembly
- 1—Cat. No. A-2345 MC Union
- 2—Cat. No. A-437 Hose Bands
- 6 ft.—Cat. No. Z-54 Fabric Hose

(Any of the above parts may be ordered separately.)

Prest-O-Lite No. 0-6109 5-in-1 Outfit



No. 0-6109

The Prest-O-Lite 5-in-1 Outfit includes five interchangeable stems so that five distinct torches may be assembled. This wide assortment enables the user to apply the proper flame and exactly the right amount of heat to obtain the best results. Used for a large variety of soldering, brazing, sweating, melting, tempering and other heating operations. Comes packed in a neat, durable metal box with snap lock. The Prest-O-Lite 0-6109 5-in-1 Outfit consists of:

- Cat. No. A-6058 Handle
- Cat. No. A-6084 Straight Stem and Mixer
- Cat. No. A-6086 Short Curved Stem and Mixer
- Cat. No. A-6083 Medium Curved Stem and Mixer
- Cat. No. A-6089 Long Curved Stem and Mixer
- Cat. No. A-3710 Friction Lighter furnished at additional cost
- Cat. No. A-6088 Soldering Iron Stem, Sleeve, Mixer and Copper Tip
- Cat. No. A-3879 Union for B Tank
- Cat. No. A-6081 Wrench
- Cat. No. L-6092 Box
- Cat. No. Z-54 Hose, 6 ft.
- Cat. No. A-437 Hose Bands, two

(Any of the above parts may be ordered separately.)

SOLDERING IRONS, TOOLS

Kellogg Electric Soldering Irons



Kellogg Iron with Pointed Tip

A good, sturdy soldering iron built to give continuous, uninterrupted service under the hardest usage. The Kellogg factory as well as installing department have standardized on this iron because they can use it eight or more hours a day continuously without the slightest danger of burning it out.

The heating element is designed and insulated to furnish the correct amount of heat at the tip and yet keep the handle cool at all times. These irons can be furnished in two degrees of heat, "Medium Hot" or "Hot." The "Medium Heat" is for general use, being suitable for light work such as radio sets, telephone and switchboard wiring, etc. The "Hot Heat" is for heavier work and is more suitable for working with enameled wire. This heating element can be easily replaced when burned out.

The pointed tip furnished is most practical for general all around use. A heavier flat tip can be furnished in addition, at a small cost, by specifying 1 extra piece No. 47794 flat tip.

Designed to operate from either 110 volt alternating current or 115 volt direct current. Furnished with 6 foot heater cord and separable plug. Overall length less cord 14 inches. Net weight with cord and plug 28 ounces.

Code No.	Heat	Watts	Style of Tip
1-A	Medium	105	Pointed
2-A	Hot	150	Pointed

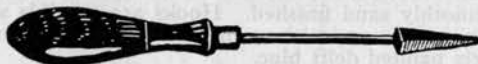
Repair parts for Kellogg Irons

- 47796 Pointed Tip only.
- 47794 Flat Tip only.
- 47777 Medium Heat Element only.
- 47778 Hot Heat Element only.

Vulcan Electric Soldering Irons

No. 100 vulcan soldering iron has a one-piece handle which unscrews and slides back on cord, exposing conveniently arranged terminals. It is 13¾ inches in length, weighs 12 oz. and consumes 70 watts. Furnished with 6-foot cord and attachment plug, wired for 110 volts when not otherwise specified.

Pony Soldering Irons



No. 680-4. Pony Type

Designed especially for telephone and switchboard assemblies and adjusters. Forged and drawn out to the proper point for accurate work. Furnished with black ebonized handles.

Cat. No.	Length	Weight
680-5	8 in.	1¼ oz.
680-4	8½ in.	1½ oz.
680-3	9 in.	1¾ oz.
680-2	11 in.	2 oz.
680-1	11½ in.	3 oz.

Manual Soldering Irons

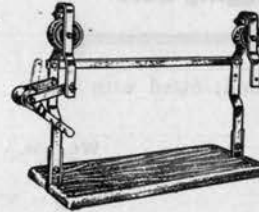


These are carried in stock and are furnished without handles.

No. 1. Manual Type

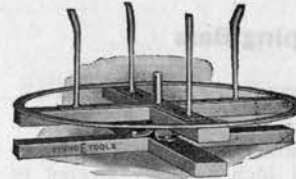
Cat. No.	Wt., Each
1	½ lb.
2	1 lb.
6	3 lb.

Cable Cars



These cable cars have been designed with a view of reducing the weight to a minimum and increasing the strength to a maximum. All the metal parts are made of cold rolled and cast steel, sherardized (rust proof) which assures free working of all parts at all times. The seat and pickup attachment are of the best grade of oak. Furnished with or without pickup attachment.

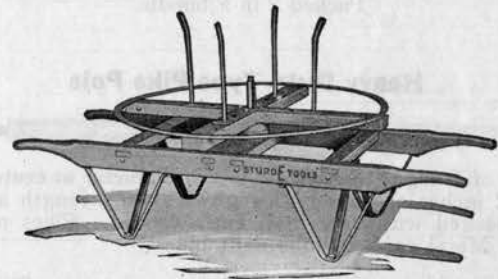
Pay-Out Reel



This reel is of hardwood, reinforced and braced throughout with metal strips. The pins are adjustable for 12, 18, 21 and 24-inch coils. Wood painted delft blue, metal parts black.

Cat. No.	Description	Wt., Lbs. Each
10-510-902	Pay-out	40

Barrow Reels



Made of hardwood and is of strong, durable construction, well able to withstand heavy work. The large metal discs on the reel and barrow form a common bearing surface around the center pin. Reel pins are adjustable for 12, 18, 21 and 24-inch coils. Wood painted delft blue, metal parts black.

Cat. No.	Description	Wt., Lbs. Each
10-520-900	Barrow Reel	80
10-521-901	Extra guard pins	1½

Folding Take-Up Reels



This reel is the collapsible type, composed of two parts—the wooden stand and the metal reel. The stand is of hardwood mortised and tenoned and reinforced with steel. Reel is malleable iron and steel. Wood painted delft blue, reel and metal parts black.

Cat. No.	Size of Coil, Inches	Wt., Lbs. Each
10-501-897	21	42

Kellogg

TOOLS

Octagon Tamping and Digging Bars



Double beveled cutting blade at one end; fitted with heavy tamping shoe at the other end.

Cat. No.	Size	Wt., Lbs. Each
10-408-1071	1 in. x 7 ft.	20
10-409-1072	1 in. x 8 ft.	25
10-411-1074	1 1/8 in. x 7 ft.	25
10-412-1075	1 1/8 in. x 8 ft.	30

Packed 2 in a bundle.

Light Shoe Tamping Bars



Select maple handle, 2 inches in diameter, tapered at lower end, fitted with steel shoe, 1 3/4 x 1/4 inch securely riveted to handles. Tamping end dipped in creosote to prevent decay, then painted delft blue. Handles smoothly sand finished.

Cat. No.	Length Feet	Wt., Lbs. Each
10-417-854	7	10
10-418-855	8	11

Packed 2 in a bundle.

Heavy Duty Type Pike Pole



Poles of Douglas Fir with 2 1/2-inch diameter at center tapering to 2 inches at ends. This gives extra strength at center where needed with very little extra weight. Pikes project 4 inches. Metal parts painted delft blue.

Cat. No.	Size	Wt., Lbs. Each
10-212-818	2 1/2 in. x 12 ft.	12
10-213-819	2 1/2 in. x 14 ft.	14
10-214-820	2 1/2 in. x 16 ft.	16
10-215-821	2 1/2 in. x 18 ft.	18
10-216-822	2 1/2 in. x 20 ft.	20

Packed 6 in a bundle.

Guarded Pike Pole



Made of selected Douglas Fir with malleable iron ferrule and fork on one piece driven onto pole and secured by a rivet. Handles are furnished in two sizes—the 2-inch are parallel, and the 2 1/2-inch are tapered to 2 inches at the ends. Metal parts painted delft blue.

Cat. No.	Size	Wt., Lbs. Each
10-226-832	2 in. x 10 ft.	9
10-227-833	2 in. x 12 ft.	11
10-228-834	2 in. x 14 ft.	13
10-229-835	2 1/2 in. x 16 ft.	17
10-230-836	2 1/2 in. x 18 ft.	19
10-231-837	2 1/2 in. x 20 ft.	21

Packed 6 in a bundle.

Shovels



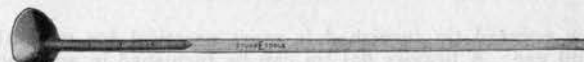
The blade of the straight type shovel is in direct line with the handle, making this shovel especially adapted to digging and lining up. Crucible steel blades, with 9- or 22-inch polished straps; selected second growth hickory, ash or maple handle; 1 1/4-inch diameter at swell; smoothly finished.

Straight Shovels

Cat. No.	Material	Size Handle Feet	Strap Inches	Wt., Lbs. Each
10-043-867	Maple Handle	7	22	8
10-044-868	Maple Handle	8	22	9
10-044-A-869	Maple Handle	9	22	10

Spoons

Western Union Pattern



Cat. No.	Material	Size Handle Feet	Strap Inches	Wt., Lbs. Each
10-059	Maple Handle	7	9	8
10-060	Maple Handle	8	9	9
10-061	Maple Handle	9	9	10
10-062-859	Maple Handle	7	22	8
10-063-860	Maple Handle	8	22	9
10-064-861	Maple Handle	9	22	10

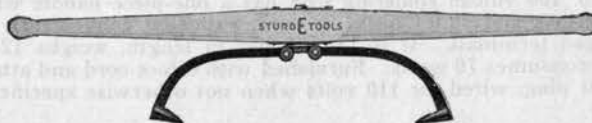
Handles Only

Straight Shovel and Spoon

Cat. No.	Material	Length Feet	Wt., Lbs. Each
10-071-993	Maple	7	5
10-072-994	Maple	8	6
10-073-995	Maple	9	7

Carrying or Lug Hooks

Standard Type



For handling poles, ties and heavy timbers. Handles of selected, air-seasoned hickory and hard maple with hand-turned knobs, smoothly sand finished. Hooks are crucible steel with duck bill points, hung in heavy malleable iron clasp and swivel. Metal parts painted delft blue.

Cat. No.	Size	Wt., Lbs. Each
10-100-295	2 1/2 in. x 4 ft. Maple	7
10-101-296	2 1/2 in. x 4 1/2 ft. Maple	8
10-102-297	2 1/2 in. x 5 ft. Maple	9

Packed 6 in a crate.

Peavies



Handles of selected air-seasoned hickory or hard maple, with hand-turned knobs, smoothly sand finished. Malleable iron sockets and crucible steel hooks with duck bill points. Pikes are of crucible steel securely driven in. Metal parts are painted delft blue.

Cat. No.	Size	Wt., Lbs. Each
10-124	2 1/2 in. x 4 ft. Hickory	8
10-127	2 1/2 in. x 4 ft. Maple	8

Packed 6 in a crate.

Kellogg

EMERGENCY EQUIPMENT, WIRE

Davis Emergency Equipment

Since the Davis system of Emergency Equipment has been made available to the telephone industry you no longer have to buy equipment you will never use—equipment that tries to cover every kind of an accident for every kind of industry. No longer need you throw away left over remnants of first aid dressings, or use material that has been handled previously and hence is unsanitary. No longer must you fumble around among the disordered contents of a tin box, searching for first aid material that is probably missing.

Now you can get a first aid kit that gives you equipment you will actually need and use. Each of the dressings and treatments in the Kit is individual, and hence surgically clean when used. There is never anything left over to put back or throw away; therefore there is no waste or any danger of infection. The entire Kit contents are instantly accessible and completely visible at all times.

The Kits are sturdily constructed of 20 gauge steel with spot welded corners and are finished in green duco.



No. 1 Phone-Kit—Assortment G

Size $4\frac{1}{8} \times 2\frac{1}{8} \times 1\frac{1}{4}$ inches

Specially adapted for the use of:

- (1) Troublemakers
- (2) Installers
- (3) Inspectors
- (4) Linemen

No. 10 Phone-Kit—Assortments

Size $7\frac{3}{4} \times 4\frac{5}{8} \times 2\frac{3}{8}$ inches

For the use of the small gang, two to four men, this kit is ideal.

- (1) Cable Splicers
- (2) Drop Wire Installers
- (3) Heavy Construction Gangs

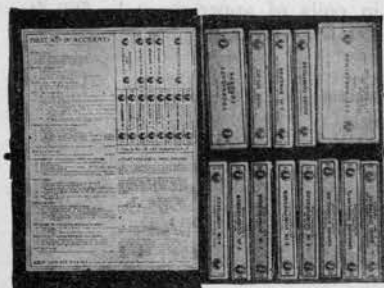


No. 16 Phone-Kit—Assortment F

Size $9 \times 6\frac{1}{2} \times 2\frac{3}{8}$ inches

This Kit is well adapted to medium size groups, 4 to 6 men, in construction and distribution departments.

Larger Kits are also furnished.



Indiana Iron Telephone Wire

(Crapo Galvanized)



This wire is made in three grades. Extra B. B., B. B. and steel. Extra B. B. is made from the very best material and has the highest conductivity of any galvanized wire. Mile ohm 4700 to 5000.

B. B. wire is somewhat stronger than extra B. B., but has a lower conductivity. It is used mostly on farm line circuits, by telephone companies and for railroad work. Mile ohm 5600 to 6000.

Steel wire is made from a special grade of material of greater strength, but less conductivity than the other grades. Mile ohm 6500 to 7000.

We do not break coils: Nos. 10, 12 and 14 put up in coils of $\frac{1}{2}$ mile, No. 6 put up in $\frac{1}{3}$ mile coils.

Size B.W.G. No.	Diam.	Breaking Strain in Lbs.			Approx. Weight per Mile
		E. B. B.	B. B.	Steel	
6	.203 in.	1475	1652	1770	590 lbs.
10	.134 in.	645	722	774	258 lbs.
12	.109 in.	425	476	510	170 lbs.
14	.083 in.	247	277	297	99 lbs.

Galvanized Steel Strand

(Indiana Crapo Galvanized)



Regular galvanized steel strand oval Siemens-Martin strand are recommended for regular exchange, farm line and toll construction work.

Single galvanized regular strand should be used in country line construction line only, where there is no possibility of deterioration from smoke conditions. Double galvanizing insures long life under smoky conditions.

Size Ins.	Size Wires	Wt. per 100 feet	Strength in Lbs.		Siemens- Martin
			Regular Single or Double Galvanized	High Strength	
$\frac{3}{16}$	16	8 lbs.	1,150		1,900
$\frac{1}{4}$	14	13 lbs.	1,900		3,150
$\frac{5}{16}$	12	22 lbs.	3,200		5,350
$\frac{3}{8}$	11	30 lbs.	4,250		6,950
$\frac{7}{16}$	$9\frac{1}{2}$	40 lbs.	5,700		9,350
$\frac{1}{2}$	8	52 lbs.	7,400		12,100

Size Ins.	Size Wires	Wt. per 100 feet	Strength in Lbs.		A. T. & T. Spec.
			High Strength	Extra High Strength	
$\frac{3}{16}$	16	8 lbs.	2,850	3,990	
$\frac{1}{4}$	14	13 lbs.	4,750	6,650	
$\frac{5}{16}$	12	22 lbs.	8,000	11,200	6,000
$\frac{3}{8}$	11	30 lbs.	10,800	15,400	10,000
$\frac{7}{16}$	$9\frac{1}{2}$	40 lbs.	14,500	20,800	16,000
$\frac{1}{2}$	8	52 lbs.	18,800	26,900	

Kellogg

WIRE

Kellogg Bronze Drop Wire

Specifications 2017-B



Kellogg bronze drop wire needs no introduction. It is the finest and most perfect drop wire ever produced for the telephone industry.

The conductor is of special bronze throughout—with tremendous strength—150 lbs. per bare conductor, and unusual conductivity—85% of pure copper. Its resistance is only 32 ohms per mile, permitting long spans to be strung without sacrificing transmission, or draining the power supply. It is completely non-corrosive—no uncertain combination of metals—no danger in scraping—no rusting at the ends—no deterioration under adverse climatic conditions.

The insulation is of the toughest, adding fifty per cent longer life to the drop wire. It consists of thirty per cent pure Para rubber, tubed onto the conductor without seams, slowly vulcanized and covered with a tightly woven two-ply, long wearing outer braid.

Kellogg Bronze Drop Wire is supplied in only one grade of insulation. It is furnished with $\frac{3}{4}$ " specification rubber if not otherwise specified. It can also be furnished with $\frac{5}{8}$ " or $\frac{3}{4}$ " insulation in parallel or twisted pair construction.

Comes in 1000 foot coils with large 15-inch eye. Each coil is individually double paper wrapped.

Cat. No.	Size B & S	Diam. Over Rubber, Inches	Wt., Lbs. per 1000 Feet
2017-B	17	$\frac{3}{4}$	33

Ironite Drop Wire

(Crapo)



A special conductor of pure basic steel, accurately annealed by a special process to provide great tensile strength, high conductivity, and great flexibility. Lighter than copper and more flexible. Highly rust-resisting, due to the purity and density of the metal, and thoroughly protected by a heavy uniform coating of pure zinc galvanizing.

Insulated with a special rubber—containing a pure rubber content equal to Code requirements—highly elastic, tough and wear resisting. Braided with strictly two-ply long fibre cotton, and thoroughly saturated with weatherproofing and wax. A small raised cord marker is woven into the braid of one of the conductors of the pair for tracing. Shipped in standard 1000-ft. coils with large 15-inch eye to fit standard reels. **USE BWG GAUGE WHEN ORDERING.**

Cat. No.	Size B. W. G.	Diam., Inches over Rubber	No. of Conductors	Wt., Lbs. per 1000 Ft.
1019-B	19	$\frac{7}{8}$	Duplex	27
1018-B	18	$\frac{3}{32}$	Duplex	39
1016-B	16	$\frac{5}{32}$	Duplex	65
1014-B	14	$\frac{1}{8}$	Duplex	80

Hard Drawn Copper Drop Wire



Insulated with a special rubber—containing a pure rubber content equal to Code Requirements—highly elastic, tough and wear resisting. Braided with strictly two-ply long fibre cotton, and thoroughly saturated with weatherproofing and wax. A small raised cord marker is woven into the braid of one of the conductors of the pair for tracing. Shipped in standard 1000-ft. coils with large 15-inch eye to fit standard reels. **USE B & S GAUGE WHEN ORDERING.**

Cat. No.	Size B. & S.	Diam., Inches over Rubber	No. of Conductors	Wt., Lbs. per 1000 Ft.
1216-B	16	$\frac{3}{32}$	Duplex	45
1214-B	14	$\frac{1}{8}$	Duplex	62

Bridle or Spider Wire



Rubber covered, black saturated weatherproof braid soft drawn tinned copper conductor wire, used for connecting open lines to cable terminals. Single conductor No. 18 for installing grounds at subscribers stations. Duplex wire is furnished with a small raised cord marker in the braid of one of the conductors for tracing. Put up in coils of approximately 500-feet. **USE B & S GAUGE WHEN ORDERING.**

Cat. No.	Size B. & S. Gauge.	Diam., Inches over Rubber	No. of Conductors	Wt., Lbs. per 1000 Ft.
1519-A	19	$\frac{3}{32}$	Single	13
1519-B	19	$\frac{3}{32}$	Duplex	25
1518-A	18	$\frac{7}{64}$	Single	15
1518-B	18	$\frac{7}{64}$	Duplex	31
1516-A	16	$\frac{1}{32}$	Single	22
1514-A	14	$\frac{1}{8}$	Single	30

Copper Interior Telephone Wire



This wire is used for interior telephone wiring, furnished in single, duplex and triple conductors. Conductors are of tinned soft copper covered with a rubber insulating compound. Braid consists of closely woven hard glazed two-ply, two-end cotton thread. Color, olive green. When furnished in duplex and triple, each conductor has a colored thread in the braid for tracing purposes. Put up in coils of approximately 500 ft. **USE B & S GAUGE WHEN ORDERING.**

Cat. No.	Size B. & S. Gauge	Diam. Over Rubber	No. of Conductors	Weight Lbs. per 1000 Ft.
1619-A	19	$\frac{3}{32}$ -in.	Single	10
1619-B	19	$\frac{3}{32}$ -in.	Duplex	20
1619-C	19	$\frac{3}{32}$ -in.	Triplex	30
1618-A	18	$\frac{7}{64}$ -in.	Single	12
1618-B	18	$\frac{7}{64}$ -in.	Duplex	24
1618-C	18	$\frac{7}{64}$ -in.	Triplex	35
1622-A	22	$\frac{3}{32}$ -in.	Single	8
1622-B	22	$\frac{3}{32}$ -in.	Duplex	15
1622-C	22	$\frac{3}{32}$ -in.	Triplex	23

Flameproof Jumper Wire



Used on main distributing and intermediate distributing frames, distributing boxes and cross connecting racks. This wire consists of a soft tinned copper conductor insulated with a high grade rubber and covered with a flame-proof braid that does not fray out. Put up in coils of approximately 500 ft. **USE B & S GAUGE WHEN ORDERING.**

Cat. No.	Size B. & S. Gauge	Diam. Over Rubber	No. of Conductors	Color of Conductors	Weight Lbs. per 1000 Ft.
1320-A	20	$\frac{1}{64}$ -in.	Single	Red	6
1320-B	20	$\frac{1}{64}$ -in.	Duplex	Red and White	12
1320-C	20	$\frac{1}{64}$ -in.	Triplex	Red, White; White with Red Tracer	18
1322-A	22	$\frac{1}{64}$ -in.	Single	White	5
1322-B	22	$\frac{1}{64}$ -in.	Duplex	Red and White	10
1322-C	22	$\frac{1}{64}$ -in.	Triplex	Red, White; White with Red Tracer	15

WIRE

Pot Head Wire



Used to terminate a paper insulated cable for distribution in cable terminals and cable boxes to prevent moisture entering the cable. Consists of soft tinned copper conductor, rubber covered with no braid. Can be furnished in single or duplex. When furnished in duplex the insulation on the two wires is of different color for tracing purposes. Put up in coils of approximately 500 feet. **USE B&S GAUGE WHEN ORDERING.**

Cat. No.	Size B. & S. Gauge	Diam. Over Rubber	No. of Conductors	Weight, Lbs. per 1000 Ft.
1419-B	19	3 1/2-in.	Duplex	17
1420-B	20	3 1/2-in.	Duplex	15
1422-B	22	3 1/2-in.	Duplex	15

Weatherproof Iron Tree Wire



This wire is used where wires run through trees and keeps them free from grounds during damp weather. Consists of BB double galvanized iron conductor, insulated with double or triple close cotton braid impregnated with moisture proofing and weatherproofing compound. Put up in 1/2-mile burlap coils. Always sold by weight. **USE BWG WHEN ORDERING**, also specify whether double or triple braid is desired.

Cat. No.	Insulation	Size B. W. G.	Weight per Mile
910-AA	Double Braid	10	350
910-AAA	Triple Braid	10	400
912-AA	Double Braid	12	225
912-AAA	Triple Braid	12	260
914-AA	Double Braid	14	145
914-AAA	Triple Braid	14	175
916-AA	Double Braid	16	90
916-AAA	Triple Braid	16	120

Kellogg Special Tree Wire



Kellogg tree wire was designed to replace the ordinary two and three braid weatherproof iron tree wire. It is low in cost and has triple the life of ordinary weatherproofed wire.

The conductor consists of No. 14 or 16 BWG "Crapo" double galvanized ironite wire. This is insulated with a 3/32" wall of 30% rubber to seal the conductor against moisture and to prevent the braid from slipping. The rubber is covered with a tough two-ply cotton braid thoroughly impregnated. This is followed by a special hard service Seine twine cable cord which is also heavily saturated. This Seine cord twine is the toughest cord obtainable, and is the same material used in the manufacture of mine cables.

Put up in 1000-foot coils. **USE BWG GAUGE WHEN ORDERING.**

Cat. No.	Size BWG	Tensile Strength	No. of Conductors	Weight per Mile
714-A	14	400 lbs.	1	175
716-A	16	250 lbs.	1	120

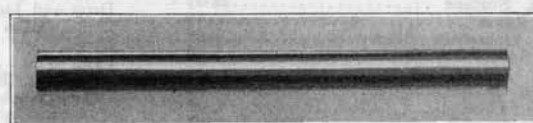
Electric Light or Power Wires



This wire is used for electrical and power work, also radio aerials and ground wire. Consists of a soft drawn tinned copper conductor, insulated with new code rubber saturated braid over all. Furnished in 500-ft. coils. **USE B&S WHEN ORDERING.**

Cat. No.	Size B. & S. Gauge	Conductor	Braid	Weight, Lbs. per 1000 Ft.
804-AA	4	Stranded	Double	230
806-AA	6	Stranded	Double	158
808-A	8	Stranded	Single	80
810-A	10	Solid	Single	55
812-A	12	Solid	Single	40
814-A	14	Solid	Single	30

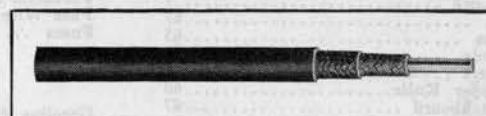
Bare Copper Wire



Supplied in soft, medium hard or hard drawn grades. Hard drawn grade is standard for toll line construction and unless otherwise specified, this grade will be furnished on all orders. The following table gives information on the hard drawn grade:

Size	Diam. Inches	Weight per 1000 Ft.	Weight per Mile	Approx. Wt. per Coil
6 B&S	.1620	79	420	220
8 B&S	.1285	50	265	220
9 B&S	.1144	40	210	220
10 B&S	.102	31	165	220
12 N.B.S.	.104	33	174	228
12 B&S	.0808	20	105	125
14 B&S	.0641	13	65	125

Weatherproof Copper Wire



Weatherproof copper wire is especially adaptable to telephone, telegraph and railway signal work, combining high conductivity with great tensile strength. Consists of hard drawn copper conductor with either double or triple close cotton braid, impregnated with moisture proofing and weather proofing compound. **USE B&S GAUGE WHEN ORDERING.** Also specify whether double or triple braid is desired. Always sold by weight.

Size B. & S. Gauge	—Approx. Weight— Lbs. per 1000 Ft.		—Approx. Weight— Lbs. per Mile	
	Double Braid	Triple Braid	Double Braid	Triple Braid
6	100	112	529	590
8	66	75	349	395
10	46	53	241	280
12	30	35	158	185
14	25	25	107	130
16	20	20	83	105

Nos. 6 and 8 put up in standard coils of 150 or 300 lbs. Nos. 10, 12, 14 and 16 put up in standard coils of 100 to 125 lbs. and can also be furnished in 25-lb. coils.

Kellogg

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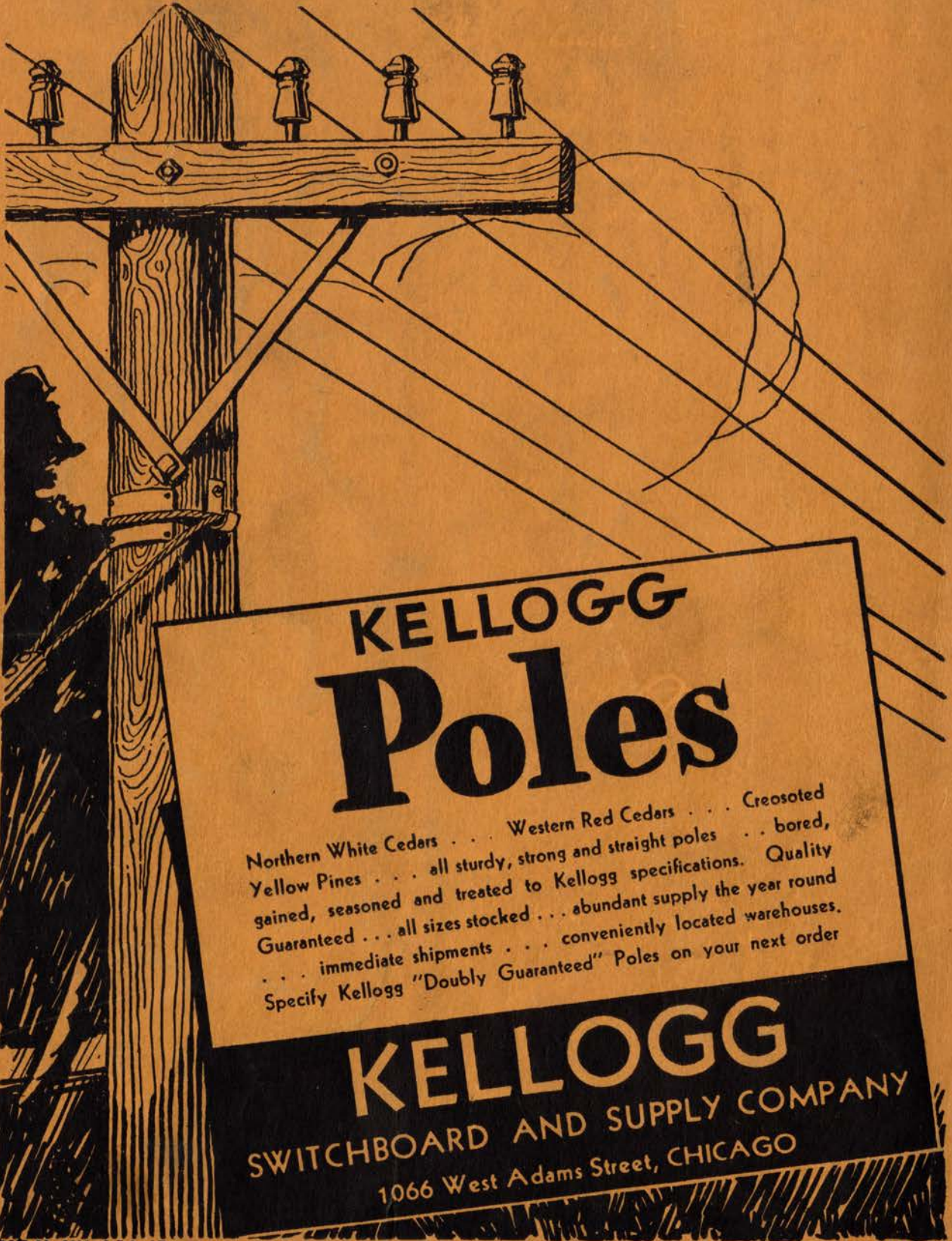
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