KELLOGG

USE—is the Test

Kellogg General Catalog 7, 1926

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The catalog was two-hole punched in the left margin and bound with Chicago screws to an embossed full spine cover.

As the purpose of this scanning project is to provide research material for telephone collectors the line supplies section of this catalog has been omitted from the scan. Also omitted are select pages of lever switches and other miscellaneous parts.

Scanned and produced by Mike Neale
from an original document furnished by Roger Conklin, members of
Antique Telephone Collectors Association US
Telephone Collectors International US
Telecom Heritage Group UK

TO THE PURCHASER

Guarantee

We guarantee our goods to the extent that we replace within one year from date of invoice those that prove 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 and radio apparatus 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 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 Co. clearly specify that shipments were received in good condition 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 Co. 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.

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 our consent.

Long experience has shown that proper understanding of each case saves transportation expense, delays and misunderstanding 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 Co. 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.

INDEX

INDEX—Continued

INDEX—Continued

INDEX—Continued

INDEX—Continued

INDEX—Continued

Kellogg Telephones Magneto and Common Battery Types

Catalog No. 7

Telephone Equipment that Gives a High Type of Service Over the Longest Period of Time.

KELLOGG SWITCHBOARD & SUPPLY COMPANY
1066 W. Adams St. Chicago, Ill.

With Kellogg
Equipment

Use—Is the Test

ONE reason for Kellogg switchboard superiority in every installation is, in part, due to the exceptional, reliable, commercial transmission and service of the Kellogg telephones used throughout these exchanges.

The Kellogg Magneto wall phone is considered a standard instrument for the smaller towns. These standard telephones have been serving Magneto subscribers for the past twenty-eight years with satisfaction.

Kellogg Common Battery sets are compact, durable and handsome in appearance.

Our policy is to build the best possible class of equipment for the type of service for which it is to be used.

Our twenty-eight years' experience in manufacturing switchboards, telephones and apparatus is an extremely valuable asset in the production of this equipment.

Kellogg telephones of today are based upon the experience of operating telephone companies as well as our own and are built with the idea of furnishing the subscriber with an equipment that will give him continual, uninterrupted service; and the manager a phone that will require the least maintenance and give its high grade service over the longest period of time.

The code numbers given on the following pages are of our standard sets, and, if your requirements are not listed herein, we will appreciate your writing for any information.

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

Kellogg Hookswitch is 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. Micarta 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 secure 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 Reverse Type Solid Back Transmitters are far reaching and superior for long distance as well as local work. Diaphragm made from hard drawn aluminum with carbon retaining cup formed in the center of its face. Highest grade carbon of correct size. Small number of parts, accurately made from the best material obtainable to insure long life and minimum chances for trouble. Will not pack. Minimum battery consumption. Not affected by foreign sounds or noises. Over three million in use today giving unequaled service.

Kellogg Condensers for magneto telephones have a one-half M. F. capacity, with a minimum resistance of 10,000 ohms. This allows the receiver to be off the hook without 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 silk insulated 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 correct, and remain so during the entire life of ringer. Gongs are made of the best material for that purpose, rich in tone, will not crack or become dead through service, they are heavily black enameled and of the concentric type.

Kellogg Generators are "built like a watch;" have large armature and greater winding space than other types that we know of; field magnets built with great care; our method of forming magnets, shapes them accurately without injury; bars thoroughly protected against rust; end plates of pressed brass; springs properly insulated; wheels and gears accurately cut and machined; generator handle of one piece, armature frame securely held; minimum number of parts offering great reliability and long life in all types of service.

KELLOGG SWITCHBOARD & SUPPLY COMPANY

1066 West Adams Street Chicago, Illinois

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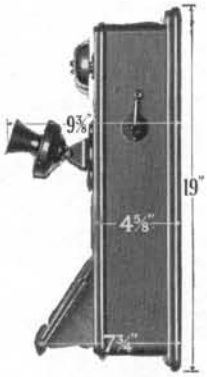
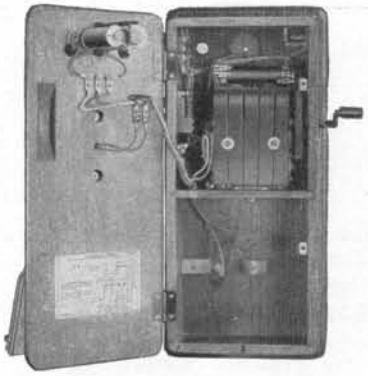
TELEPHONES
Magneto Wall Type



Side View



Open View

The Kellogg Magneto Telephone is equipped with a powerful generator, non-adjustable, non-sticking ringer, short lever hook switch with removable hook, famous Kellogg reverse type transmitter, and bakelite mouth piece, short knuckle transmitter arm, sensitive receiver with bakelite shell. Exposed metal parts are handsomely finished in black enamel, and the cabinets are of thoroughly seasoned quarter-sawed oak made in our own cabinet factory. Cabinets are drilled for standard sizes of generators and have either straight line or harmonic ringers. Wiring is provided for a condenser in the receiver circuit, and the ringer can be connected across the line or from either side to ground for divided circuit and 8-party harmonic ringing.

Batteries and mounting screws are not furnished except when specified but all of the four and five bar sets have as a part of the regular equipment the Kellogg Battery Saver, which enables patrons to listen without using battery. A prefix F indicates that the receiver binding post will take either spade or spike cord tips, but spade tips are regularly furnished unless otherwise specified. Receiver Cords are 36″ long finished in brown. The following codes cover the most popular types of three, four and five bar instruments, but telephones can be furnished to meet any requirements that special conditions may demand.

Straight Line Ringers

Code No.	Ringer Ohms Res.	Ringer Code No.	Generator No. Bars	Generator Code N.	Transmitter	Arm	Hook Switch	Ind. Coil	Receiver
F2809	1000	78-A	3	15	64-LC	50	103	28-C	F41-A
F2811	1600	78-D	4	22	64-LC	50	103	28-C	F41-A
F2812	1600	78-D	5	53	64-LC	50	103	28-C	F41-A
F2859	2500	78-G	5	53	64-LC	50	103	28-C	F41-A

Straight Line Ringers with Condenser in Secondary

No. 28 condenser wired in receiver circuit. Enables operator or subscriber to ring on a heavily loaded farm line when a number of receivers are down.

Code No.	Ringer Ohms Res.	Ringer Code No.	Generator No. Bars	Generator Code N.	Transmitter	Arm	Hook Switch	Ind. Coil	Condenser	Receiver	Remarks
F2815	1600	78-D	4	22	64-LC	50	103	28-C	28	F41-A	Cond. in sec'd'y
F2816	1600	78-D	5	53	64-LC	50	103	28-C	28	F41-A	Cond. in sec'd'y
F2880	2500	78-G	5	53	64-LC	50	103	28-C	28	F41-A	Cond. in sec'd'y

TELEPHONES

Magneto Wall Type

Straight Line Ringer—P. & A. C. Generator and Push Button

For calling central secretly on grounded or metallic lines. Requires no special wiring at switchboard. Either pulsating or alternating current will operate the ring off drop. Many different kinds of telephones can be used on the same line if desired and if only a part are secret calling they will work just as satisfactorily as if all were the same type.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Push Button	Cond.	Rec.
F2819	1600	78-D	4	26	64-LC	50	103	28-C	5	28	F41-A
F2820	1600	78-D	5	59	64-LC	50	103	28-C	5	28	F41-A
F2860	2500	78-G	5	59	64-LC	50	103	28-C	5	28	F41-A

Grounding Key for Metallic Lines Only with No. 28 Cond. in Rec. Ckt.

The drop at the Central office must have one side wired to ground and all telephones on the line must be equipped with grounding key.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Push Button	Cond.	Rec.
F2823	1600	78-D	4	22	64-LC	50	103	28-C	5	28	F41-A
F2824	1600	78-D	5	53	64-LC	50	103	28-C	5	28	F41-A
F2881	2500	78-G	5	53	64-LC	50	103	28-C	5	28	F41-A

Selective Ringing-Harmonic-4 and 8 Party

Telephones used with this system are equipped with ringers having a frequency of 30, 42, 54 and 66 cycles per second which is especially desirable on four and eight party selective magneto lines. There is no danger from cross rings when the subscribers ring Central. Specify parties desired.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Rec.
F2807	4-party	73-A	3	15	22-LC	42	103	28-C	F41-A

Selective Ringing-Harmonic 4-Party (Old System)

Condenser in ringer circuit and special three bar generator. Ringers have frequencies of 16⅔, 33⅓, 50 and 66 cycles per second. Specify parties desired.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	
F2873	4-party	72-A	3	66	64-LC	50	103	28-C	78	F41-A	Cond. in secondary.

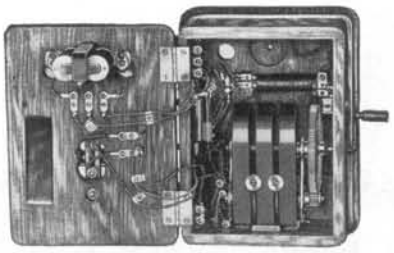
Biased Ringer for 4-Party Selective Systems

Using positive and negative pulsating current.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Rec.
F2808	1000	79-A	3	15	64-LC	50	103	28-C	F41-A

TELEPHONES

Magneto Residence Type



These sets are intended for use where a smaller telephone than the regular compact wall set is desired or required because of limited mounting space.

The cabinet backboard panel measures 7½″ wide by 10″ long. No writing shelf is furnished and no provision is made for batteries, otherwise they are of the same sturdy construction as the standard magneto wall telephone.

With this type of telephone, it is necessary to mount the batteries outside, either in the basement or in a separate battery box. For battery boxes for these sets, see Supply Catalog.

We are listing here a few of the more popular types but can furnish any other combinations that may be required.

Straight Line Ringer

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Rec.
F1809	1000	78-A	3	15-AC	64-LC	41	103	28-C	F41-A
F1812	1600	78-D	5	53-AC	64-LC	41	103	28-C	F41-A

Straight Line Ringer with Condenser in Sec'd'y

No. 28 condenser wired in receiver circuit. Enables operator or subscriber to ring on a heavily loaded farm line when a number of receivers are down.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.
F1816	1600	78-D	5	53-AC	64-LC	41	103	28-C	28	F41-A

Biased Ringer for Four-Party Selective Systems

Using positive and negative pulsating current.

F2805	1000	79-A	3	15-AC	64-LC	41	103	28-C	F41-A

Selective Ringing—Harmonic—4 and 8 Party

Telephones used with this system are equipped with ringers having a frequency of 30, 42, 54 and 66 cycles per second, which is especially desirable on four and eight party selective magneto lines. There is no danger from cross rings when the subscribers ring Central.

F2804	4-party	73-A	3	15-AC	64-LC	41	103	28-C	F41-A

Magneto Residence Grabaphone Type

Straight Line Ringer

These sets consist of a No. 12 LC Grabaphone and Generator Box containing the generator, ringer, induction coil and hook switch. We are listing a few of the popular equipments but can furnish this style of instrument to meet any condition.

Code No.	Ringer Res.	Ringer Code	Generator Bars	Generator Code	Hook Switch	Ind. Coil	Grabaphone
F1809-G	1000	78-A	3	15	110	28-C	F12-LC
F1812-G	1600	78-D	5	53	110	28-C	F12-LC

Straight Line Ringer with Condenser in Secondary

No. 28 condenser wired in receiver circuit. Enables operator or subscriber to ring on a heavily loaded farm line when a number of receivers are down.

F1816-G	1600	78-D	5	53	110	28-C	28	F12-LC

TELEPHONES

Magneto Desk Sets

Desk Stand Type

The Kellogg desk stand has been carefully designed to reduce maintenance to a minimum. It is graceful in appearance and light enough in weight to handle with ease, is sufficiently rugged to withstand ordinary knocks and continuous service. It is the only one on the market that is provided with a perfect transmitter adjustment which never requires attention, the transmitter back does not become loose on its mounting, as it is part of the lug.

The capital is non-breakable and holds the transmitter securely in any position. Instead of using an ordinary japan finish over the upright which always chips or wears off, a heavy Kellogg Bakelite protection tube is used, insuring a lasting finish that does not discolor, crack or chip.

The base is of steel, treated to prevent rusting after which it is given a heavy coat of dull, black enamel. It is equipped with a heavy felt ring which is securely held in a groove, encircling the outer edge of the base. This felt is firmly held in position by prongs and protects the furniture as well as absorbing the shock of the impact when the stand is slammed down on the table.

The springs are of German silver and with the connecting rack are located in an accessible manner in the base. The hookswitch has a very short action, yet a free movement of the contact springs is effected. All corners and sharp edges are rounded off, and the hook fork so formed that the receiver does not fall off should the stand be tilted. The standard finish is in a permanent black enamel.

No rattle to hookswitch. Weight is in the right place. Accessibility and practicability in arrangement of the apparatus in base of stand. Absolute, unequalled transmission for either short or long distances.

Desk stands with either three or four conductor cords may be used but three conductor are regularly furnished. The code numbers listed below include the more popular types and each consists of a complete stand, receiver and desk set box. Mounting screws and batteries are not furnished unless specified. Cords are regularly furnished with brown mercerized outer braid and spade terminals.

The superiority of this stand has caused the leading telephone companies to adopt it as a standard for long distance, as well as local work.

Straight Line Ringer—Induction Coil

	Desk Stand					Desk Set Box				
Set Code No.	Code	Conductor	Cord	Rec.	Trans.	Code	Ringer	Generator	Ind. Coil	Push Button Cond.
F- 9	F-84	3	F-150D	F-41A	64LC	F-2328	No. 78A-1000 ohm	No. 15-3 bar alternating	28	
F-12	F-84	3	F-150D	F-41A	64LC	F-2361	No. 78D-1600 ohm	No. 53-5 bar alternating	28	
F-59	F-84	3	F-150D	F-41A	64LC	F-2362	No. 78G-2500 ohm	No. 53-5 bar alternating	28	

Straight Line Ringer—Induction Coil-Condenser

No. 28 condenser wired in receiver circuit. Enables operator or subscriber to ring on a heavily loaded farm line when a number of receivers are down.

F-16	F-84	3	F-150D	F-41A	64LC	F-2370	No. 78D-1600 ohm	No. 53-5 bar alternating	28C	28½MF
F-80	F-84	3	F-150D	F-41A	64LC	F-2371	No. 78G-2500 ohm	No. 53-5 bar alternating	28C	28½MF

Selective Ringing. Harmonic—4 and 8 Party

Telephones used with this system are equipped with ringers having a frequency of 30, 42, 54 and 66 cycles per second, which is especially desirable on 4 and 8 party selective magneto lines. There is no danger from cross rings when the subscribers ring central. Specify parties desired.

F- 7	F-84	3	F-150D	F-41A	64LC	2326	No. 73A-4-party	No. 15-3 bar alternating	28

Biased Ringer for 4-Party Selective Systems

Using Positive and Negative Pulsating Current.

F- 8	F-84	3	F-150D	F-41A	64LC	2327	No. 79A-1000 ohm	No. 15-3 bar alternating	28

Magneto Desk Stands

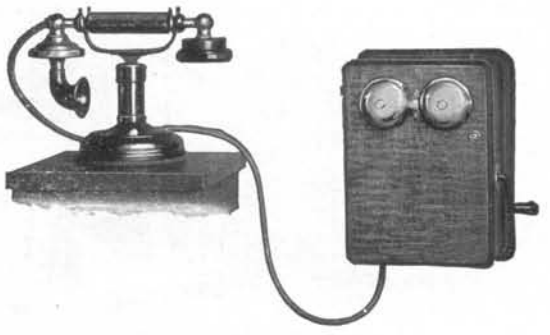
The following numbers cover stands only but include receivers. One of these stands with a No. 85 induction coil makes an excellent extension set.

Magneto Type

Code No.	Conductors	Cords D. S.	Cords Rec.	Rec.	Trans.	Where Used
F28	4	F102-D	F98-TR	F41-A	64-LC	Magneto boxes, old style.
F67	4	F102-D	F98-TR	46 Type	64-L	Dispatching sets, head receivers.
F84	3	F150-D	F98-TR	F41-A	64-LC	Magneto boxes, new style.
F85-B	4	F241-RD	248-RTR	F41-A	64-L	Dispatching sets. Same as No 28 but with L trans. and R R type cords.

TELEPHONES

Magneto Grabaphone Desk Sets



Grabaphone Type

The grabaphone desk set consists of a generator box, No. F115 cradle desk stand with 72″ 3 conductor cord, No. 11-L.C. grabaphone with 48″ 4-conductor cord. The No. 115 stand is interchangeable with the No. 84 and old No. 28 desk stand and can be used with any standard generator box. Grabaphones are becoming rapidly more popular for offices and homes. Their great convenience lies in the ability of the user to move about without getting away from the transmitter. The grabaphone also forces the user to talk directly into the transmitter which is located at exactly the right distance from the lips. We are listing some of the more popular combinations but can furnish any other types that special conditions may demand. Cords are regularly furnished with brown mercerized outer braid and spade terminals.

Straight Line Ringer

Set Code No.	Desk Stand				Desk Set Box			
	Code	Conductor	Cord	Rec.	Code	Ringer	Generator	Ind. Coil
F- 9G	F-115	3	F-150D	F-11LC	F-2328	No. 78A-1000 ohm	No. 15-3 bar alternating	28C
F-12G	F-115	3	F-150D	F-11LC	F-2361	No. 78D-1600 ohm	No. 53-5 bar alternating	28C
F-59G	F-115	3	F-150D	F-11LC	F-2362	No. 78G-2500 ohm	No. 53-5 bar alternating	28C

Straight Line Ringer—Condenser

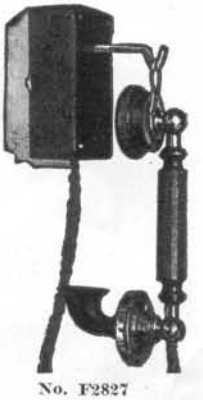
No. 28 condenser wired in receiver circuit. Enables operator or subscriber to ring on a heavily loaded farm line when a number of receivers are down.

Set Code No.	Desk Stand				Desk Set Box				
	Code	Conductor	Cord	Rec.	Code	Ringer	Generator	Ind. Coil	
F-16G	F-115	3	F-150D	F-11LC	F-2370	No. 78D-1600 ohm	No. 53-5 bar alternating	28C	28-½MF
F-80G	F-115	3	F-150D	F-11LC	F-2371	No. 78G-2500 ohm	No. 53-5 bar alternating	28C	28-½MF

Magneto Extension Telephones

F2827 Wall Grabaphone Extension Set

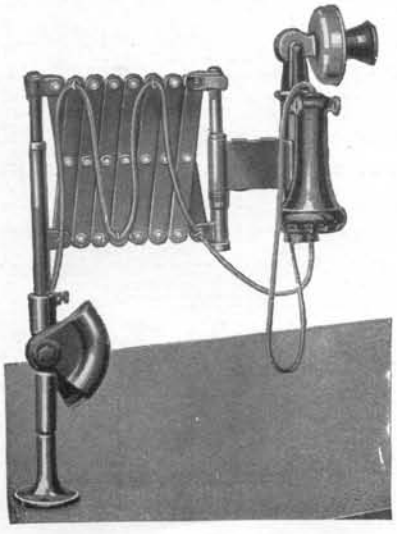
This set consists of a neat steel box equipped with No. 98 hook switch, No. 28-C induction coil and No. F12-LC grabaphone, making a complete extension telephone by the addition of two dry cells. The box is only 2 inches deep, 5 inches wide and 6 inches high and can be very conveniently mounted on a desk, on the side of a bed or any other place where it is desirable to have a telephone within handy reach.



No. F2827

TELEPHONES

No. 600 Magneto Bracket Telephone Complete With Arm



Bracket Telephone with Universal Attachment on No. 2 Mounting

Kellogg bracket telephones consist of our standard desk stands without the base, attached to bracket arms in the regular manner.

These sets are convenient for those who have constant use for desk telephones.

Bracket Telephone with No. 2 Mounting.

When it is desired to give the Bracket a vertical movement as well as a horizontal, a Universal attachment may be obtained at a small additional cost, which transforms any Standard bracket into a Universal bracket.

Bracket telephone includes a standard No. 8 telephone arm and mounting. This Arm is durably and neatly constructed and guaranteed for five years.

Kellogg Bracket phones require no other attachments or complications.

The Kellogg Telephone on the Arm is always within reach—never in the way.

	Bracket Telephone					Desk Set Box			
Set Code No.	Code	Conductor	Cord	Rec.	Trans.	Code	Ringer	Generator	Ind. Coil
609	684	3	F-150D	F-41A	64L	**2328**	78A-1000 ohm	15-3 bar	28
612	684	3	F-150D	F-41A	64L	**2361**	78D-1600 ohm	53-5 bar	28

Other combinations can be furnished when required.

Mountings

No. 1

With each Bracket Telephone, we supply a mounting with which it may be attached to the desk or table. Below you will find three types of mountings. If you do not find a type mounting which will suit your particular need, write us and we will be glad to supply you with that type which you desire.

Universal Attachment

No. 1 Mounting especially designed to be attached to the side of a flat top desk or table. It can also be used on the side of a roll top desk.

No. 5

No. 2 Mounting is used on a flat top table.

No. 5 Mounting is used on the side of a flat top desk or table.

The No. 2 Mounting is standard and is regularly furnished when either the Standard or Universal type arm is ordered, unless otherwise specified.

No. 2

TELEPHONES

Common Battery Steel Residence Type

This popular type of common battery telephone is made entirely of mild planished steel, with a heavy black enamel finish. It consists of but two parts—back-plate and cover, making every part accessible when the cover is open. It is equipped with standard Kellogg apparatus and can be used interchangeably as a party or straight line set. All condensers in talking circuits are 2 M. F.

Induction Coil Circuit
Straight Line Ringer

Code No.*	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F742-SA	84-A	1000	64-C	39	113	79-A	16	F41-A	Ringer to ground post.

Induction Coil Circuit
Biased Ringers

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F742-BA	79-A	1000	64-C	39	113	79-A	16	F41-A	Ringer to ground post.

Harmonic Ringers (Old Frequencies)

16⅔, 33⅓, 50 and 66⅔ cycles

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F742-HA	72-A	4-party	64-C	39	113	79-A	16	F41-A	Ringer to ground post.

Harmonic Ringers (New Frequencies)

30, 42, 54 and 66 cycles.

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F742-HB	73-A	4-party	64-C	39	113	79-A	16	F41-A	Ringer to ground post.

Common Battery Oak Residence Type

For those desiring a wood set in preference to steel, we have an exceptionally fine oak telephone, that is compact, trim in appearance, and positive in operation. The heavy quarter-sawed, oak cabinet is fully as attractive as the steel set.

The apparatus is accessible with plenty of room for connections and binding posts. It is equipped with Kellogg standard apparatus. All condensers in talking circuits are 2MF.

Induction Coil Circuit
Straight Line Ringer

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F729-SA	84-A	1000	64-C	41	103	79-A	16	F41-A	Ringer to ground post.

Biased Ringer

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F729-BA	79-A	1000	64-C	41	103	79-A	16	F41-A	Ringer to ground post.

Harmonic Ringer (Old Frequencies)

16⅔, 33⅓, 50 and 66⅔ cycles.

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F729-HA	72-A	4-party	64-C	41	103	79-A	16	F41-A	Ringer to ground post.

Harmonic Ringer (New Frequencies)

30, 42, 54 and 66 cycles.

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F729-HB	73-A	4-party	64-C	41	103	79-A	16	F41-A	Ringer to ground post.

TELEPHONES

Common Battery Oak Wall Type

For those who prefer common battery wall telephones with the writing shelf, our F730 type is the most popular. It is compact, attractive in appearance, and reliable in operation. The transmitter cords are concealed in the transmitter arm, all binding posts are on the inside of the box and all exposed metal parts are carefully insulated.

The standard Kellogg apparatus is compactly arranged, and provided with sufficient room for the working parts. All condensers in talking circuits are 2MF.

Induction Coil Circuit

Straight Line Ringer

Code No.	Ringer Code	Ringer Ohms Res.	Trans.	Arm	Hook Switch	Ind. Coil	Cond.	Rec.	Remarks
F730-SA	84-A	1000	22-C	42	101	79-A	66	F41-A	Ringer to ground post.

Biased Ringer

F730-BA	79-A	1000	22-C	42	101	79-A	66	F41-A	Ringer to ground post.

Harmonic Ringers (Old Frequencies)

16⅔, 33⅓, 50 and 66⅔ cycles.

F730-HA	72-A	4-party	22-C	42	101	79-A	66	F41-A	Ringer to ground post.

Harmonic Ringers (New Frequencies)

30, 42, 54 and 66 cycles.

F730-HB	73-A	4-party	22-C	42	101	79-A	66	F41-A	Ringer to ground post.

Common Battery Wall Grabaphone Type

Our No. 9742 wall type set is very convenient. The box is made entirely of mild planished steel with a heavy black enamel finish, and is equipped with standard Kellogg apparatus.

The cover is attached with hinges, located at the bottom, and the release of the spring catch permits the swinging down of the cover exposing all of the apparatus.

No. F12C Grabaphone furnishes transmission of the highest efficiency. It is sturdily built and an ideal type of instrument to use.

All condensers in talking circuits are 2MF.

Induction Coil Circuit

Straight Line Ringer

Code No.	Ringer Code No.	Ringer Ohms Res.	Hook Switch	Ind. Coil	Condenser	Grabaphone
F-9742SA	84-A	1000	116	79-A	16	F12-C

Biased Ringer

Code No.	Ringer Code No.	Ringer Ohms Res.	Hook Switch	Ind. Coil	Condensers	Grabaphone
F-9742BA	79-A	1000	116	79-A	16	F12-C

Harmonic Ringer

Old Frequencies 16⅔, 33⅓, 50, 66⅔ cycles.

Code No.	Ringer Code No.	Ringer Ohms Res.	Hook Switch	Ind. Coil	Condensers	Grabaphone
F-9742HA	72-A	4-party	116	79-A	16	F12-C
New Frequencies 30, 42, 54, 66 cycles.						
F-9742HB	73-A	4-party	116	79-A	16	F12-C

TELEPHONES

Desk Stands

The Kellogg desk stand has been carefully designed to reduce maintenance to a minimum. It is graceful in appearance and light enough in weight to handle with ease, is sufficiently rugged to withstand ordinary knocks and continuous service. It is the only one on the market that is provided with a perfect transmitter adjustment which never requires attention, the transmitter back does not become loose on its mounting, as it is part of the lug.

The capital is non-breakable and holds the transmitter securely in any position. Instead of using an ordinary japan finish over the upright which always chips or wears off, a heavy Kellogg Bakelite protection tube is used, insuring a lasting finish that does not discolor, crack or chip.

The base is of steel, treated to prevent rusting after which it is given a heavy coat of dull, black enamel. It is equipped with a heavy felt ring which is firmly held in a groove, encircling the outer edge of the base. This felt is securely held in position by prongs and protects the furniture as well as absorbing the shock of the impact when the stand is slammed down on the table.

The springs are of German silver equipped with No. 1 contacts, and with the connecting rack are located in an accessible manner in the base. The hookswitch has a very short action, yet a free movement of the contact springs is effected. All corners and sharp edges are rounded off, and the hook fork so formed that the receiver does not fall off should the stand be tilted. The standard finish is in a permanent black enamel.

No rattle to hookswitch. Weight is in the right place. Accessibility and practicability in arrangement of the apparatus in base of stand. Absolute, unequalled transmission for either short or long distances.

The superiority of this stand has caused the leading telephone companies to adopt it as a standard for long distance, as well as local work.

Common Battery Desk Stands

Code No.	Conductors	Desk Set Cord	Receiver Cord	Rec.	Trans.	Remarks
F118	3	F636-D 72″	F98-TR 36″	F41-A	64-C	Used with boxes Nos. 404, 257, 407 and 600 types.
F 97	2	F100-D 72″	F98-TR 36″	F41-A	64-C	Induction coil and talking condenser in base. Used with boxes Nos. 75, 259 and 408 types.
F 75	2	F100-D 72″	F98-TR 36″	F66-A	64-C	Direct current set with transmitter and receiver in series. Used with boxes Nos. 75, 259 and 408 types.

Common Battery Desk Grabaphone Stands

Kellogg Grabaphone stands are of the same sturdy construction as our standard desk telephones. The cradle is of pressed steel heavily black enameled, and operates the hook switch springs with the same reliability as in our desk stand.

This F115A Grabaphone stand takes the No. F11C Grabaphone.

Kellogg Grabaphones are unequalled in every way. They combine ease of talking, practicability, and handsome appearance.

They are especially desirable in offices, as only one hand is required to carry on a conversation, the right or left hand is always free, for writing, for instance, and requires minimum amount of effort.

Code	Cord	Grabaphone	Grabaphone Cord
F115A	3 cond. 72″	F-11C	4 cond. 48″

NOTE: All of the above stands are furnished with brown mercerized cords with spade terminals, unless otherwise specified. Connecting racks and binding posts in stands and receivers will take cords with either spade or spike tips.

TELEPHONES

Common Battery Desk Sets

3 Conductor Type

The F-118 stand described on the preceding page is equipped with a 3-conductor cord and is used with desk set boxes containing the induction coil and one 2 MF condenser for both the talking and ringing circuits. There is nothing in the base of this stand except the hook switch springs and connecting rack. For complete sets, order the F118 stand with any of the following desk set boxes.

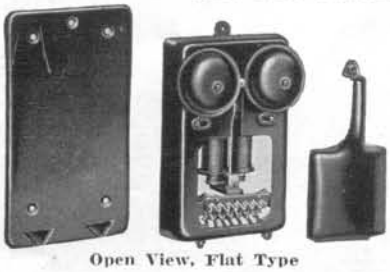
Desk Set Boxes

Kellogg Desk Stand Boxes are extra compact, requiring small mounting space. The metal boxes are of pressed steel, heavily enameled, and present a very fine appearance. The wood boxes are made of the same heavy quartered oak used in making Kellogg telephones, with the same high grade finish. All apparatus is arranged in the most practical and accessible manner.

Flat Type

Flat Type

The flat type Desk Stand Box is of pressed steel, parkerized, heavily black enameled, and is especially desirable where the mounting space is limited. The loosening of one screw releases the cover, exposing the binding posts, ringer and cord connecting rack. The loosening of another screw permits the removing of the box from the mounting plate which is attached to the wall giving access to all apparatus contained in the box. The connecting rack takes either spike or spade (flat) terminal cords.



Open View, Flat Type

Code	Ringer
F-404SA	86-A 1000 Ohm Straight Line.
F-404BA	85-B 1000 Ohm Biased.
F-404HB	88-A Four-party Harmonic, 30, 42, 54, 66 cycles.
F-404HA	87-A Four-party Harmonic, 16⅔, 33⅓, 50, 66⅔ cycles.

Deep Front Type

The deep drop-front type Desk Stand Box is of pressed steel, and very popular, although somewhat larger than the flat type, it is compact and pleasing in appearance. The cover is attached with hinges, which are located at the bottom. The release of the spring catch which also forms the tapper guard, permits the swinging down of the cover, exposing all apparatus.

Deep Drop-Front Type

The connecting rack takes either spike or spade (flat) terminal cords.

Code	Ringer
F-257SA	84-A 1000 Ohm Straight Line.
F-257 BA	79-A 1000 Ohm Biased.
F-257HB	73-A Four-party Harmonic 30, 42, 54, 66 cycles.
F-257HA	72-A Four-party Harmonic 16⅔, 33⅓, 50, 66⅔ cycles.

Open View
Deep Drop-Front Type

Oak Type

No. 407 Type

The No. 407 Type Desk Set box is of quartered oak, with Kellogg high grade finish. It is light in weight, compact, handsome in appearance, and is a popular box, where the wood type is desired.

Code	Ringer
F-407SA	84-A 1000 Ohm Straight Line.
F-407BA	79-A 1000 Ohm Biased.
F-407HA	72-A Four-party Harmonic, 16⅔, 33⅓, 50, 66⅔ cycles.
F-407HB	73-A Four-party Harmonic, 30, 42, 54, 66 cycles.
F-407HC	74-A Two-party Harmonic, 20, 60 cycles.

Open View
No. 407 Type

All of the above boxes are equipped with a 2MF condenser and an induction coil.

TELEPHONES

Common Battery Desk Sets

2 Conductor Type

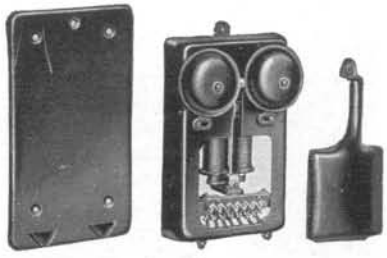
The F-97 stand is furnished with a 2-conductor cord and contains the induction coil and a 2-MF talking condenser in the base. A separate 1-MF ringing condenser is furnished in the desk set box. For complete sets, order one F-97 desk stand and any of the following desk set boxes.

Desk Set Boxes

Flat Type

Flat Type

The flat type Desk Stand Box is of pressed steel, parkerized, heavily black enameled, and is especially desirable where the mounting space is limited. The loosening of one screw releases the cover, exposing the binding posts, ringer and cord connecting rack. The loosening of another screw permits the removal of the box from the mounting plate, which is attached to the wall, giving access to all apparatus contained in the box. The connecting rack takes either spike or spade (flat) terminal cords.



Open View Flat Type

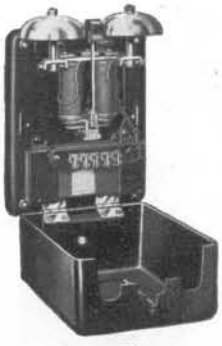
Code	Ringer
F-75SA	86-A 1000 Ohm Straight Line.
F-75BA	85-B 1000 Ohm Biased.
F-75HB	88-A Four-party Harmonic 30, 42, 54, 66 cycles.
F-75HA	87-A Four-party Harmonic 16⅔, 33⅓, 50, 66⅔ cycles.

Deep Front Type

The deep drop-front type Desk Stand Box is of pressed steel, and very popular, although somewhat larger than the flat type, it is compact and pleasing in appearance. The cover is attached with hinges, which are located at the bottom. The release of the spring catch which also forms the tapper guard, permits the swinging down of the cover, exposing all apparatus.

Deep Drop-Front Type

Code	Ringer
F-259SA	84-A 1000 Ohm Straight Line.
F-259BA	79-A 1000 Ohm Biased.
F-259HB	73-A Four-party Harmonic, 30, 42, 54, 66 cycles.
F-259HA	72-A Four-party Harmonic 16⅔, 23⅓, 50, 66⅔ cycles.



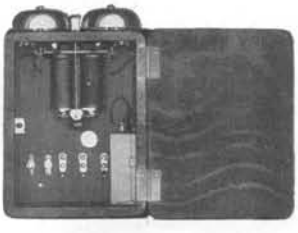
Open View Deep Drop-Front Type

Oak Type

The No. 408 Type Desk Set box is of quartered oak, with Kellogg high grade finish. It is light in weight, compact, handsome in appearance, and is a popular box, where the wood type is desired.

No. 408 Type

Code	Ringer
F-408SA	84-A 1000 Ohm Straight Line.
F-408BA	79-A 1000 Ohm Biased.
F-408HA	72-A Four-party Harmonic, 16⅔, 33⅓, 50, 66⅔ cycles.
F-408HB	73-A Four-party Harmonic, 30, 42, 54, 66 cycles.
F-408HC	74-A Two-party Harmonic, 20, 60 cycles.



Open View No. 408 Type

All of the above boxes are equipped with a 1MF condenser.

TELEPHONES

Common Battery Desk Sets

Grabaphone Type

The F-115A Grabaphone is of the same sturdy construction as our standard desk stand. It is furnished with a three-conductor cord and is used with desk set boxes containing the induction coil and a 2-MF condenser for both the talking and ringing circuits. This stand takes an F-11C Grabaphone.

There is nothing in the base of this stand except the hookswitch springs and connecting rack.

For complete sets, order one No. F-115A desk stand and one F-11C Grabaphone with any of the following desk set boxes.

Desk Set Boxes
Flat Type

Flat Type

The flat type Desk Stand Box is of pressed steel, parkerized, heavily black enameled, and is especially desirable where the mounting space is limited. The loosening of one screw releases the cover, exposing the binding posts, ringer and cord connecting rack. The loosening of another screw permits the removal of the box from the mounting plate, which is attached to the wall, giving access to all apparatus contained in the box. The connecting rack takes either spike or spade (flat) terminal cords.

Open View Flat Type

Code	Ringer
F-404SA	86-A 1000 Ohm Straight Line.
F-404BA	85-B 1000 Ohm Biased.
F-404HB	88-A Four-party Harmonic 30, 42, 54, 66 cycles.
F-404HA	87-A Four-party Harmonic 16⅔, 33⅓, 50, 66⅔ cycles.

Deep Front Type

The deep drop-front type Desk Stand Box is of pressed steel, and very popular, although somewhat larger than the flat type, it is compact and pleasing in appearance. The cover is attached with hinges, which are located at the bottom. The release of the spring catch which also forms the tapper guard, permits the swinging down of the cover, exposing all apparatus.

Deep Drop-Front Type

Code	Ringer
F-257SA	84-A 1000 Ohm Straight Line.
F-257BA	79-A 1000 Ohm Biased.
F-257HB	73-A Four-party Harmonic 30, 42, 54, 66 cycles.
F-257HA	72-A Four-party Harmonic 16⅔, 33⅓, 50, 66⅔ cycles.

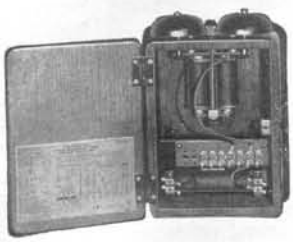
Open View Deep Drop-Front Type

Oak Type

The No. 407 Type Desk Set Box is of quartered oak, with Kellogg high grade finish. It is light in weight, compact, handsome in appearance, and is a popular box, where the wood type is desired.

No. 407 Type

Code	Ringer
F-407SA	84-A 1000 Ohm Straight Line.
F-407BA	79-A 1000 Ohm Biased.
F-407HA	72-A Four-party Harmonic 16⅔, 33⅓, 50, 66⅔ cycles.
F-407HB	73-A Four-party Harmonic 30, 42, 54, 66 cycles.
F-407HC	74-A Two-party Harmonic 20, 60 cycles.



Open View No. 407 Type

All of the above boxes are equipped with a 2MF condenser and an induction coil.

TELEPHONES

Common Battery Enclosed Gong Wall Type

No. F801

Kellogg enclosed gong type wall telephones are made in three styles or circuit arrangements; straight common battery, straight common battery for 8 or 10 party harmonic rural common battery lines, and common battery arranged for automatic dials.

In planning these sets, a great deal of time and study was spent to secure the most accessible arrangement of parts so standardized that parts would be interchangeable with those used on older Kellogg telephones.

The photographs we believe will show to what extent we have succeeded. The cabinets used in these sets are made from heavy drawn steel, finished in durable black enamel. All parts are most accessible for inspection and adjustment. Connecting racks are stamped with white lead so that all markings can be easily distinguished.

The booster induction coil circuit has been designed in connection with the Kellogg transmitter and receiver for maximum transmission.

For common battery rural lines, having divided ringing, we recommend the No. 802 set which is arranged with an extra condenser in the ringer circuit. The standard 801 set has a provision for adding the second condenser to convert it for rural use without any change in the cabling.

Ringer wires on all sets are separate from the cable, so that the ringer can be removed without the use of a soldering iron or without disturbing the wiring in the set. For low maintenance, excellent transmission and long life, we believe the telephone manager can find nothing better than these fine instruments.

Common Battery Telephones, Straight Line and Harmonic

	Ringer	Induction Coil	Condenser	Remarks
F-801SA	84A-1000 ohm	79A	146-1Mf	Straight Line
F-801HA	72A-Harmonic	79A	146-1Mf	16⅔, 33⅓, 50, 66⅔ cyles
F-801HB	73A-Harmonic	79A	146-1Mf	30-42-54-66 cyles
F-801BA	79A-1000 ohm biased	79A	146-1Mf	Biased ringer

Common Battery Telephones for Harmonic Rural Lines

F-802HB	73A-Harmonic	79A	146 & 12	30-42-54-66 cyles
F-801HA	72A-Harmonic	79A	146 & 12	16⅔ cyles

Arranged for Automatic Dial

The No. F-803 automatic enclosed gong wall telephone contains the same standard equipment used in the above sets.

These telephones are furnished without dials unless specified. When furnished without dial, openings are covered with suitable blanks.

	Ringer	Induction Coil	Condenser	Remarks
F-803BA	79A	79A	146-1Mf	Biased ringer for straight line use
F-803HA	72A-Harmonic	79A	146-1Mf	16⅔, 33⅓, 50, 66⅔ cycles
F-803HB	73A-Harmonic	79A	146-1Mf	30-42-54-66 cycles

TELEPHONES

Common Battery Enclosed Gong Desk Type

Enclosed gong desk sets are made up in two types, common battery and automatic. The construction of the desk set box is practically the same as that used in the wall sets and parts are interchangeable. The desk set box contains the ringer, induction coil, No. 146-1Mf condenser and connecting rack. The same desk set boxes are used on both straight common battery and automatic, the only difference being in the desk stands.

For complete description of the F-118 desk stand, see page 13. A complete desk set consists of one of these stands and one of the following desk set boxes:

	Ringer	Induction Coil	Condenser	Remarks
600SA	84A-1000 ohm	79A	146-1Mf	Straight Line
600HA	72A-Harmonic	79A	146-1Mf	16⅔, 33⅓, 50, 60⅔ cycles
600HB	73A-Harmonic	79A	146-1Mf	30-42-54-66 cycles
600BA	79A-1000 ohm biased	79A	146-1Mf	Biased ringer

Common Battery Enclosed Gong Desk Grabaphone Sets

The F-115A Grabaphone Desk Stand is of the same sturdy construction as the regular F-118 stand and interchangeable with it. Because of the convenience of this type of equipment it is preferred by many subscribers. It is used with any of the F-600 type Desk Boxes listed below.

	Ringer	Induction Coil	Condenser	Remarks
600SA	84A-1000 ohm	79A	146-1Mf	Straight Line
600HA	72A-Harmonic	79A	146-1Mf	16⅔, 33⅓, 50, 60⅔ cycles
600HB	73A-Harmonic	79A	146-1Mf	30-42-54-66 cycles
600BA	79A-1000 ohm biased	79A	146-1Mf	Biased ringer

TELEPHONES

Common Battery Desk Sets

Automatic Type

The Kellogg Automatic Desk Stand is very similar to the standard Kellogg Desk Stand except that the upright is set off center permitting the dial to be placed well onto the surface of the base to protect the dial mechanism from injury in case the desk stand is accidently knocked over.

Another important feature of the Kellogg Automatic Desk Stand is that the weight of the instrument is such that numbers can be turned up on the dial with one hand not requiring the other hand to steady the base as is the case with some other automatic instruments.

The connecting rack in the base is of the Universal type, taking either spike or spade tips. It is accessible, convenient, durable and efficient.

A complete set consists of an F-301 desk stand and one of the following desk set boxes.

Telephones are furnished without dials unless specified.

	Ringer	Induction Coil	Condenser	Remarks
600HA	72-A-Harmonic	79A	146-1Mf	16⅔, 33⅓, 50, 60⅔ cycles
600HB	73-A-Harmonic	79A	146-1Mf	30-42-54-66 cycles
600BA	79-A-1000 ohm biased	79A	146-1Mf	Biased ringer

Common Battery Desk Grabaphone Sets

Automatic Type

The No. F135 automatic desk grabaphone set is essentially the same in circuit design and operation as the F301 Desk Set listed above. Because of its convenience many subscribers prefer it to the regular desk type.

It is furnished with the same heavy offset base and standard induction coil booster circuit. Interchangeable with F301 Desk Stand and used with the F600 type desk set boxes listed above.

Telephones are furnished without dials unless specified. When furnished without dials, openings are covered with suitable blanks.

Common Battery Grabaphone Extension Sets

The Kellogg Grabaphone set is a desirable instrument for extension service. It is a handy bed-side telephone and a perfect conversation is always a certainty, whether in a standing, sitting or reclining position.

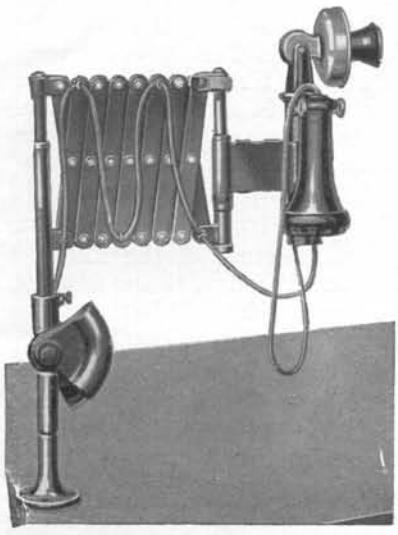
This set consists of a small steel box and a No. F12C Grabaphone. The box is neatly finished in a durable black enamel. A mounting space of 5x6 inches is all that is necessary to take care of this installation.

Induction Coil Circuit

Code No.	Hook Switch	Retard. Coil	Cond.	Grabaphone
F722	98	79-A	62	F12-C

TELEPHONES

No. 600 Bracket Telephone Complete With Arm



Bracket Telephone with Universal Attachment on No. 2 Mounting.

Kellogg bracket telephones consist of our standard desk stands without the base, attached to bracket arms in the regular manner.

These sets are convenient for those who have constant use for desk telephones.

Bracket Telephone with No. 2 Mounting.

For the telephone manager it means a desk-stand rate with no desk-stand maintenance. The "no base" feature prevents all base trouble and breakage from mishandling and permits every paper and letter on the desk to be seen at once. The added safety of mounting the desk stand on the sturdy arm is desirable because it eliminates all possibility of the desk-stand being knocked from the top of the desk to the floor. An accident which usually results in broken mouthpieces and receiver-shells, and a general disfigurement and break-down of the apparatus. The cord, likewise, is held securely on the bracket and out of the way.

When it is desired to give the Bracket a vertical movement as well as a horizontal, a Universal attachment may be obtained for small additional cost, which transforms any Standard bracket into a Universal bracket.

Bracket telephone includes a standard No. 8 telephone arm and mounting. This Arm is durably and neatly constructed and will last for many years. It is guaranteed for five years.

Kellogg Bracket phones require no other attachments or complications.

The Kellogg Telephone on the Arm is always within reach—never in the way.

The following numbers cover complete sets with flat steel desk set boxes. Deep steel or oak boxes may be substituted by referring to boxes used with F-118 stand.

Set Code No.	Bracket Telephone					Desk Set Box			
	Code	Conductor	Cord	Rec.	Trans.	Code	Ringer	Cond.	Ind. Coil
F-618SF	F-618	3	F-150-D	F-41A	64C	600SA	86A-1,000 ohm	146-1MF	79A
F-618BF	F-618	3	F-150-D	F-41A	64C	600BA	85B-1,000 ohm	146-1MF	79A
F-618HAF	F-618	3	F-150-D	F-41A	64C	600HA	87A-16⅔-33⅓-50-66⅔	146-1MF	79A
F-618HBF	F-618	3	F-150-D	F-41A	64C	600HB	88A-30-42-54-66	146-1MF	79A

Mountings

No. 1

With each Bracket Telephone, we supply a mounting with which it may be attached to the desk or table. Below you will find three types of mountings. If you do not find a type mounting which will suit your particular need, write us and we will be glad to supply you with that type which you desire.

Universal Attachment

No. 5

No. 1 Mounting especially designed to be attached to the side of a flat top desk or table. It can also be used for side of a roll top desk.

No. 2 Mounting is used on a flat top table.

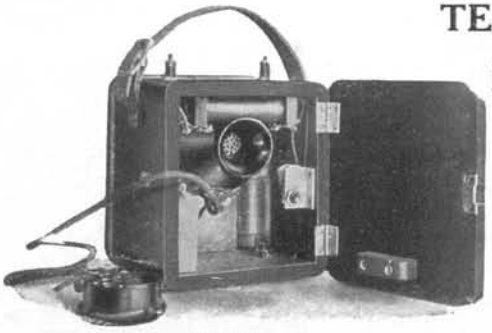
No. 5 Mounting is used on the side of a flat top desk or table.

The No. 2 Mounting is standard and is regularly furnished when either the Standard or Universal type arm is ordered, unless otherwise specified.

No. 2

TELEPHONES

Railway Telephones



No. 2731

Portable Sets
Birch Mahogany

The No. 2731 portable set is very compact and light in weight. The cabinet is of unusually fine birch mahogany, and is equipped with standard Kellogg apparatus.

This handy set is used by several of our large railroad companies, and it fills the need of communication while enroute.

Code No.	Trans.	Ind. Coil	Cond.	Push Button	Rec.
F2731	22-L	28-C	28	4	46-A

Above set used with line connecting pole.

No. 2744
Insulated Telephone

Insulated Telephones

Insulated Wall Telephone, compact wood-work with concealed binding posts, for use on lines in the vicinity of high-tension currents to safeguard the telephone circuit and avoid injury from shocks. No exposed connected metal parts.

No. 2744 Contains: No. 53 5-bar generator, No. 78D 1600 ohm ringer, No. 22L transmitter, No. 28C induction coil, No. 41A receiver, special railway cord.

Oil Field Telephones

Wall Type

Heavy Duty Extra Powerful Set

Code No.
2884 Wall telephone. Oak cabinet with concealed binding posts. Designed to meet the requirements of oil field and pipe line companies where highest transmission and ringing service is demanded. Separate primary and secondary circuit.

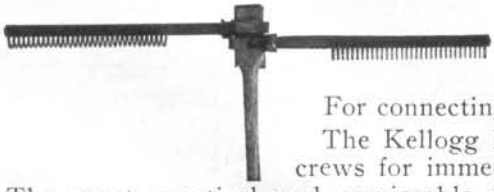
Contains: No. 22L transmitter on No. 42 arm, No. 75 6-bar generator, No. 79G 2500 ohm ringer, No. 28C induction coil, No. 41A receiver with special railway cord.

No. 2884
Oil Field Telephone

Desk Type

The desk type oil field telephone consists of our standard No. 90A desk stand and No. 2415 desk set box. This desk set box is equipped with a six bar generator and will give the same service as the 2884 wall set described above. The desk stand is handsomely finished in black enamel and equipped with Bakelite receiver shell and mouth piece, making this stand practically indestructible.

This desk set box contains: No. 75 6-bar generator, No. 28C induction coil, No. 78G 2500 ohm ringer.



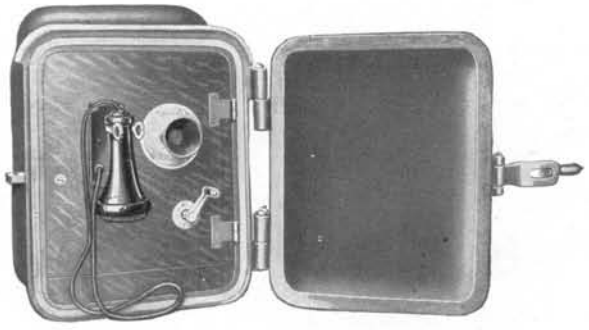
Kellogg Jointed Railway Connecting Poles

For connecting at any point on a pole line circuit.

The Kellogg No. 12-B telephone connecting arm is used by train crews for immediate connection along the lead with the dispatcher. The most practical and serviceable jointed pole equipment for this purpose. Seasoned hickory. Comes in three pieces. Quickly assembled. The connecting rods or arms at the top are of bronze and fitted with spiral springs which automatically scrape and grip the line wires making excellent connection. These connecting arms are hinged at the pole and fold close to the pole. The two arms, and connecting pole with twisted pair wire fold into a compact bundle. A number of railroads are using these poles with our portable telephone, Code No. 2731. The bronze arms can be screwed into position at right angles to the pole or parallel with it so that contact can be made with two wires on the same level, from the same cross arm, or from a pair of wires, one above the other.

TELEPHONES
Malleable Iron Case

No. 2868



Open View No. 2868

These telephones are intended for use in mines, railroad yards, for street railways, and for all outdoor use. The case is of heavy malleable iron, designed to fasten on poles or on the wall. All parts are thoroughly protected from the weather and from mechanical injury. The malleable iron case is 16″ high, 17¾″ wide and 17½″ deep. Net weight, 97 lbs. The front door, which opens on strong hinges, is provided with a heavy malleable iron hasp so it can be locked by means of an ordinary iron padlock. The bells are protected by a heavy malleable iron hood, provided with weatherproof openings, which allow the ringing to be heard at a considerable distance.

This set was designed at the request of one of the large railroads for yard service. It is unquestionably the most rigid and serviceable set ever built, and should not be confused with the ordinary cast iron mine telephone.

Code No.	Ringer	Trans.	Generator	Ind. Coil
2868	1000 ohms	32L	4 bar	28-C
2882	1600 ohms	32L	5 bar	28-C
2883	2500 ohms	32L	5 bar	28-C

Sets—Test
No. 1025 Lineman's Test Set

Code No. 1025—Test Set

This compact, easy-to-carry lineman's testing and talking set is arranged for use on common battery lines. A very desirable addition to the lineman's repair kit. When used as a talking set, central can be reached by simply "clipping" in at the main frame, the terminal rack or out on the line.

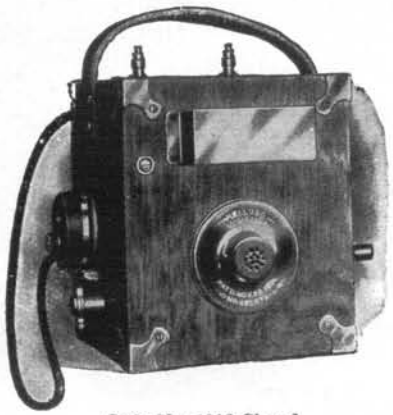
The set consists of a Code No. 19 grabaphone arranged for use with two single conductor cords, sixty-two inches long, equipped with two No. 13 Universal test clips. The grabaphone is made entirely of metal, black enameled with one exception, the ear cap which is made of hard rubber.

TELEPHONES
SETS—TEST

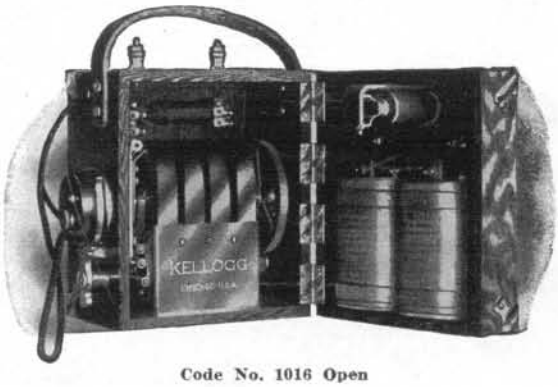
Kellogg Test Sets are compact, light in weight and properly proportioned so as to be easy to carry. The durable cabinet is reinforced with steel plates at each corner. The standard Kellogg equipment is securely mounted in the most practical manner for the convenience of the line man.

The service furnished by these sets in the World War prove them to be unequalled for reliability and long life.

Any combination of generators and ringers, either series or bridging, furnished promptly to order.



Code No. 1016 Closed



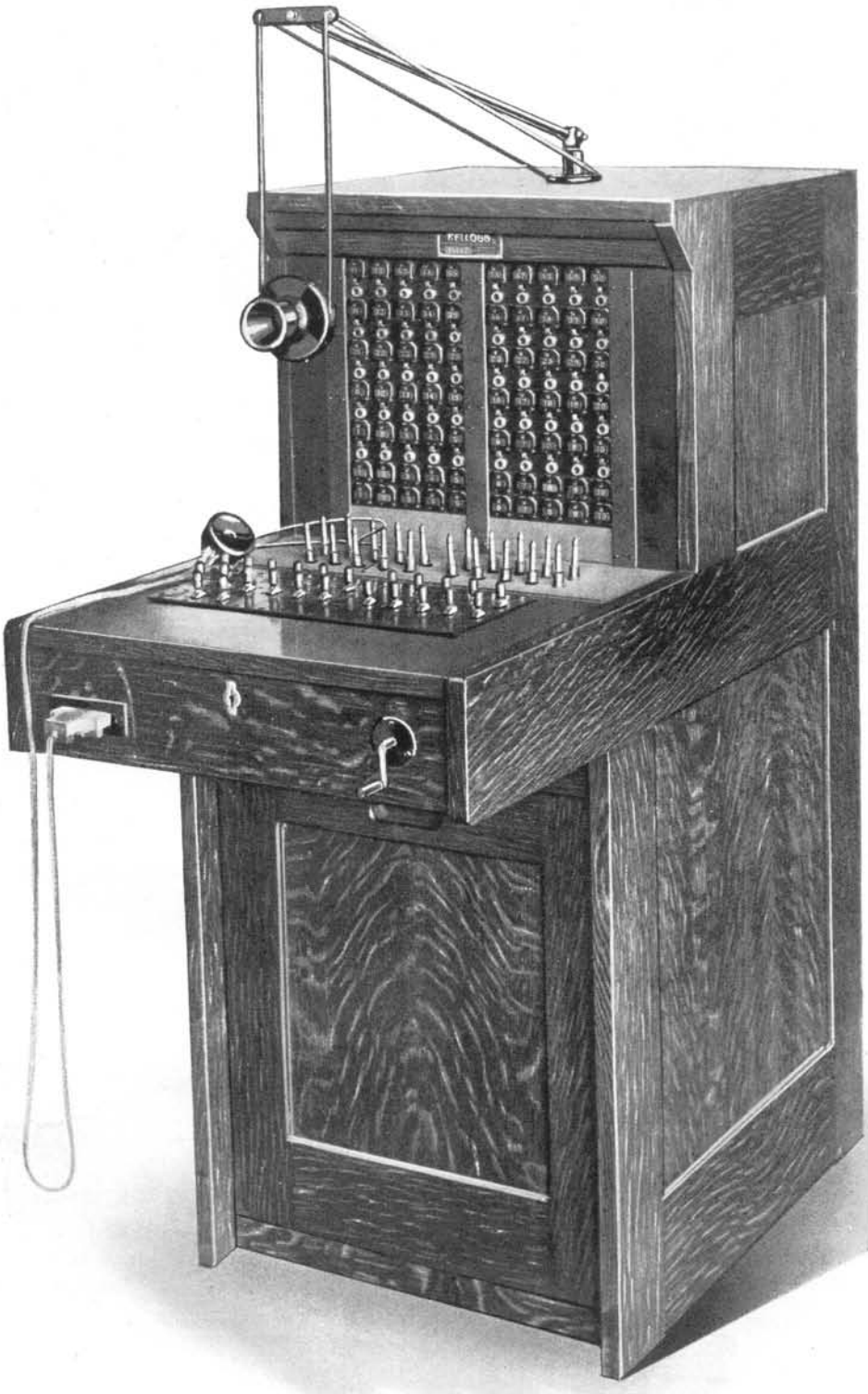
Code No. 1016 Open

No. 1008 measurements: 6⅞" h, 6⅛" w, 6" d.
No. 1016 measurements: 8" h, 7" w, 8⅜" d.
Weight about 15 pounds.

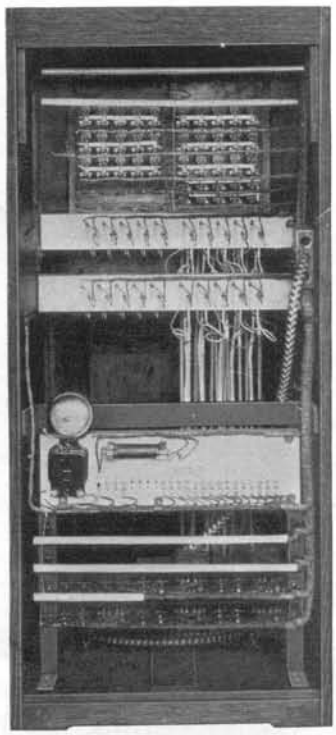
Bridging Type

This set is a complete portable telephone and is built from standard parts. An excellent all round test set.

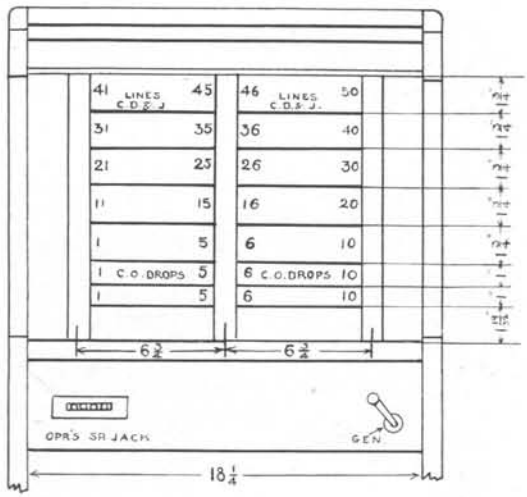
Code No.	Generator Code No.	Bars	Ringer Code No.	Ohms	Hook Switch	Rec.	Trans.	Ind. Coil	Oval Dry Cells
1016	22	4	18-C	1600	47	14-A	32-L	28-C	2 No. 4



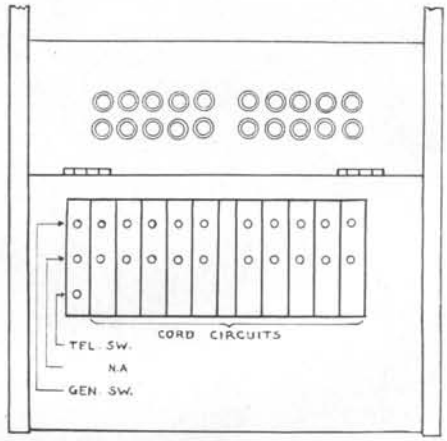
Fifty Line Magneto Switchboard.



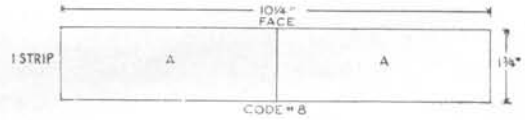
Rear view, 50 line board
Floor space occupied: Base, Depth, 24¾.
Width, 18¾.



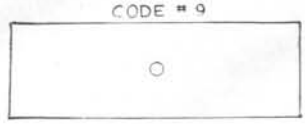
Front view of face equipment showing standard numbering arrangement of drops and jacks and front end of key shelf, with operator's jack.



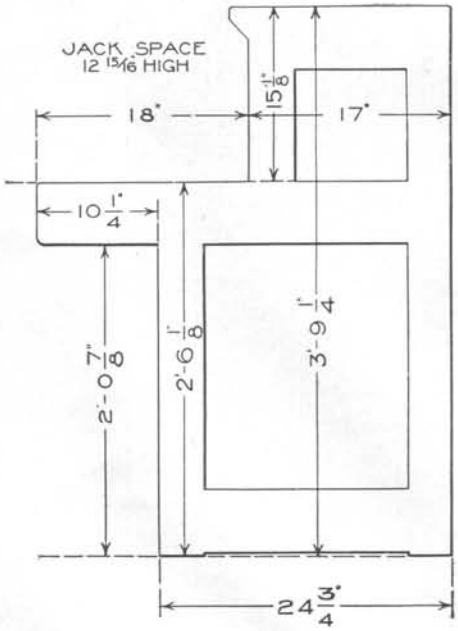
Top view of key shelf, showing keys and cord equipment.



Occupies space of 10 combined drops and jacks, with compartments for cash drawers.



Cash Drawer to Fit "A."

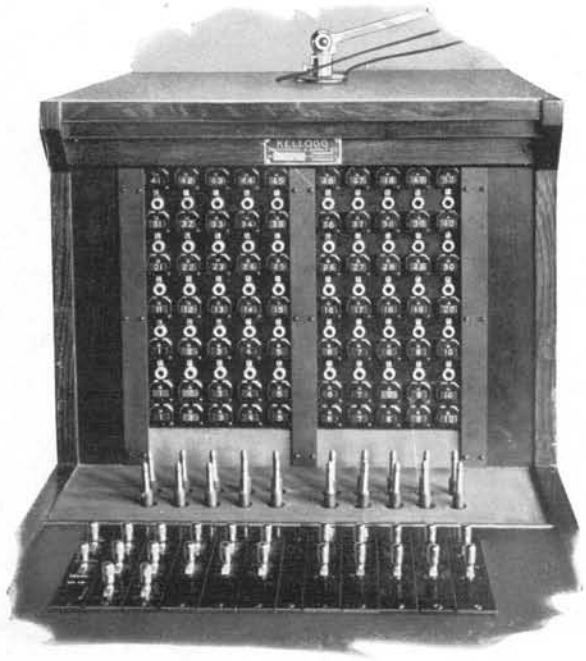


Side elevation 50 line cabinet

Shipping weight fully equipped, 180 lbs. net, 350 lbs. packed.

No. 50—Fifty Lines Capacity

One Position—Low Key Shelf



The No. 50 Magneto switchboard is wired as follows:

Drop Supervision Only

Cabinet Code	Lines Wired	Cords Wired
No. 50	50	10

This No. 50 type magneto switchboard has greater flexibility, we believe, than any other similar equipment. It is extremely fast, and economical in operating, and any standard arrangement of equipment assures a money saving and money making switchboard for the smaller town exchange.

Kellogg No. 50 Type Magneto Switchboards are designed to meet the needs of every magneto telephone exchange with equipment that will operate reliably and give the best class of service under all conditions. Everything has been done to eliminate complicated circuits and apparatus and to build every part with the idea of reducing future maintenance costs. The Kellogg self-restoring drop and jack with its pure hard rubber insulation between drop shell and frame, its long lever hook and simple spring arrangement is giving good uninterrupted service in many thousand boards in this country and abroad.

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

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

The night alarm contact is held point up in a long and resilient German silver spring and will not fail to operate the bell on night calls.

In the keys a heavy T frame permits the springs with No. 1 contact metal to be mounted on both sides and the cam is so designed that the extra heavy rollers are held in place without screws, making these keys the smoothest operating and the longest wearing on the market.

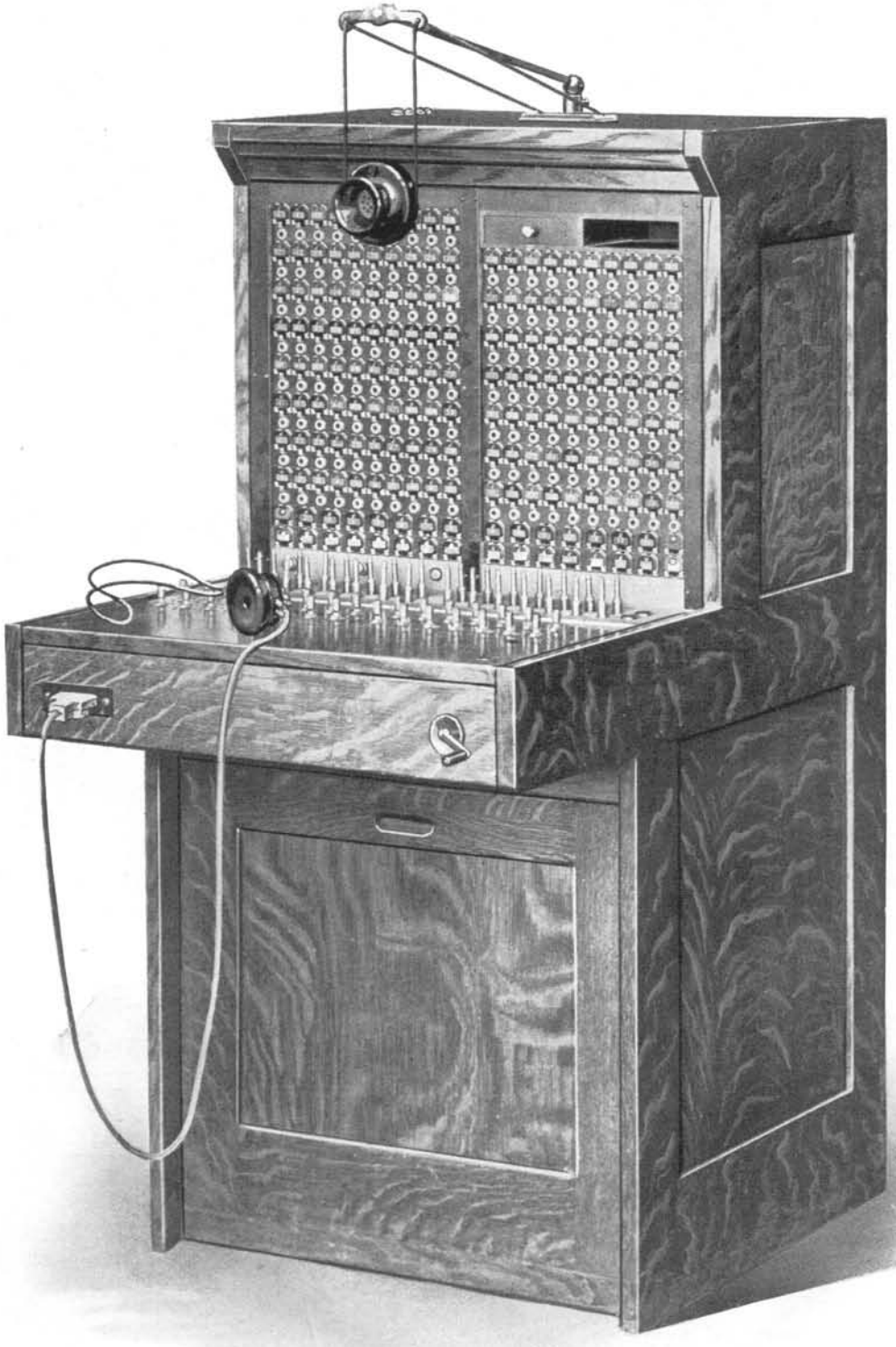
The operators' equipment consists of a suspended type transmitter. The jack is mounted on the face of the key shelf.

The finished cabinets present a most attractive appearance and are what is known as the low key shelf type, permitting the use of an ordinary office chair and providing sufficient space on the key shelf for making tickets or such other work as the operator may have occasion to do.

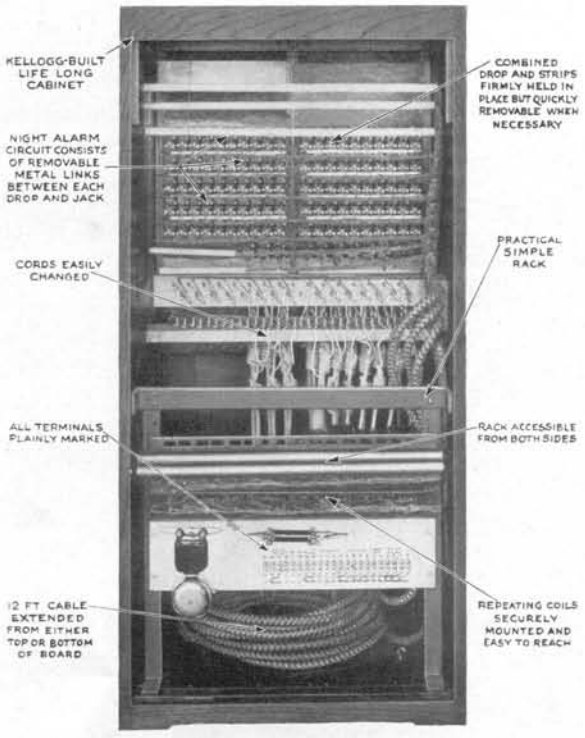
All circuits used in these switchboards are carefully balanced against the possibility of cross talk and generator noise by the use of twisted pairs in all wiring.

The detailed description and construction of all the various important pieces of apparatus are given following the circuit descriptions.

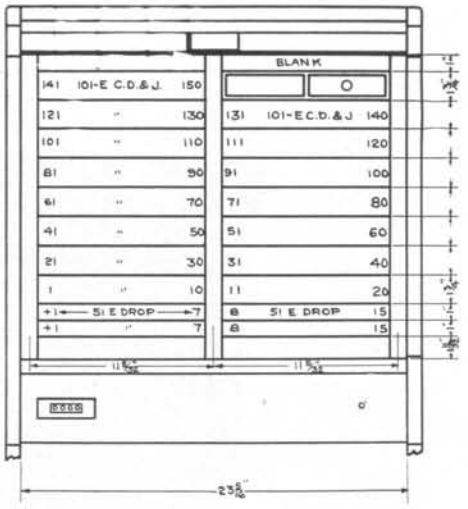
No. 150 MAGNETO SWITCHBOARD



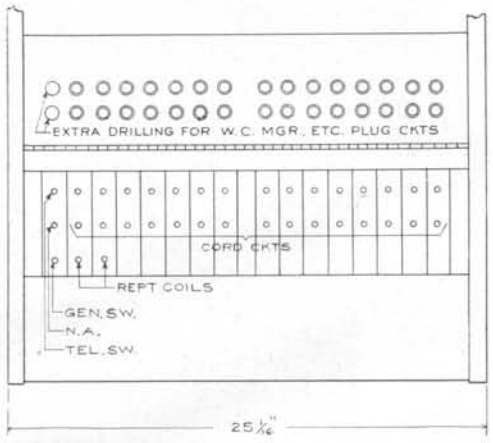
150 *Line Magneto Switchboard may be equipped with either double or single drop supervision.*



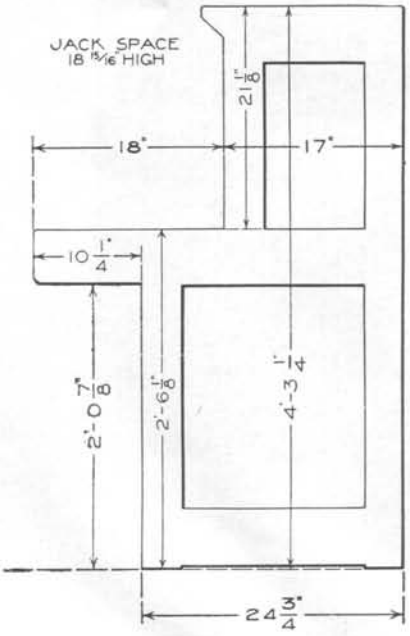
Rear view, 150 line board
Floor space occupied: Base, depth, 24¾.
Width, 25 1/16.



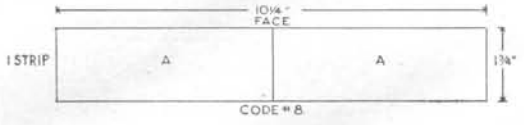
Front view of face equipment, showing standard numbering arrangement of drops and jacks and front end of key shelf, with operator's jack.



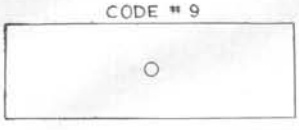
Top view of key shelf, showing keys and cord equipment.



Side elevation 150 line cabinet.

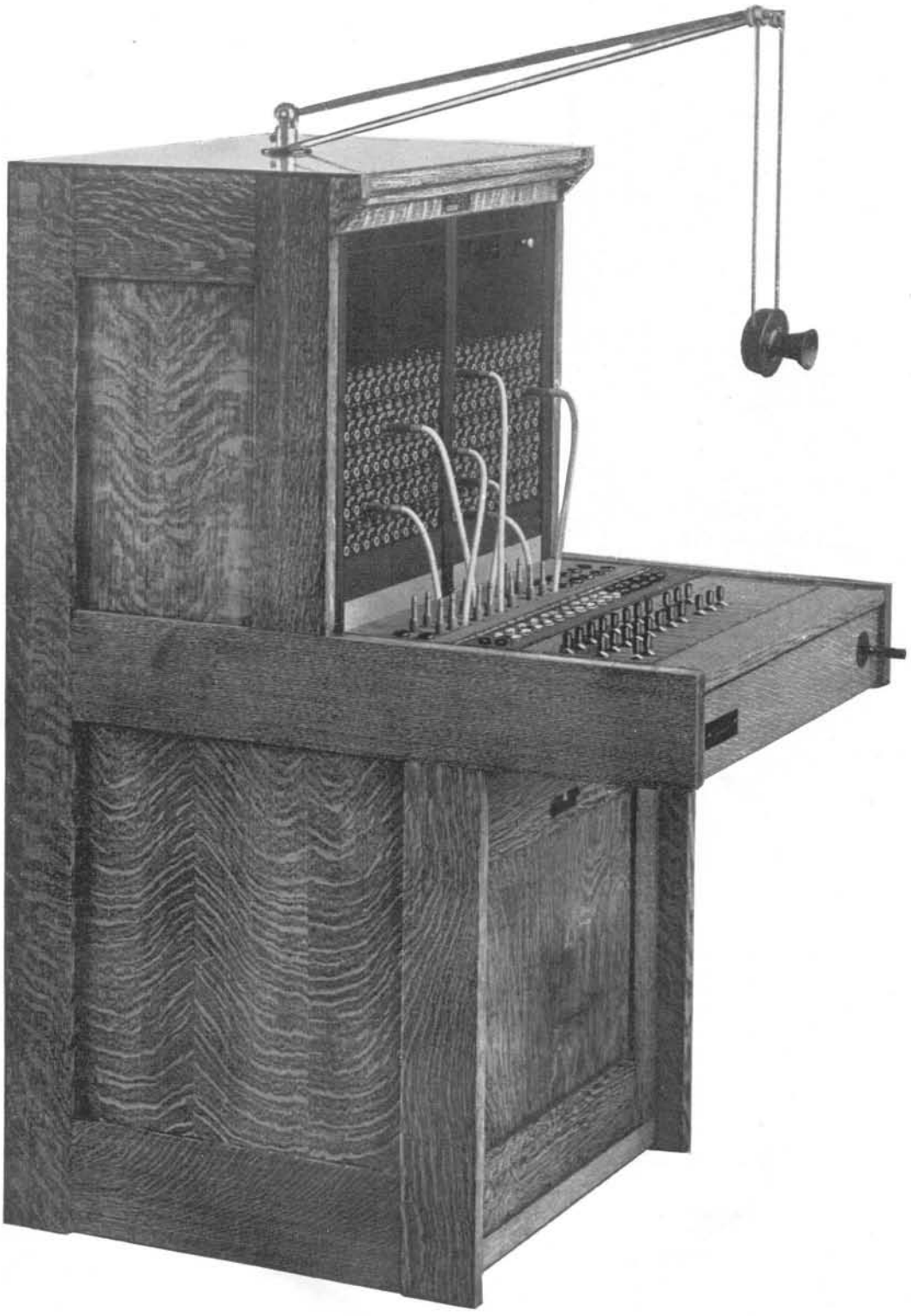


Occupies space of 10 combined drops and jacks, with compartments for cash drawers.

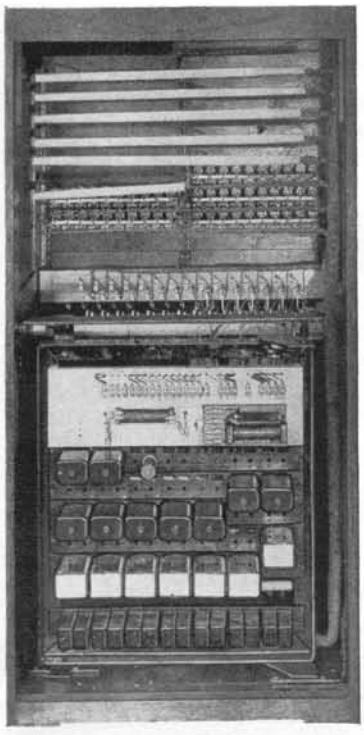


Cash Drawer To Fit "A"

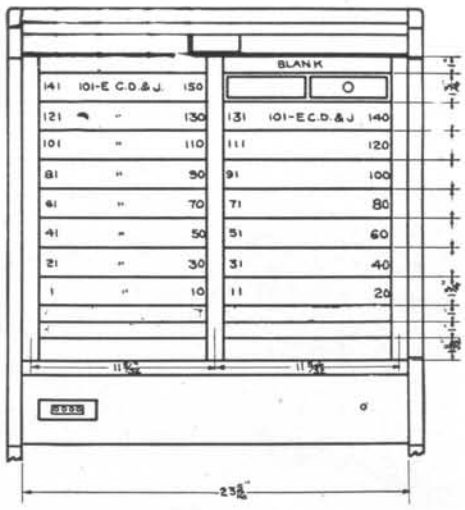
Shipping weight fully equipped, 450 to 500 lbs. packed.



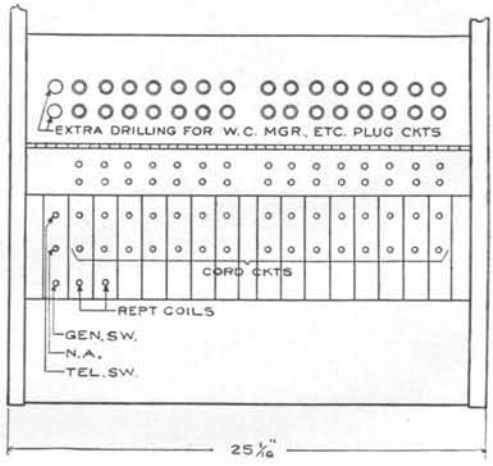
150 *Type Magneto Switchboard with Double Lamp Supervision.*



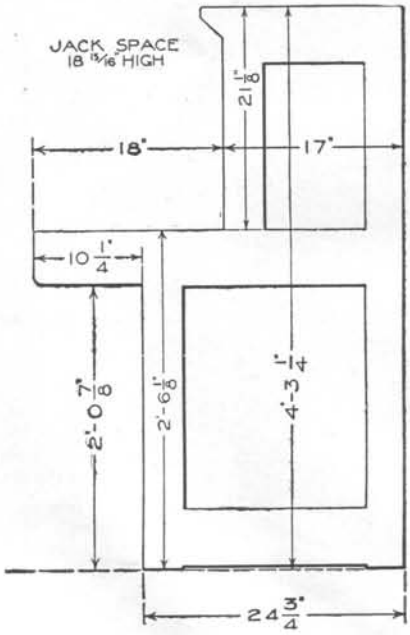
Rear view of 150 type lamp supervision, Magneto Switchboard.



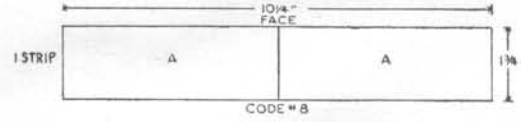
Front view of face equipment, showing standard numbering arrangement of drops and jacks and front end of key shelf, with operator's jack.



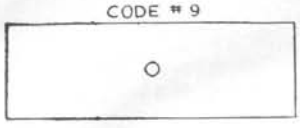
Top view of key shelf, showing keys, lamp and cord equipment.



Side elevation 150 line cabinet.
Floor space occupied: Base, depth, 24¾.
Width, 25⅛.

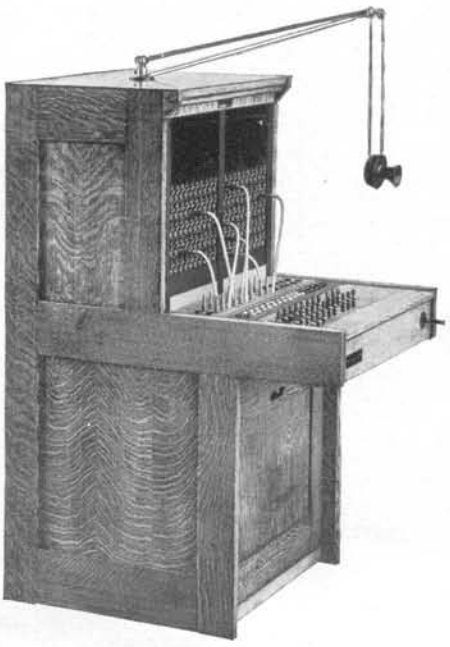


Occupies space of 10 combined drops and jacks, with compartments for cash drawers.



Cash Drawer
To Fit "A"

No. 150—One Hundred Fifty Lines Capacity
One Position—Low Key Shelf



The No. 150 Magneto switchboard is wired as follows:

Drop Supervision

Cabinet Code	Lines Wired	Cords Wired
No. 150-A	100	15
No. 150-B	150	15

Lamp Supervision

Cabinet Code	Lines Wired	Cords Wired
No. 150-A.L.	100	15
No. 150-B.L.	150	15

This No. 150 type magneto switchboard has greater flexibility, we believe, than any other similar equipment. It is extremely fast, and economical in operating, and any of the combinations described on these pages assures a money saving and money making switchboard for the smaller town exchange.

Kellogg No. 150 Type Magneto Switchboards are designed to meet the needs of every magneto telephone exchange with equipment that will operate reliably and give the best class of service under all conditions. Everything has been done to eliminate complicated circuits and apparatus and to build every part with the idea of reducing future maintenance costs. The Kellogg self-restoring drop and jack with its pure hard rubber insulation between drop shell and frame, its long lever hook and simple spring arrangement is giving good uninterrupted service in many thousand boards in this country and abroad.

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

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

The night alarm contact is held point up in a long and resilient German silver spring and will not fail to operate the bell on night calls.

In the keys a heavy T frame permits the contact springs with No. 1 contact metal points to be mounted on both sides and the cam is so designed that the extra heavy rollers are held in place without screws, making these keys the smoothest operating and the longest wearing on the market.

The Key Shelf is equipped with a bracket support to hold it in a convenient open position when an inspection of the keys is necessary.

The operators' equipment consists of a suspended or breast plate type transmitter and headband and receiver. The jack is mounted on the face of the key shelf.

An operator's telephone circuit switching key is permanently wired into the circuit which permits switching together two operators' circuits to enable one operator to use the cord circuits of two boards when they are installed next to each other where a larger capacity than one hundred and fifty lines is required.

The finished cabinets present a most attractive appearance and are what is known as the low key shelf type, permitting the use of an ordinary office chair and providing sufficient space on the key shelf for making tickets or such other work as the operator may have occasion to do.

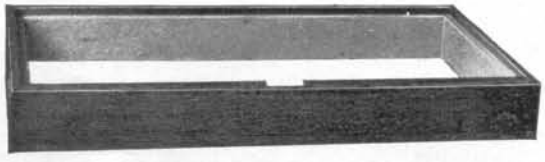
All circuits used in these switchboards are carefully balanced against the possibility of cross talk and generator noise by the use of twisted pairs in all wiring.

The detailed description and construction of all the various important pieces of apparatus are given following the circuit descriptions.

Switchboard Pedestal

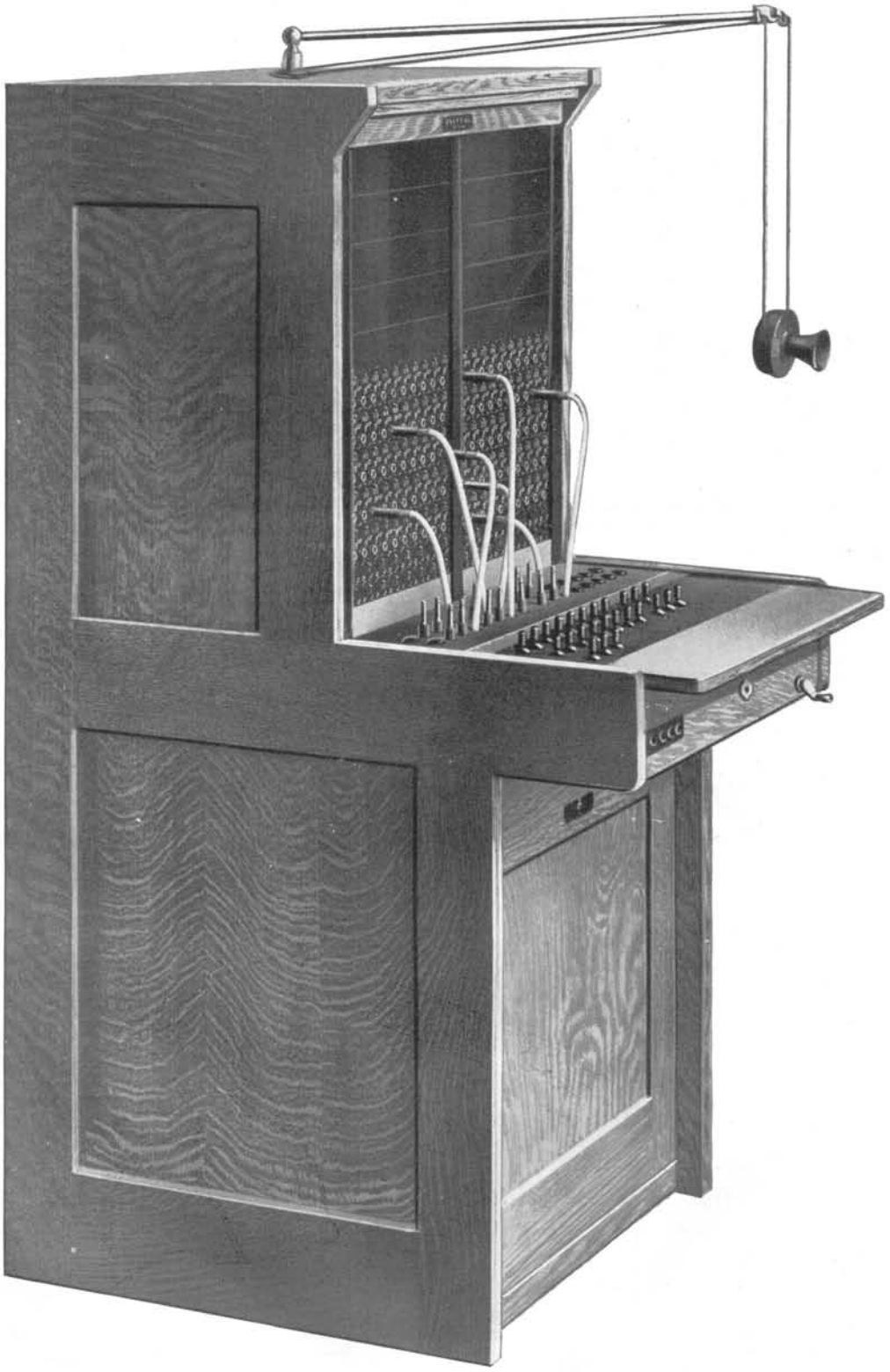
When the growth of an exchange requires the installation of an additional 150 type magneto switchboard, these can be placed side by side, and, when desired, mounted on a frame of sufficient height that all cords will reach all the jacks in either board.

This pedestal is of quartered oak of finest quality in material and workmanship and matches the finish of our switchboards.



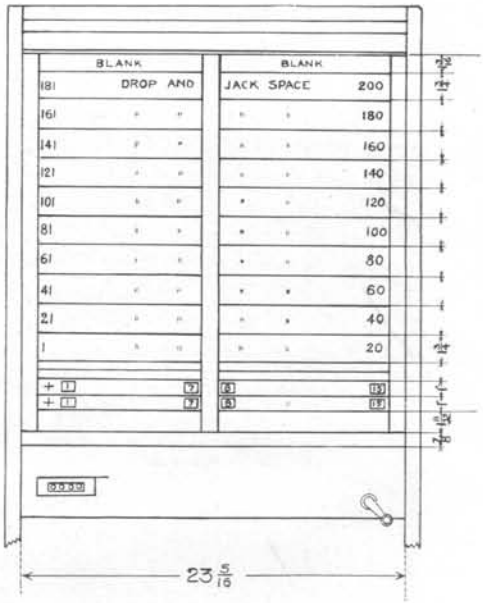
Code No. 155 Pedestal

No. 200 MAGNETO SWITCHBOARD

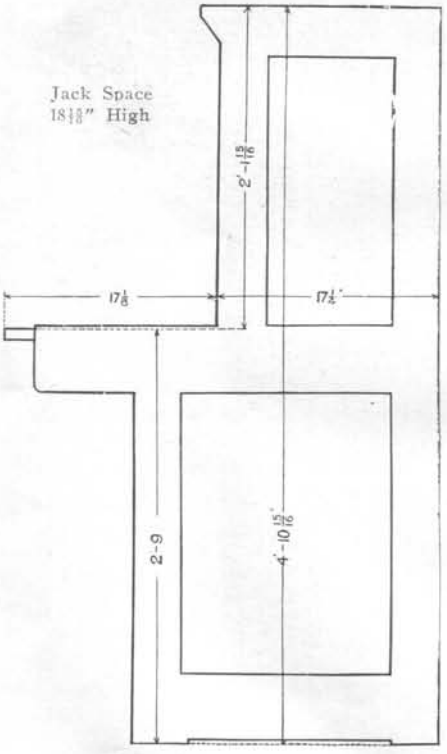


200 Line Magneto Switchboard may be equipped with either double or single drop supervision.

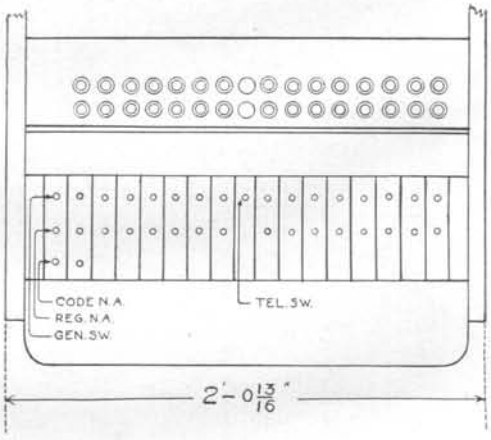
The outstanding advantages of our 200 line magneto switchboard are its capacity, especially when its compact size is considered, its adaptability to so wide a range in the number of telephones that can economically be switched through it, its exceptionally wide and deep extended keyshelf, its long cord reach, and the fact that in larger towns, where special conditions may make the installation of our Universal switchboard not advisable, two of these 200 line cabinets can be lined up together, giving what telephone men consider the very finest magneto service for the medium sized town.



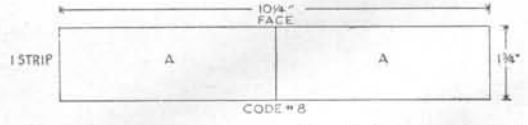
Front view of face equipment, showing standard numbering arrangement of drops and jacks and front end of key shelf, with operator's jack.



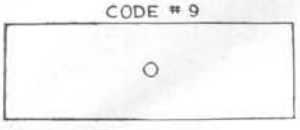
Side elevation, 200 line cabinet.



Top view of key shelf, showing keys and cord equipment.



Occupies space of 10 combined drops and jacks, with compartments for cash drawers.



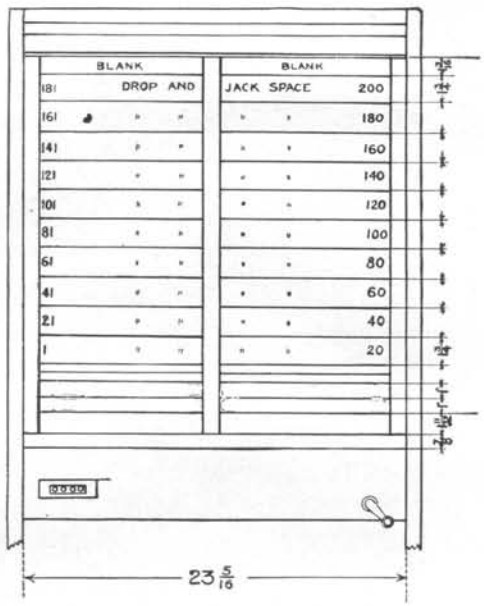
Cash Drawer to Fit "A."

Floor space occupied: Base, depth, 24¾ in.; width, 24 13/16 in.

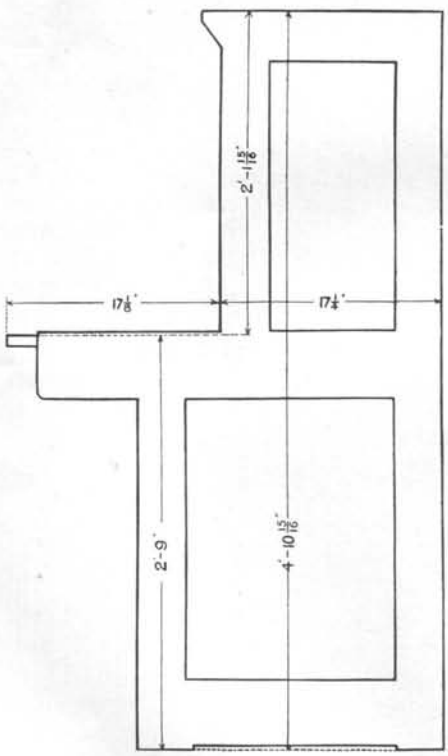
200 *Line Magneto Switchboard with Double Lamp Supervision.*

On this page, we show the dimensional cabinet drawing, the face and shelf equipment drawing of our 200-line magneto switchboard with double lamp supervision. This board is uniform in type with our 150-line magneto switchboard with double lamp supervision, illustrated on pages 112A and 112B.

The larger 200-line equipment represents what we believe to be the last word in clean cut, fast, magneto switchboard operating. It is particularly efficient for the larger exchange where magneto switchboards and telephones are preferred, and is popular in the medium size towns in which, for various reasons, it is not advisable to install our unit type Universal equipment.

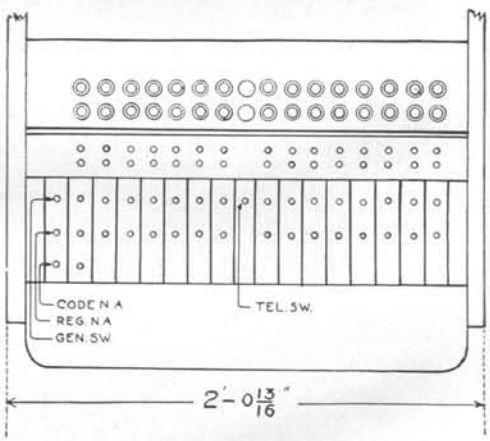


Front view of face equipment, showing standard numbering arrangement of drops and jacks and front end of key shelf, with operator's jack.

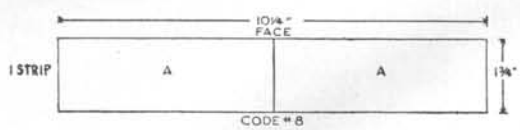


Side elevation, 200 line cabinet.

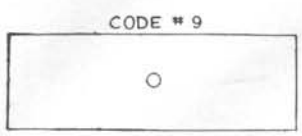
Floor space occupied: Base, depth, 24¾ in.; width, 24 1/16 in.



Top view of key shelf, showing keys, lamps and cord equipment.



Occupies space of 10 combined drops and jacks, with compartments for cash drawers.



Cash Drawer to Fit "A."

No. 200—Two Hundred Lines Capacity

One Position—Low Key Shelf

The No. 200 Magneto switchboard is wired as follows:

Drop Supervision

Cabinet Code	Lines Wired	Cords Wired
No. 200-A	100	15
No. 200-B	150	15
No. 200-C	200	15

Lamp Supervision

Cabinet Code	Lines Wired	Cords Wired
No. 200-A.L.	100	15
No. 200-B.L.	150	15
No. 200-C.L.	200	15

Cables to consist of fifty pair each.

This No. 200 type Magneto Switchboard has greater flexibility, we believe, than any other similar equipment. It is extremely fast, and economical in operating, and any of the combinations described on these pages assures a money saving and money making switchboard for the smaller town exchange.

Kellogg No. 200 Type Magneto Switchboards are designed to meet the needs of every magneto telephone exchange with equipment that will operate reliably and give the best class of service under all conditions. Everything has been done to eliminate complicated circuits and apparatus and to build every part with the idea of reducing future maintenance costs. The Kellogg self-restoring drop and jack with its pure hard rubber insulation between drop shell and frame, its long lever hook and simple spring arrangements is giving good uninterrupted service in many thousand boards in this country and abroad.

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

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

The night alarm contact is held point up in a long and resilient German silver spring and will not fail to operate the bell on night calls.

In the keys a heavy T frame permits the contact springs with No. 1 contact metal points to be mounted on both sides and the cam is so designed that the extra heavy rollers are held in place without screws, making these keys the smoothest operating and the longest wearing on the market.

The Key Shelf is equipped with a bracket support to hold it in a convenient open position when an inspection of the keys is necessary.

The operator's equipment consists of a suspended or breast-plate type transmitter, a light head band receiver. The jack is mounted on the face of the key shelf.

An operator's telephone circuit switching key is permanently wired into the circuit which permits switching together two operators' circuits to enable one operator to use the cord circuits of two boards when they are installed next to each other where a larger capacity than two hundred lines is required.

The finished cabinets present a most attractive appearance and are what is known as the low key shelf type, permitting the use of an ordinary office chair and providing sufficient space on the key shelf for making tickets or such other work as the operator may have occasion to do.

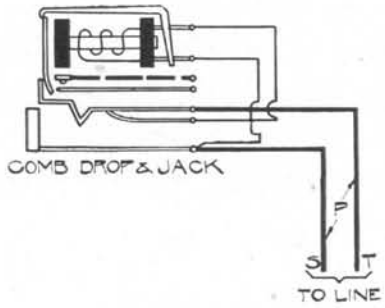
All circuits used in these switchboards are carefully balanced against the possibility of cross talk and generator noise by the use of twisted pairs in all wiring.

The detailed description and construction of all the various important pieces of apparatus are given following the circuit descriptions.

The circuit operations are as follows:

Magneto Line Circuit Using Combined Drop and Jack

ckt. No. 18558



This circuit uses the Kellogg three conductor combined drop and jack, one conductor being an inside contact, which cuts one side of the drop off when a plug is inserted in the jack.

Perfect talking and ringing contacts and circuits are assured no matter how old the jack. The thimbles of the jacks will last for years on busy lines and are very easy and inexpensive to replace when worn.

The heavy, hard rubber strips between the drop and jack and mounting plate insure the best possible insulation between lines.

Drops are regularly furnished in 100, 500, and 1,000 ohm resistances; 500 for local and rural lines, and 1000 for toll lines is our recommendation.

The circuit is simple and easy to maintain.

The wiring is carried direct from the combined drop and jack to the main frame protector in 50 pair color coded cable and from there connected onto the outside line by means of a jumper wire. This cable is No. 22 gauge copper wire properly insulated with two wrappings of silk and one of cotton, and before applying the outer braid or covering the cable is saturated with bees wax.

All parts of the drops and jacks are accessible for inspection and repair. Drop coils are easily removed, though it is very seldom necessary.

Night Alarm Circuit on Switchboards Having Drop Supervision

ckt. No. 18559

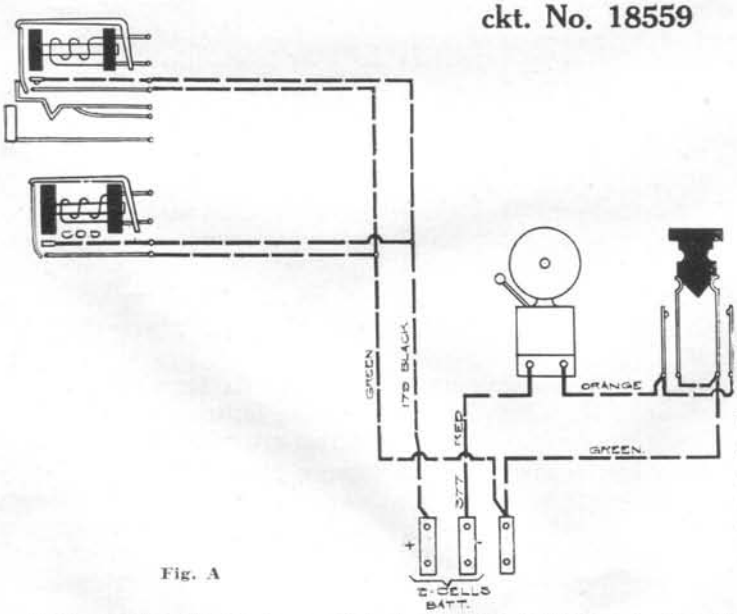


Fig. A

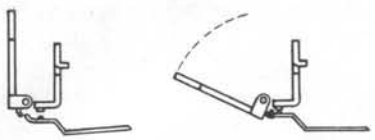


Fig. B

View of night alarm contact used with Kellogg combined drop and jacks.

Night Alarm

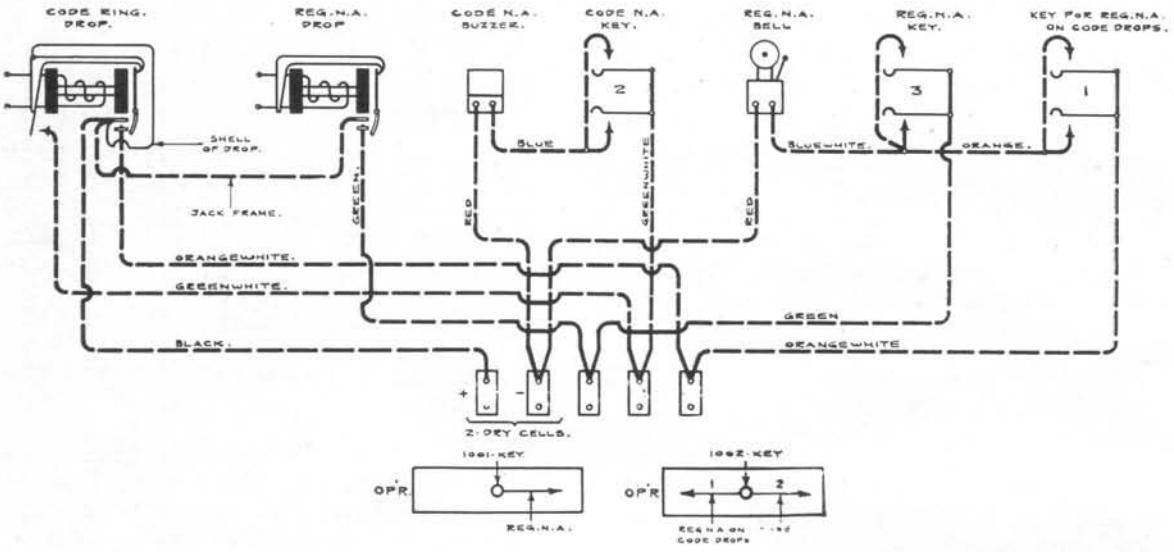
Dependability of the night alarm circuit is of absolute necessity in every magneto exchange. The Kellogg night alarm is the result of our endeavor to produce a night alarm system that is infallible. Its reliability is exceedingly important, as it leaves no reason, whatever, for the operator's inability to answer night calls.

This night alarm is operated by the falling of the drop shutter. It is positive in its operation and requires no adjustment and is dependable. It contains the fewest possible number of parts and such parts are of the very best construction. Each night alarm contact

has its contact point turned upward, as shown in Figure B, page 117 making a contact that cannot be affected by accumulated dust, since dust does not settle on sharp upturned points, nor on the under side of flat surfaces. The night alarm has a three inch vibrating bell as a signal.

Code and Regular Night Alarm Circuit Used on Switchboards Having Drop Supervision

ckt. No. 29591



In addition to a regular night alarm, such drops as desired can be equipped with code alarm attachment as shown on the armature end of the left hand drop of the above circuit.

The advantage of this code alarm is that when the operator or attendant is not at the board, such as during the night time, she is able to distinguish between code rings on party lines when the parties on the line are calling each other and when they are calling for central.

The regular code alarm is controlled by a key mounted on the key shelf of the switchboard within easy reach of the operator, and can be switched on or off as the operator desires.

The code alarm has a buzzer signal. Both the night and code alarms are operated from dry batteries unless the board is equipped with a storage battery and in the latter case the night alarms, operator instrument and ringing should all be operated from one set of storage batteries.

While not absolutely essential on magneto switchboards, pilot lamp equipment is a refinement which has become very popular and many Kellogg boards are now going out with this equipment included.

All common battery switchboards have always been equipped with pilot lamps, but it remained for the Kellogg Company to design a simple and practical pilot lamp system for use on magneto switchboards.

In the standard Kellogg pilot lamp system, each operator's position is provided with a line pilot lamp, which lights in unison with falling line drops or the lighting of the supervisory lamp and stays lighted so long as these signals remain unattended to.

Should two parties happen to call in at the same time and throw drops widely separated, it is barely possible that the operator without the aid of pilot equipment might overlook one of the drops until the party called again, thereby vibrating the armature rod and calling attention to the fact of this drop being down. But with the pilot lamp equipment, it is impossible for the operator to neglect anyone unknowingly, since the pilot lamp burns steadily so long as either line calls, recalls or ring off signals remain unanswered. Thus the proper operation of the board becomes merely a matter of "keeping the lights out" and the highest class of service is assured.

Pilot Lamp Circuit and Night Alarm Used on Switchboards Having Lamp Supervision

Circuit No. 32678

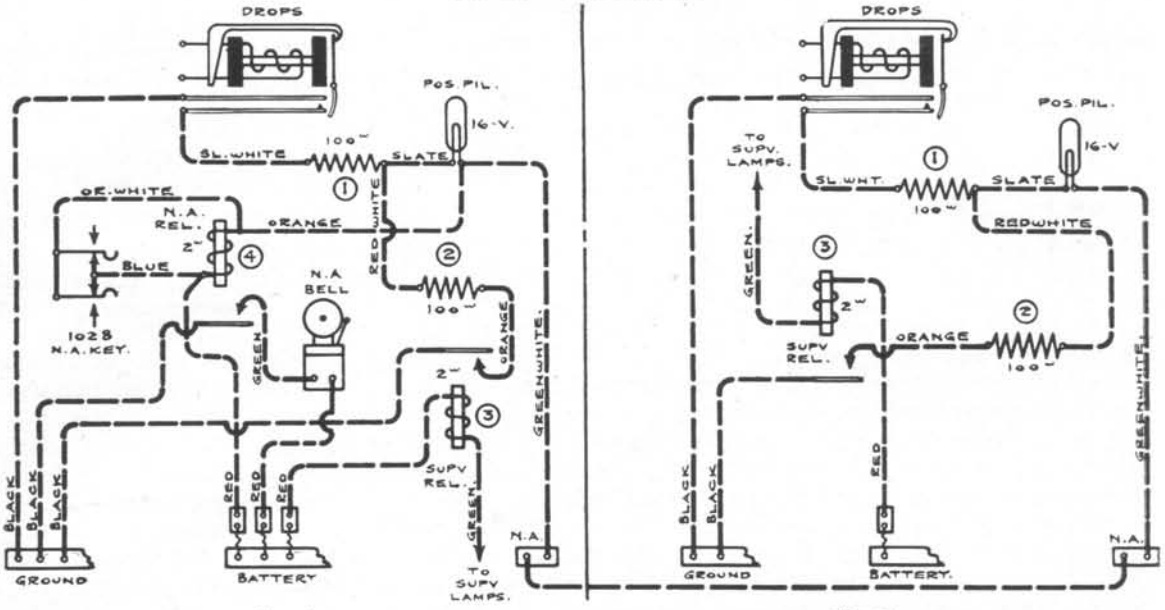


Fig. A Fig. B

A common pilot lamp is included as standard equipment on all of our magneto switchboards having lamp supervisory signals. This pilot is placed in a conspicuous position where it is easily observed by the operator and so connected that the pilot lamp which is common to the position will light every time a supervisory lamp lights and also every time a line drop falls. This pilot furnishes a distinctive signal to the operator which directs her attention to the call. It means one of two things, either that there is a line to be answered by reason of some line drop shutter being down or that there is some cord circuit supervisory lamp lit showing that somebody is either making a recall or ringing off.

Where the switchboard is equipped with a pilot lamp the night alarm signal is associated in the same circuit and is operated by a relay, the action of which is controlled by a key.

Figure A, ckt. 32678 shows equipment in position No. 1 and Figure B shows the wiring and equipment necessary if a second position is used or added.

Pilots can be installed in magneto switchboards having ring off drops with equally good results.

We, however, do not suggest or recommend that pilots be installed on switchboards operated from dry batteries.

Where pole changers are to be installed for ringing it is advisable and recommended that a small set of storage batteries with a rectifier for charging be installed. This gives by far the most satisfactory and economical ringing arrangement or scheme that can be used, and this is true whether the ringing is on a basis of single frequency or whether it is on a basis of harmonic or any other type of party line ringing. The necessary power plant or equipment required to do this is a set of P. T. Type storage batteries and a 3 ampere rectigon rectifier. This added equipment requires a small amount of space for mounting, is inexpensive as to first cost, much more economical to operate and maintain than dry batteries or operating a motor generator or any type of ringing machine connected direct to the electric light circuit.

Where it is decided to put in such a storage battery plant we strongly recommend that lamp supervision cord circuits be used as shown in circuits No. 34007, L.R. Page No. 122, No. 32648 LRK, Page No. 123, and No. 32577 L, Page No. 124. We also

recommend that the operators' instrument, circuit No. 32579, Page No. 127, be used and operated from this same storage battery and also the night and code alarms. This gives a very complete and satisfactory arrangement.

The Night Alarm Key

The operator's switching key when furnished, the secondary cut-out key when furnished and the generator switching key are mounted on the keyshelf in the line up with cord circuit keys and are of the same general type with different color tops to distinguish them.

Cord Circuits

Following are the various types of Kellogg cord circuits commonly used and are listed in the order of our preference and recommendations, based on our experience.

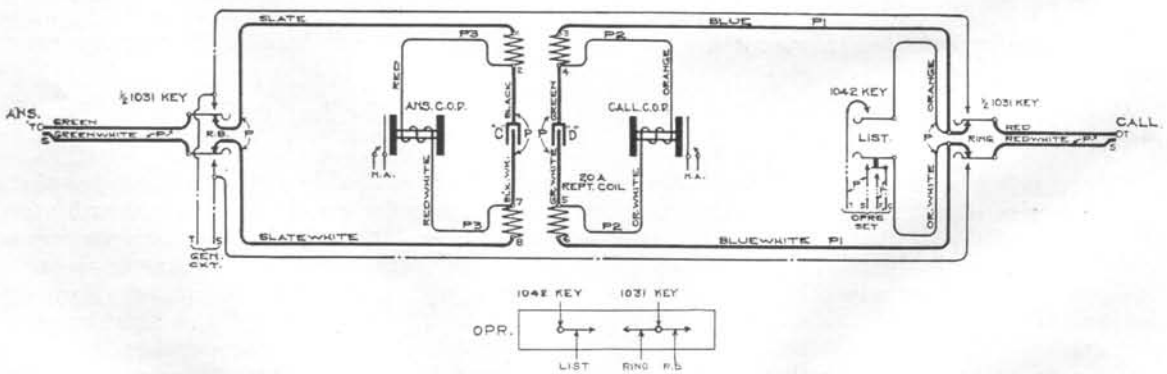
Double supervision cord circuits cost more money than those having single supervision, but the service possible with double supervision is vastly superior and more accurate than where single supervision is used. Whether to have a new board equipped with the standard cord circuits having single bridging ring-off drop, or to pay a little more and get the improved double supervisory non ring-through cord circuits, is a question that each purchaser must determine from local conditions.

Double supervisory cord circuits should always be installed where trouble has previously been encountered in "ringing off". The Kellogg double supervisory system will completely overcome all confusion and ring-off trouble previously encountered, when heavily loaded bridging lines have been connected with series telephones in town, or when two heavily loaded country lines have been connected with each other, or when two antiquated series telephones with old and weak generators have been unable to throw the ring-off drop, due to the escape of six-sevenths of the current to the other telephone.

There is no difference electrically in the efficiency between double drop and double lamp supervision. With either one you are assured of the very best results, but where it is necessary to maintain storage batteries for a ringing machine, (by far the most economical way of ringing that can be used) we recommend that the operator's instruments, night and code alarm be operated from these same batteries and also that lamp supervision be used instead of drops. Either one is equally sensitive, accurate and dependable, but lamp supervision is more modern and more attractive.

Magneto Cord Circuit With Double Drop Supervision and Repeating Coil

ckt. No. 20237 T. R. (Fig. A)



This is the cord circuit we highly recommend as being the most efficient, serviceable, and satisfactory under all conditions for Magneto switchboards.

Kellogg No. 20-A non-ring through repeating coils in cord circuits serve three very useful purposes. One is to separate ground and metallic lines, thereby maintaining the normal balance between these types of lines. Another purpose is when ringing off, to prevent ring-

ing across the cord circuit and out on the line connected on the opposite cord. This creates confusion and annoyance both to the party ringing off and to the party whose bell is being rung by the subscriber who is trying to get central on a recall. And lastly, assures at all times a positive ring off signal to the operator and also a positive signal in case of a recall.

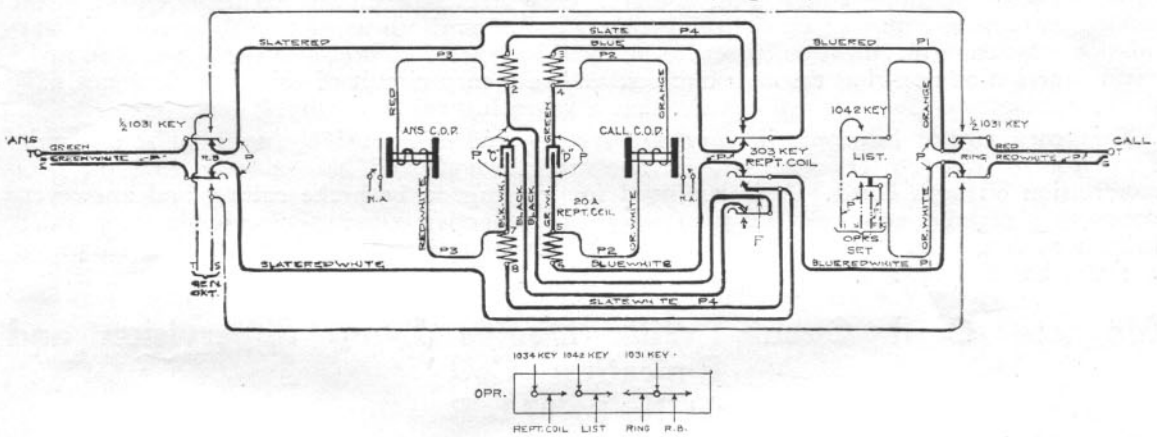
The condensers in this circuit are connected to the center of the repeating coil windings and provide a path for voice currents with a minimum of transmission loss and maximum of ringing off efficiency.

Cord circuit No. 20237, T. R. and cord circuit No. 34007, L.R. illustrate these repeating coils and condensers. They have a transmission loss of less than one half mile which is negligible. They are equipped for ringing on both the calling and answering cords and can be equipped with any type of selective ringing scheme desired, either using master keys or individual party ringing keys per cord circuit.

This makes a very efficient cord circuit with extremely low transmission loss. It is absolutely non-ring through but with positive ring-off supervision on both cords and can be equipped with any type of ringing scheme or circuits desired. It is simple to operate, has a low maintenance cost and will take care of the most exacting customer's requirements.

Magneto Cord Circuit With Double Drop Supervision, Repeating Coil, and Repeating Coil Cutout Key

ckt. No. 20237 T. R. K. (Fig. B)



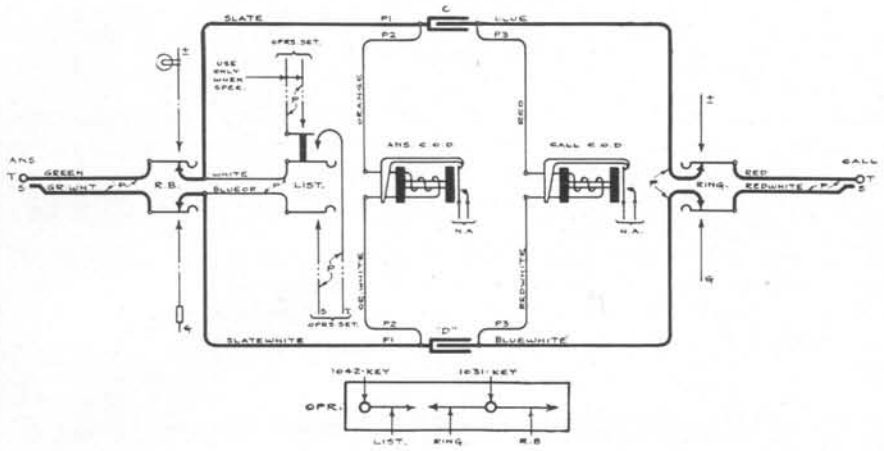
This cord circuit is also highly recommended and is exactly the same as cord circuit No. 20237, T.R. which was just previously described with the one exception that it has a repeating coil cutout key which is used to cut the repeating coil out on through toll connections. There are few instances, however, where Magneto exchanges are called upon to do this, or have the lines available for through connections, and we consider this feature quite unnecessary. The transmission loss when using a Kellogg repeating coil is less than one half mile, and there is no real need for this feature. In fact the repeating coils used on these switchboards are so efficient that the actual gain in transmission when the repeating coil is cutout is so small as to be not noticeable. The cutting out of the repeating coil leaves but one supervisory drop on the circuit and this will function when a party on either the answering or calling cord rings off.

When the repeating coil is cut out the circuit becomes a straight through cord circuit with no transmission loss.

While the cost of this circuit is very little more than the ckt. No. 20237, T.R. (Fig. A) we believe that the use of this circuit with a repeating coil cutout key is not warranted, due to the very low transmission loss even when the repeating coil is in the circuit on all connections. However, if it is decided to equip the switchboard with cord circuits of this type it is our recommendation that there be not more than two cord circuits with repeating coil cutout keys and that these be placed on the left hand No. 1 and 2 cord circuits of each position.

Magneto Cord Circuit With Double Drop Supervision With Condensers

ckt. No. 19050 T.

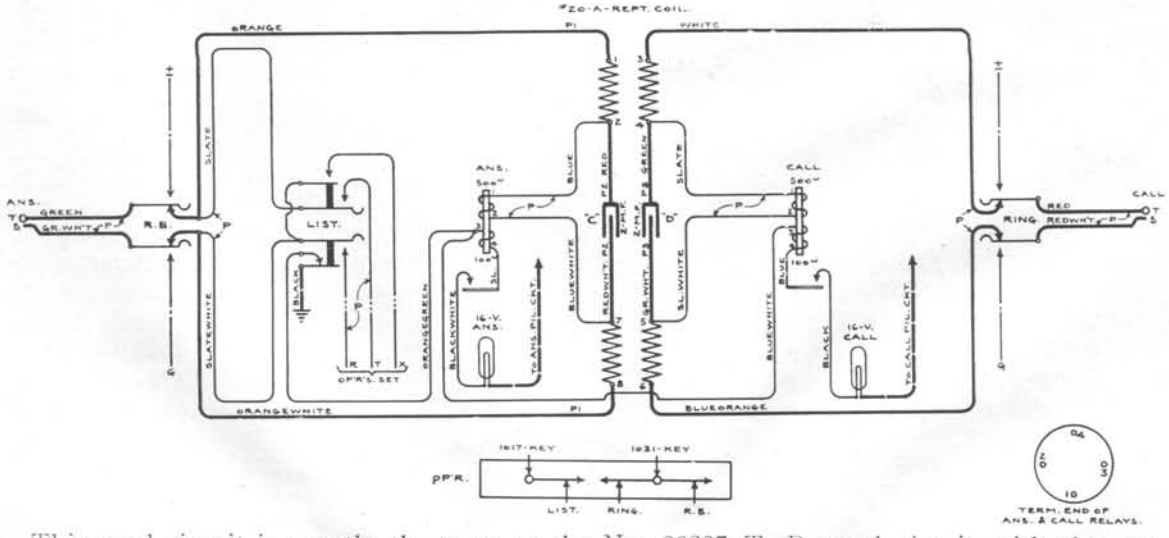


This cord circuit is designed primarily as a non-ring through cord circuit and works very successfully as such. It has the advantage of being cheaper than a cord circuit equipped with repeating coils. But, however, cord circuits equipped with condensers in the talking circuits are not as efficient for transmission as those using repeating coils. Transmission efficiency in the condenser used in this type of cord circuit is sacrificed to make them function as non-ring through circuits. Also, a cord circuit of this type does not have the balancing qualities between circuits that a repeating coil cord circuit has.

This cord circuit however, is very satisfactory and is extensively used. The transmission loss is not objectionable, it is non-ring through and has positive ring off drop supervision on both cords. It is equipped for ringing on both the calling and answering cords and can be equipped with any type of selective ringing circuit desired, either using master keys or with individual party ringing keys per cord circuit. It is simple to operate, has a very low maintenance cost and will meet all reasonable requirements.

Magneto Cord Circuit With Double Lamp Supervision and Repeating Coil

ckt. No. 34007 L. R.



This cord circuit is exactly the same as the No. 20237 T. R. cord circuit with the one

exception that it has double lamp supervision instead of double drop. The same arguments and recommendations apply however as apply to the No. 20237 T. R. circuit.

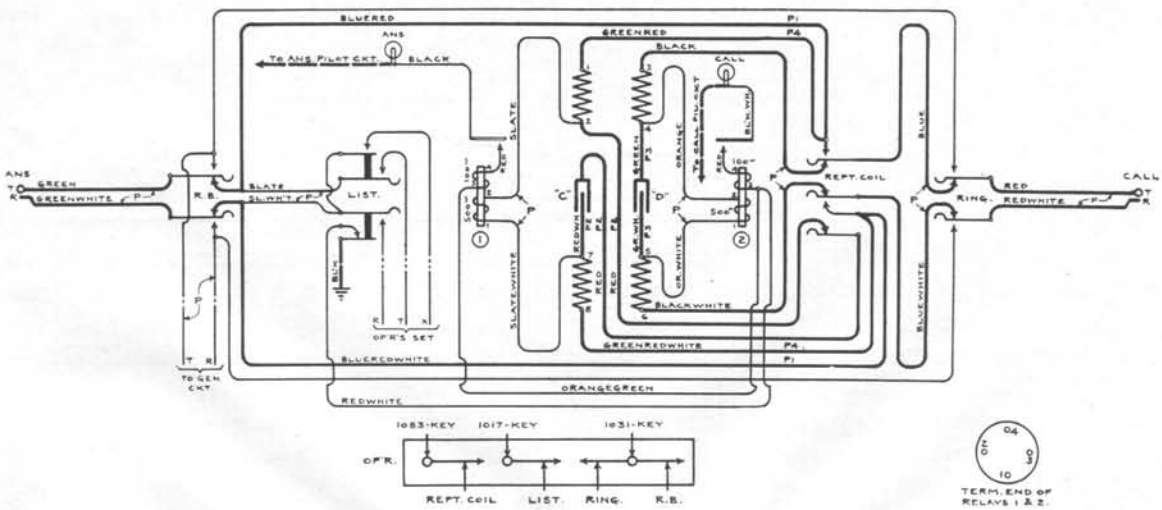
In this circuit the drops are replaced with double wound relays of the major type, the ring off winding of which is connected across the condensers. The act of ringing off energizes the relay and pulls the relay armature up, this armature movement causes the contact springs to close and this connects battery from the lamp through the relay spring contacts and then through the second winding on the relay and from there through a break contact on the listening key, which is always closed except when the operator is listening on the cord pair. When the relay is energized by a subscriber ringing off it locks up through its own winding and spring contacts and keeps the supervisory lamp lighted until the operator throws the listening key and cuts in on the connection. The act of doing this opens the circuits which hold the relay up and puts out the supervisory lamp. The operation of the relays on both the answering and calling cords is exactly the same, and either party ringing off will light the supervisory lamp on the cord which is connected to his line.

With this operation the operator gets a positive ring off or recall lamp signal every time any party turns the generator crank on any line in which there is a cord connected. This assures the subscriber the very best possible service obtainable on a magneto switchboard.

The relays are very simple with no adjustment necessary, they are positive in their operation and very reliable, the signal is distinct and dependable and the cord circuit is absolutely non-ring through. It is simple to operate, has a low maintenance cost and will give the very best results obtainable, it is equipped for ringing on both the answering and calling cords and can be equipped with any type of selective ringing scheme desired either using master keys or individual party ringing keys for each cord circuit.

Magneto Cord Circuit With Double Lamp Supervision, Repeating Coil and Repeating Coil Cutout Key

ckt. No. 32648 L. R. K.



This cord circuit is exactly the same as cord circuit No. 34007 L. R. previously described with the one exception that it has a repeating coil cut out key, which is used to cut the repeating coil out on through toll line connections. There are few instances however where magneto exchanges are called upon to do this or have the lines available for through connections and we consider this feature quite unnecessary. The trans-

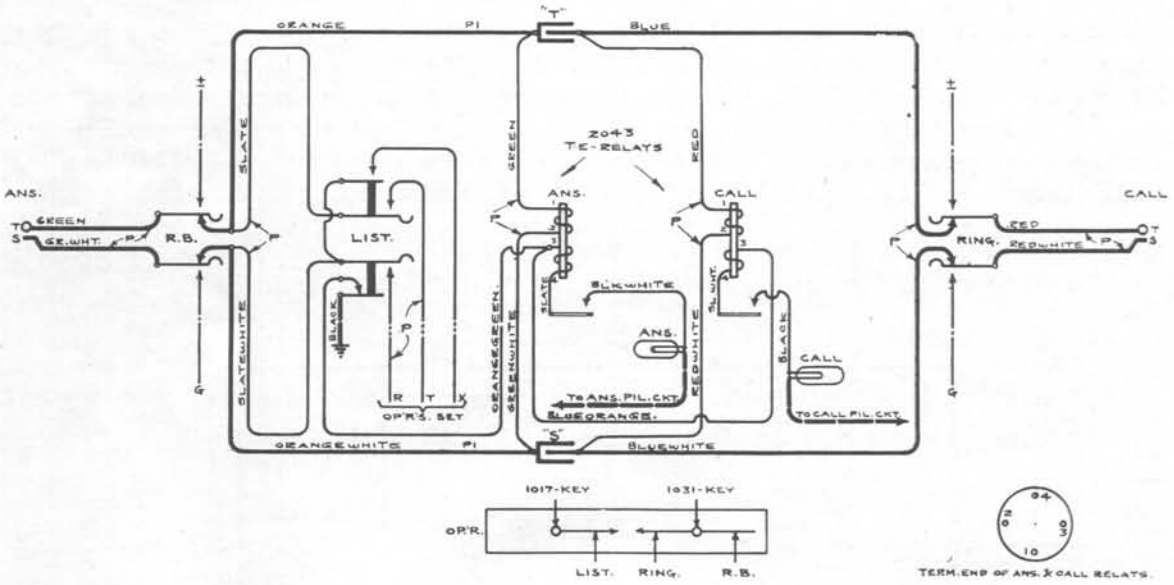
mission loss on Kellogg repeating coils is less than one-half mile and there is no real need for this feature. In fact, the repeating coils used on these switchboards are so efficient that the actual gain in transmission when the repeating coil is cut out is so small as not to be noticeable.

The cutting out of the repeating coil leaves but one supervisory signal lamp on the circuit and this will function when a party on either the answering or calling cord rings. When the repeating coil is cut out the circuit becomes a straight through cord circuit with no transmission loss.

While the cost of this circuit is very little more than the No. 34007 L. R. circuit we believe the use of this circuit with the repeating coil cut out key is not warranted due to the very low transmission loss even when the repeating coil is in the circuit on all connections. However, if it is decided to equip the switchboard with cord circuits of this type it is our recommendation that there be not more than two cord circuits, with repeating coil cut out keys and that these be on left hand No. 1 and No. 2 cord circuits of each position.

Magneto Cord Circuit With Double Lamp Supervision With Condensers

ckt. No. 32577 L.

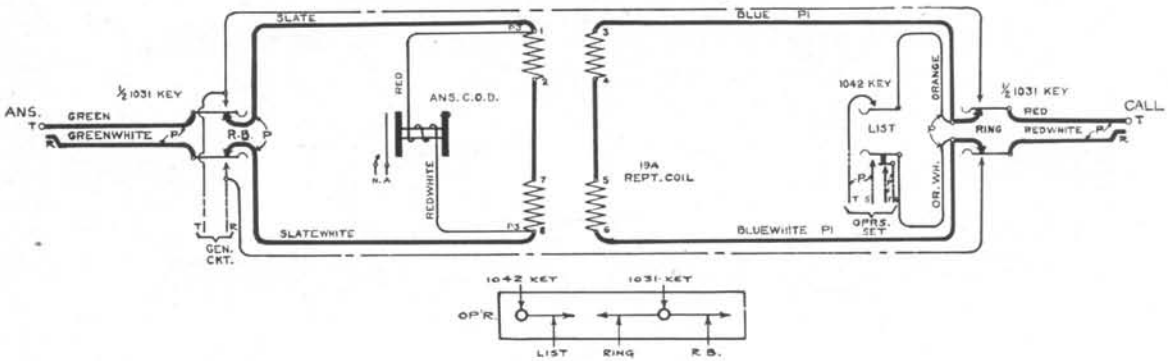


This cord circuit is designed primarily as a non-ring through cord circuit and works very successfully as such. It has the advantage of being cheaper than a cord circuit equipped with repeating coils. But, however, cord circuits equipped with condensers in the talking circuit are not as efficient for transmission as those using repeating coils. Transmission efficiency in the condenser used in this type of cord circuit is sacrificed to make them function as non-ring through circuits. Also, a cord circuit of this type does not have the balancing qualities between circuits that a repeating coil cord circuit has.

This cord circuit is very satisfactory, the transmission loss is not objectionable, it is non-ring through and has positive ring off lamp supervision on both cords. It is equipped for ringing on both the calling and answering cords and can be equipped with any type of selective ringing circuit desired, either using master keys or with individual party ringing keys for each cord circuit. It is very simple to operate, has a very low maintenance cost, and will meet all reasonable requirements.

Magneto Cord Circuit With Single Drop Supervision and Repeating Coil

ckt. No. 20260 S. R. (Fig. A)



This cord circuit is not recommended where high efficiency, double supervision or a non-ring through type of cord circuit is desired. This cord circuit is used where it is necessary to have a repeating coil in every connection. The repeating coil used in this circuit is known as our No. 19A and is a combination talk and ring through coil. There is but one ring-off drop in the cord circuit and this drop is operated by a ring from the subscriber on either the answering or calling cord.

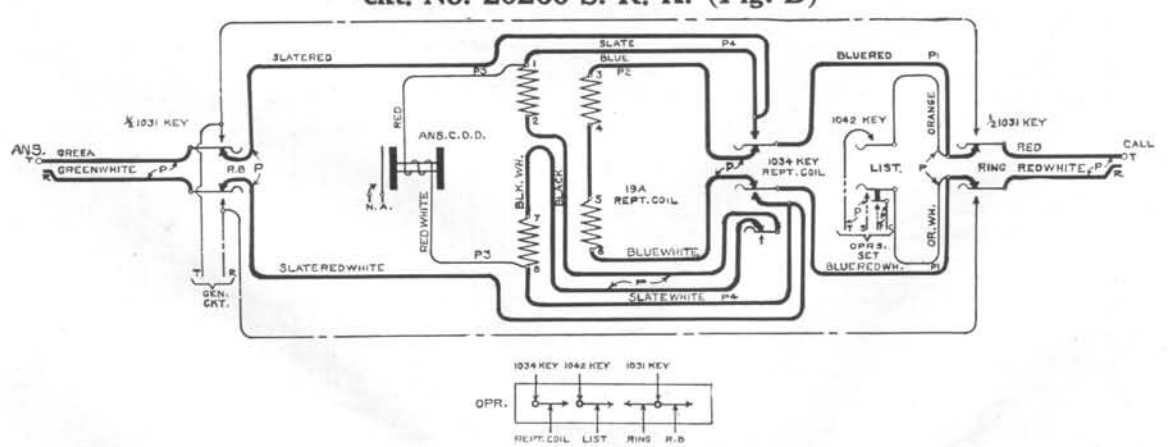
This cord circuit must not be confused with our non-ring through type as it is known as a ring-through circuit and either party on either the calling or answering cord can ring across the cord and not only ring the ring-off drop but ring all bells connected on the cord pair.

This cord circuit assures good transmission and a positive single ring-off from either cord. It is equipped for ringing on both the calling and answering cords and can be equipped with any type of selective ringing circuit desired, either using master keys or with individual party ringing keys per cord circuit.

This makes a very satisfactory cord circuit of the single supervision ring-through type with repeating coil. The transmission loss is less than one-half mile. The circuit is simple to operate and has a low maintenance cost.

Magneto Cord Circuit With Single Drop Supervision, Repeating Coil, and Repeating Coil Cut Out Key

ckt. No. 20260 S. R. K. (Fig. B)

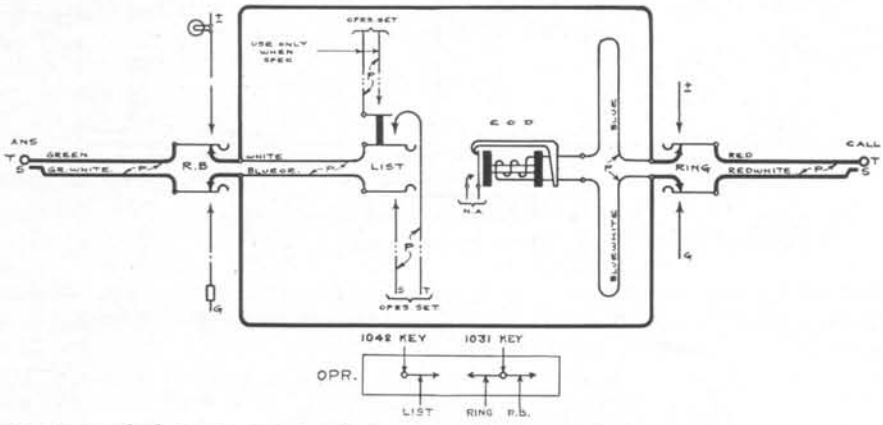


This cord circuit is exactly the same as cord circuit No. 20260 S. R. previously described with the one exception that it has in addition a repeating coil cut out key which is used to cut the repeating coil out on through toll line connections. There are few instances however, where magneto exchanges are called upon to do this or have the lines available

for through connections and we consider this feature quite unnecessary. The transmission loss on Kellogg repeating coils is less than one-half mile and there is no real need for this feature except where the switchboard is equipped with the following, No. 19055-S cord circuit and then we recommend that two cord circuits of this type be included on each position and that these be placed on the left hand No. 1 and No. 2 cord circuits.

Magneto Cord Circuit With Single Drop Supervision

ckt. No. 19055-S

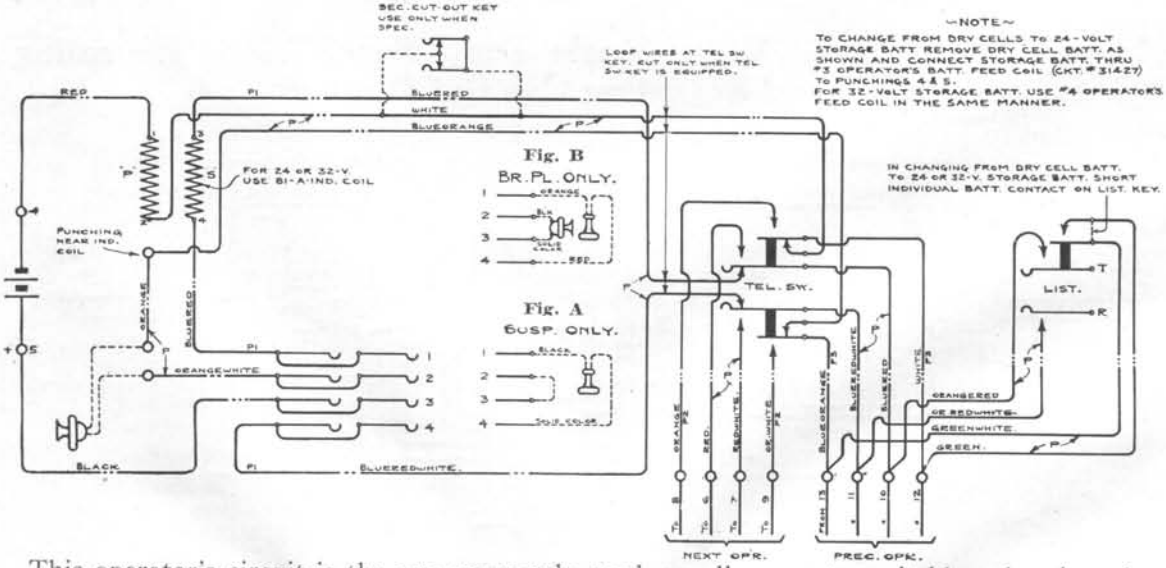


This is recommended as a very efficient cord circuit, but is not to be confused with the high efficient talk and non-ring through types of circuits previously described.

The talking efficiency of this circuit is the very highest and for toll connections is the best but when used to connect local subscribers it has the very great disadvantage of ringing through from one cord circuit to the other on a ring-off or recall.

Magneto Operator's Telephone Circuit With Either Suspended (Fig. A) or Breast Plate (Fig. B) Type Transmitter. Circuit Operated From Dry Batteries.

Circuit No. 20153



This operator's circuit is the one commonly used on all magneto switchboards when dry batteries are used to supply current for the transmitter. The circuit is very efficient both for receiving and transmitting.

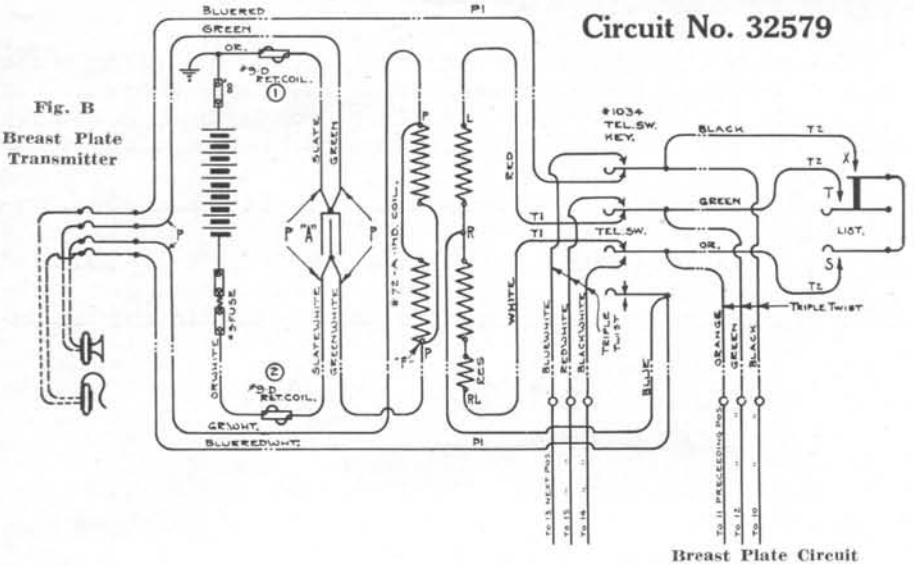
When this circuit is used with dry batteries the transmitter battery feed circuit remains open excepting when the operator has a listening key operated in the listening position.

This assures the most economical battery drain possible and prolongs the life of the dry batteries.

Magneto Operator's Telephone Circuit With Either Suspended (Fig. A) or Breast Plate Type Transmitter (Fig. B). Circuit Operated From Storage Batteries.

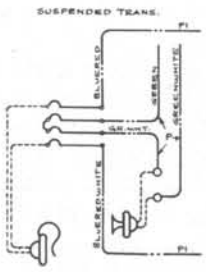
Circuit No. 32579

Fig. B
Breast Plate Transmitter



Breast Plate Circuit

Fig. A



For Suspended Transmitter

This circuit is the one used on all magneto switchboards where a 24-volt storage battery is used to supply current for the transmitter. This circuit is also very efficient for both receiving and transmitting.

Where requested, a telephone switching key is included in either of the above circuits. The purpose of this key is to make it possible, where there is more than one operator position, to connect these positions so that all of the cord circuits in the adjoining positions can be connected to any one of the operator sets.

These circuits show the terminals which are used for switching positions. In the two position board, position 1 would be the "preceding" operator and position 2, the "next" operator. In boards having more than two positions, the next higher numbered position would be the "next" operator and the lower numbered position, the "preceding" operator.

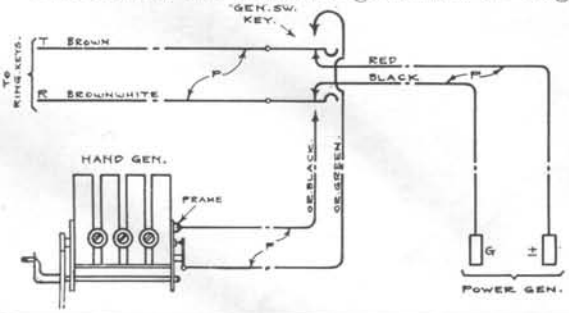
This instrument circuit can be easily changed from suspended to breast plate type or the reverse by the changing of the wires as shown in the different figures of each circuit.

Also circuit No. 20153 can be changed to 24-volt battery operation as described in the circuit note.

If required, a secondary cut out key can be included in either of these circuits which, when operated, will cut the transmitter out and allow the operator to listen in and supervise toll connections without disturbing the parties talking with side tone from the operator's instrument.

Generator Circuit No. 20284

This shows the standard generator or ringing circuit for Kellogg magneto switchboards.



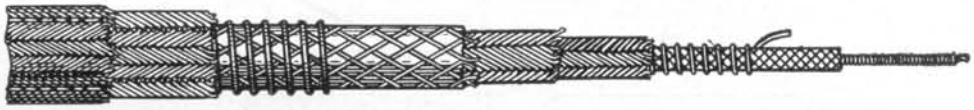
This circuit is to be commended for its extreme simplicity and completeness.

All switchboards are arranged for both power and hand generator ringing and have a switching key wired in the circuit conveniently located so that the operator can switch the circuit from power to hand generator by simply operating the key.

All switchboards are equipped with five-bar generators.

MAGNETO SWITCHBOARD APPARATUS

Switchboard Cords



Kellogg Switchboard & Supply Company have made the cordage problem a thing of the past. Kellogg Switchboard cords are built of steel wire wound over braided tinsel. The steel conductors are practically unbreakable while the presence of copper tinsel insures the lowest resistance to talking circuits. Only the best grade of material is used in the insulation.

The outer braid is tangentially sewed at the plug end so that the cord can be cut back several times, assuring the longest possible service.

To protect the outer braid from deterioration caused by the cords becoming saturated with perspiration from the operator's hands, they are treated with a compound that works down into a glazed moisture-proof coating making the cords perfectly flexible, and increasing the life of the outer braid three-fold.

Switchboard Plugs

Kellogg No. 42 plugs are used with all Kellogg Magneto Switchboards and have been especially designed for Magneto service.

The tip of the No. 42 plug is of the same diameter as the sleeve and, consequently, gives greater spring displacement than a plug containing a ball-like tip of smaller diameter, which is necessary in the plug used for both Magneto and Common Battery work. The tip of the No. 42 plug contains a conical point which makes its insertion sure and swift and assures long life.

The Kellogg plug is extremely strong and simple. Heavy hard rubber insulation is employed, the center of the plug being a strong steel pin. The tip is screwed down over the threaded end against the head of the rubber bushing, holding all members of the plug firmly in place.

The outside of the plug is covered with a fibre handle which has been found much more durable for this purpose than the more brittle hard rubber. The high grade materials and careful construction make this plug last without any "maintenance" until completely worn from natural usage.

Cord Weights

No. 9

Many excellent cords have had their life materially shortened due to the use of cord weights of poor design. Kellogg cord weights are of lead which is encased in a steel shell.

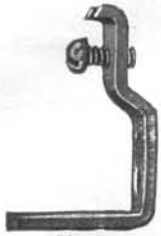
The top portion of the weight contains a grooved box-wood roller on which the cord runs.

These weights operate perfectly and the cords do not become tangled.

Cord Fasteners

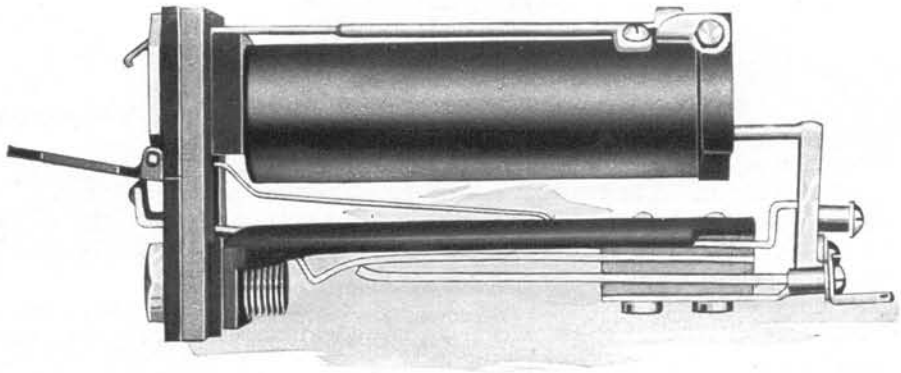
Kellogg cord fasteners are of steel with a heavy coating of tin, making the soldering of connections an easy matter. They are securely fastened to the cord rack by a wood screw. The switchboard cord end is fastened under a screw connection.

These cord fasteners are mounted in an accessible place, making it an easy matter to change cords.



No. 5

Combined Drops and Jacks



For View of the Kellogg Combined Drop and Jack with Parts Listed and Described, See Page 133.

The Kellogg combined drop and jack is the last word in efficient signalling devices for magneto switchboards. It is absolutely reliable in operation, and the signals are visible from any angle. The drop shutter is of the advanced hinge type construction. There is no loose pin to work out.

The operation of the armature releases the shutter, and, in addition, forces it down. It falls to almost a 90% angle.

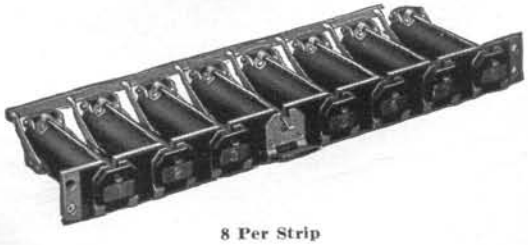
The drop is extremely sensitive and will operate with the least electrical impulse. It will give a good, clean rattle and its mechanism is designed so that the drop shutter will respond reliably no matter how badly the plug may be worn.

The jack is of the single line spring construction with a chafing knife edge drop circuit contact. This type of cut-off contact has proven the greatest success of any jack ever built.

The jack is extremely simple, having only the tip and cut-off spring in addition to the regular night alarm 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 and permits easy replacement when it has become too badly worn for proper operation.

The frame of the jack is of the punched metal construction which permits uniform and rigid assembly. The terminals on the jack are of the screw type.

Clearing Out Drops



8 Per Strip

Kellogg ring-off or "clearing out" drops, as they are sometimes called, are similar in design, and embody all the points of excellence found in the Kellogg line drops.

They are sensitive. The shutters are forced to fall, assuring positive signal. Kellogg drops are of rust proof construction and are fitted with No. 1 metal contacts for the night alarm and pilot lamp signals, the same as the drops used in the line circuits.

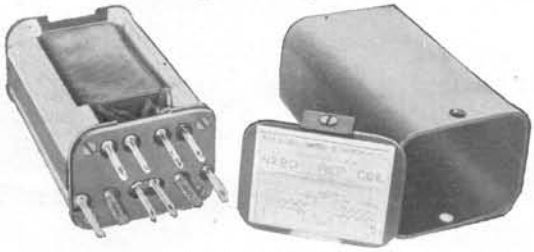
Condensers

No. 128

The condensers used in Kellogg Magneto switchboards have been especially designed for this particular service. They possess high insulation resistance and will never become short circuited or "go open" in service, and, while they permit the passage of talking current, they effectually hold back ringing currents and prevent them from operating bells on a connected line.

Only the best grade of tin-foil and paraffin paper are used in the making of Kellogg condensers. The tin-foil type of construction is more expensive, but is absolutely reliable and free from trouble.

Repeating Coils



No. 20A Repeating Coil

The Kellogg No. 20A repeating coil is used in the cord circuits of our Magneto Switchboards and is a talk-through coil only. Due to the peculiar shape of the laminations used, the coil is practically unaffected by low frequency current, thus becoming strictly a non-ring-through coil.

This coil is made up of four concentric windings wound on an open lamination, and has a transmission loss of less than one half mile.

This coil is designed to mount on a regular relay mounting strip, and occupies the same space as the circuit relays.

The shell is of pressed steel and is cross-talk proof. The terminals are brought out in such a manner that the connections can be made similar to that of a standard Kellogg relay.

Transmitters

Suspended Transmitter

Kellogg transmitters are of the reverse back type used by the Kellogg Company for the past twenty-seven years. Unique in design and original in principle, they are a happy combination of quality and efficiency.

Breast Plate Transmitter

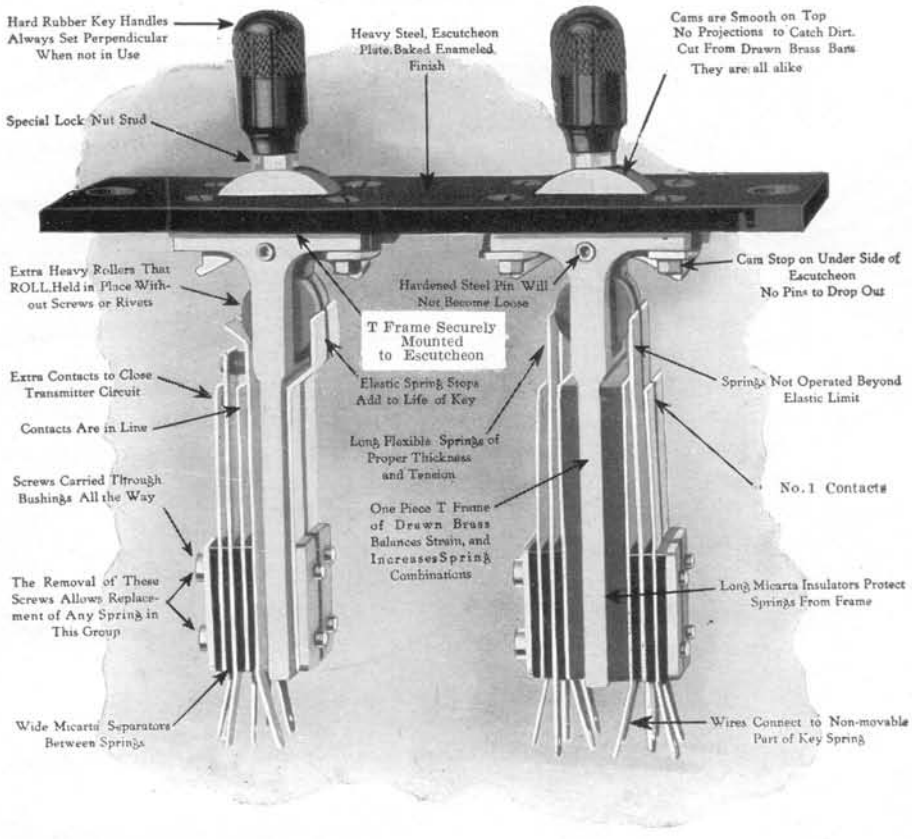
Kellogg transmitters give unusually long service; thousands of our first transmitters are still giving good service and have been in constant use for over twenty years. Such service proves the design of the Kellogg transmitter to be correct, as well as the materials of which it is made and Kellogg methods of efficient manufacture.

The diaphragm is made of hard drawn aluminum with a carbon-retaining cup formed in the center of its face. Exceedingly hard and uniform sized carbon, that is free from dust, is used. Great care is exercised in preparing this carbon, and each granule has a highly polished surface.

Electrodes are made from a special grade of dense carbon, copper plated on one face, and, through this metal, carefully soldered to backing discs.

The exposed surface of the carbon is accurately finished to size and highly polished without any filling. The Kellogg transmitters are just as efficient on long distance as on local work, and, due to their high transmission efficiency, they make operating a pleasure.

Switchboard Keys



Kellogg cam type keys are used on Magneto switchboards and are built on a scientific basis to resist wear, thus assuring long life, with positive contacts at all times.

The "T" frame and the assembling screws are made of brass. The springs are of German silver with No. 1 metal contacts eliminating the possibility of corrosion, and giving perfect talking and ringing connections at every operation.

There is no hard rubber used in the construction of this key. All bushings, insulation and rollers are made of Bakelite which will not carbonize or break down on high voltage, and which will stand up under the most persistent and severe usage.

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

Receivers

Kellogg operators' receivers are compact and the lightest in weight on the market today. They are extremely sensitive and accurately reproduce every sound registered by the transmitter.

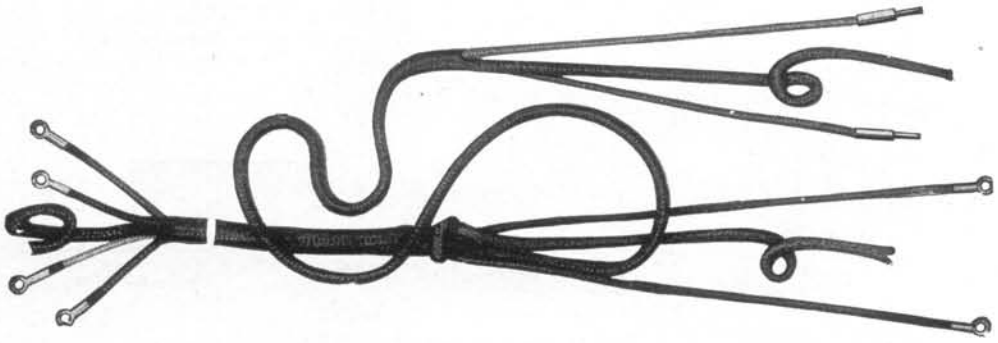
The total weight of this receiver and band is but 3-9/10 ounces, enabling operators to wear it continually for the entire period without the least discomfort or fatigue. The total width of the case is 2-3/16 inches and the depth, 7/8 inches.

The terminals are entirely inclosed within the shell; solid horseshoe magnets and electro magnets of high-grade wire are wound on cores of special magnet steel.

The head band is arranged to permit the receiver to be adjusted to the position most comfortable to the wearer.

Operators all over the country state that this receiver has no equal and makes operating a pleasure to the wearer.

Operator's Cords



Kellogg operator's cords are made of 18 strands of tinsel twisted together in three ropes of 6 strands each. Over which is placed one wrapping of plain white cotton impregnated with a moisture-proof compound. Over this is placed one braid of plain green cotton and it is then covered over all with a green silk braid.

Only the best grades of materials are used in making up Kellogg cordage. Our cord department is considered the foremost in the country in complete up-to-date equipment for the production of the most durable and practical cordage for every type of telephone service.

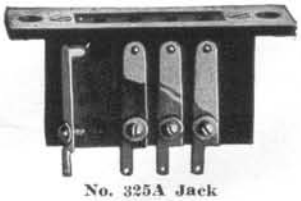
Operator's Plugs

No. 182 Opr. Plug

The Kellogg No. 182 operator's plug is used with our Magneto Switchboards.

This four-prong plug is of durable construction and easy to handle. It has no sharp corners or projections to catch on the operator's dress. The prongs are mounted in black fibre and the cord terminals are connected to the plug with nickel-plated brass terminal screws. The cord is so arranged that all strain is removed from the terminal connections.

Operator's Jack



No. 325A Jack

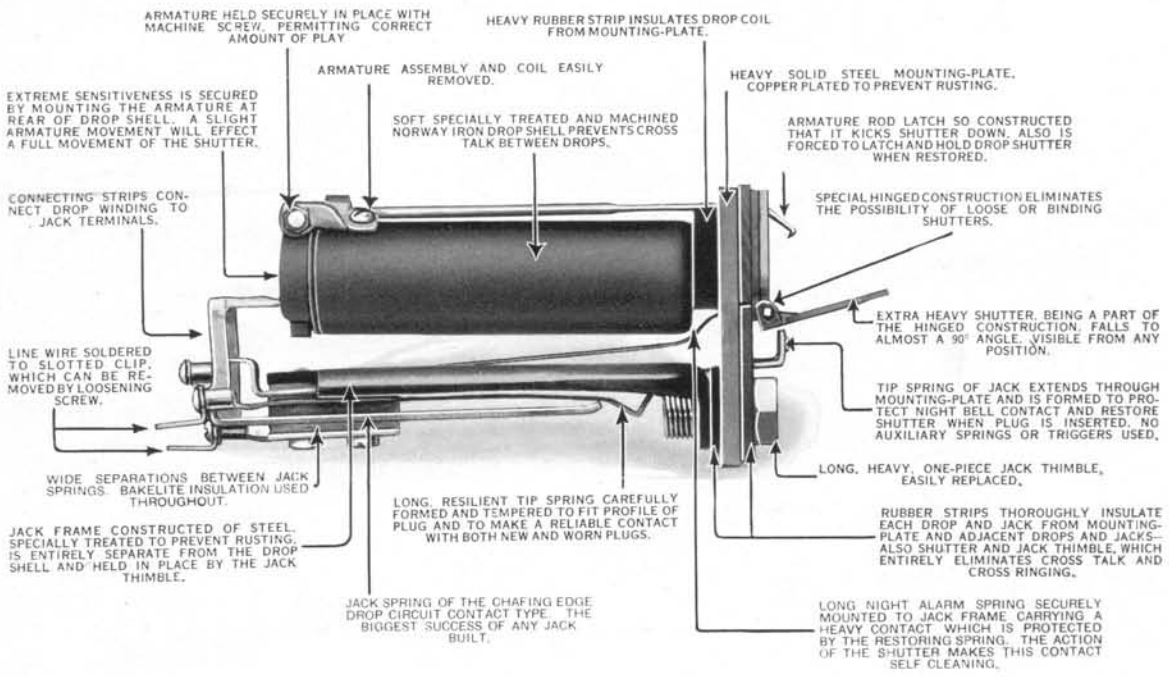
The No. 325A operator's jack is used with the No. 182 operator's plug. This jack mounts in the lower left hand end of the key shelf. The jack consists of a black fibre mounting plate attached to a steel escutcheon plate. Special springs assure positive contact with the prongs of the operator's plug.

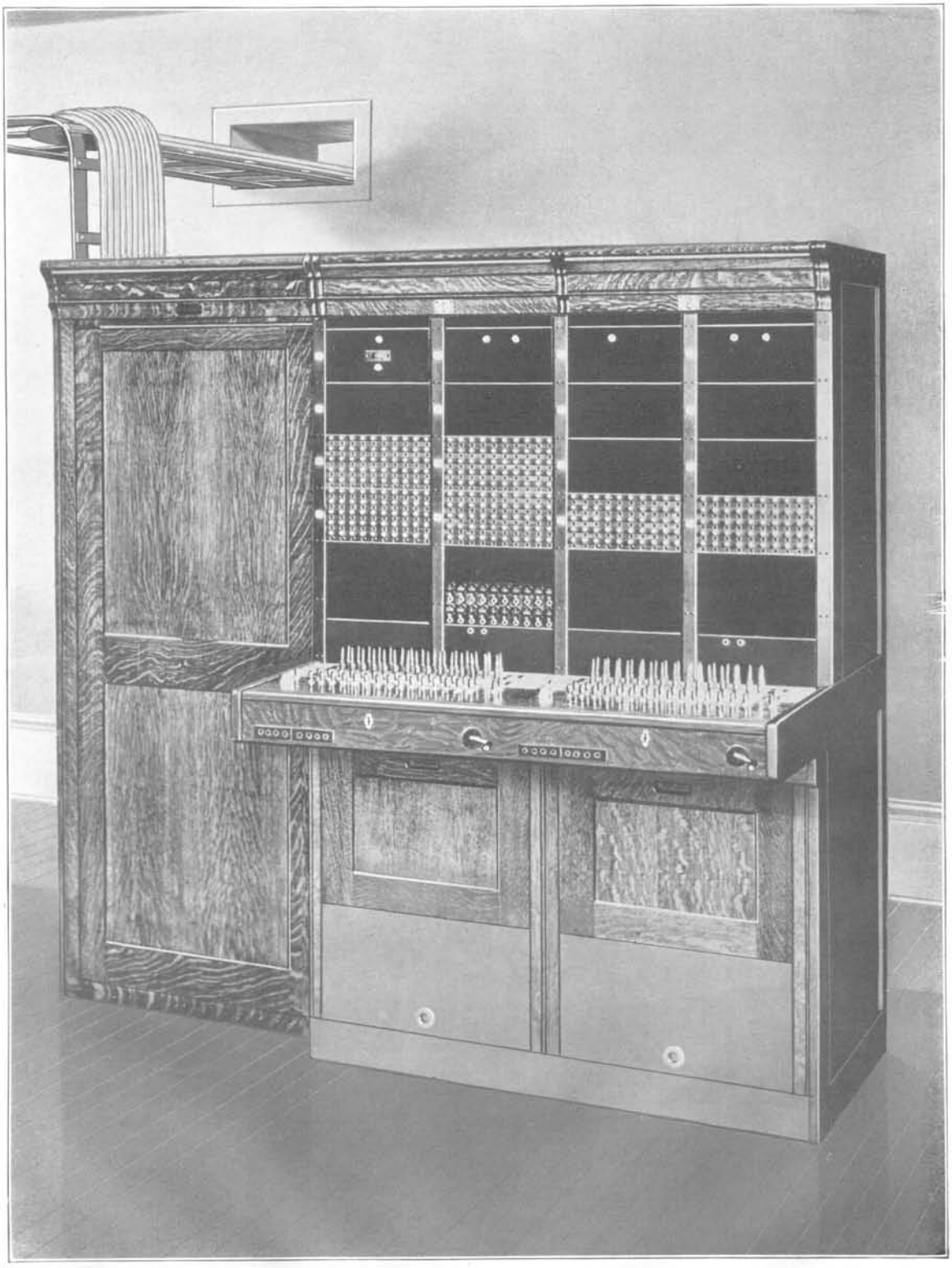
This operator's jack mounts flush with the key shelf and makes a very neat looking installation.

Night Alarm

This equipment consists of the night alarm spring mounted on a Kellogg combined drop and jack and a night alarm bell. The operation of the shutter closes the circuit, ringing the bell.

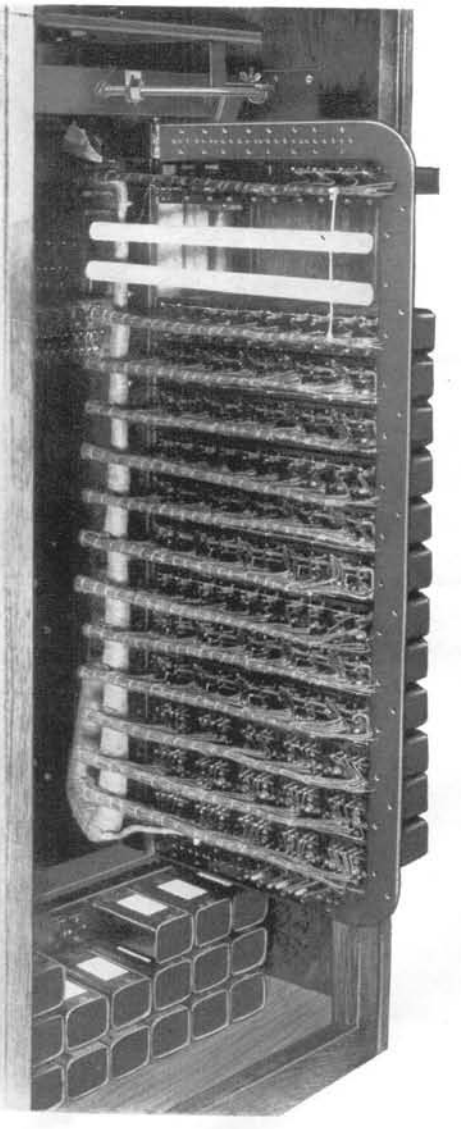
It contains a minimum number of parts, and the contact points are so arranged to prevent interference from the accumulation of dust.


ARMATURE HELD SECURELY IN PLACE WITH MACHINE SCREW, PERMITTING CORRECT AMOUNT OF PLAY
HEAVY RUBBER STRIP INSULATES DROP COIL FROM MOUNTING-PLATE.
ARMATURE ASSEMBLY AND COIL EASILY REMOVED.
HEAVY SOLID STEEL MOUNTING-PLATE, COPPER PLATED TO PREVENT RUSTING.
EXTREME SENSITIVENESS IS SECURED BY MOUNTING THE ARMATURE AT REAR OF DROP SHELL. A SLIGHT ARMATURE MOVEMENT WILL EFFECT A FULL MOVEMENT OF THE SHUTTER.
SOFT SPECIALLY TREATED AND MACHINED NORWAY IRON DROP SHELL PREVENTS CROSS TALK BETWEEN DROPS.
ARMATURE ROD LATCH SO CONSTRUCTED THAT IT KICKS SHUTTER DOWN. ALSO IS FORCED TO LATCH AND HOLD DROP SHUTTER WHEN RESTORED.
CONNECTING STRIPS CONNECT DROP WINDING TO JACK TERMINALS.
SPECIAL HINGED CONSTRUCTION ELIMINATES THE POSSIBILITY OF LOOSE OR BINDING SHUTTERS.
EXTRA HEAVY SHUTTER, BEING A PART OF THE HINGED CONSTRUCTION, FALLS TO ALMOST A 90° ANGLE, VISIBLE FROM ANY POSITION.
LINE WIRE SOLDERED TO SLOTTED CLIP, WHICH CAN BE REMOVED BY LOOSENING SCREW.
TIP SPRING OF JACK EXTENDS THROUGH MOUNTING-PLATE AND IS FORMED TO PROTECT NIGHT BELL CONTACT AND RESTORE SHUTTER WHEN PLUG IS INSERTED. NO AUXILIARY SPRINGS OR TRIGGERS USED.
LONG, HEAVY, ONE-PIECE JACK THIMBLE, EASILY REPLACED.
WIDE SEPARATIONS BETWEEN JACK SPRINGS. BAKELITE INSULATION USED THROUGHOUT.
LONG, RESILIENT TIP SPRING CAREFULLY FORMED AND TEMPERED TO FIT PROFILE OF PLUG AND TO MAKE A RELIABLE CONTACT WITH BOTH NEW AND WORN PLUGS.
RUBBER STRIPS THOROUGHLY INSULATE EACH DROP AND JACK FROM MOUNTING-PLATE AND ADJACENT DROPS AND JACKS—ALSO SHUTTER AND JACK THIMBLE, WHICH ENTIRELY ELIMINATES CROSS TALK AND CROSS RINGING.
JACK FRAME CONSTRUCTED OF STEEL, SPECIALLY TREATED TO PREVENT RUSTING, IS ENTIRELY SEPARATE FROM THE DROP SHELL AND HELD IN PLACE BY THE JACK THIMBLE.
JACK SPRING OF THE CHAFING EDGE DROP CIRCUIT CONTACT TYPE. THE BIGGEST SUCCESS OF ANY JACK BUILT.
LONG NIGHT ALARM SPRING SECURELY MOUNTED TO JACK FRAME CARRYING A HEAVY CONTACT WHICH IS PROTECTED BY THE RESTORING SPRING. THE ACTION OF THE SHUTTER MAKES THIS CONTACT SELF CLEANING.



Kellogg Unit Type Universal Switchboard

Cord Relay Rack and connecting panel, showing gate in closed position



Relay gate open, showing wiring

ARMS—TRANSMITTER

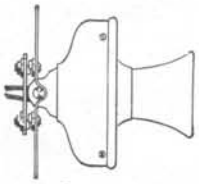
For Telephones

Kellogg Adjustable Transmitter Arms are of pressed brass and steel construction, and are free from heavy or brittle castings. They adjust readily, and easily, and are so designed as to keep their adjustment. They are attractively finished in black enamel, and all wiring is concealed.

Code No. 42
Transmitter Arm

No. 42—This pressed steel arm is used on deep shelf magneto and short back board type, and common battery sets; 4¾" long; adjustable to 18 degrees above and 12 degrees below horizontal; concealed cord; replaces all former types; net weight 8 ounces.

No. 39—The transmitter back of this arm is of punched brass, nickel plated, the balance punched steel. This arm is used on steel residence sets; ¾" long; adjustable to 15 degrees above and 15 degrees below horizontal; concealed cord.



Code No. 39
Transmitter Arm

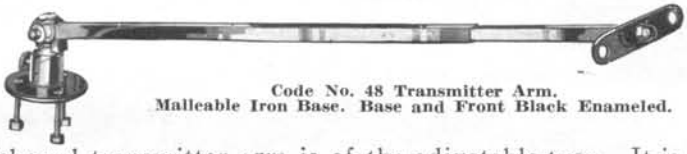
No. 41—The transmitter back of this arm is of punched brass, nickel plated, and balance of the arm is of pressed steel, black enameled; adjustable to 15 degrees above and 15 degrees below horizontal. This arm is used on residence type sets, and requires a 2" opening in woodwork to mount; concealed cord; net weight, 5 ounces.

No. 50. This arm consists of the base of No. 42 and the transmitter mounting of the No. 41 Arm. This is the standard arm for magneto telephones and all other wood cabinet instruments. Depth from transmitter to back, 2⅝".

Code No. 41
Transmitter Arm

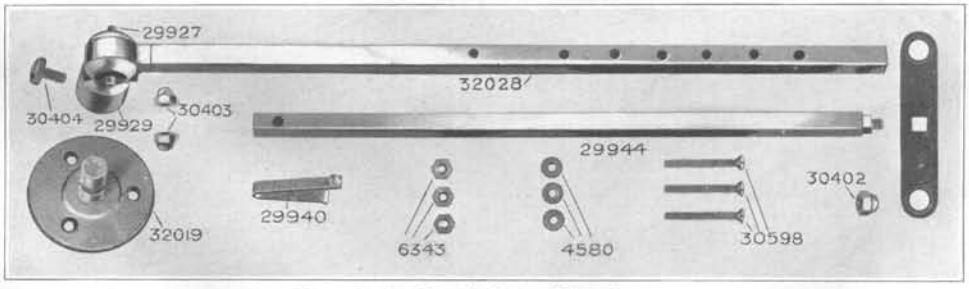
Code No. 50
Transmitter Arm

For Switchboards



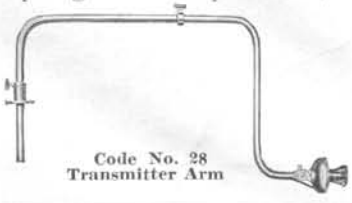
Code No. 48 Transmitter Arm.
Malleable Iron Base. Base and Front Black Enameled.

No. 48—Switchboard transmitter arm is of the adjustable type. It is made of heavy brass with a durable nickel finish. It can be used on all types of small switchboards, and is a marked improvement over other styles. This arm eliminates the usual cord weight. It is equipped with horizontal and vertical swivel joints, making it possible to place in any position, and making it possible to hold the transmitter conveniently for use, whether in a standing or sitting position. This arm is especially valuable with P. B. X.'s or Magneto Switchboards, where the operator or attendant has other work to do, and uses an adjoining desk or counter; standard lengths 15½"; net weight 25 ounces.



Piece Parts No. 48 Transmitter Arm

	Mountings
Base—32019, Support—29929, Stud—29927, Nut	30403
Tube Assembled (Outside)	32028
Tube Assembled (Inside)	2944
Spring with Stop—29940, Nut—30402, Screw,30404, Screw—30598, Washer—6343, Nut 4580	

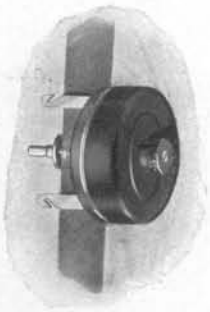


Code No. 28
Transmitter Arm

No. 28—Switchboard arm is used on desk and small boards. It is made of brass tubing, heavily nickel plated; cords are concealed. Minimum length 16¼", maximum, 22¾". This arm is equipped with swivel joint, enabling it to be swung either to the right or left.

ARRESTERS

Telephone



No. 3

No. 3. This neat carbon disk type arrester is suitable for any standard wood telephone and is easily cleaned. It is 1⅛" in diameter and arranged for mounting on ⅜" wood.

Bars—Distributing, Bus (Fuse Posts)

Distributing bars are used on switchboards for battery commons, ground strips and fuse terminals. They are finished in rolled brass and furnished with round head brass machine screws with washers. They are divided into two types, the No. 3 and 5, No. 3 type measuring ¼"x¼" and No. 5 type ¼"x⅜". Code numbers and lengths are listed below.

No. 3

No. 5

Code No.	No. of Points	Centers Spaced	Length	Stock
		No. 3 Type		
3	1	.....	1½"	¼"x¼"
4	3	½"	2½"	¼"x¼"
		No. 5 Type		
5	4	½"	2 9/16"	¼"x⅜"
10	5	½"	3 1/16"	¼"x⅜"
12	6	½"	3 9/16"	¼"x⅜"
15	8	½"	4 9/16"	¼"x⅜"
18	10	½"	5 1/16"	¼"x⅜"
19	12	½"	6 9/16"	¼"x⅜"
23	15	½"	8 1/16"	¼"x⅜"

BELLS—EXTENSION

These extension bells are for auxiliary use with wall or desk telephones and are used where conditions make the regular telephone bells inaudible, such as in factories, warehouses, garages, machine shops, etc.

Ringers are mounted in wood or steel boxes with two line terminals or binding posts, gongs are finished in black enamel.

When ordering specify same ringer resistance or frequency as telephone with which it is to be used.

Harmonic four and eight party frequencies	30	42	54	66
Corresponding ringer resistance	All 1000 ohm resistance.			
Harmonic four party frequencies	33⅓	50	66⅔	16⅔
Corresponding ringer resistance	500	500	500	2500
Harmonic two party frequencies			20	60
Corresponding ringer resistance			2500	500

Flat Steel Type—With Condensers

2½-inch Gongs

Code No.	Resistance	Condenser	Use
63SA	1000 ohms	1 M. F.	Straight line service.
63BA	1000 ohms	1 M. F.	Biased line service.
63HA	16⅔, 33⅓, 50, 66⅔ cycles	1 M. F.	4 party line service.
63HB	30, 42, 54, 66 cycles	1 M. F.	4 party line service.
63HC	20, 60 cycles	1 M. F.	2 party line service.

Flat Steel Extension Bell.

Flat Steel Type—Without Condensers

2½-inch Gongs

163SA	1000 ohms		Straight line service.
163BA	1000 ohms		Biased line service.
163HA	16⅔, 33⅓, 50, 66⅔ cycles		4 party line service.
163HB	30, 42, 54, 66 cycles		4 party line service.
163HC	20, 60 cycles		2 party line service.

Loud Ringing Extension Bells Wood Type—With Condensers

6-inch Gongs

47SA	1000 ohms	1 M. F.	Straight line service.
47BA	1000 ohms	1 M. F.	Biased line service.
47HA	16⅔, 33⅓, 50, 66⅔ cycles	1 M. F.	Harmonic line service.
74HB	30, 42, 54, 66 cycles	1 M. F.	Harmonic line service.

4-inch Gongs

48SA	1000 ohms	1 M. F.	Straight line service.
48BA	1000 ohms	1 M. F.	Biased line service.
48HA	16⅔, 33⅓, 50, 66⅔ cycles	1 M. F.	Harmonic line service
48HB	30, 42, 54, 66 cycles	1 M. F.	Harmonic line service

Loud Ringing Bell, Wood Type.

Loud Ringing Extension Bells—Wood Type—Without Condensers

6-inch Gongs

147SA	1000 ohms	Straight line service.
147SD	1600 ohms	Straight line service.

Oak Cabinet Extension Bells For Magneto Telephone Service

2½-inch Gongs

37SA	1000 ohms	Straight line service.
37SD	1600 ohms	Straight line service.
37SG	2500 ohms	Straight line service.
37BA	1000 ohms	Biased line service.
37HA	16⅔, 33⅓, 50, 66⅔ cycles	Harmonic line service.
37HB	30, 42, 54, 66 cycles	Harmonic line service.

Oak Cabinet Extension Bell.

Note: For Weatherproof Loud Ringing Bells, see Index.

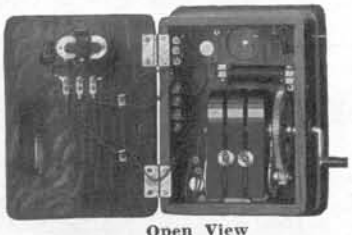
MAGNETO DESK SET BOXES

No. 2328

Kellogg Magneto Desk Set Boxes are extra compact, and convertible to common battery. The cabinet is made of heavy quartered oak, with our standard golden oak finish. All apparatus is securely mounted in the most practical manner. The exposed parts are heavily black enameled. All Magneto Desk Stand Boxes are equipped with our standard connecting rack.

The following code boxes are equipped with condenser, induction coil, generator, and ringer, as specified below.

These boxes are used with our No. 84 desk set and No. 115 Grabaphone.



Open View No. 2328

Straight Line Ringer

Code No.	Ringer	Generator
F-2409	No. 78-A 1000 ohm	No. 15 3-Bar Alternating
STRAIGHT LINE RINGER WITH NO. 28-C INDUCTION COIL—		
F-2328	No. 78-A 1000 ohm	No. 15 3-Bar Alternating
F-2361	No. 78-D 1600 ohm	No. 53 5-Bar Alternating
F-2362	No. 78-G 2500 ohm	No. 53 5-Bar Alternating
WITH NO. 28, ½ M. F. CONDENSER IN RECEIVER CIRCUIT—NO. 28 INDUCTION COIL		
F-2363	No. 78-A 1000 ohm	No. 15 3-Bar Alternating
F-2364	No. 78-D 1600 ohm	No. 15 3-Bar Alternating
F-2365	No. 78-G 2500 ohm	No. 15 3-Bar Alternating
F-2366	No. 78-A 1000 ohm	No. 22 4-Bar Alternating
F-2367	No. 78-D 1600 ohm	No. 22 4-Bar Alternating

Magneto With No. 28, ½ M. F. Condenser—No. 28C Induction Coil

Code	Ringer	Generator
F-2370	No. 78-D 1600 ohm	No. 53 5-Bar Alternating.
F-2371	No. 78-G 2500 ohm	No. 53 5-Bar Alternating.

Biased Ringer—No. 28C Induction Coil

F-2327	No. 79-A 1000 ohm	No. 15 3-Bar Alternating.
F-2372	No. 79-G 2500 ohm	No. 15 3-Bar Alternating.

Harmonic Selective Ringer

F-2410	No. 73-A 4-Party	No. 15 3-Bar Alternating (no Ind. Coil).

Harmonic Selective Ringer—No. 28C Induction Coil

20, 42, 54 and 66 cycles

F-2326	No. 73-A 4-Party	No. 15 3-Bar Alternating.

Straight Line Ringer—Condenser and Push Button for Grounded Signalling—No. 28C Induction Coil

F-2376	No. 78-D 1600 ohm	No. 53 5-Bar Alternating.

Straight Line Ringer—Condenser and Push Button for Secret Signalling—No. 28C Induction Coil

F-2374	No. 78-D 1600 ohm	No. 59 5-Bar Pulsating and Alternating.

Desk Set Boxes for Railway Dispatching Service

These boxes are of the same construction as our standard Magneto Desk Stand Boxes. They are equipped with binding post for attaching an additional push button or key if required.

Code	Generators	Retard or Resistance Coil	Condenser	Induction Coil	Push Button	Ringer
F-2416	No. 53 5-Bar	30-F, 30-G	12	28-C	26	
F-2417	No. 15 3-Bar	30-F, 30-G	12	28-C	26	
F-2418	No. 53 5-Bar	4-L Resis. Coil	25	28-C	14	
F-2419			25	28-C		
F-2402		30-G	25–28	66-A	14	
F-2422	No. 74 3-Bar	4-L Resis. Coil	25	28-C	14	78-G 2500 ohm

Heavy Duty Desk Set Boxes for Oil Field Service With Special Heavy High Power Generator

Code	Generator	Induction Coil	Ringer
2415	No. 75 6-bar	28-C	78-G

Generator Boxes

Generator only mounted in cabinet similar to No. 2328.

Code	Generator
F-2420	No. 22 4-bar
F-2421	No. 53 5-bar

Widely used by railroads, and in other installations where generator alone in cabinet is required.

Common Battery Desk Set Boxes. See Common Battery Telephones Page No. 14

COILS—INDUCTION

Common Battery Switchboards

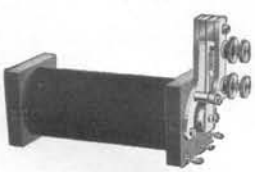
No. 5A

No. 7A

No. 72A

Code No.	Length Overall	Width Overall	Height Overall	No. of Terminals	No. of Windings	Res. Primary Winding	Res. 1st Sec. Winding	Res. 2nd Sec. Winding	Res. Tertiary Winding	Use
5A	5⅜″	1 7/16″	1¼″	4	2	64	68			Coil and terminals mounted on oak base.
7A	6 ″	2 1/16″	2 1/16″	6	3	65	90		435	Maple base holding terminals.
32A	6 ″	2 ″	1¾″	8	4	28.5	45	45	410	
32B	6 ″	2 ″	1¾″	8	4	28.5	135	135	425	
17A	6 ″	2 ″	1¾″	8	4	28.5	62	410	474	4 Concentric coils.
17B	6 ″	2 ″	1¾″	8	4	28.5	62	1475	474	
72A	1st coil 6 ″	2⅛″	1½″	5	4	12	82			
	2nd coil 6 ″					12	432			

Miscellaneous



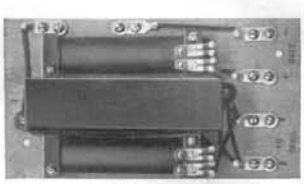
No. 35A

No. 66A

35A	5¾″	2 ″	3½″	5	2	1.5	51.5	Used with No. 2 Howler.
66A	3 ″	1 ″	2 ″	3	2	8	51.5	Combined interrupter and induction coil for railroad telegraphone sets.

Operator's Feed Coils

These coils are used in magneto switchboards with No. 81A induction coils to supply operators' transmitters with current from storage batteries. One No. 81A induction coil and one battery feed coil is used in each position.



No. 3A

3A No. 34 Condenser, 2 No. 9D Retard. coils.
For use on 24-volt pole changer storage battery.

4A No. 34 Condenser, 2 No. 9E Retard. Coils.
For use on 32-volt lighting current.

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.

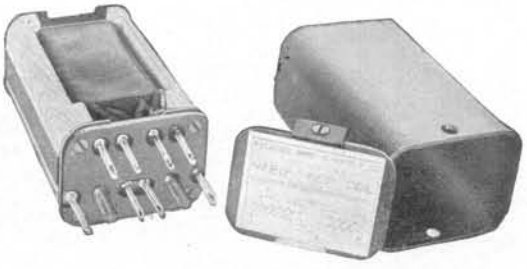
The cores are made of Silicon steel laminated, and the windings are completely enclosed in heavy cross-talk proof cases.

No. 16

Height 3¾ in. Width, 3¼ in. Depth 2⅝ in.

No. 17

Height 3¾ in. Width 3¾ in. Depth 2⅞ in.

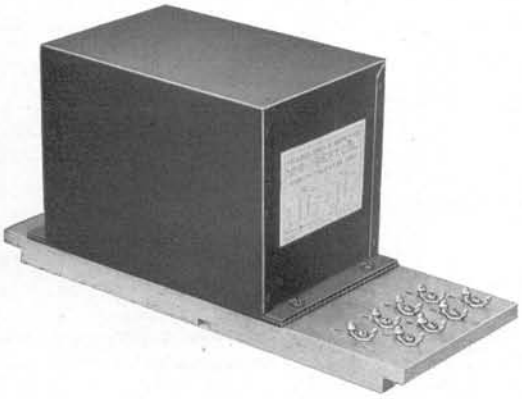


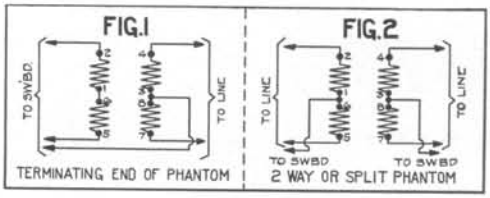
No. 20

Height 1⅜ in. Width 2⅜ in. Length 4⅛ in.

Code	Description	Use
17-F	Has two windings in tamden and two in parallel.	Especially designed for phantom work and particularly adaptable to grounded phantoms, since the windings are separated there is less possibility of the coil being subjected to the effects of lightning.
18-B	Similar to No. 18-A except has two windings in tandem and two in parallel.	Especially designed for rural phantom work and particularly adaptable to grounded phantoms, since the windings are separated there is less possibility of the coil being subjected to the effects of lightning. Talk and ring through efficiency practically same as No. 18-A.
16-A	2 concentric windings, 16- and 20-ohms. Net weight, 3 lbs. 3 oz.	Common battery cord and trunk circuits, non-ring through type. Formerly used in magneto double supervisory cord circuits. Used anywhere a non-ring through coil is desired for wood mounting.
19-A	4 concentric windings, 15.3, 17.1, 18.8, 20.9-ohms.	For magneto cord circuits where a ring and talk through coil is required. Mounts on relay strips or can be mounted on individual angle mountings Nos. 1012, 1013 or 1014.
20-A	4 concentric windings, 12.1, 13.7, 15.2, 16.6-ohms.	Talk through only. Magneto cord circuits and local trunk ckts. Mounts on relay strips or can be mounted on individual mountings Nos. 1012, 1013 or 1014.

COILS—REPEATING; PHANTOM AND SIMPLEX





Connections No. 18A.
Over all Dimensions
10¾"x4"x5¼"

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 telegraph circuit.

Heretofore, when service of this kind was required, it was necessary to introduce two repeating coils in each physical circuit making a total of four additional coils which decreased the transmission and ringing efficiency. The old arrangement was necessary due to the fact that previous coils were not perfectly balanced in each half.

The No. 18-A Coil is arranged to mount on standard coil racks and has a resistance on ½ of the transformer circuit of 11.4 ohms, which is made up of two windings of 5.7 ohms each. The other half of the transformer circuit has a total resistance of 15 ohms, which is made up of two windings of 7.5 ohms each. 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.

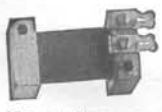
The transmission loss to telephone values is less than one-half mile, No. 19 gauge cable having a mutual capacity of .054 M. F. per mile. It has greater ringing efficiency than any other coil on the market.

The No. 18-A repeating coil, when used to obtain an intermediate telegraph station on a simplex telephone circuit, eliminates the thump which isusually present when unbalanced coils are used.

This coil has been placed in service on lines where other repeating coils, including the No. 46-A, have been used and a material increase in efficiency has been noticed.

COILS — RESISTANCE

Kellogg resistance coils have a sufficiently large carrying capacity and radiating surface to prevent them from overheating. They are wound with enamel insulated special resistance wire, which is enameled in our own wire enameling plant, and which has proven under test and in practice to be superior to any other enamel wire made. These coils are made in suitable forms so that they can be mounted where it is found most convenient. We are prepared to furnish resistance coils in the type illustrated below in any resistance.



No. 1 Type

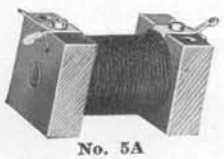
Code	Resistance	Size of Spec. Res. Wire	Code	Resistance	Size of Spec. Res. Wire
1A	1,000 ohms	No. 36	1K	50 ohms	No. 29
1B	500 ohms	No. 36	1L	1 ohm	No. 22
1C	100 ohms	No. 29	1M	2,000 ohms	No. 36
1D	700 ohms	No. 36	1N	10,000 ohms	No. 40
1E	30 ohms	No. 29	1P	500 ohms	No. 38
1F	200 ohms	No. 29	1Q	250 ohms	No. 30
1G	3,000 ohms	No. 36	1R	10,000 ohms	No. 40
1H	10 ohms	No. 26	1S	300 ohms	No. 31
1J	120 ohms	No. 29	1T	450 ohms	No. 34
			1U	6,000 ohms	No. 38

COILS—RESISTANCE

No. 4 Type

Code	Resistance	Size of Spec. Res. Wire	Code	Resistance	Size of Spec. Res. Wire
4A	500 ohms	No. 28	4G	1,500 ohms	No. 32
4B	400 ohms	No. 28	4H	160 ohms	No. 28
4C	300 ohms	No. 28	4J	5,000 ohms	No. 34
4D	50 ohms	No. 25	4K	5 ohms	No. 29 Copper
4E	100 ohms	No. 28	4L	250 ohms	No. 28
4F	200 ohms	No. 28	4M	1,000 ohms	No. 30
5A	10,000 ohms	No. 38	4N	2,400 ohms	No. 34
29	Variable	No. 18			
30A	48,000 ohms				
31A	300 ohms	No. 35			
32A	16 ohms	No. 35			

Also see non-inductive relay coils which can be used as resistance coils.



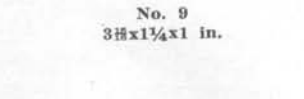
No. 5A

COILS—RETARDATION

See Relay Coils

Kellogg retardation coils are made over a core of soft iron wire or on coils having laminated cores of silicon steel. They are wound with the proper size enamel wire, and number of turns, and have the proper amount of iron. The coils are thoroughly tested for resistance and inductance. The function of retardation coils is to feed battery and to isolate or limit fluctuating or alternating currents to some particular circuits. All conditions under which these coils are to be used must be considered carefully and the proper coil selected to meet these conditions.

No. 8
Base 2x6 in. Coil 4½x1⅝ in.



No. 9
3⅛x1¼x1 in.

No. 10
2¼x1 in. Diam.

No. 11
Base 9x2⅜ in.
Coil Diam. 2¼ in.; Length 6 in.

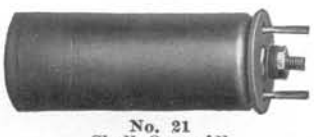
Code No.	Type	Term	Resist	Size of Wire	Winding
8A	Open	2	100	29	Single
8B	Open	2	200	30	Single
8C	Open	2	350	32	Single
8D	Open	2	30	26	Single
8E	Open	2	500	32	Single
8F	Open	2	400	32	Single
8G	Open	2	200c/800GS	31&32	Single
8H	Open	2			
9A	Open	2	25	27	Single
9B	Open	2	150	32	Single
9C	Open	2	200	....	Single
10A	Cast Iron Encased	2	500	37	Single
10B	Cast Iron Encased	2	100	32	Single
10C	Cast Iron Encased	2	200	34	Single
10D	Cast Iron Encased	2	1000	39	Single
10E	Cast Iron Encased	2	300	35	Single
10F	Cast Iron Encased	2	800c/700GS	40&38	Single
10G	Cast Iron Encased	2	30	30	Single
10H	Cast Iron Encased	2	40	30	Single
10J	Cast Iron Encased	2	1800c/200GS	40&38	Single
10K	Cast Iron Encased	2	50	31	Single
10L	Cast Iron Encased	2	70	32	Single
10M	Cast Iron Encased	2	150	33	Single
10N	Cast Iron Encased	2	250	35	Single
10P	Cast Iron Encased	2	175	34	Single
11A	Closed	4	60/60	26	2 parallel on one spool

COILS—RETARDATION

No. 14
2¼x$\frac{15}{16}$ in. Diam.

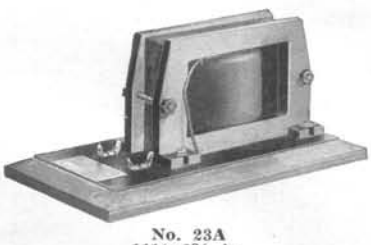
No. 16
⅞x1 ft. Diam.

No. 18
2$\frac{11}{16}$x$\frac{15}{16}$ in. Diam.



No. 21
Shell Over All
3⅝x1$\frac{7}{16}$ in. Diam.

No. 22
Shell Over All
3$\frac{31}{32}$x1$\frac{11}{64}$ in. Diam.



No. 23A
11½x6¾ in.

No. 24
3$\frac{1}{16}$ in. x 1 in.

No. 25
Shell Over All
3⅛x1$\frac{11}{64}$ in.

Code No.	Type	Term.	Res.	Size of Wire	Winding
12A	Closed	4	15/15	19	2 on 2 spools
12B	Closed	4	25/25	20	2 on 2 spools
14A	Cast Iron Encased	4	250/250	37&37	2 coils concent.
14B	Cast Iron Encased	4	100/100	35&35	" " "
14C	Cast Iron Encased	4	25/25	32&32	" " "
14D	Cast Iron Encased	4	10/10	29&29	" " "
14E	Cast Iron Encased	4	500/500	39&39	" " "
14F	Cast Iron Encased	4	50/50	33&33	" " "
14G	Cast Iron Encased	4	150/150	36&36	" " "
16A	Open	....	33	31	Single
16B	Open	....	100	34	"
18A	Open	2	25	28	"
21A	Closed	2	350	33	Ind. non Ind.
21B	Closed	2	100	30	" " "
21C	Closed	2	30	28	" " "
21D	Closed	2	2000	39	" " "
21E	Closed	2	500	34	" " "
21F	Closed	2	32	18	" " "
21G	Closed	2	50	29	" " "
21H	Closed	2	1000	36	" " "
21J	Closed	2	300	33	" " "
21K	Closed	2	1500	37	" " "
21L	Closed	2	200	32	" " "
22A	Closed	4	75/75	32	2 Tandem
22B	Closed	4	100/100	32	"
22C	Closed	4	150/150	34	"
22D	Closed	4	250/250	35	"
22E	Closed	4	200/200	34	"
23A	Closed	2	.125	12	Single
23B	Closed	2	23	12	"
25A	Closed	4	1000/1000	39	Parallel
25B	Closed	4	2000/2000	39	"
25C	Closed	4	50/50	32	"
28A	Closed	2	1500	32	Single
28B	Closed	2	1000	31	"
29A	Closed	4	8.8/8.8	20	Tandem
29B	Closed	4	27/27	23	"
29C	Closed	4	500/500	30	Parallel
29D	Closed	4	.34/.34	13	Tandem

No. 28
Base 8½x2$\frac{7}{16}$ in.

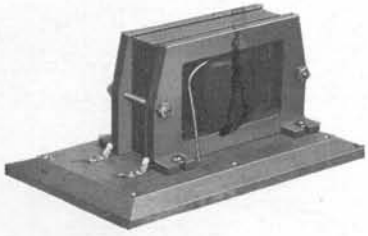
No. 29
Base 11½x6¾ in.

COILS — RETARDATION

No. 30
Adjustable Core Over All 3⅞x1 in.

No. 31 similar to No. 11

No. 34 same as No. 21, but with rubber heads



No. 35A
Base 10¾x6¾ in.

No. 36 similar to No. 29

No. 39 similar to No. 29

No. 40
3¾x2⅞ in.

No. 55

No. 41
Base 7x3 in.

Code	Type	Term.	Resist.	Size of Wire	Winding
30A	Open	2	1.9	21	Single
30B	Open	2	50	29	"
30C	Open	2	100	31	"
30D	Open	2	7.5	24	"
30E	Open	2	25	27	"
30F	Open	2	3.5	23	"
30G	Open	2	150	31	"
31A	Closed	4	1500/1500	31	Tandem
34A	Closed	2	2000	39	Single
35A	Closed	2	.125	12	"
36A	Closed	4	500/500	30	Parallel
36B	Closed	4	50/50	25	"
39A	Closed	8	44/44 44/44	26	4 Wires Parallel
40A	Closed	4	44/44	28	Parallel
40B	Closed	4	500/500	34	"
41A	Closed	2	.08	14	Single
42A	Open	2	25	27	"
43A	Open		165/165	34	Parallel
44A	Closed	4	54/54	27	Tandem
44B	Closed	4	200/200	31	"
45A	Closed	4	80/80		Single
55A	Closed		39/39 39/39	39	"
56A	Closed	4	57/57	29	Tandem
58A	Closed	2	25		Single

No. 42
4⅛x1 1/16x1 in. Diam.

No. 56A

CONDENSERS

For Telephones, Switchboards and General Use

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 our condensers, rather than the metallized paper process, which is not satisfactory for general use.

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.

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

For Telephones

No. 28

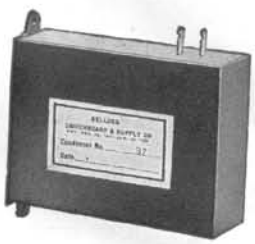
No. 12

No. 16

No. 62

Code	M. F. Cap.	Height	Width	Thickness	Use
28*	½	2 4/64"	1¼"	1 1/16"	Receiver circuit Magneto Telephones.
10	½	2 4/64"	1¼"	¾"	Base of No. 39 Stand No. 111 Cradle set.
20	.2	2 4/64"	1¼"	¾"	Special three layers of paper and one layer of tin foil.
77*	½	3 1/16"	1¼"	¾"	Similar to No. 28, except mounting ear is bent flat and is parallel with side of case
12	1	4 1/16"	2 "	2 2/32"	Telephones and bell boxes.
16	2	4 1/16"	2 1/16"	1⅛"	Telephones and bell boxes, also common battery cord circuits.
41	1.5	4 1/16"	2 1/16"	⅞"	Special. Similar to No. 16.
90	1	4 1/16"	2 1/16"	1⅛"	Two ½ M. F. condensers in same case. Similar to No. 16.
110	2	4 1/16"	2 1/16"	1 3/32"	Same as No. 16, except terminal head is specially treated for export use.
78	1	3 5/16"	1½"	1 1/32"	Common battery wood telephones and bell boxes. Similar to No. 62.
62	2	3 5/16"	1½"	1 1/32"	Common battery wood telephones and bell boxes.
103*	1	4⅛"	1 19/32"	1 1/32"	Same as No. 78, except mounting ear is on side.
53*	2	3 4/64"	1 53/64"	1 1/32"	In base of No. 97 desk stand. Similar to No. 103.
96*	2	4⅛"	1 19/32"	1 1/32"	No. 110 Grabaphone unit set. Similar to No. 103.
105	½	4 1/16"	2 "	2 2/32"	Similar to No. 12, but ½ M. F. to stand 1000 volts direct current, break down test.
99*	½	3⅜"	2¼"	1 1/32"	4 papers 1000 volts D. C. Break-down test used in No. 2866 telephones. Similar to 103, but mounts on base.
23	1	2 1/16"	3 "	1 "	For 4 party sub. sets. Similar to No. 12.
13	1	3 3/64"	4 7/16"	5/8"	Special.
30	1	4 1/16"	2 "	2 2/32"	Similar to No. 12, but with 3 terminals ½ M. F. from center terminals to either outside ones.
19	2	3 3/32"	4 7/16"	5/8"	Similar to No. 13, but 1 strawboard is used in place of space strip.
58	2	11 5/8"	2 1/32"	1 1/16"	Flexible terminals 7½" long, two 1 M. F. condensers in one case.

For Switchboards



No. 37

37*	1	3 "	3 3/64"	1 "	Formerly used in magneto switchboard cord circuits.
68*	½	3⅜"	2¼"	1 1/32"	Magneto cord circuits.
67*	1	3⅜"	2¼"	1 1/32"	Magneto cord circuits.
66*	2	3⅜"	2¼"	1 1/32"	P. B. X. cord circuits.
64	2	2 57/64"	1 17/32"	1 1/32"	Same as No. 62, arranged to mount on steel mounting strip like relays.
32*	½	3 "	3 1/64"	1 5/8"	Mounting ears on narrow side.
34*	2	5¼"	2 7/64"	1⅛"	Mounting ears on narrow side.

*Denotes condensers with ears for mounting.

CONDENSERS

For Switchboards

No. 68

Code No.	M. F. Cap.	Height	Width	Thickness	Use
36	2	5¼″	2 3/32″	1 1/16″	Common battery cord circuits. Same as No. 16, except arranged to mount on steel mounting strip like relays.

No. 64

54	½	5¼″	2 3/32″	1 1/16″	Similar to No. 36.
57	1	5¼″	2 3/32″	1 1/16″	Same as No. 36, except capacity.
101*	½	3 23/64″	1 17/32″	1 3/32″	Similar to No. 64.
65*	2	4 1/16″	1 13/32″	1 5/64″	Similar to No. 64 with lugs on rear for holding can.

No. 34

Miscellaneous

24	½	2¾″	2 1/16″	Round	Pole changers.
25	1	2¾″	2 1/16″	Round	Pole changers.
79	.2	2 5/8″	1⅞″	7/16″	Two 1. M. F. condensers under one case, special for telegraph service.

No. 36

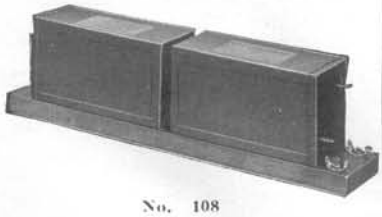
17	.3	4 43/64″	2 1/16″	⅞″	4 layers of paper to 1 layer of tin foil. Similar to No. 8.
31	.05 to .1	5 37/64″	¾″	Round	3 layers of paper to 1 of tin foil.
118	.75 to .80 to 1	4 11/16″	2 1/16″	1⅛″	Two units in one cover used with 412 desk set box.
11	4	8 31/32″	4 15/32″	1⅛″	Two 2 M. F. condensers connected in multiple, one case overall. Similar No. 8.

No. 25

102	2.10	4 15/16″	1 11/16″	2 3/8″	Balanced condenser.
108	4.20	10¾″	1⅞″	2⅞″	2 No. 102 condensers (paired) mounted on wood base.
128	4	4 ″	1 13/16″	2 3/32″	Twin condensers in case for No. 56 set coil.

*Denotes condenser with ears for mounting.

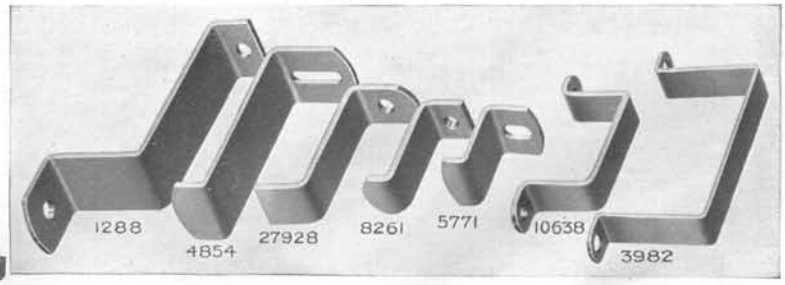
No. 118



No. 108

No. 128

Condenser Mounting Brackets



	Width Inches	Thickness Inches	Use
Pc. 1288	2 1/16	1⅛	No. 16 and No. 90 condenser.
Pc. 4854	2 1/16	Any	With all condensers 2 1/16 wide.
Pc. 27928	1½	Any	With all condensers 1½ wide.
Pc. 8261	Any	1 3/32	With all condensers 1 3/32 thick.
Pc. 5771	Any	¾	With all condensers ¾ in. thick.
Pc. 10638	1 1/16	¾	With No. 10 and No. 20 condenser.
Pc. 3982	2 1/16	1⅛	With No. 16 condenser.

CORDS

OUR cords are built complete in our own factory. This department is considered foremost in the country in complete, up-to-date equipment for the production of the most durable and practical cordage for every telephone service.

It is the records of the switchboard man that tell the service value of the grade of wire, the number of strands of tinsel, the quality of the conductors, the manner of their braiding and winding on which we base our statement of Kellogg cordage superiority.

KEY TO CORD CODES

The following letters are added to cord code numbers to designate the classification in which the cord belongs.

Apparatus Cords

Code No.	
D.	Desk Stand.
G.	Grabaphone.
O.	Operator transmitter and receiver.
O. R.	Operator receiver.
O. T.	Operator transmitter.
T. R.	Telephone receiver.
T.	Transmitter.

R—Preceding any of above designations, designates railroad type.

242 R. T. R. Cords means Railroad Telephone Receiver Cords.

Switchboard Cords

S. T.	Steel and tinsel.
T. O.	Tinsel only.

Code No. prefixed by F indicates flat Tip Pc. 33566.

Kellogg tinsel switchboard and telephone cords are completely moisture-proof.

Brown mercerized cords are standard, but green silk cords can be furnished when specified.

Abbreviations in Tables Following

Inches	In.
Connector	Conn.
Connectors	Conns.
Conductor	Cond.
Conductors	Conds.
Soldered	Sold'd

CORDS—DESK STAND

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

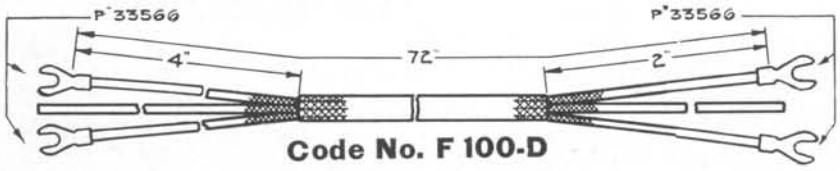
The conductors consist of 18 strands of tinsel twisted together in three ropes, each consisting of 6 strands of tinsel. Over this are two wrappings of silk impregnated with a moisture-proof compound. This is covered with a plain brown cotton braid, over which is placed the brown mercerized outer braid.

The green silk desk stand cords are of the same construction as the brown mercerized, except that the cotton braid is green and the outer covering is of green silk.

The black and maroon desk stand cord conductors are of 18 strands of tinsel twisted together into 3 ropes of 6 strands each, over which is placed 2 wraps of silk, impregnated with a moisture-proof compound. This is covered with a black mercerized cotton braid over which is placed a black and maroon mercerized cotton braid.

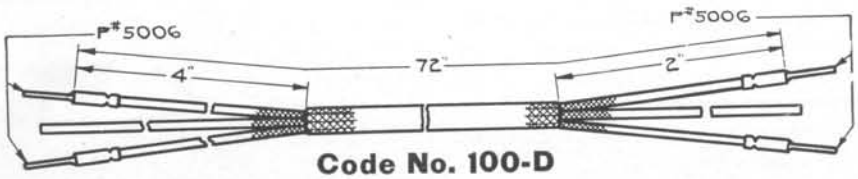
2 Conductor—Brown Mercerized

Green Silk Furnished When Specified



Code No. F 100-D

Code No.	Tips and Conn. Stand End	Tips and Conn. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Overall Inches	Remarks
F100D	33566	33566	2	4	Brown, Black	72	For No. F97, F39, F78, F75 and F111 desk stands.



Code No. 100-D

2 Conductor—Brown Mercerized—18 Strand Tinsel

Code No.	Tips and Conn. Stand End	Tips and Conn. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Color	Length Over All Inches	Remarks
100-D	5006	5006	2	4	Brown, Black	72	For Nos. 97, 39, 78, 75 and 111 desk stands.

Extra Long 2 Conductor Cords

516-D	5006	5006	2	4	Brown, Black	120	Same as 100-D except length.

2 Conductor Desk Stand Cords

Miscellaneous

511-D	Loops	17132	2	4	Brown, Black	72
581-D	33566	5006	2	4	Brown, Black	72

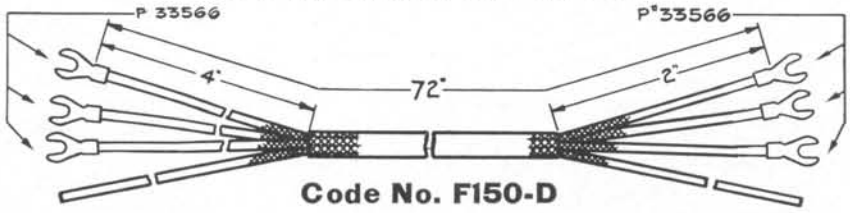
Actual Size Cord Tips specified with Cords on this page.

33566 5006 17132 Loop

CORDS—DESK STAND

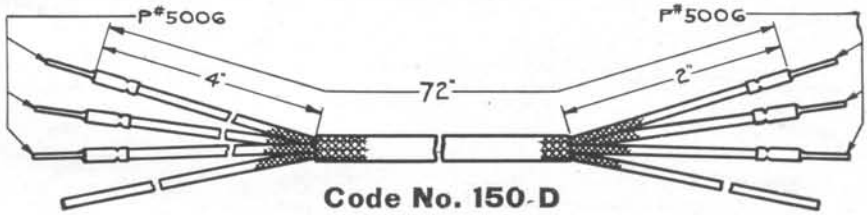
3 Conductor—Brown Mercerized 18 Strand Tinsel

Green Silk Furnished When Specified.



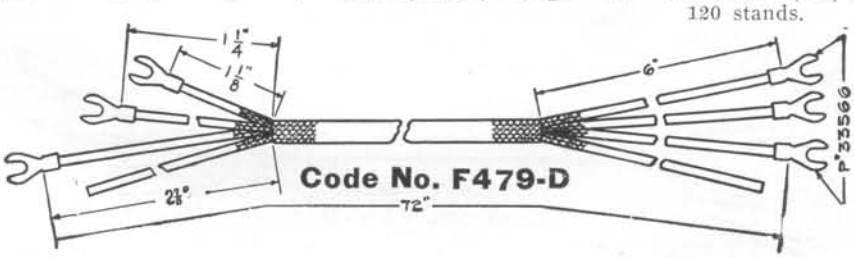
Code No. F150-D

Code No.	Tips and Conns. Stand End	Tips and Conns. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Over All Inches	Remarks
F150-D	33566	33566	2	4	Brown, Black, Orange	72	For Nos. F84, F68, F82, F115, F110 and F120 stands.
F636-D	33566	33566	4	4	Green, Red, Orange	72	For Nos. F118, F118-B, F115, F138, F301, F135.
F452-D	33566	33566	2	2	Brown, Red, Orange	72	For F-115-A stand.



Code No. 150-D

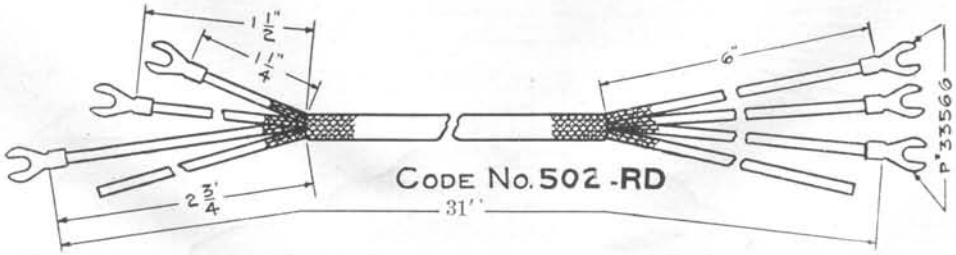
Code No.	Tips and Conns. Stand End	Tips and Conns. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Over All Inches	Remarks
150-D	5006	5006	2	4	Brown, Black, Orange	72	For Nos. 84, 68, 82, 115, 110 and 120 stands.



Code No. F479-D

Code No.	Tips and Conn. Stand End	Tips and Conn. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Over all Inches	Replaces W. E. Cord	Remarks
F479-D	33566	33566	{ Min. 1 1/8 / Max. 2 3/8 }	6	Green, Red, Orange	72	550	W. E. desk stands, Nos. 1020AL, AP, BC, MC, MP and SC. W. E. arms, Nos. 1048AA, AB and AC.

3 Conductor—Black and Maroon Mercerized Cotton 18 Strands Tinsel

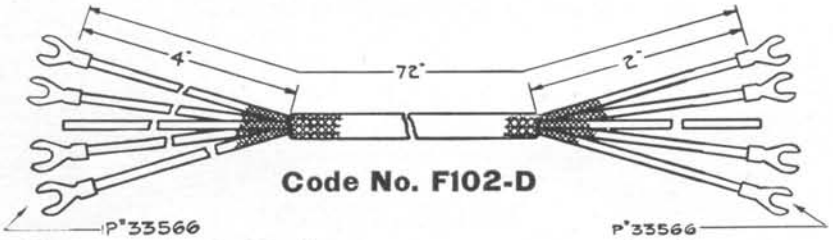


Code No. 502-RD

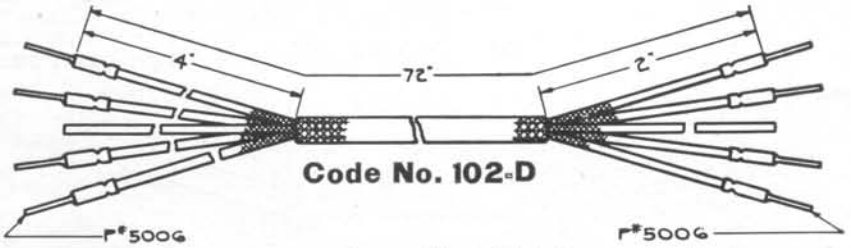
Code No.	Tips and Conns. Stand End	Tips and Conns. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Over all Inches	Remarks
F502-RD	33566	33566	{ Min. 1 1/4 / Max. 2 3/4 }	6	Green, Red, Orange	81	Replaces W. E. Co. No. 409.

CORDS—DESK STAND

4 Conductor—Brown Mercerized



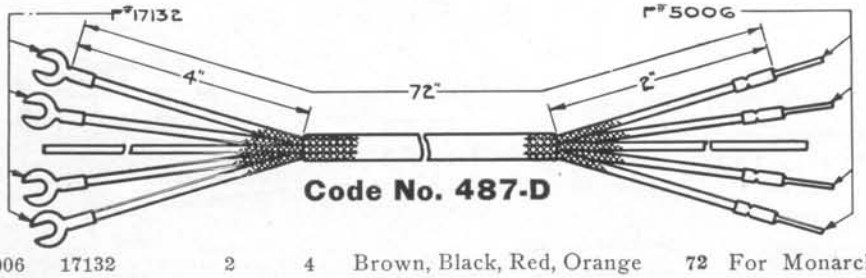
Code No.	Tips and Conns. Stand End	Tips and Conns. Box End	Length of Conds. Stand End, In.	Length of Conds. Box End, In.	Tracer Colors	Length Over all Inches	Remarks
F102-D	33566	33566	2	4	Brown, Black, Red, Orange	72	For stands and boxes with flat terminals.



102-D	5006	5006	2	4	Brown, Black, Red, Orange	72	For 4 conductor stands and boxes.

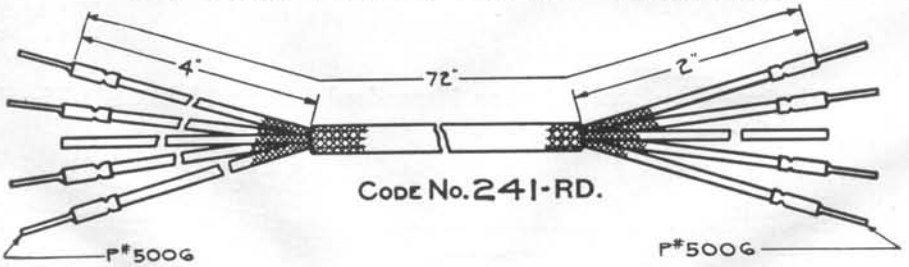
4 Conductor—Desk Stand Cords

Miscellaneous Tips



487-D	5006	17132	2	4	Brown, Black, Red, Orange	72	For Monarch desk stand

4 Conductor—Black and Maroon 18 Strand Tinsel



241-RD	5006	5006	2	4	Green, Black, Red, Orange	72	For 4 cond. stands and boxes.
566-RD	33566	5006	3	6	Green, Black, Red, Orange	72	

Pc. 33566

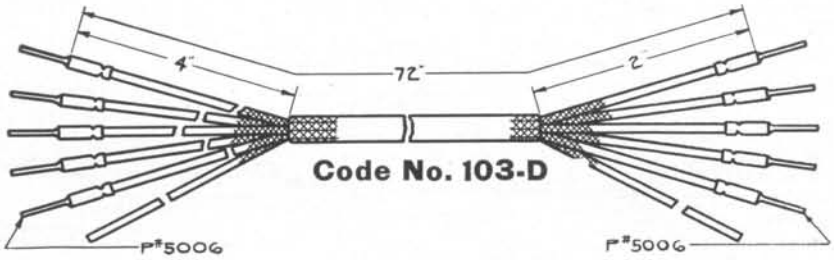
Pc. 5006

Pc. 17132

CORDS—DESK STAND

5 Conductor—Brown Mercerized

Green Silk furnished when specified.



Code No.	Tips and Conns. Stand End	Box End	Length of Conds. Stand End, In.	Box End, In.	Tracer Colors	Length Over all Inches	Remarks
103-D	5006	5006	2	4	Brown, Black, Red, Orange White	72	For 5 conductor stands.

6 Conductor—Brown Mercerized

F-104-D	33566	33566	2	4	Brown, Black, Red, Orange White, Blue	72	For No. 98 stand.

7 Conductor—Brown Mercerized

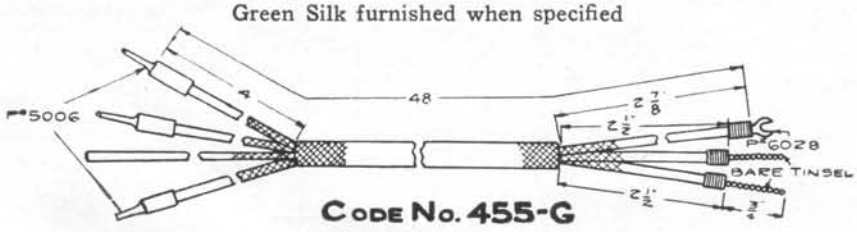
F-105-D	33566	33566	2	4	Black, Red, Orange, Brown, Blue, White, Green	72	

CORDS—GRABAPHONE

Kellogg Grabaphone Cords are of the same construction as our Desk Stand Cords.

3 Conductor—Brown Mercerized

Green Silk furnished when specified



Code No.	Tips and Conns. Stand End	Grabaphone End	Length of Conds. Stand End, In.	Grabaphone End, In.	Tracer Colors	Length Over all Inches	Remarks
455-G	5006	6028 / Bare	4	Min. 2½ / Max. 2⅞	Green, Black, Orange	48	For Nos. 13 and 14 Grabaphone.

4 Conductor—Brown Mercerized

Code No.	Tips and Conns. Stand End	Grabaphone End	Length of Conds. Stand End, In.	Grabaphone End, In.	Tracer Colors	Length Over all Inches	Remarks
454-G	5006	33563	4	Min. 3 / Max. 7	Brown, Black, Red, Orange	48	For Nos. 11 and 12 Grabaphones.
F454-G	33566	33563	4	Min. 3 / Max. 7	Black, Red, Orange	48	

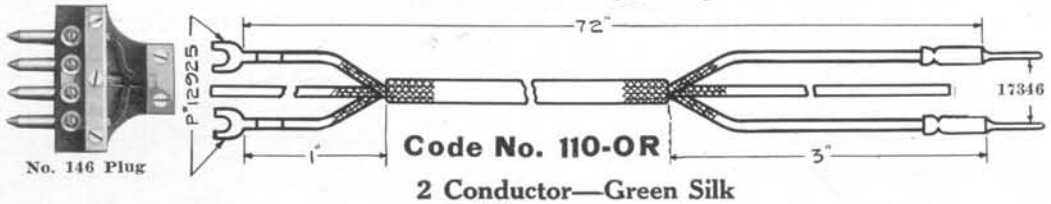
5006 33566 6028 Bare 33563

CORDS — OPERATORS'

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 Green Silk Operator Cords are made up of 18 strands of tinsel, twisted together in three ropes of 6 strands each, which are covered with one wrap of plain white cotton, impregnated with moisture-proof compound. Over this, is placed one braid of plain green cotton and it is then covered over all with a green silk braid.

CORDS — OPERATORS'
To Fit Kellogg Plugs

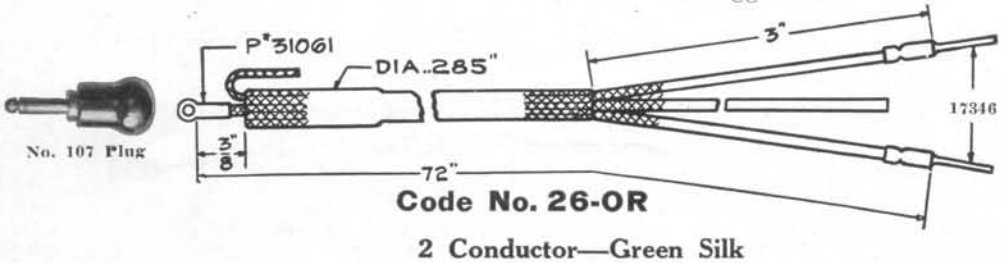


No. 146 Plug

Code No. 110-OR

2 Conductor—Green Silk

Code No.	Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End, In.	Length of Conds. Receiver End, In.	Length Over all Inches	Remarks
110-OR	12925	17346	1	3	72	Stay cord on plug end fits Kellogg No. 146 plug. A. E. Co. No. 103 plug. Standard on Kellogg boards.

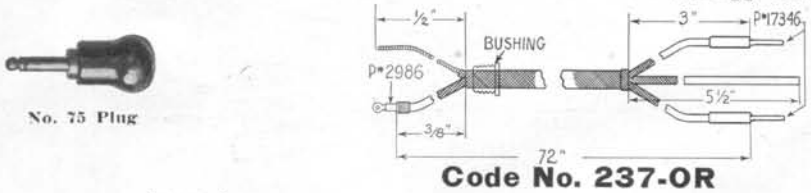


No. 107 Plug

Code No. 26-OR

2 Conductor—Green Silk

Code No.	Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End	Length of Conds. Receiver End	Length Inches	Remarks
26-OR	31061	17346	3/8	3	72	Fits 5/16 tap. Kellogg No. 107 plug. Also fits W. E. Co. No. 47 plug or Kellogg No. 130 switchboard plug. Formerly standard on Kellogg boards.

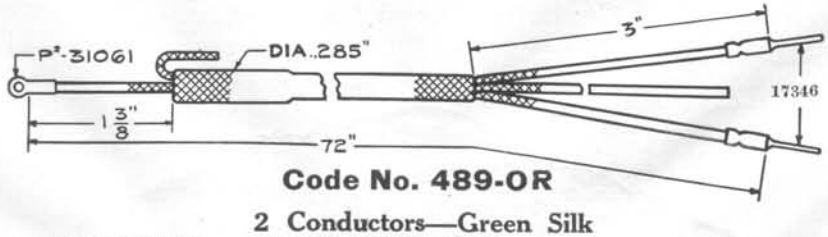


No. 75 Plug

Code No. 237-OR

Code No.	Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End, In.	Length of Conds. Receiver End, In.	Length Over all Inches	Remarks
237-OR	2986 / Bare	17346	3/8	3	72	Fits tap No. 12-24. For No. 75 plug. Formerly standard on Kellogg boards.

CORDS—OPERATORS'
Miscellaneous



Code No. 489-OR

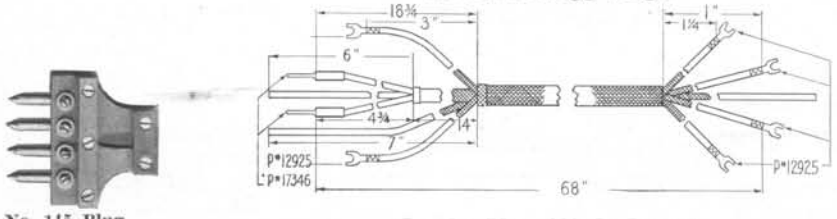
2 Conductors—Green Silk

Code No.	Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End, In.	Length of Conds. Receiver End, In.	Length Over all Inches	Remarks
489-OR	31061 / Bare	17346	1 3/8	3	72	Fits Dean head receiver and 2-conductor operator's plug. 5/16-in. tap.

CORDS—OPERATORS'

4 Conductor—Green Silk Plaited No Overall Braid

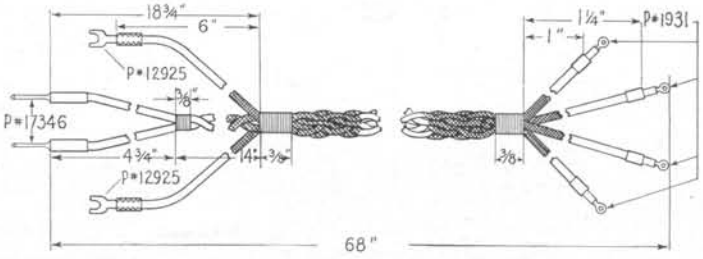
To Fit Kellogg Plugs



No. 145 Plug

Code No. 111-0 Cord

Code No.	Tips and Conns. Plug End	Trans-mitter End	Re-ceiver End	Length of Conds., Inches Plug End	Trans-mitter End	Re-ceiver End	Tracer Colors	Length Over all Inches	Remarks
111-O	12925	12925	17346	Min. 1 / Max. 1¼	3	4¾	Green, Black, Red, Orange	68	For Nos. 131 and 145 plugs. Fits A. E. Co. plug No. 103.



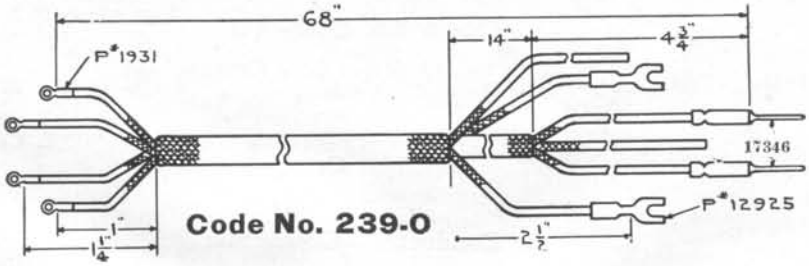
No. 25 Plug

Code No. 433-0 Cord

433-O	1931	12925	17346	Min. 1 / Max. 1¼	2½	4¾	Green, Black, Red, Orange	68	Transmitter on tip. No. 25 plug.
439-O	Loop	12925	17346	Min. ½ / Max. 1¾	6	4¾	Green, Black, Red, Orange	68	For No. 182 plug.

4 Conductor—Green Silk with Braid Overall

To Fit Kellogg Plugs



No. 136 Plug

Code No. 239-0

239-O	1931	12925	17346	Min. 1 / Max. 1¼	2½	4¾	Green, Black, Red, Orange	68	Fits bushing Pc No. 28818 ⅝ drill. Transmitter on tip. No. 136 plug.
240-O	1931	12925	17346	Min. 1 / Max. 1¼	2½	4¾	Green, Black, Red Orange	68	Fits bushing Pc No. 28818. ⅝ drill. Receiver on tip No. 136 plug.
67-O	1931	12925	17346	Min. 1 / Max. 1¼	6	4¾	Green, Black, Red, Orange	68	Transmitter on tip of plug Same as No. 2390 but larger to fit No. 25 plug.

Note—No. 25 and No. 136 plugs are the same except No. 136 has smaller cord bushing.

CORD FOR DOUBLE HEAD RECEIVERS

4 Conductor—Green Silk Braid Overall

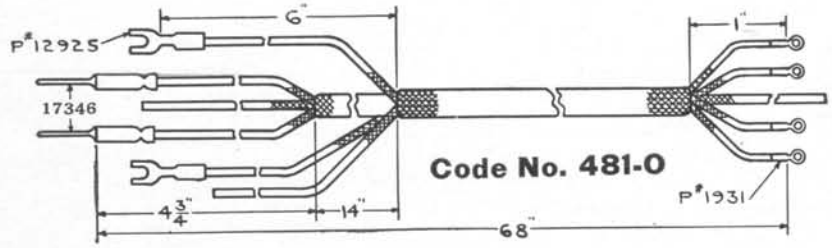
Two Receivers in Multiple

442-O	12925	12925	17346	Min. 1 / Max. 1¼	3	4½		83	Fits No. 145 plug.

CORDS — OPERATORS'

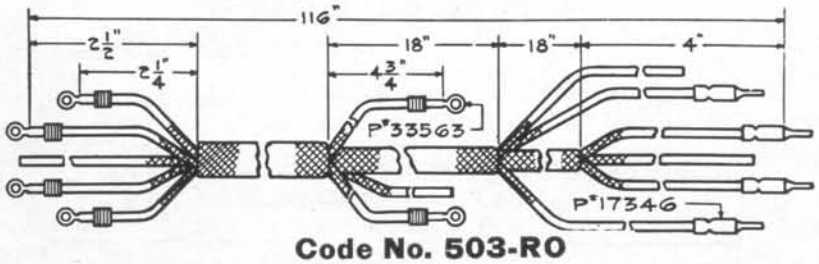
4 Conductor—Green Silk Braid Overall

To Fit Plugs of Other Makes



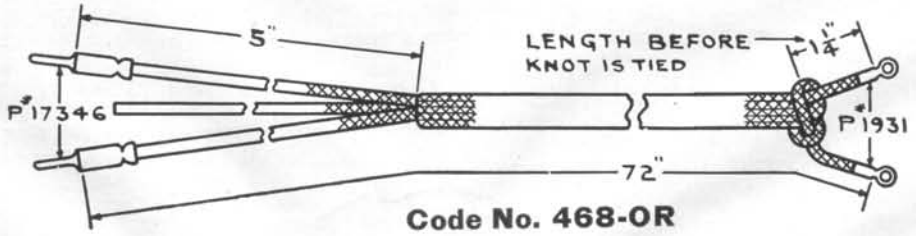
Code No.	Tips and Conns. Plug End	Tips and Conns. Transmitter End	Tips and Conns. Receiver End	Length of Conds., Inches Plug End	Length of Conds., Inches Transmitter End	Length of Conds., Inches Receiver End	Tracer Colors	Length Over all Inches	Remarks
481-O	1931	12925	17346	1	6	4¾	Green, Black, Red, Orange	68	Fits Dean Operator Plug. Fits bushing Pc No. 28818.
140-O	33563	33563	17346	{ Min. 2 / Max. 2 7/16 }	4	3¾	Green, Black, Red, Orange	96	W. E. Co. breast plate transmitter, W. E. Co. plug No. 103.
464-O	33563	12925	17346	{ Min. 2 / Max. 2 7/16 }	2½	4¾	Green, Black, Red, Orange	68	Fits No. 139 plug and W E. Co. 103 plug.

4 Conductor—Black and Maroon



503-RO	33563	33564	17346	2½	5	4	Red, Blue, Orange, Green, White	116	For double receiver duplicate of W. E. Co. No. 363.
504-RO	33563	33563	33563	2½	4½	4	Green, Blue, Red, Orange	98	W. E. Co. No. 375.

2 Conductor—Green Silk



Code No.	Tips and Conns. Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End, In.	Length of Conds. Receiver End, In.	Tracer Colors	Length Over all Inches	Remarks
468-OR	1931	17346	7/16	5	Green, Black	72	Replaces W. E. No. 30. Fits W. E. plugs, Nos. 85, 47 and 110.

CORDS — RECEIVER

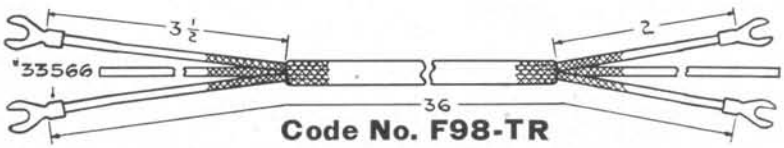
Kellogg Receiver Cords are of the same sturdy construction as our Desk Stand Cords.

The Brown Mercerized Receiver Cord is made up of conductors of eighteen strands of tinsel twisted together in 3 ropes each of 6 strands of tinsel, over which is placed two wrappings of silk impregnated with moisture-proof compound. This is covered with a braid of plain brown cotton and a brown mercerized over-all braid.

The green silk deskstand cords are of the same construction as the brown mercerized, except that the cotton braid is green and the outer covering is of green silk.

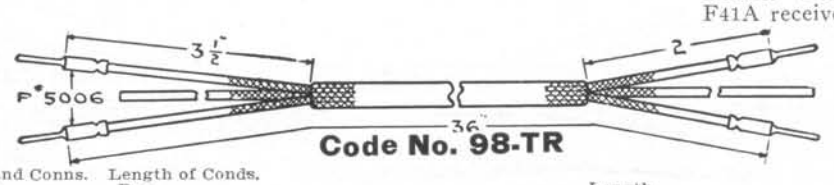
2 Conductor—Brown Mercerized

Green Silk Furnished When Specified.



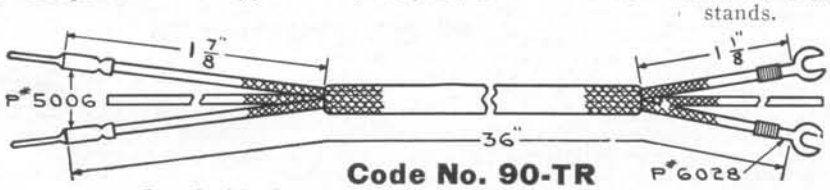
Code No. F98-TR

Code No.	Tip and Conns. Receiver End	Tip and Conns. Stand End	Length of Conds. Receiver End, In.	Length of Conds. Stand End, In.	Tracer Colors	Length Over all Inches	Remarks
F98-TR	33566	33566	3½	2	Brown, Black	36	For all receivers with flat terminals. For Kellogg No. F41A receiver.



Code No. 98-TR

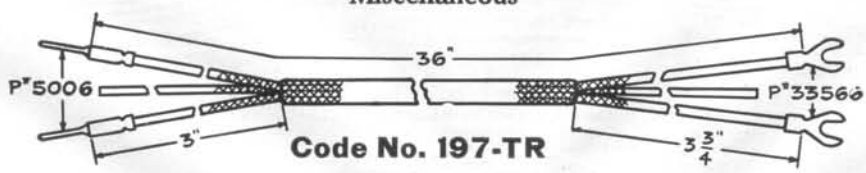
Code No.	Tips and Conns. Receiver End	Tips and Conns. Stand End	Length of Conds. Receiver End, In.	Length of Conds. Stand End, In.	Tracer Colors	Length Over All Inches	Remarks
98-TR	5006	5006	3½	2	Brown, Black	36	For all receivers with solid terminals. Kellogg receivers Nos. 17, 18, 23, 26, 27, 32, 41A.
508-TR	5006	5006	3½	2	Brown, Black	30	Same as 98-TR but shorter.
27-TR	5006	Bare	4½	1¼	Brown, Black	36	For old style receivers Nos. 6, 8, 12.
196-TR	5006	Loops	3	3⅜	Green, Black	36	Nos. 197-B and F-197-B desk stands.



Code No. 90-TR

Code No.	Tips and Conns. Receiver End	Tips and Conns. Stand End	Length of Conds. Receiver End, In.	Length of Conds. Stand End, In.	Tracer Colors	Length Over all Inches	
90-TR	5006	33563	1⅞	1⅛	Brown, Black	36	Flexiphones.

2 Conductor—Brown Mercerized Miscellaneous



Code No. 197-TR

Code No.	Tip and Conns. Receiver End	Tip and Conns. Stand End	Length of Conds. Receiver End, In.	Length of Conds. Stand End, In.	Tracer Colors	Length Over All Inches
197-TR	5006	33566	3	3¾	Brown, Black	36

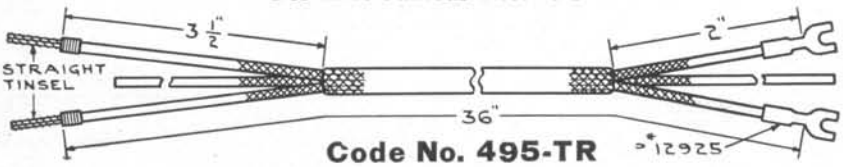
33566 — 5006 — 33563 — Bare — Loop

Cord Tips Listed on this page.

CORDS—RECEIVER

2 Conductor Brown Mercerized.

For Miscellaneous Receivers



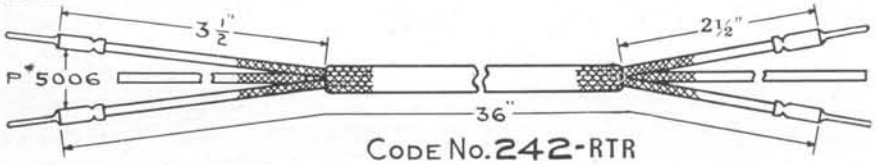
Code No. 495-TR

Code No.	Tips and Conns. Receiver End	Tips and Conns. Stand End	Length of Conds. Receiver End, In.	Length of Conds. Stand End, In.	Tracer Colors	Length Inches	Remarks
495-TR	12925	Bare	3½	2	Brown, Black	36	
179-TR	5006	6028	3	Min. 1¼ / Max. 2¾	Brown, Red	36	W. E. Co.'s Code No. 178.
207-TR	5066	17132	3½	Min. 1⅛ / Max. 2¾	Brown, Black	36	W. E. Code No. 176.

2 Conductor Black and Maroon

18 Strand Tinsel

The black and maroon cords are made up of 18 strands tinsel twisted together in three ropes of six strands each. Two inner braids impregnated with moisture-proof compound and one outer braid of mercerized cotton.



Code No. 242-RTR

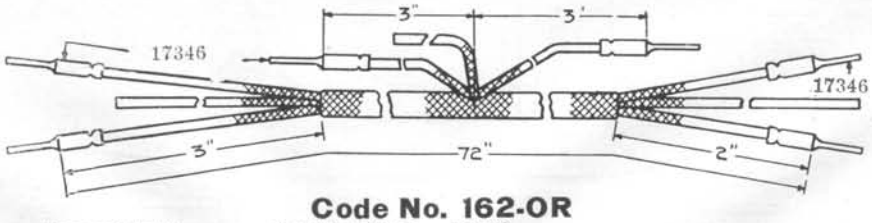
Code No.	Tips and Conns. Receiver End	Tips and Conns. Stand End	Length of Conns. Receiver End, In.	Length of Conns. Stand End, In.	Tracer Colors	Length Inches	Remarks
242-RTR	5006	5006	3½	2½	Black, Red	26	
248-RTR	39663	17132	3½	Min. 1½ / Max. 2	Black, Red	36	No. 9 blocking cord.

Code No. 415-RTR

415-RTR	17346	33566	3½	Min. 1¼ / Max. 2¾	Green, White	42	W. E. Code No. 408
427-RTR	17346	33566	3½	5	Green, White	30	W. E. Co. Code Nos. 446 and 546.

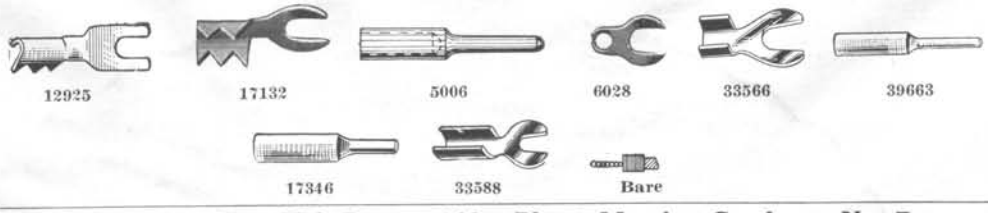
CORDS FOR DOUBLE HEAD RECEIVERS

2 Conductor—Green Silk



Code No. 162-OR

Code No.	Tips and Conns. Plug End	Tips and Conns. Receiver End	Length of Conds. Plug End, In.	Length of Conds. Receiver End, In.	Length Over all Inches	Remarks
162-OR	17346	17346	2	3	72	For two receivers in series.



CORDS—SWITCHBOARD

Kellogg switchboard cords solve the problem of reducing the high cost of switchboard cordage.

Kellogg steel and tinsel switchboard cords consist of two spiral steel conductors wrapped over braided tinsel, making a practically perfect cord. The round steel conductors are practically unbreakable giving the cord a wonderfully long life, while the tinsel lowers the resistance of the steel conductors, making a most satisfactory cord from a transmission standpoint.

Kellogg all tinsel cords are constructed of 18 strands of tinsel insulated with two wrappings of moisture-proofed silk. Tinsel cords are especially recommended for common battery switchboards where extreme flexibility is important.

Repeated testimonials from users all over the world prove the quality of Kellogg cords unequalled.

Kellogg switchboard cords are furnished in 36 to 96 inch lengths.

1 Conductor—Steel and Tinsel Conductors

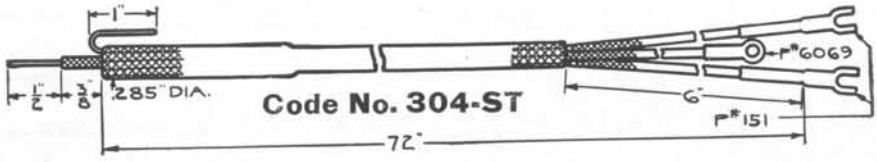
Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End, In.	Tracer Colors	Fits Tap Inches	Remarks
310-ST	.....	151	½	.285–.295	White	5/16–18	Fits No. 44 plug.
311-ST	.....	.....	½	.285–.295	White	5/16–18	Arranged for No. 44 plug at each end.

1 Conductor—Tinsel Conductors

Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End, In.	Tracer Colors	Fits Tap Inches	Remarks
313-TO	31061	151	5/8	.285–.295	White	5/16–18	Fits No. 44 plug.
318-TO	31061	.....	1¼	.285–.295	White	5/16–18	Arranged for plug at each end.

2 Conductor—Steel and Tinsel Conductors

Standard Lengths—36", 48", 60", 72".



Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End, In.	Tracer Colors	Fits Tap Inches	Remarks
304-ST	.....	151	5/8	.292–.312	White, Blue	.....	Fits Nos. 42, 112, 55, 187, 162, 138, 168, 17, 70, 15, 56, 130, 109, 3, 29, 102, 166, 78, 90, 193, 178, and Amer. Elec. No. 1188 plug.
323-ST	.....	151	5/8	.245–.265	White, Blue	17/64–32	Fits Nos. 128, 151, 192, 181 and 141 plugs.
305-ST	.....	2749	5/8	.196–.216	White, Blue	12–24	Fits Nos. 26 and 122 plugs. Also S. C. No. 33.
331-ST	.....	151	1⅛	.292–.312	White, Blue	5/16–18	Fits 144 plugs and S. C. Nos. 15 and 42.
357-ST	.....	34603	⅞	.196–.216	White, Blue	12–24	Fits No. 36 S. C. plug.
350-ST	.....	151	1	.235–.245	White, Blue	.....	Fits S. C. No. 43 plug.
360-ST	.....	151	½	.261–.281	White, Blue	.....	Fits Nos. 78 and 128 plugs.
308-ST	.....	.....	5/8	.292–.312	White, Blue	5/16–18	Arranged for plug at each end. Tied in middle.
353-ST	.....	33599	5/8	.292–.312	White, Blue	5/16–18	Fits W. E. Co. No. 47 plug.

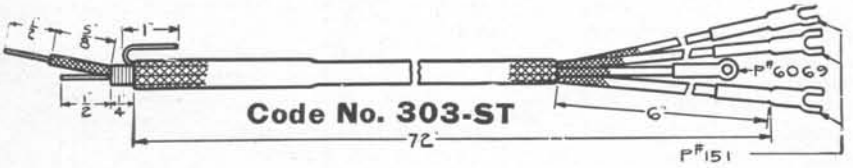
Two Conductor—Tinsel Conductors

Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End, In.	Tracer Colors	Fits Tap Inches	Remarks
301-TO	31061	151	¾	.292–.312	White, Blue	5/16–18	Fits Nos. 3, 15, 17, 42 and 70 plugs.
324-TO	31061	151	¾	.245–.265	White, Blue	¼–32	Fits No. 128 plug.

CORDS—SWITCHBOARD

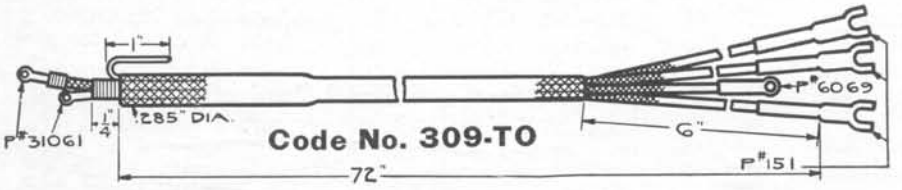
3 Conductor—Steel and Tinsel Conductors

Standard Lengths—36″, 48″, 72″, 84″.



Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End	Tracer Colors	Fits Tap Inches	Remarks
303-ST	.....	151	½–1	.292–.312	White, Blue, Red	5/16–18	Fits Nos. 106, 74, 137, 152, 34, 108, 111, 156, 29, 191, 115, 116, 118, 194, 18, 38, 165 plugs.
358-ST	.....	33569	½–⅞	.292–.312	White, Blue, Red	.....	Fits W. E. No. 110 plug.
325-ST	.....	151	½–1	.245–.265	White, Blue, Red	7/64–32	Fits Nos. 129, 143, 154, 188, 164, 176 and 177 plugs.

3 Conductor—Tinsel Conductors

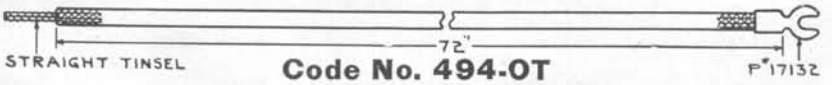


Code No.	Tips and Conns. Plug End	Tips and Conns. Swbd. End	Length Plug End, In.	Diam. at Plug End	Tracer Colors	Remarks
309-TO	31061	151	¾–1¼	.285–.295	White, Blue, Red	Fits same plugs as No. 303 cord.
326-TO	31061	151	¾–1¼	.235–.245	White, Blue, Red	Fits Nos. 154, 201 and 129 plugs.

CORDS—SWITCHBOARD TRANSMITTER

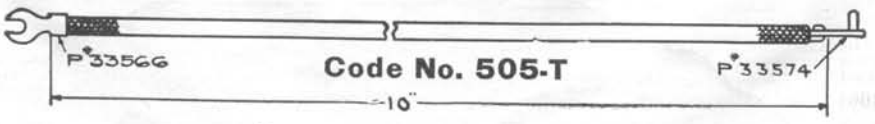
The conductors of Kellogg green silk transmitter cords are made up of 18 strands of tinsel twisted together in 3 ropes of 6 strands each. The conductors are then covered with two wraps of silk impregnated with a moisture-proof compound over which is placed a green cotton braid, then covered over all with a green silk braid.

1 Conductor—Green Silk



Code No.	Tip and Conns. Transmitter End	Conn. Rack End	Tracer Colors	Length Over all Inches	Remarks
494-OT	Bare	17132	Green	72	No stay cord.
499-OT	Bare	5006	Green	72	No stay cord. Standard Kellogg cord used on suspended type switchboard.
261-OT	5006	5006	Green	72	
465-OT	5006	17132	Green	72	No stay cord. W. E. Co. No. 437.
485-OT	31070	31070	Green	72	Loop tied at one end.

CORDS—MISCELLANEOUS



505-T	33574	33566	Green	10	Used on W. E. Co. apparatus.

No. 4

FASTENERS—CORD

No. 4. Cord Fasteners. Brass, dull nickeled.

No. 5. Cord Fasteners. Steel, hot tin plated.

No. 5

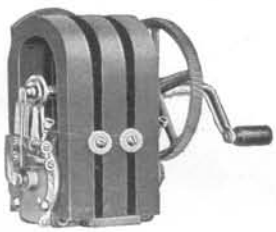
GENERATORS

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 circuit 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.

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

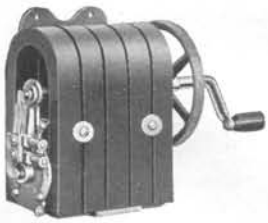


Code No. 15 Generator

Telephone Type

Code No.	Bars	Description	Term.	Contacts
15	3	Alternating current	3	Make and break.
22	4	Alternating current	3	Make and break.
53	5	Alternating current	3	Make and break.
66	3	Pulsating current	3	Make and break.
26	4	Pulsating and alternating	6	Make and break.
31	3	Pulsating and alternating	5	Make and break.
59	5	Pulsating and alternating	5	Make and break.
75	6	Alternating	3	Make and break.

Alternating Current Generator Terminals



Code No. 53 Generator

Switchboard Type

64	3	Alternating, Inverted gear wheels	2	No contacts.
61	4	Alternating, Inverted gear wheels	2	No contacts.
63	5	Alternating, Inverted gear wheels	2	No contacts.
72	5	Alternating	2	No contacts.
78	5	Alternating	2	No contacts with Mtg. Brackets.

Pulsating & Alternating Current Generator Terminals

Generator Parts

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

No. 63

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

HEAT COILS

No. 2

Kellogg Heat Coils are carefully made and will blow at the amperage specified. Only fuse wire of the highest grade is used.

No. 6

Code No.	Resistance	Remarks	Used on
2	3.45-3.70	Will not blow on .4-amp. for 5-min. Will not blow on .5-amp. for 2-min.	No. 16 Arresters.
6	3.5	Will not blow on .35-amp. indefinitely. Will blow on .5-amp. in less than 210 seconds.	No. 1 Arresters.

See page No. 503 for Heat Coil Pliers

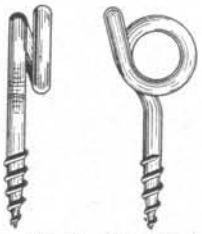
No. 1
Cord Hook

HOOKS—CORD

Individual Type

No. 1—Brass Cord Hook. Made from No. 11 B. & S. gauge brass. One bend to hold cord threaded one end.

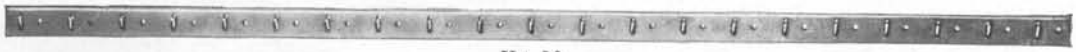
No. 2—Brass Cord Hook. Same as No. 1, but bent to form loop to prevent cord from slipping off.



No. 2 Cord Hook

Strip Type

No. 3B



No. 3A

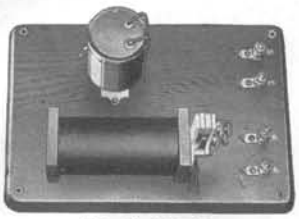
No. 3 Type Cord Hook

Code No.	No. of Hooks	Hook Centers	Dimensions	Material
3	20	1 "	21 x¾"	Aero metal, 1/16" thick
3A	21	1¼"	26¼x¾"	Aero metal, 1/16" thick
3B	34	13/16"	19 5/16x¾"	Aero metal, 1/16" thick

HOWLERS

Kellogg howlers are made in two types. The No. 4 is for railway dispatching service and industrial signals. The No. 2 is for exchange purposes to signal subscribers who have left the receivers off the hook by howling the receiver.

No. 2—Howler consists of one No. 35A Ind. Coil and one No. 24 Condenser, mounted on 9 1/16x10⅜" wood base. Wired to four binding posts.



No. 2 Howler

No. 4 Howler

No. 4—1000 ohm Howler with special black enameled receiver. Mounted on an oak base 5x6". Black enamel horn 5½" long, and 3" in diameter. Wired to two binding posts on base. Used as a signal on high frequency current in connection with composite telephones.

PLUGS—SWITCHBOARD

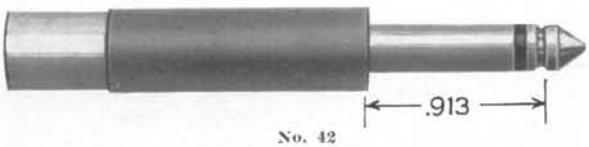
Kellogg switchboard plugs are made to give maximum service. The heavy brass tips are made so as to resist wear. The hard rubber insulation will not break down, even after years of severe usage. No weak parts—eliminating plug breakages. Every part carefully made and of the proper size. Connections protected by fibre sleeve held securely in place.

Whit, abbreviation for Whitworth tap having rounded top threads which prevent cutting cords.

Two Conductor

No. 3

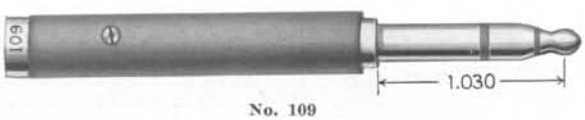
No. 26



No. 42

No. 70

No. 130



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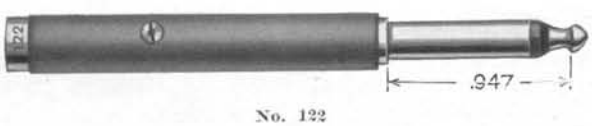


No. 122

No. 211

No. 187

No. 144

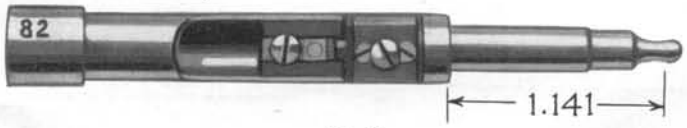
Code No.	Diam of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cords Nos. Steel	Tinsel	Remarks
3	.2495	Conical	5/16-18 whit.	3-6-25-61-207-237-277-301-302-315-316-319-215-225-227-233 and 100-101-102-103-105-113-112-118-30-comb. D&J.	304	301	Magneto switchboards. Sleeve conductor turned down.
26	.1775	Round	12-24 whit.	55-88-89	305	.....	Insulated metal ring.
29	.2495	Conical	5/16-18 whit.	For worn jacks	304	301	2 springs in sleeve.
42	.2495	Conical	5/16-18 whit.	same jacks as No. 3 plug.	304	301	Same as No. 3 but full sleeve.
44	.2495	Round	5/16-18 whit.	69-134-141-146-147-148-149-152-159-191-204-205-211-218-223-230-231-232-244-250-251-252-266-322-53-209-94-100-229-332-298-299	310	313	Test plug.

PLUGS—SWITCHBOARD

Two Conductor

Code No.	Diameter of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cords Nos. Steel and Tinsel	Fits Cords Nos. Tinsel	Remarks
55	.2495	Conical	5/16-18 whit.	10-18-22-26-33-30-40-63-95-116-122-126-129-132-133-151-163-186-195-211-247-255-283-85-87-98-311	304	301	No short circuit in jack
70	.2495	Conical	5/16-18 whit.	Same jack as No. 44 plug	304	301	
92	.2495	Conical	3/32-18 whit.	Dean jacks			Replaces Dean plug
109	.2495	Round	5/16-18 whit.	Same jacks as No. 44 plug	304	301	
122	.2013	Conical	12-24 whit.	Stromberg Carlson jacks	336		Replaces S. C. Co. No. 331 plug
130	.2495	Round	5/16-18 whit.	Same jacks as No. 44 plug	304	301	Replaces W. E. Co. No. 47 plug
144	.2485	Conical	5/16-18 whit.	Swedish-Am. jacks			Replaces Swedish Am. plugs
168	.2495	Round	5/16-18 whit.	Same jacks as No. 44 plug	304	301	Similar to 130 with large sleeve
187	.2495	Conical	5/16-18 whit.	Same jacks as No. 55 plug	304	301	Similar to No. 112 but tip and length
193	.2495	Conical	5/8-18 whit.	Same jacks as No. 55 plug	304	301	
195	.2013	Conical	12-24 whit.	Stromberg-Carlson jacks	336		Replaces S. C. Co. plug
141	.2215	Conical	1/4-32	239-253-257-274-288-295-254-292-293-313-314	325	323	No. 129 but two conductors
138	.2495	Conical	5/16-18 whit.	258-259-261-267-268-269-270-271-272-273-282-285-324-326-327-328-329-260-286-303-304-296-297-318-309	304	301	No. 106 but two conductors
211	.2215	Conical	3/32-24 whit.	36-37-45-201-240-241-281-208	323	324	

Three Conductor



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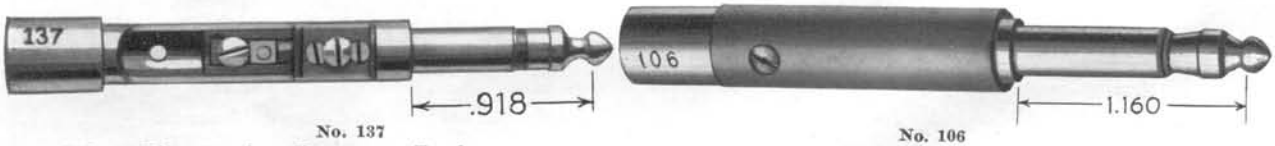


No. 137 No. 106

Code No.	Diameter of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cords Nos. Steel	Fits Cords Nos. Tinsel	Remarks
13		Round	5/16"-18 whit.	Group No. 35.			
82	.248	Round	3/8"-24	Sterling Elec. Co. jacks	335		Replaces Sterling plug
91	.2187	Conical	3/32-24 whit.	Dean jacks	342	329	Replaces Dean plug
106	.2495	Conical	5/16-18 whit.	258-254-261-267-268-269-270-271-272-273-282-285-324-326-327-328-329-260-286-303-304-296-297-318-309	303	309	Used on three wire Kellogg boards
111	.2495	Round	5/16-18 whit.	Fits North Elec. jacks			Replaces North Elec. plugs
137	.2495	Round	5/16-18 whit.	Same jacks as No. 55 plug	303	309	Used in Universal cord ckts. 2 wire board
165	.2495	Round	5/16-18 whit.	Same jacks as No. 44 plug	303	309	

PLUGS — SWITCHBOARD

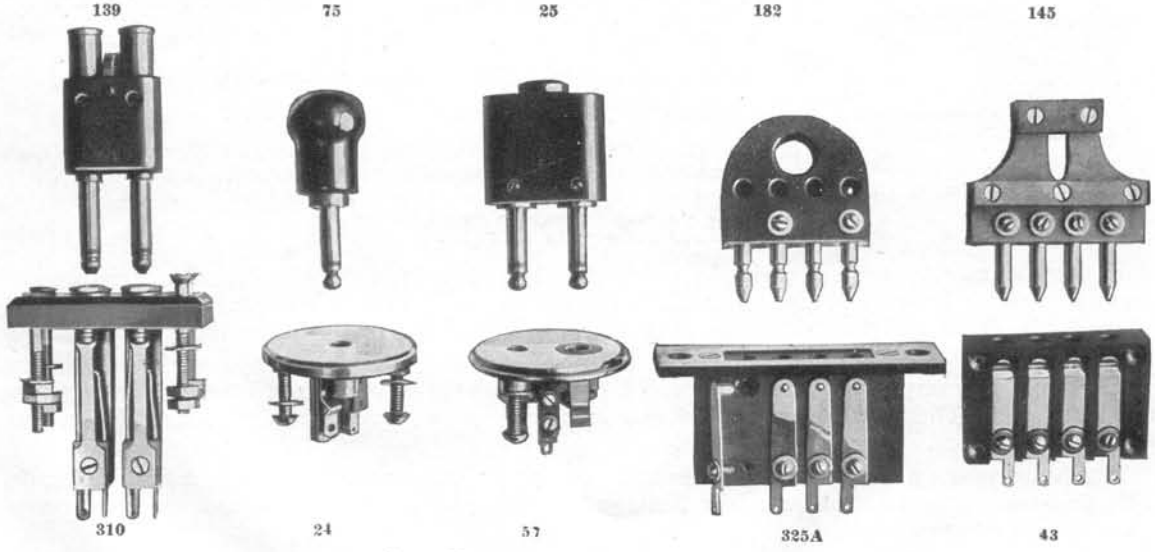
Three Conductor

Code No.	Diam. of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cords Nos. Steel and Tinsel	Fits Cords Nos. Tinsel	Remarks
175	.261	Round	11/32-30	Sterling Elec. Co. jacks			Replaces No. 31 Sterling plug for reamed out jacks
176	.2175	Conical	¼-32	Garford jacks		349	Replaces Garford plugs
177	.2175	Conical	¼-32	Garford jacks		439	No. 176 but extra insulator and dead metal ring
185	.210	Round	3/32-24 whit.	W. E. Co. jacks	368		Replaces W. E. Co. No. 109 plug
191	.2495	Round	5/16-18 whit.	W. E. Co. jacks	358		Replaces W. E. Co. No. 110 plug
194	.2495	Round	5/16-18 whit.	Same jacks as No. 44 plug	303	309	
199	.220	Conical	¼-32	Garford jacks 339 replaces Garford plug.			
201	.2215	Conical	¼-32	239-253-257-274-288-295-254-292-293-313-314	325	326	
202	.248	Round	5/16-18 whit.	Sterling Elec. Co. jacks			Replaces Sterling plug

PLUGS — OPERATORS

The construction of the No. 25, 107 and 139 types is substantially the same as the regular switchboard plug except that they are mounted in hard rubber covers.

The No. 131, 145 and 146 types are of the same construction both as to design and material. The prongs are mounted in a hard fibre strip which is provided with terminal screws, conductor separators and an adjustable strip to grip the cord and prevent any strain on the terminal connections.



One Prong—Two Conductor

Code No.	Diam. of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cords Nos.	Remarks
75	.2495	Round	12-24	24-97-228	237	
107	.2495	Round	5/16"-18 whit.	24-97-228	260-T	No. 75 but cord bushing
148	.2495	Round	12-24	24-97-228	237	Two one cond. plugs under one cover.

Two Prong—Two Conductor

Code No.	Diam. of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cord No.	Remarks
16	.2495	Round	3/32"-24 whit.	34 spring jacks in pairs for Test Panel	307-ST	Two 1 cond. plugs under one cover

PLUGS — OPERATORS

Two Prong—Four Conductor

Code No.	Diameter of Metal Sleeve	Shape of Tip	Tap for Cord	Fits Jacks Nos.	Fits Cord No.	Remarks
25	.2495	Round	5/16" Not Tapped	57-224-276	67-0	Two 2 cond. plugs under one cover
136	.2495	Round	3/32" Not Tapped	57-224-276	239-0	No. 25 but cord bushing
139	.2495	Conical	12-24	310	463-0, 440-0, 464-0	Two 2 cond. plugs under one cover

Two Prong—Six Conductor

81	.2495	Conical	5/16"-18 whit.	34 spring jack in pairs for Test Panel	316-T	Two 3 cond. plugs under one cover

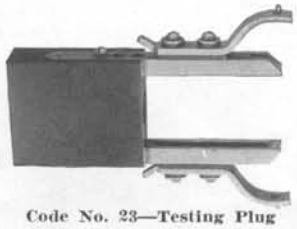
Four Prong—Four Conductor

145	.210	Conical	1/4" Not Tapped	43	111-O	Used with breast plate sets.
146	.210	Conical	Half hole 1/4" dia.	43	110-OR	Used with Operators' Receiver and suspended trans.
182	.218	Conical	1/4" Not Tapped	325 and 325A	439-O	

Five Prong—Five Conductor

131	.210	Conical	1/4" Not Tapped	291	110-OR or 111-O	For boards with both suspended and breast plate type trans., 111-0 cord for breast plate type and 110-0R for suspended type.

PLUGS — TEST



Code No. 23—Testing Plug

No. 21. Test Plug for American Arresters. Total Length 1 11/32".

No. 23. Four Conductor Test Plug for No. 1 Kellogg Arrester.

No. 190. Test Plug for No. 16 Kellogg Arresters.

No. 30. Single Prong Test Plug. Length 1 29/32".

No. 41. Double Prong Test Plug for American Electric Fuse Co.'s combined cross connecting rack and fuse board.

PLUGS—DUMMY

Kellogg dummy plugs are carefully made of select high grade stock. The finish retains its fine appearance practically the entire life of the plug. Whether the plug is to designate party lines, change of number, take outs, or to cover blank spaces resulting from the removal of apparatus, it is made to give maximum service.

The wood dummy plugs are constructed of well seasoned birch and maple, turned down to exact size. The enamel is sprayed on, resulting in an even coat and presenting a fine glossy appearance.

The brass plugs are accurately made and equipped with non-exploding celluloid heads. The non-exploding celluloid used in Kellogg dummy plugs will not explode when exposed to excessive heat or sparks.

The accompanying table gives the code numbers and dimensions of our standard plugs.

124

132

Apparatus Blank Type

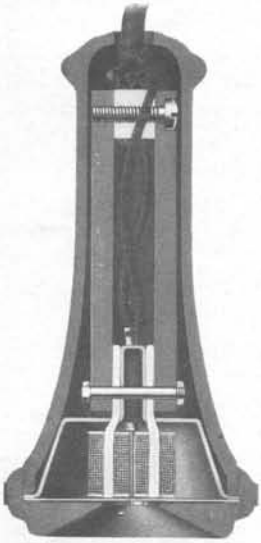
Code No.	Shape of tip	Diameter of plug	Total Length	Material	Finish	Remarks
124	Round	.3125	1 5/8" & Screw	Birch	Imitation Leather	Used with Pc. No. 6074 Bushing.
132	Round	.115	1 3/8"	Brass	Black Enamel	Used with No. 233 Mounting Strip.

RECEIVERS — SUBSCRIBERS'

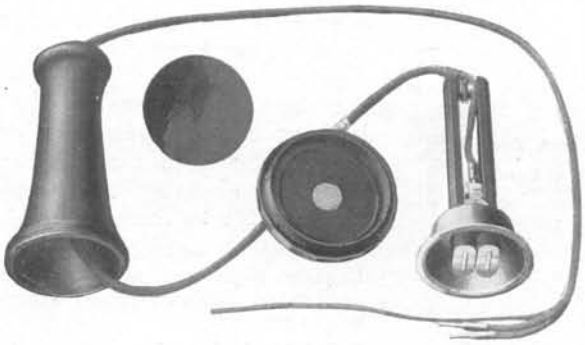
Kellogg receivers are scientifically correct in design and construction, insuring the maximum of efficiency combined with permanent adjustment and long life. These receivers are so designed that cords with either spade or spike tips can be used.

Thirty-six inch brown mercerized cords are furnished on all telephone receivers unless otherwise specified. If a different cord is required, full description can be had by referring to the cord list in this catalog.

The standard receiver shell is made from the famous Kellogg BAKELITE. The material itself is produced by the condensation of formaldehyde and carbolic acid to a powdered form. It is then moulded into shape with great pressure by steam heated hydraulic presses, the moulding temperature being 350° F. (120 lbs. steam pressure) and the hydraulic pressure is from 1,500 to 2,000 lbs. per square inch of mould surface. When moulded by the Kellogg process, Bakelite is:



Enlarged view to show details of construction.



1st—Practically unbreakable. Tensile strength 3,600 to 3,900 lbs. per square inch—as "strong as iron."

2nd—A perfect dielectric. Dielectric strength of 300 to 350 volts per mile—many times as much as rubber.

3rd—Shape retaining. Will not warp or discolor; co-efficient of expansion only .000034 inches for each degree centigrade, just enough elasticity to keep from being brittle.

4th—Oil, water, moisture and color proof. Impervious to most of the organic acids.

5th—Odorless. Absolutely no obnoxious smell.

6th—Non-inflammable. Positively will not burn. Resists temperatures up to 350° F., and somewhat higher for short periods. At higher temperatures Kellogg Bakelite only chars.

7th—Light weight. Specific gravity of only 1.33. Weighs only as much as an equal volume of hard rubber.

A sanitary feature of Kellogg Bakelite receiver shells and mouthpieces is that they can be cleaned and disinfected by boiling in water.

Approximate weight packed for shipment—one pound.

Code No.	Resistance	Description	Remarks
41A	60 ohms	Bakelite shell and cap.	Fitted with 98TR cord with spike tips.
F41A	60 ohms	Same as No. 41 but with cord having spade tips.	Fitted with F98TR cord with spade tips.
F41B	650 ohms	Same as No. F41 but high resistance for railway work.	Fitted with F98TR cord with spade tips.
F66	85 ohms	Similar to No. F41 but direct current. Replaces No. F36.	Fitted with F98TR cord with spade tips.

Receiver cords are 36 inches from tip to tip. Any of the above receivers will take cords with either spike or spade tips.

RECEIVERS — OPERATORS'

The Latest Receiver Development, the No. 65A

The No. 65 type operators' 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.

No. 65A Rec. And No. 12 Head Band. Total Weight 3.6 Ounces

The total weight of receiver and band is but 3.9 ounces, enabling operators to wear it continuously for the entire period without the least discomfort or fatigue. The total width is 2 3/16 inches and the depth or thickness 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.

Code No.	Resistance	Description	Use
65-A	100 Ohms	Bakelite shell and cap. No. 12 head band included unless otherwise specified.	Standard for all switchboards any make.
46-A	140 Ohms	Bakelite shell and cap. Specify head band desired.	Formerly used on all switchboards. Replaced by No. 65-A.
62-A	100 Ohms	Light weight receiver similar to No. 65-A but has three terminals.	Extra terminal connected to center of the two coils to be used for busy test on Sterling multiple boards.
14-A	140 Ohms	Rubber shell and cap.	Used only on lineman's test set with special switch hook.

No. 69A Head Set

Head Receivers—Railway Dispatching

46-B	650 Ohms	Same as No. 46-A but resistance. Specify head band.	Railway dispatching circuits.
65-B	1200 Ohms	Light weight similar to No. 65-A but high resistance and bakelite shell and cap. No. 12 Head band included.	Railway dispatching circuits.
69-A	2400 Ohms	Consisting of two No. 65-B receivers and No. 10 khaki web covered wire head band and No. 617 cord.	Railway dispatching circuits.

HEAD BANDS

For Operators' Receivers

No. 2

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

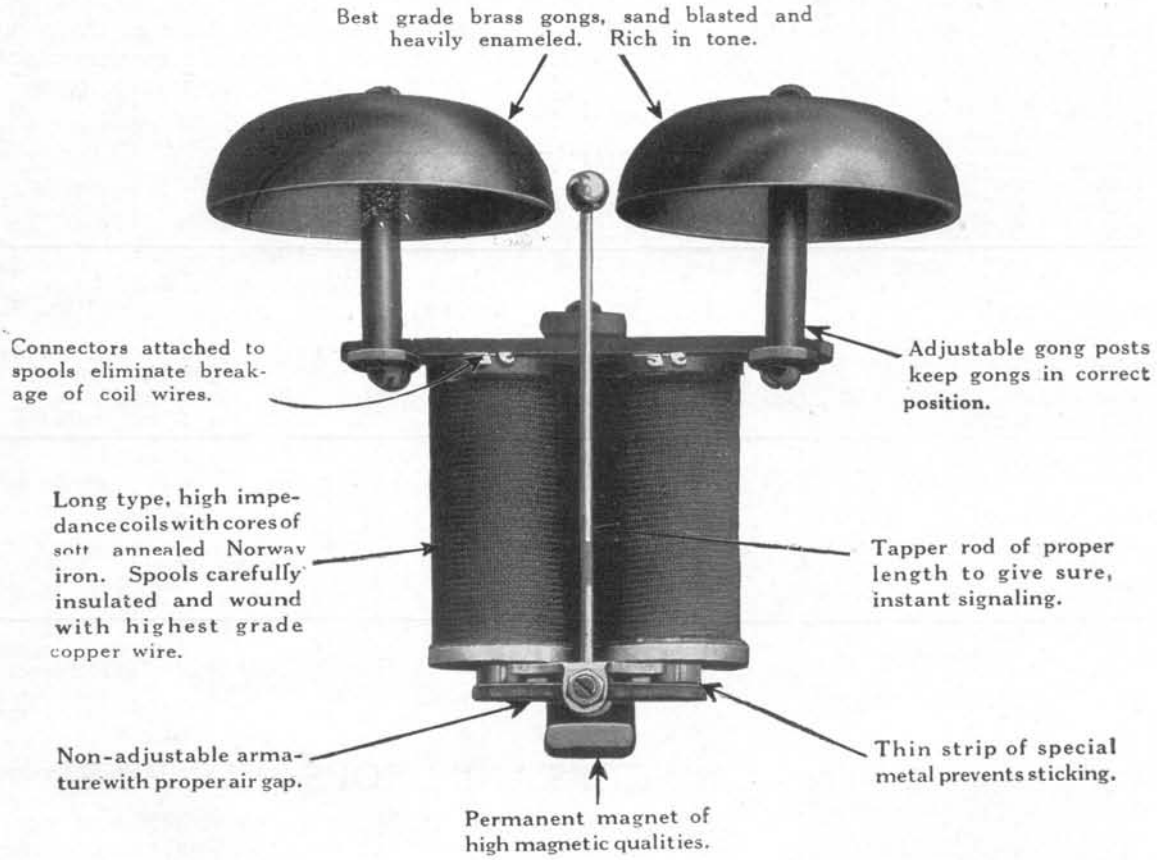
Code No. 3, flat spring steel plain with leather cover for two receivers.

Code No. 12 new type wire band, for No. 65-A receiver only.

No. 12

RINGERS

Kellogg ringers are constructed throughout of the best materials and are so designed that they will not magnetize and stick. They can be furnished in either the adjustable or non-adjustable type and are fitted with high-grade brass gongs which are sand blasted and heavily enameled.

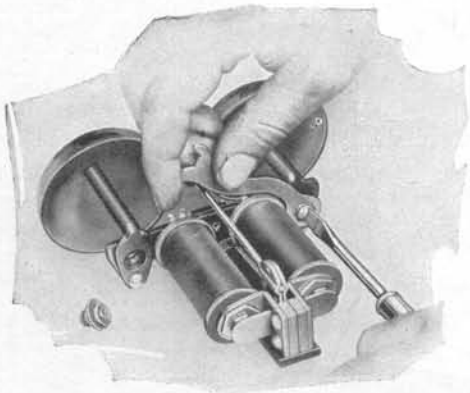


Non-Adjustable Type

Code No.	Size of Gongs	Ohms Resistance A	B	C	D	E	F	G	H	Remarks
78	2½"	1000			1600			2500	2000	Standard for Mag. Tel's.
55	3 "	1000	80	500	1600	100	250	2500	2000	Same as No. 78, but 3-in. gongs.
61	4 "	1000		500	1600			2500		Same as No. 78 but 4-in. gongs.
69	6 "	1000		500	1600			2500		Same as No. 61 but 6 in. gongs.
70	1¾"	1000								

Adjustable Type

18	1¾"		1000	1600						No. 1016 lineman's test set.
36	4 "	1000	1600					2500		Malleable iron railway telephone.
79	2½"	1000		500	1600		250	2500		Biased.
84	2½"	1000		500	1600			2500		C. B. Tel's.
85			1000	500						Biased for flat steel desk set box.
86		1000		500						Regular for flat steel desk set box.



RINGERS

Harmonic Type

Center Gongs

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

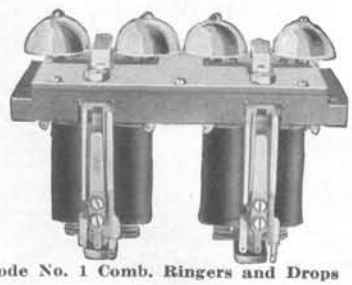
The gongs are of the center mounted type securely mounted on the gong posts.

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, and only requires a few minutes' time.

Code No.	Size of Gongs	Frequencies 1	2	3	4	1	2	3	4	1	2	
72-A	2½"	33⅓	50	66⅔	16⅔							
73-A	2½"					30	42	54	66			
74-A	2½"									20	60	
87-A	2½"	33⅓	50	66⅔	16⅔							For Nos. 75 and 404 flat steel boxes.
88-A	2½"					30	42	54	66			For Nos. 75 and 404 flat steel boxes.
89-A	2½"									20	60	For Nos. 75 and 404 flat steel boxes.
43-A	6 "	33⅓	50	66⅔	16⅔							For No. 47 ext. bells.
67-A	6 "					30	42	54	66			For No. 47 ext. bells.
95-A	6 "									20	60	For No. 47 ext. bells.
44-A	4 "	33⅓	50	66⅔	16⅔							No. 43-A, but gongs for No. 43 ext. bells.
68-A	4 "					30	42	54	66			
93-A	4 "									20	60	

Vibrating Type

Code No.	Size of Gongs	A	Res. B	C	
24	2½"	4	50	300	Used in oak intercom. sets.
49	2½"	50	300		No. 24, but arranged for steel sets.



Code No. 1 Comb. Ringers and Drops

RINGERS AND DROPS—COMBINED

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

Adjustable Type

Code No. 1-A	1000 Ohms
Code No. 1-D	1600 Ohms
Code No. 1-E	2500 Ohms
Code No. 2-A	1000 Ohms
Code No. 2-D	1600 Ohms

Non-Adjustable Type

Code No. 3-A	1000 Ohms
Code No. 3-D	1600 Ohms
Code No. 3-E	2500 Ohms

Code No. 14—Mech. Signal

No. 12 Mech. Signal

SIGNALS—MECHANICAL

Code No.	Type Shutter	Mtg. Centers	Night Alarm	Resistances A	B	C	D	E	F	G	H	Where Used
7	Gridiron	1"	1	500	100	50	200	250	1000	150	3000	Line on C. B. systems.
8	Gridiron	1"		250	100	200	50	20				Supervisory on C. B. systems.
				250	100	200	50	20				
12	Target	½"		160	100	1600						Busy test on toll boards.
14	Gridiron	1"	1	250	200							No. 7, but insulated.

STRIPS—MOUNTING

Meter and Automatic Dial

No. 338

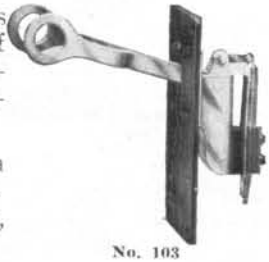
Code No.	No. Per Strip	Width of Strip	Centers Spaced	Mtg. Centers	Length of Face	Material	Length Over All	Remarks
380	1	.....	.....	.....	.....	Steel	.....	Mounts on Ebonized Jack Panel.
382	1	$2\frac{3}{16}$"	.....	.....	.....	Steel	.....	Mounts on Ebonized Jack Panel.
343	6	$1\frac{3}{16}$"	$1\frac{9}{16}$"	$10\frac{5}{32}$"	.....	Steel	$10\frac{23}{32}$"	For No. 5 Meters.
338	10	$1\frac{1}{2}$"	2"	22"	.....	Steel	$22\frac{3}{4}$"	For No. 5 Meters.
423	10	$1\frac{1}{2}$"	2"	22"	.....	Steel	$22\frac{3}{4}$"	No. 338 but mounts perpendicular.
340	1	.....	.....	.....	.....	Steel	.....	Dial Mounts Flush.
463	1	.....	.....	.....	.....	Steel	.....	Dial Mounts Flush.

SWITCHES — HOOK

No. 100

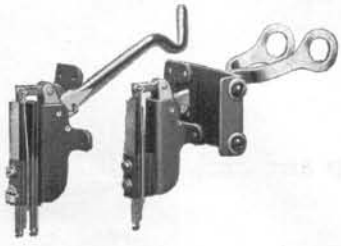
Kellogg hookswitches are made of punched brass which is handsomely nickeled. The springs are of heavy German silver with platinum contacts and assembled with a strong, steel reinforcing spring. Kellogg Bakelite Dilecto insulation is used.

With these standard hookswitches, the hook can be removed by simply pushing the springs forward. These hookswitches are most simple in construction, but are reliable and require practically no attention.



No. 103

Code No.	Contacts: Hook Down	Contacts: Hook Up	Where Used
100	....	....	Dummy hook.
101	....	2	Common battery short backboard telephones.
103	....	2	Magneto and common battery wood telephones.
105	....	2	No. 103. Less escutcheon.
113	....	2	Common battery steel hotel sets.
116	....	2	Common battery steel wall sets with Grabaphone. No. 113 but hook
123	1	2	Extension sets with Grabaphone.



No. 123 (Two Standard) No. 113 Hookswitches)

SWITCHES — PLUG

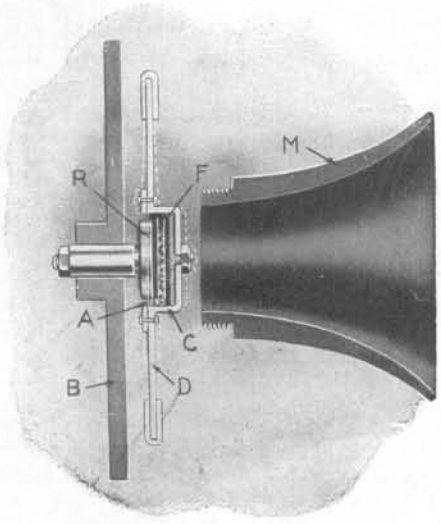
Kellogg plug switches for use in transferring circuits are especially adapted for this purpose, being so constructed that no particles of dirt can clog up the contacts. They are furnished in the following types:

No. 5 Plug Switch

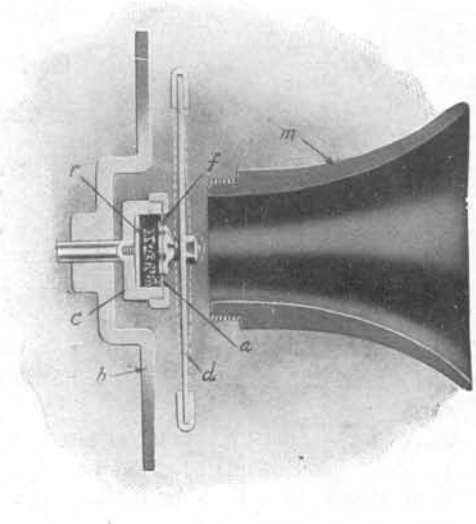
For Switchboards

Code No.	Frame	Break	Make & Break	Sets of Springs	Remarks
5	Brass	....	1	1	Necessary to force plug down.
6	Brass	....	1	1	Similar to No. 5 but fits No. 78 plug.
7	Brass	1	....	1	Similar to No. 5 but fits No. 74 plug.

TRANSMITTERS



Kellogg



Not Kellogg

Conditions throughout the country clearly indicate that telephone companies who are not using Kellogg transmitters are under heavy maintenance expense and are often continually changing from one type of transmitter to another in hope of reducing maintenance expense and securing satisfactory transmission.

In view of the above conditions, it is not only our desire but our duty to see that all telephone companies become thoroughly familiar with the superiority of Kellogg transmitters and adopt them as their standard.

The Kellogg reverse type solid back transmitter is well known to the telephonic world. Designed nineteen years ago, it has held the distinction of being the unchangeable standard of excellence for high grade transmission. There are today over three million in use giving unequalled service in all classes of work and in all parts of the world.

Except Kellogg, every transmitter manufactured today could be likened to all other transmitters:—Kellogg stands apart, unique in design and original in principle; a happy combination of quality and efficiency.

GUARANTEE: The Kellogg transmitter is guaranteed superior to any other make on the market, and any part showing an inherent defect within one year will be repaired or replaced free on being returned to the Kellogg Company, prepaid.

TRANSMITTER REPAIRS: Old Kellogg transmitters, when returned to the factory, charges prepaid, with no parts broken, will be reconstructed, carbon electrode reground, new granular carbon, and a new rubber gasket will be installed at a very small cost, making the transmitter as good as new so far as transmission is concerned. Unless otherwise instructed, we will re-nickel the case, for which an additional charge is made.

Our transmitters are regularly furnished in three different types: "LC"—used for local or common battery: "C"—used for common battery only: "L"—for special local battery conditions.

When specified, transmitters for telephones will be furnished with 2 connecting cords, 15 inches long.

Machine screws and washers for attaching the transmitter to arm will be furnished only when specified.

Net weight complete telephone transmitter (with mouthpiece) .....11½ ozs.
Net weight complete telephone transmitter (with mouthpiece) less back..... 8½ ozs.

Special markings on transmitter fronts, such as the name of the telephone company, require special tools and cause delayed shipment. Customers desiring special markings should make use of our No. 88 name plate or card holder, which attaches to any Kellogg transmitter by means of the screws which hold the transmitter front in place.

Complete Transmitter No. 64 Type

TRANSMITTERS

No. 22 Type

With Backs and Mouthpieces

For Magneto and Common Battery Telephones

Furnished in Black Enamel

Transmitter Front Only No. 64 Type

Code No.	Description	Use
22–L	Low resistance, insulated contact. Attaches to arm by means of two screws. Includes back and mouthpiece.	For general service, including railway dispatching use.
22–C	Same as 22–L but high resistance.	Common battery telephones.
22–LC	Same as 22–C but universal.	Magneto telephones.
23–L	Same as 22–L but back has rubber bushing for exposed cord.	Old type magneto.
23–C	Same as 23–L but high resistance.	Old type common battery telephones.
44–L	Low resistance, insulated contact N. P. finish. Includes back with rubber bushing for exposed cord, mouthpiece and mounting lug.	Fits old Kellogg magneto desk stands.
44–C	Same as 44–L but high resistance.	Fits old Kellogg common battery desk stands.
105–L	Similar to 22–L but special back and terminal block or bridge.	Fits Bell arm and cord.
105–C	Same as 105–L but high resistance.	Fits Bell arm and cord.
105–LC	Same as 105–L but universal.	Fits Bell arm and cord.

No. 64 Type—No Back, But With Mouthpiece

32–L	Low resistance, insulated contact. Includes mouthpiece, no back. Bridge drilled and tapped for mounting on steel sets.	Portable railway sets and mine telephones.
32–C	Same as 32–L but high resistance.	Portable railway sets and mine telephones.
32–LC	Same as 32–C but universal.	Portable railway sets and mine telephones.
64–L	Same as 22–L but no back.	Desk stands for railway dispatching service.
64–C	Same as 22–C but no back.	Desk stands for C. B. service.
64–LC	Same as 22–LC but no back.	Desk stands for magneto service.

Grabaphone Type

Nickel Plated

Code No.	Description	Use
50-L	Low resistance, insulated contact, N. P. finish, includes mouthpiece and back, attaches by means of two screws.	No. 11-L and 12-L grabaphones
50-C	Same as 50-L, but high resistance.	No. 11-C and 12-C grabaphones.
50-LC	Same as 50-C, but universal.	No. 11-LC and 12-LC grabaphones.
58-L	Same as 50-L, but bridge assembly.	No. 13-L and 14-L grabaphones
58-C	Same as 50-C, but bridge assembly.	No. 13-C and 14-C grabaphones.
58-LC	Same as 50-LC, but bridge assembly.	No. 13-LC and 14-LC grabaphones.

TRANSMITTERS

Operators

Suspended Transmitter

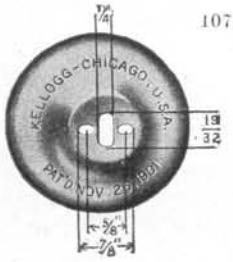
Code No.	Description	Use
55-L	Low resistance, insulated contact, semi-gloss black enamel finish, suspended by two 72-inch cords, complete with back and mouthpiece.	Magneto switchboards.
55-C		
55-LC	Same as 55-L, but high resistance.	Common battery boards and P. B. X.'s.
76-L	Same as 55-C, but universal.	Universal switchboards.
	Low resistance, insulated contact. Breast plate type, made of polished aluminum, includes neck band and mouthpiece. No cords.	Magneto switchboards.
76-C	Same as 76-L, but high resistance.	Common battery boards.
76-LC	Same as 76-C, but universal.	Universal switchboards.
1076-C	Same as 76-C but is pure white and bright aluminum; the breastplate is constructed of aluminum, celluloid veneered; the mouthpiece is of hard rubber, heavily white enameled. Transmitter shell is aluminum.	
1076-LC	Same as 1076-C, but universal.	

Breast Plate Transmitter

No. 1076 Breast Plate Transmitter

Transmitter Backs

For attaching Kellogg transmitters to other makes of telephones.



Pc. 10259

Pc. 34155

Pc. 29748

Pc. 5755

Pc. 27505

Piece Part No.	Description
Pc. 10259	Kellogg standard transmitter back, furnished on all telephone transmitters unless otherwise ordered. Will attach to any make telephone arm requiring two screws for mounting transmitter.
Pc. 34155	Back only, to fit all types of Western Electric telephone arms with concealed cord.
Pc. 29748	Back only, to fit all types of Western Electric telephone arms with exposed cord.
Pc. 5755	Back only, to fit old style American Electric telephone arm with exposed cord.
Pc. 27505	Back only, to fit Sterling Electric telephone arm with concealed cord.

TRANSMITTER ADAPTERS

Pc. 6889

Pc. 8274

Pc. 8545

Pc. 5742

Pc. 33860

While we have listed many types of adapters for attaching our transmitter to other makes of special telephone arms, we do not recommend their general use, as experience has proven that it is more satisfactory to use our transmitter with the No. 42 or 41 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 the present standards.

Note: In ordering specify transmitter code number, together with piece part number of adapter required.

Piece Part No.	Description
Pc. 33860	Adapter for attaching our transmitter to Western Electric desk or wall set. Cast brass lug, drilled to fit our standard transmitter back, arranged for concealed cords. If exposed cords are in use specify No. 23 type transmitter.
Pc. 5742	Adapter for attaching our standard transmitter to old style Stromberg-Carlson telephone arms, concealed cord.
Pc. 8545	Adapter for attaching our standard transmitter to old style American Electric telephone arm, concealed cord.
Pc. 8274	Adapter for attaching our standard transmitter to Ericsson telephone arm, concealed cord.
Pc. 6889	Adapter for attaching our standard transmitter to North Electric telephone arm, concealed cord.

TRANSMITTER MOUTHPIECES

Telephone

Pc. No. 29779

Pc. No. 38191

Pc. No. 29779 telephone mouthpieces are made of Kellogg Bakelite, which is unbreakable in ordinary service. These mouthpieces retain their glossy finish and are not affected by heat, chemicals, moisture, etc.

Pc. No. 29779 for Kellogg telephones. **Pc. No. 38191** hard rubber for grabaphones, old style.

Pc. No. 43963 for new type grabaphones, brass black enameled.

Pc. No. 34419 special for Stromberg-Carlson Telephones. Also fits Monarch, American Electric and several other makes of equipment.

Operators' Set

Pc. No. 29776

Pc. No. 29776 is constructed of hard rubber and will fit all Kellogg operators' transmitters

RECEIVER SHELLS

Kellogg Bakelite receiver shells are a big factor in the reduction of the maintenance of telephones.

They are practically unbreakable and have a beautiful finish that is lasting. After years of hard service they still retain their "newness." Some Kellogg Bakelite advantages:

1st—Unbreakable; tensile strength 3,600 to 3,900 lbs. per square inch—as "strong as iron."

2nd—A perfect dielectric; dielectric strength of 300 to 350 volts per mil—many times as much as rubber.

3rd—Shape retaining; will not warp or discolor, coefficient of expansion only .000034 inches for each degree centigrade, just enough elasticity to keep from being brittle.

4th—Oil, water, moisture and color proof; impervious to most of the organic acids excepting nitric acid and concentrated sulphuric acid.

5th—Odorless; absolutely no obnoxious smell.

6th—Non-inflammable; positively will not burn; resists temperature up to 350° F., and somewhat higher for short periods. At higher temperatures Kellogg Bakelite only chars.

7th—Light weight; specific gravity of only 1.33 weighs only as much as an equal volume of hard rubber.

A sanitary feature of Kellogg Bakelite receiver shells and mouthpieces is that they can be cleaned and disinfected by boiling in water.

Pc. No. 27944 shell with **Pc. No. 32307** cap also fits W. E. Co., Monarch, American and certain dates of Dean and Garford receivers.

WEIGHTS—CORD

No. 8

No. 9

Code No.	Material	Length	Width	Thickness	Weight in Ounces	Where Used
4	Cast iron	3 11/16"	1¼"	Round	16	On transmitter cords.
6	Cast iron	6⅞"	2½"	2⅝"	44	Main frame test shoe cords.
7	Cast iron	7⅝"	2½"	1¼"	28¾	Main frame test shoe cords.
8	Cast iron	7½"	2½"	1 "	20¼	Main frame test shoe cords.
9	Steel and lead	4 "	1 31/64"	½"	9 to 11	On switchboard cords.
10	Steel and lead	4 "	1 31/64"	½"	18 to 22	Two No. 9 weights combined. Used on switchboard cords.

Prices in this list subject to change without notice. Write us for later prices.

A Price List that will save you money—Order now—Prompt shipments

MAIN OFFICES AND FACTORY—1066 WEST ADAMS STREET, CHICAGO

Use—Is the Test

CONDENSED Price List No. 460

on

Kellogg Equipment

Listed in same order as our Catalog No. 7, are our latest prices on telephone and switchboard apparatus

June 1926

KELLOGG SWITCHBOARD & SUPPLY CO.

Main Offices and Factory, Chicago

Branch Offices and Warehouses

Columbus, Ohio Kansas City, Mo. San Francisco, Cal.
Portland, Ore.

Please mention Form 460 when ordering from this price list

Form No. 460—Mer.—7500—6-26

Notice!

This Condensed Apparatus Price List is based upon our Catalogue Number 7, which is a complete listing of all Kellogg products. If you do not have a copy of this catalogue, kindly advise us promptly so that we may send you one.

Page 5

TELEPHONES—MAGNETO

COMPACT TYPE

No Push Button

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
F-2809	$16.70	$17.00	$17.00	$17.70
F-2811	17.05	17.35	17.35	18.05
F-2812	17.45	17.75	17.75	18.45
F-2859	17.60	17.90	17.90	18.60
Straight Line Ringers with Condenser in Secondary				
F-2815	$17.65	$17.95	$17.95	$18.65
F-2816	18.05	18.35	18.35	19.05
F-2880	18.20	18.50	18.50	19.20

Page 6

Straight Line Ringer—P. & A. C. Generator

Push Button

F-2819	$18.15	$18.45	$18.45	$19.15
F-2820	18.55	18.85	18.85	19.55
F-2860	18.70	19.00	19.00	19.70
Straight Line Ringer—Grounding Key				
F-2823	$17.90	$18.20	$18.20	$18.90
F-2824	18.30	18.60	18.60	19.30
F-2881	18.45	18.75	18.75	19.45
Harmonic Ringer—No Push Button				
F-2807	$17.45	$17.75	$17.75	$18.45
F-2873	18.30	18.60	18.60	19.30
Biased Ringer—No Push Button				
F-2808	$16.80	$17.10	$17.10	$17.80

Page 7

RESIDENCE TYPE

Straight Line Ringer
No Push Button

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
F-1809	$16.45	$16.75	$16.75	$17.45
F-1812	17.15	17.45	17.45	18.15
Straight Line Ringer With Condenser in Secondary				
F-1816	$17.75	$18.05	$18.05	$18.75
Biased Ringer—No Push Button				
F-2805	$16.55	$16.85	$16.85	$17.55
Harmonic Ringer—No Push Button				
F-2804	$17.20	$17.50	$17.50	$18.20

RESIDENCE—GRABAPHONE TYPE

Straight Line Ringer—No Push Button

F-1809-G	$18.05	$18.35	$18.35	$19.05
F-1812-G	18.80	19.10	19.10	19.80
Straight Line Ringer—Condenser in Secondary				
F-1816-G	$19.40	$19.70	$19.70	$20.40

Page 8

TELEPHONES—MAGNETO—Continued

MAGNETO DESK SETS—REGULAR TYPE

F-9	$17.55	$17.85	$17.85	$18.55
F-12	18.25	18.55	18.55	19.25
F-59	18.40	18.70	18.70	19.40
Straight Line Ringer—Induction Coil—Condenser				
F-16	$18.85	$19.15	$19.15	$19.85
F-80	19.00	19.30	19.30	20.00
Selective Ringing—Harmonic—4 and 8 Party				
F-7	$18.30	$18.60	$18.60	$19.30
Biased Ringer for 4 Party Selective System				
F-8	$17.65	$17.95	$17.95	$18.65

DESK STANDS ONLY

Prices Include Receivers

F-28	$ 7.10	$ 7.20	$ 7.20	$ 7.50
F-67	8.90	9.00	9.00	9.30
F-84	7.10	7.20	7.20	7.50
F-85-B	7.10	7.20	7.20	7.50

Page 9

MAGNETO DESK SETS—GRABAPHONE TYPE

Straight Line Ringer—Induction Coil

F-9-G	$20.45	$20.75	$20.75	$21.45
F-12-G	21.15	21.45	21.45	22.15
F-59-G	21.30	21.60	21.60	22.30
Straight Line Ringer—Induction Coil—Condenser				
F-16-G	$21.75	$22.05	$22.05	$22.75
F-80-G	21.90	22.20	22.20	22.90

STEEL MAGNETO EXTENSION SET

F-2827-G	$ 9.40	$9.65	$9.65	$9.80

Page 10

BRACKET TELEPHONES

Code No.		f. o. b. Chicago, Ill.
	Complete with Desk Set Box	
F-609	With No. 1, No. 2 or No. 5 Mounting	$18.95
F-612	With No. 1, No. 2 or No. 5 Mounting	19.65

For other combinations add Desk Set Box price to following stand.

DESK STAND ONLY

F-684 With No. 8 Arm and No. 1, No. 2 or No. 5 Mounting **$8.50**

When equipped with Universal attachment add $0.90 to above prices.

If a clamp mounting is desired, use No. 3 and add $0.30 to price.

Page 11

COMMON BATTERY TELEPHONES

General Information

Black enameled gongs, standard. N. P. gongs furnished only when specified on order.

Common Battery wall telephones, less parts, deduct as follows:

For deduction of straight line ringer	$1.50
For deduction of harmonic ringer	2.00
For deduction of transmitter	1.65
For deduction of receiver	1.75
For deduction of induction coil	.80

STEEL RESIDENCE TYPE

Induction Coil Circuit—Straight Line Ringer

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
F-742-SA	$10.50	$10.75	$10.75	$11.10
Biased Ringer				
F-742-BA	$10.60	$10.85	$10.85	$11.20
Harmonic Ringer				
F-742-HA	$11.00	$11.25	$11.25	$11.60
F-742-HB	11.00	11.25	11.25	11.60

OAK RESIDENCE TYPE

Induction Coil Circuit—Straight Line Ringer

F-729-SA	$10.50	$10.75	$10.75	$11.10
Biased Ringer				
F-729-BA	$10.60	$10.85	$10.85	$11.20
Harmonic Ringer				
F-729-HA	$11.00	$11.25	$11.25	$11.60
F-729-HB	11.00	11.25	11.25	11.60

Page 12

OAK WALL TYPE

Induction Coil Circuit—Straight Line Ringer

F-730-SA	$11.10	$11.35	$11.35	$11.70
Biased Ringer				
F-730-BA	$11.20	$11.45	$11.45	$11.80
Harmonic Ringer				
F-730-HA	$11.60	$11.85	$11.85	$12.20
F-730-HB	11.60	11.85	11.85	12.20

GRABAPHONE WALL TYPE

Induction Coil Circuit—Straight Line Ringer

F 9742-SA	$14.20	$14.45	$14.45	$14.80
Biased Ringer				
F 9742-BA	$14.30	$14.55	$14.55	$14.90
Harmonic Ringer				
F 9742-HA	$14.70	$14.95	$14.95	$15.30
F 9742-HB	14.70	14.95	14.95	15.30

Page 13

DESK STANDS ONLY

Prices Include Receivers

F-97	$8.55	$8.65	$8.65	$8.95
F-118	7.10	7.20	7.20	7.50
F-75	7.80	7.90	7.90	8.20

GRABAPHONE STANDS ONLY

F-115 A	$4.25	$4.35	$4.35	$4.45
Grabaphone With Cord				
11-C	$5.75	$5.85	$5.85	$5.95

Page 14

DESK SETS

3 Conductor Type

To obtain price of complete desk set add price of stand to box selected.

3 Conductor Desk Stand

F-118	$7.10	$7.20	$7.20	$7.50

DESK SET BOXES

Flat Type

F-404-SA	$5.80	$5.95	$5.95	$6.00
F-404-BA	5.90	6.05	6.05	6.10
F-404-HB	6.30	6.45	6.45	6.50
F-404-HA	6.30	6.45	6.45	6.50

Page 14—Continued

COMMON BATTERY TELEPHONES

Continued

DESK SET BOXES

Deep Front Type

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
F-257-SA	$6.30	$6.45	$6.45	$6.50
F-257-BA	6.40	6.55	6.55	6.60
F-257-HB	6.80	6.95	6.95	7.05
F-257-HA	6.80	6.95	6.95	7.05
Oak Type				
F-407-SA	$6.05	$6.20	$6.20	$6.25
F-407-BA	6.15	6.30	6.30	6.35
F-407-HA	6.55	6.70	6.70	6.75
F-407-HB	6.55	6.70	6.70	6.75
F-407-HC	6.55	6.70	6.70	6.75

Page 15

2 Conductor Type

To obtain price of complete desk set add price of stand to box selected.

2 Conductor Desk Stand

F-97	$8.55	$8.65	$8.65	$8.95

DESK SET BOXES

Flat Type

F-75-SA	$5.00	$5.15	$5.15	$5.20
F-75-BA	5.10	5.25	5.25	5.30
F-75-HB	5.50	5.65	5.65	5.70
F-75-HA	5.50	5.65	5.65	5.70
Deep Front Type				
F-259-SA	$5.55	$5.70	$5.70	$5.75
F-259-BA	5.65	5.80	5.80	5.85
F-259-HB	6.05	6.20	6.20	6.25
F-259-HA	6.05	6.20	6.20	6.25
Oak Type				
F-408-SA	$5.30	$5.45	$5.45	$5.50
F-408-BA	5.40	5.55	5.55	5.60
F-408-HA	5.80	5.95	5.95	6.00
F-408-HB	5.80	5.95	5.95	6.00
F-408-HC	5.80	5.95	5.95	6.00

Page 16

GRABAPHONE TYPE

To obtain price of complete grabaphone set add price of grabaphone and grabaphone stand to box selected.

Grabaphone Stand

F-115-A	$4.25	$4.35	$4.35	$4.45
Grabaphone				
F-11-C	$5.75	$5.85	$5.85	$5.95

DESK SET BOXES

Flat Type

F-404-SA	$5.80	$5.95	$5.95	$5.00
F-404-BA	5.90	6.05	6.05	6.10
F-404-HB	6.30	6.45	6.45	6.50
F-404-HA	6.30	6.45	6.45	6.50
Deep Front Type				
F-257-SA	$6.30	$6.45	$6.45	$6.50
F-257-BA	6.40	6.55	6.55	6.60
F-257-HB	6.80	6.95	6.95	7.05
F-257-HA	6.80	6.95	6.95	7.05
Oak Type				
F-407-SA	$6.05	$6.20	$6.20	$6.25
F-407-BA	6.15	6.30	6.30	6.35
F-407-HA	6.55	6.70	6.70	6.75
F-407-HB	6.55	6.70	6.70	6.75
F-407-HC	6.55	6.70	6.70	6.75

Page 17

COMMON BATTERY TELEPHONES
Continued
ENCLOSED GONG WALL TYPE

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
F-801-SA	$10.40	$10.65	$10.65	$11.00
F-801-BA	10.50	10.75	10.75	11.10
F-801-HA	10.90	11.15	11.15	11.50
F-801-HB	10.90	11.15	11.15	11.50
Prices above cover telephones having 1-MF Condensers.				
F-802-HA	$11.75	$12.00	$12.00	$12.35
F-802-HB	11.75	12.00	12.00	12.35
F-803-BA	10.50	10.75	10.75	11.10
F-803-HA	10.90	11.15	11.15	11.50
F-803-HB	10.90	11.15	11.15	11.50

Page 18

ENCLOSED GONG TYPE

Desk Stands				
F-118 Desk Stand	$7.10	$7.20	$7.20	$7.50
Desk Set Boxes				
600-SA	$5.80	$5.95	$5.95	$6.00
600-HA	6.30	6.45	6.45	6.50
600-HB	6.30	6.45	6.45	6.50
600-BA	5.90	6.05	6.05	6.10
Enclosed Gong Desk Grabaphone Sets				
F 115-A Desk Stand	$4.25	$4.35	$4.35	$4.45
F-11-C Grabaphone	5.75	5.85	5.85	5.95
Desk Set Boxes				
600-SA	$5.80	$5.95	$5.95	$6.00
600-HA	6.30	6.45	6.45	6.50
600-HB	6.30	6.45	6.45	6.50
600-BA	5.90	6.05	6.05	6.10

Page 19

Desk Stands				
Desk Set—Automatic Type				
F-301, Less Dial	$7.10	$7.20	$7.20	$7.60
Desk Set Boxes				
600-HA	$6.30	$6.45	$6.45	$6.50
600-HB	6.30	6.45	6.45	6.50
600-BA	5.90	6.05	6.05	6.10
Desk Grabaphone Set—Automatic Type				
Desk Stands				
F-135, Less Dial	$4.75	$4.85	$4.85	$4.95
Grabaphone				
F-11-C	$5.75	$5.85	$5.85	$5.95
Desk Set Boxes				
600-HA	$6.30	$6.45	$6.45	$6.50
600-HB	6.30	6.45	6.45	6.50
600-BA	5.90	6.05	6.05	6.10
Grabaphone Extension Set				
F-722	$10.00	$10.25	$10.25	$10.40

Dial prices will be furnished on application.

Page 20

BRACKET TELEPHONE

Code No.	f. o. b. Chicago, Ill.
Complete with Desk Set Box	
F-618-SF With No. 1, No. 2 or No. 5 Mounting	$14.30
F-618-BF With No. 1, No. 2 or No. 5 Mounting	14.40
F-618-HAF With No. 1, No. 2 or No. 5 Mounting	14.80
F-618-HBF With No. 1, No. 2 or No. 5 Mounting	14.80

For other combinations add Desk Set Box price to following stand.

DESK STAND ONLY

F-618 With No. 8 Arm and No. 1, No. 2 or No. 5 Mounting . . . . $ 8.50

When equipped with Universal attachment add $0.90 to above prices.

If a clamp mounting is desired, use No. 3 and add $0.30 to price.

Page 21

TELEPHONES—Continued
RAILWAY

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
Portable Sets				
F-2731	$13.00	$13.25	$13.25	$13.60
Insulated Telephones				
2744	$21.20	$21.50	$21.50	$22.20
Oil Field Telephones				
Wall Type				
2884	$20.50	$20.80	$20.80	$21.50
Desk Type				
Desk Stand 90-A, Desk Set Box 2415	$22.60	$22.90	$22.90	$23.60

Code No.	f. o. b. Chicago, Ill.
Connecting Poles	
12-B	$9.50

Page 22

MALLEABLE IRON CASE

2868	$52.50	$53.50	$53.50	$54.50
2882	52.90	53.90	53.90	54.90
2883	53.15	54.15	54.15	55.15

SETS—TEST
LINEMAN'S TEST SET

	f. o. b. Chicago, Ill.
1025	$7.75

Page 23

BRIDGING TYPE

1016	$18.80

Page 253

RINGING EQUIPMENT
DRY BATTERY POLE CHANGERS

23	$25.00
30	27.00

Page 254

STORAGE BATTERY POLE CHANGERS
Single Frequency

36-A	$43.00
36-B	43.00
13	26.00
25-A	17.50

Page 255

Four Frequency

6	$65.00
17	65.00

Five Frequency

19	$89.00

Page 256

RINGING TRANSFORMERS

2	$25.00
9	58.00

Page 257

RINGING EQUIPMENT—Continued

MOTOR RINGING GENERATOR

Motor Direct Current, 1150 R. P. M.

Generator—80 volts, 19 cycles

Code No.		f. o. b. Chicago, Ill.
310081		$108.00
310082		108.90

Motor Single Phase, 60 Cycles, A. C., 1150 R. P. M.

Generator—80 volts, 19 cycles

310087		$108.00
310088		108.90

Motor Single Phase, 25 Cycles, A. C., 1400 R. P. M.

Generator—110 volts, 23 cycles

310093		$117.55
310094		118.45

Pages 258-270 inclusive

POLE CHANGERS

6	$65.00
17	65.00
19	89.00
23	25.00
36 A	43.00
36-B	43.00

TRANSFORMER SETS

18-A	$98.75
19-A	83.00
21-A	83.00

RECTIFIERS

Rectigon

3 amp. D. C. and 2 bulbs	$34.05
Extra bulbs, each	3.60

Tungar

Tungar rectifier with extra bulb 110 volt, 60 cycle S. P. arranged to charge a series of 11 cells lead battery at 2½ amp. Each $35.10

110 volt, 60 cycle S. P. arranged to charge a series of 11 cells lead battery at 5 amp. Including extra bulb, each $72.00

General Electric Mercury Arc. Rect., 10 amp $156.15

BATTERIES

Normal Charge Rate in Amperes	Type	Price for 11 cells Complete	f. o. b. Philadelphia Pa. Price for 22 cells Complete
¾	B. T.	$ 20.37	$ 38.61
1½	C. T.	29.77	57.03
3	P. T.	51.75	100.78
4½	E. T.	69.62	136.49
5	D. 5	115.40	.....
10	E 5	188.21	.....

MISCELLANEOUS

Code No.		f. o. b. Chicago, Ill.
	3 Battery Feed Coil	$5.50 each
	4 Battery Feed Coil	5.50 each
	81-A Induction Coil	1.40 each
	34-A Resistance Coil	2.00 each
	23-A Retardation Coil	7.50 each
	41-A Retardation Coil	3.75 each
	P. R. XXX 300 ohm buzzer	Supplies
	P. R. XXX 300 ohm bell	Supplies
	454 Knife Switch—(See supply section)	
	456 Knife Switch—(See supply section)	
9402	Lamp Socket	$0.20 each
	25 watt 110 volt Mazda lamp	.25 each
	3327 fuse cut-out base	.50 each
	3325 fuse cut-out base	.35 each
	2602 fuse	.15 each

Pages 258-270 inclusive--Continued

POWER BOARD

Code No.		f. o. b. Chicago, Ill.
33483	Less meters	$18.35
	With Meters	32.75

WIRE

105	Cable	$16.00 C ft.
122	Cable	27.65 C ft.
814	A. B. R. C. (See Price List No. 445)	
1618	Wire (See Price List No. 445)	

Page 403

KELLOGG ARRESTERS

Code No.		Net Price Per Strip
6		$15.00
9		6.00
		Price Per Pair
16		$1.25

Page 406

Prices on Application

Page 407

No. 100 Central Office Protector

1230	Protectors in 10 pr. Sections	$1.35	5%
1231	Protectors in 20 pr. Sections	1.25	5%
1232	No. 100 Heat Coils	.17 ea.	5%
1234	No. 100 Test Plugs	3.50 net each	

Page 408

No. 10 Central Office Protector

Code No.	Description	Price Per Pair	Discount 100 Pairs and Over
1100	Protectors in 10 pr. Sections	$1.35	5%
1101	Protectors in 20 pr. Sections	1.25	5%
1103	No. 10 Wire Wound Heat Coils	.15 ea.	5%
1106	Test Plug	2.75 each net	
1112	Resoldering Clamp	.25 each net	
2802	Heat Coil Solder	.40 oz. net	
2803	Heat Coil Flux	.25 bottle net	

Page 409

NO. 105 CENTRAL OFFICE PROTECTOR

Code No.	Description	Price Per Pair	Discount 100 Pairs and Over
1237	Protectors in 10 pr. Sections	$2.60	5%
1238	Protectors in 20 pr. Sections	2.50	5%
1232	No. 100 Wire Wound Heat Coils	.17 ea.	5%
1234	Test Plug	3.50 ea. net	

No. 10-W Central Office Protector

1110	Protectors in 10 pr. Sections	$2.50	5%
1111	Protectors in 20 pr. Sections	2.40	5%
1103	No. 10 Wire Wound Heat Coils	.15 ea.	5%
1106	Test Plug	2.75 ea.	net
1112	Resoldering Clamp	.25 ea.	net

Page 409--Continued

No. H-36 Central Office Protector

1200	Protectors in 10 pr. Sections with A-45 Wood Fuses	$0.65	5%
1201	Protectors in 20 pr. Sections with A-45 Wood Fuses	.65	5%
1202	Protectors in 10 pr. Sections with A-45 Composition Fuses	.70	5%
1203	Protectors in 20 pr. Sections with A-45 Composition Fuses	.70	5%

Page 410

COOK "L"-9 WALL FRAME

1050	20-pair size without protectors but including line terminals	$ 9.50	net
1052	40-pair size without protectors but including line terminals	12.00	net
1054	60-pair size without protectors but including line terminals	16.00	net

The above frame takes No. 10, 10-W, H-36, 100 or 105 protectors. Add price of protectors selected from previous protectors.

Page 412

COOK "L"-10 MAIN DISTRIBUTING FRAME

1260	L-10 Frame 50 pair	$0.10	net
1040	H-51 Protector 10 Pair Sections	.65	5%

RELIABLE NO. 101 MAIN DISTRIBUTING FRAME

101	Frame Work only—100 Pair Units	$0.14	net 10%
102-H	Line Cable Terminals—25 Pair Blocks	.13	net 10%
101-A	Protectors — Wood Fuses — 20 Pair Banks	.65	net 10%
101-B	Protectors — Fibre Fuses — 20 Pair Banks	.70	net 10%

Page 413

ARMS

Code No.	Transmitter	Price Each
28		$ 5.00
41		.60
42		.60
48		5.00
50		.90
39		.60
32019	Base	75.00 C
29929	Support	1.50 each
29927	Nut	.10 each
30403	Mtg	.06 each
32028	Tube	1.50 each
29944	Tube	1.00 each
29940	Spring	.20 each
30402	Nut	.06 each
30404	Screw	.05 each
30598	Screw	1.00 C
6343	Washer	2.80 C
4580	Nut	.50 C

Page 414

ARRESTERS

Code No.	Telephone	Price Each
3		$0.25

BARS—DISTRIBUTING BUS (FUSE POSTS)

Code No.	Price Each	Code No.	Price Each
3	$0.25	15	$0.50
4	.30	18	.60
5	.35	19	.65
10	.45	23	.65
12	.45		

Page 415

BELLS—EXTENSION

Flat Steel Type—With Condensers

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
63-SA	$5.00	$5.15	$5.15	$5.20
63-BA	5.10	5.25	5.25	5.30
63-HA	5.50	5.65	5.65	5.70
63-HB	5.50	5.65	5.65	5.70
63-HC	5.50	5.65	5.65	5.70
Flat Steel Type—Without Condensers				
163-SA	$4.50	$4.65	$4.65	$4.70
163-BA	4.60	4.75	4.75	4.80
163-HA	5.00	5.15	5.15	5.20
163-HB	5.00	5.15	5.15	5.20
163-HC	5.00	5.15	5.15	5.20
Loud Ringing Extension Bells—Wood Type With Condensers 6 Inch Gongs				
47-SA	$7.75	$7.90	$7.90	$7.95
47-BA	7.85	8.00	8.00	8.05
47-HA	8.25	8.40	8.40	8.45
47-HB	8.25	8.40	8.40	8.45
4 Inch Gongs				
48-SA	$7.50	$7.65	$7.65	$7.70
48-BA	7.60	7.75	7.75	7.80
48-HA	8.00	8.15	8.15	8.20
48-HB	8.00	8.15	8.15	8.20

BELLS—EXTENSION—Continued

Loud Ringing Extension Bells—Wood Type Without Condensers

Code No.	f. o. b. Chicago, Ill.	f. o. b. Columbus, Ohio	f. o. b. Kansas City, Mo.	f. o. b. Portland, Ore., San Francisco, Cal.
6 Inch Gongs				
147-SA	$7.00	$7.15	$7.15	$7.20
147-SD	7.00	7.15	7.15	7.20
Oak Cabinet Extension Bells For Magneto Telephone Service 2½ Inch Gongs				
37-SA	$4.50	$4.65	$4.65	$4.70
37-SD	4.50	4.65	4.65	4.70
37-SG	4.65	4.80	4.80	4.85
37-BA	4.60	4.75	4.75	4.80
37-HA	5.25	5.40	5.40	5.45
37-HB	5.25	5.40	5.40	5.45

Page 416

MAGNETO DESK SET BOXES

F2409	$ 9.95	$10.15	$10.15	$10.55
F2328	10.45	10.65	10.65	11.05
F2361	11.15	11.35	11.35	11.75
F2362	11.30	11.50	11.50	11.90
F2363	11.05	11.25	11.25	11.65
F2364	11.05	11.25	11.25	11.65
F2365	11.20	11.40	11.40	11.80
F2366	11.35	11.55	11.55	11.95
F2367	11.35	11.55	11.55	11.95
F2370	11.75	11.95	11.95	12.35
F2371	11.90	12.10	12.10	12.50
F2327	10.55	10.75	10.75	11.15
F2372	10.70	10.90	10.90	11.30
F2410	10.70	10.90	10.90	11.30
F2326	11.20	11.40	11.40	11.80
F2376	12.00	12.20	12.20	12.60
F2374	12.25	12.45	12.45	12.85
F2415	15.00	15.20	15.20	15.60

GENERATOR—BOXES

F2420	$7.15	$7.35	$7.35	$7.95
F2421	7.50	7.70	7.70	8.10

Page 418

CABLE—SWITCHBOARD

ROUND TYPE— One Silk and One Cotton Enameled Wire Red and White Waxed Braid

Code No.	Price Per 100 Ft. Less than 100 ft.	100 to 500 ft.	500 to 2500 ft.
114-X	$12.10	$ 9.00	$ 8.10
137-X	15.00	11.25	10.00
107-X	18.75	14.25	12.65
22-X	29.90	22.50	20.25
8-X	22.00	17.00	15.00
109-X	34.00	25.60	22.75
29-X	49.25	37.25	32.75
53-X	92.00	69.00	62.00

Lead Colored Fireproof Paint Over Braid

114-AX	$12.10	$ 9.00	$ 8.10
137-AX	15.00	11.25	10.00
107-AX	18.75	14.25	12.65
22-AX	29.90	22.50	20.25
8-AX	22.00	17.00	15.00
109-AX	34.00	25.60	22.75
29-AX	49.25	37.25	32.75
53-AX	92.00	69.00	62.00

ROUND TYPE—Continued Two Silk and One Cotton Tinned Wire Red and White Waxed Braid

Code No.	Price Per 100 Ft. Less than 100 ft.	100 to 500 ft.	500 to 2500 ft.
65	$12.50	$ 9.50	$ 8.50
99	19.50	14.75	13.00
149	16.00	12.00	10.50
127	18.00	13.50	12.00
24	19.75	15.00	13.25
23	28.00	21.00	18.50
112	29.00	22.00	19.50
97	35.25	26.50	23.50
63	46.00	34.50	31.00
62	100.00	77.00	69.00

Lead Colored Fireproof Paint Over Braid

65-A	$12.50	$ 9.50	$ 8.50
99-A	19.50	14.75	13.00
149-A	16.00	12.00	10.50
127-A	18.00	13.50	12.00
42-A	19.75	15.00	13.25
41-A	28.00	21.00	18.50
112-A	29.00	22.00	19.50
125-A	35.25	26.50	23.50
63-A	46.00	34.50	31.00
62-A	100.00	77.00	69.00

FLAT TYPE— One Silk and One Cotton Enameled Wire

Code No.	Price Per 100 Ft. Less than 100 ft.	100 to 500 ft.	500 to 2500 ft.
49-X	$21.25	$16.25	$14.50
104-X	37.00	28.00	25.00
138-X	32.00	23.75	21.00
139-X	32.00	23.75	21.00
140-X	32.00	23.75	21.00
49-AX	21.25	16.25	14.50
104-AX	37.00	28.00	25.00
138-AX	32.00	23.75	21.00
139-AX	32.00	23.75	21.00
140-AX	32.00	23.75	21.00

LEAD COVERED Two Silk and One Cotton Tinned Wire Round Type Wax Core

148-L 1/16″ Lead	$22.00	$17.00	*
144-L 1/16″ Lead	26.00	20.00	*
121 1/16″ Lead	28.50	21.50	*
147-L 1/16″ Lead	34.00	24.50	*
146-L 5/64″ Lead	60.00	45.00	*
145-L 3/32″ Lead	113.00	84.50	*
120-L 1/16″ Lead 11 Pair No. 22 B & S Ga. 2S and 1C	24.50	18.50	*

*Prices on application.

The above prices are net f. o. b. Chicago and not subject to discount.

Page 419

CABLE—POWER

Tinned Wire

Code No.	Price Per 100 Ft. Less than 100 ft.	100 to 500 ft.	500 to 2500 ft.
71	$ 3.50	$ 2.75	$ 2.40
72	6.50	5.00	4.35
101	6.00	4.50	4.00
102	6.25	4.75	4.25
103	7.20	5.40	4.80
59	11.50	8.65	7.75
66	21.50	16.15	14.50
105	15.00	11.25	10.00
105-L	35.00	27.50	*
122	.....	.....	*
122-L	.....	.....	*
59-L	23.50	18.50	*

*Price on application.

Enameled Wire

71-X	$ 4.25	$ 3.25	$ 3.00
72-X	7.50	5.75	5.00
101-X	6.90	5.25	4.60
102-X	7.15	5.45	4.90
103-X	8.30	6.25	5.55

Page 421

LAMP CAPS

Code No.	f. o. b. Chicago, Ill. Price Each
25	$0.10
27	.10
154	.10
154-G	.10
154-D	.10
154-H	.10
154-J	.10
154-K	.10
154-L	.10
154-M	.10
154-F	.10
154-U	.10
154-V	.10
154-W	.10
79	.10
79-A	.10
79-E	.10
79-G	.10
79-K	.10
62-F	.10
62-H	.10
62-J	.10
9	.20
9-A	.20
9-B	.20
9-C	.20
9-D	.20
74	.35
75	.35

Page 422

COILS

INDUCTION

28-C	$0.75
41-C	.75
85-C	1.85
51-A	1.00
79-A	1.00
90-A	5.25
7-D	2.10
81-A	1.40

Page 423

5-A	$1.95
7-A	2.10
32-A	2.25
32-B	2.25
17-A	2.75
17-B	2.75
72-A	2.25
35-A	8.50
66-A	1.75

Page 423—Continued

COILS—Continued

Code No.	Price Each
OPERATOR'S FEED	
3-A	$5.50
4-A	5.50

Page 424

REPEATING

16-A	$ 4.50
17-F	6.50
18-B	13.50
19-A	4.00
20-A	4.00

Page 425

18-A	$11.75

RESISTANCE

1-A	$0.65
1-B	.65
1-C	.65
1-D	.65
1-E	.65
1-F	.65
1-G	.80
1-H	.65
1-J	.65
1-K	.65
1-L	.65
1-M	.70
1-N	1.00
1-P	.85
1-Q	.65
1-R	1.00
1-S	.65
1-T	.65
1-U	1.00

Page 426

4-A	$0.75
4-B	.75
4-C	.75
4-D	.75
4-E	.75
4-F	.75
4-G	.90
4-H	.75
4-J	1.00
4-K	.75
4-L	1.00
4-M	.80
4-N	.90
5-A	1.00
29	9.25
30-A	.75
31-A	.65
32-A	.65

RETARDATION

Prices on retardation coils do not include mountings. Mounting strips ordered will be entered as separate items and priced accordingly.

8-A	$ 1.50
8-B	1.75
8-C	1.75
8-D	1.75
8-E	1.75
8-F	1.75
8-G	1.75
8-H	1.75
9-A	.75
9-B	.75
9-C	.75
10-A	.85
10-B	.85
10-C	.85
10-D	1.25
10-E	.85

Page 426—Continued

COILS—Continued

RETARDATION

Code No.	Price Each
10-F	$1.25
10-G	.85
10-H	.85
10-J	1.25
10-K	.85
10-L	.85
10-M	.85
10-N	.85
10-P	.85
11-A	10.00

Page 427

14-A	$ 1.25
14-B	1.15
14-C	1.15
14-D	1.15
14-E	1.25
14-F	1.15
14-G	1.25
16-A	.50
16-B	.50
18-A	.70
21-A	1.50
21-B	1.50
21-C	1.50
21-D	1.75
21-E	1.50
21-F	1.50
21-G	1.50
21-H	1.75
21-J	1.50
21-K	1.75
21-L	1.50
22-A	1.50
22-B	1.50
22-C	1.50
22-D	1.50
22-E	1.50
23-A	7.50
23-B	10.00
25-A	1.50
25-B	2.00
25-C	1.25
28-A	7.25
28-B	7.00
29-A	20.00
29-B	20.00
29-C	20.00
29-D	20.00

Page 428

30-A	$ 1.25
30-B	1.25
30-C	1.25
30-D	1.25
30-E	1.25
30-F	1.25
30-G	1.25
31-A	7.00
34-A	1.75
35-A	7.50
36-A	24.00
36-B	22.00
40-A	4.25
40-B	4.75
41-A	3.75
42-A	1.00
43-A	1.50
44-A	7.00
44-B	7.00
45-A	4.50
55-A	30.00
56-A	4.85
58-A	.85

Page 429

CONDENSERS FOR TELEPHONES SWITCHBOARDS AND GENERAL USE

Code No.	Price Each	Code No.	Price Each
28	$0.60	105	$0.85
10	.60	99	.85
20	.60	23	.85
77	.60	13	1.00
12	.75	30	1.00
16	.95	19	1.40
41	.85	58	1.50
90	1.15	37	.85
110	1.15	68	.85
78	.85	67	.85
62	1.15	66	1.15
103	.85	64	1.25
53	1.15	32	.60
96	1.15	34	1.15

Page 430

36	$1.15	17	$0.85
54	1.15	31	.85
57	.85	118	1.25
101	.85	102	2.25
65	1.50	108	5.00
24	1.50	128	2.10
25	1.30		

Discounts on above: Less than 25, Net; 25 and over, 10 per cent.

CONDENSER MOUNTING BRACKETS

Pc. No.	Price Per 100	Pc. No.	Price Per 100
1288	$ 2.25	5771	$ 2.60
3982	10.00	10638	4.00
4854	2.85	27928	4.00
8261	8.40		

Page 432

CORDS

DESK STAND

Code No.	With Green Silk Overall Price Per 100	With Brown Merc. Cotton Overall Price Per 100
F100-D	$40.00	$38.00
100-D	40.00	38.00
516-D	.....	56.25
511-D	40.00	38.00
581-D	40.00	38.00

The above prices are net and not subject to discount.

Page 433

F150-D	$65.00	$56.00
150-D	65.00	56.00
F452-D	65.00	56.00
F479-D	65.00	56.00
F636-D	65.00	56.00

Code No.	Black and Maroon Merc. Cotton Overall Price Per 100
F502-RD	$69.00

The above prices are net and not subject to discount.

Page 434

F102-D	$83.00	$72.00
102-D	83.00	72.00
487-D	83.00	72.00

Code No.	Black and Maroon Merc. Cotton Overall Price Per 100
241-RD	$93.00
566-RD	93.00

The above prices are net and not subject to discount.

Page 435

CORDS—Continued

DESK STAND

Code No.	With Green Silk Overall Price Per 100	With Brown Merc. Cotton Overall Price Per 100
103-D	$95.00	$84.00
F104-D	.....	95.00
F105-D	.....	150.00

Grabaphone Cords

455-G	$47.00
454-G	62.00
F454-G	62.00

The above prices are net and not subject to discount.

Page 436

OPERATORS'

Code No.	With Green Silk Overall Price Per 100
110-OR	$40.00
26-OR	66.00
237-OR	49.00
489-OR	71.00

The above prices are net and not subject to discount.

Page 437

111-O	$ 86.00
433-O	120.00
439-O	100.00
239-O	94.00
240-O	105.00
67-O	95.00

Code No.	With Green Silk Overall Price Per 100
442-O	$165.00

The above prices are net and not subject to discount.

Page 438

481-O	$ 95.00
140-O	120.00
464-O	95.00
468-OR	42.50

Code No.	Black and Maroon Cotton Braid Overall Price Per 100
503-RO	$160.00
504-RO	125.00

The above prices are net and not subject to discount.

Page 439

RECEIVER

Code No.	With Green Silk Overall Price Per 100	With Brown Merc. Cotton Overall Price Per 100
F98-TR	$27.50	$23.50
98-TR	27.50	23.50
508-TR	.....	21.75
27-TR	27.50	24.50
196-TR	28.25	26.25
90-TR	.....	26.25
197-TR	27.50	26.25

The above prices are net and not subject to discount.

Page 440

CORDS—Continued

RECEIVER

Code No.	With Green Silk Overall Price Per 100	With Brown Merc. Cotton Overall Price Per 100
495-TR	.....	$26.25
179-TR	.....	28.00
207-TR	$27.50	24.00
162-OR	55.00	.....

Code No.	Black and Maroon Cotton Braid Overall Price Per 100
242-RTR	$28.00
248-RTR	26.25
415-RTR	28.00
427-RTR	28.00

The above prices are net and not subject to discount.

Page 441

SWITCHBOARD

Code No.	Lengths 36″	48″	60″	72″	Price Ea.
310-ST					*
311-ST					*
313-TO					*
318-TO					*
304-ST	.48½	.57	.65	.75	
323-ST					*
305-ST					*
331-ST					*
357-ST					*
350-ST					*
360-ST					*
308-ST					*
353-ST					*
301-TO	.43	.49	.56	.65	
324-TO	.43	.49	.56	.65	

Discounts on above: Less than 100, Net; 100 to 249, 5 per cent; 250 and over, 10 per cent.

*Price on application.

Page 442

Code No.	Lengths 36″	48″	60″	72″	84″	Price Ea.
303-ST	.75	.87	...	1.11	1.29	
358-ST						*
325-ST	.75	.87	...	1.11	1.29	
309-TO	.65	.73	...	.97	1.10	
326-TO	.65	.73	...	.97	1.10	

Discounts on above: Less than 100, Net; 100 to 249, 5 per cent; 250 and over, 10 per cent.

TRANSMITTER

Code No.	With Green Silk Overall Price Per 100
261-OT	$29.25
465-OT	20.25
485-OT	28.75
505-OT	16.50
494-OT	21.50
499-OT	20.25

The above prices are net and not subject to discount.

CORDAGE

Telephone Transmitter

Code No.		Per Lb.
F137	Blue-red glazed cotton braid stranded copper conductor.	$0.85

Approx. 5.614 pounds per 1,000 feet.
Not listed in Catalog.
*Price on application.

Page 443

CORD TIPS

Piece No.	Price Per 100	Piece No.	Price Per 100
151	$0.90	17132	$ 1.00
1813	1.05	17344	1.00
1931	.95	17346	1.00
2734	.50	31061	.50
2749	1.00	31070	1.10
2986	1.00	33563	.50
3477	1.95	33566	1.15
4928	.50	33569	2.00
5006	.80	33574	2.75
6028	.50	33584	1.70
6069	.90	33586	3.15
11192	1.50	33588	2.10
11196	1.75	33692	.50
12129	1.25	34603	10.00
12925	1.00	7625	1.50
14846	2.00		

Less than 100, list.
100 to 999, 10%.
1000 and over, 20%.

Page 447

CUT IN STATIONS AND KEY BOXES

Key Boxes

Code No.		Price Each
3	Key box with No. 216 key	$4.50
4	Key box with No. 28 key	2.25

Cut-in Stations

No. 5 ..... Price on application

Not listed in Cat. No. 7

No. 8 Key Box with No. 1028 Key for 2 lines $4.50

Page 448

DROPS AND JACKS

Combined

Shutter for 301 and 300 Type Drops

Piece No.		Set of Three
39454	Shutter	$0.15
39458	Shutter Support	
39459	Insulation	

Page 449

COMBINED DROPS AND JACKS

Code No.	Price Each	Code No.	Price Each
300-A	$3.00	301-A	$2.75
300-C	3.10	301-C	2.85
300-E	3.05	301-E	2.80

SINGLE WOUND COILS

Ohms.	Price Each	Ohms.	Price Each
100	$0.80	200	$0.85
350	.85	150	.80
500	.95	300	.85
800	1.05	80	.75
1000	1.10	250	.85
1200	1.15	750	1.00
1600	1.20	120	.80
480	.95	600	1.00

Page 450

DROPS—RING OFF

Code No.	Price Each	Code No.	Price Each
50-A	$1.90	51-A	$1.65
50-B	2.15	51-B	1.90
50-C	2.20	51-E	1.80
50-E	2.05	51-G	1.70
50-G	1.95	51-L	1.70
50-L	1.95		

Page 450—Continued

DROPS—RING OFF—Cont'd

COILS FOR RING OFF DROPS

Ohms.	Coils, Price, Ea.	Ohms.	Coils, Price, Ea.
100	$0.80	200	$0.85
350	.85	150	.80
500	.95	300	.85
1000	1.10	80	.75
1600	1.20	250	.85
800	1.05	750	1.00
1200	1.15	120	.80
480	.95		

Page 451

ESCUTCHEONS

For 1000 Type Keys

Code No.	Price Each	Code No.	Price Each
1000	$0.75	1036	$1.25
1001	.25	1037	1.25
1002	.55	1040	1.00
1003	.25	1041	1.00
1004	.55	1043	.75
1010	.25	1051	1.25
1011	.25	1053	.25
1012	.25	1054	.25
1013	.25	1055	.25
1014	.75	1057	.75
1015	.25	1059	1.00
1016	.25	1065	.75
1021	.15	1070	1.00
1026	.25	1071	.75
1030	1.00	1049, Used on W. E. Boards	2.00
1031	1.00		
1032	1.25		

For 1000 Type—4 Party and Cam Keys

1106	$1.00	1031	$1.00
0138	1.00	1072	1.00

Page 452

For 1000 Type—4 Party and Cam Keys

1008	$0.75	1024	$0.35
1009	.75	1033	.75
1020	1.00	1034	.75
1023	1.00		

Blank

224	$0.20	257	$0.50
225	.20	258	.35
226	.50	261	.35
227	.20	262	.50
241	.35	263	.50
250	.35	264	.35
251	.50	268	.35
252	.20	269	.35
255	.75	270	.50
256	.50	309	.35

Page 453

FASTENERS

Cord

4	$0.05	5	$0.05

Discounts

Lots of 100 and over 10%
Lots of 1000 and over 20%

GENERATORS

Telephone Type

15	$5.50	53	$6.00
22	5.80	59	6.25
26	6.05	66	5.75
31	5.75	75	8.00

Switchboard Type

61	$5.80	72	$6.00
63	6.00	78	6.50
64	5.50		

Page 454

HEAT COILS

Code No.	Price Each
2	$0.15
6	.16

HOOKS—CORD

Individual Type

1	Replaced by No. 2
2	$0.03

Strip Type

Prices on Application

HOWLERS

2	$12.75
4	5.50

Page 455

JACKS

INDIVIDUAL LAMP

39		$0.25
39	100 and over	.20

5 Per Strip

	Type	Price Strip
9	Tran	$2.50
37	Line	2.50

10 Per Strip

15	Line	$3.50
23	Tran	3.50
31	Line	3.50
33	Line	3.50
34	Line	3.50

Page 456

20 Per Strip

25	Line	$5.00
32	Line	5.00
35	Line	5.00
36	Line	5.00
41	Line	5.00

INDIVIDUAL SPRING 2 Cond.

	Fits Plug	Price Each
25	No. 42	$0.75
53	No. 17-44-152	1.00
61	No. 42	1.00
85	No. 55	.75
87	No. 55	1.00
88	No. 26	.50
98	No. 55	1.00
99	No. 26	.75
207	No. 42	.75
208	No. 128	.75
209	No. 17-44-152	.75
237	No. 42	1.00
277	No. 42	1.00
301	No. 42	1.00

Page 457

Individual—2 Cond.

302		$1.50
315	No. 42	1.50
316	No. 42	1.50
319	No. 42	1.00

5 Per Strip—2 Cond.

215	No. 42-55	$5.00
225	No. 42-55	5.00
227	No. 42-55	3.00
238		5.00

10 Per Strip—2 Cond.

129	No. 55	$6.00
132	No. 55	8.00
151	No. 55	5.50
163		5.00
186		5.00
195		5.00
201		4.00

Page 458

JACKS—Continued

SPRING

10 Per Strip—2 Cond.

Code No.	Fits Plug	Price Strip
240		$ 4.00
255	No. 55	10.00
283	No. 55	5.00

20 Per Strip—2 Cond.

45		$ 5.00
116	No. 55	5.50
122		10.00
126		10.00
211	No. 55	6.00
247	No. 55	6.50
281	No. 128	5.50

Individual—3 Cond.

		Price Each
94	No. 17-44-152	$0.75
100	No. 17-44-152	1.50
229	No. 17-44-152	1.00
254	No. 77	1.00
260	No. 106	.75
286		2.10

Page 459

Individual—3 Cond.

298	No. 16-44	$1.00
299	No. 16-44	.90
303		1.00
304		1.50
311	No. 137	1.00
332		

5 Per Strip—3 Cond.

		Price Strip
152	No. 17-44-152	$4.00
205	No. 17-44-152	3.50
223	No. 17-44-152	3.00
296	No. 106	5.50
297		4.00
309	No. 106	7.00
318		5.50

10 Per Strip—3 Cond.

141	No. 17-44-152	$4.00
147	No. 17-44-152	8.50
149	No. 17-44-152	5.00
191	No. 17-44-152	8.00
202		8.00
217		8.50
218	No. 17-44-152	6.50

Page 460

10 Per Strip—3 Cond.

232	No. 17-44-152	$5.50
244	No. 152	8.00
251	No. 17-44-152	5.50
252	No. 152	8.00
253	No. 77	5.00
259	No. 106	5.50
267	No. 106	8.00
269	No. 106	6.50
271	No. 106	6.50
273	No. 106	5.00
274	No. 77	3.50
282		7.00
285	No. 106	8.50
288	No. 77	8.00
293		6.50
295		5.00
324		8.00

20 Per Strip—3 Cond.

134		$12.00
135		12.00
146		6.50
148		12.00
159		12.00

Page 461

JACKS—Continued

SPRING

20 Per Strip—3 Cond.

Code No.	Fits Plug	Price Strip
230	No. 17-44-152	$6.50
231	No. 17-44-152	6.50
239	No. 77	5.50
257	No. 77	6.00
258	No. 106	6.50
261	No. 106	6.50
268	No. 106	8.00
270	No. 106	8.00
272	No. 106	8.00
292		6.50

OPERATORS'

		Price Each
24		$0.75
43		.75
57		1.25
97		1.00
224		1.00
228		1.25
276		1.50
291		.75
310		1.50
325	Replaced by 325-A	
325-A		1.25

Page 463

DUMMY

Code No.		Price Strip
263		$0.60
289		1.00
294		.75
308		.60
312		.75

Page 464

KEYS

CAM

1000 Type

Code No.		Price Each
1001	Replaces Nos. 126, 170, 174, 291	$1.20
1003		1.80
1004	Replaces Nos. 220, 261, 274	1.80
1005		1.20
1014		1.50
1017		1.80
1025		2.10
1028	Replaces Nos. 28, 77, 106, 225, 253	1.50
1034	Replaces Nos. 34, 65, 85, 288	2.40
1035		1.80
1042	Replaces Nos. 42, 101, 292	1.50
1069		2.10
1070		2.40
1072		1.80
1083		1.80
1002		1.70
1010	Replaces Nos. 52, 99, 275, 280, 287	3.50
1011		2.90
1013	Replaces Nos. 83, 90, 187, 286, 294	4.10
1019		1.70
1020		1.30

Page 465

1030		$2.30
1036	Replaces Nos. 36, 74, 131, 137, 184, 185, 219, 229	2.60
1037		2.30
1039		2.70
1049		2.90
1052		3.20
1059		1.70

Page 465 Continued—

KEYS—Continued

CAM

1000 Type

Code No.		Price Each
1067		$3.50
1073		2.60
1074		3.30
1016		3.50
1021		2.45
1023		2.60
1024		2.90
1026		2.90
1027		2.30
1029	Replaces Nos. 29, 203, 215, 235	2.30
1032	Replaces Nos. 32, 39, 55, 144, 214, 245	2.60
1040		2.75
1041		2.00
1043		2.30
1044	Releases for No. 264 Type Key	2.00
1045	Releases for No. 264 Type Key	1.50
1046	Releases for No. 264 Type Key	2.30
1047	Releases for No. 264 Type Key	1.20
1048		2.30
1053	Releases for No. 264 Type Key	1.80
1054		2.75
1057		2.90
1058		3.00
1062		2.10
1063		2.15
1076		3.20
1084		2.90
1089		2.30
1000	Dummy for Restoring Four Party Keys	1.00
1007		2.10
1008		2.00
1009		1.80
1015	Releases for No. 264 Type Key	1.50
1022		1.65
1033		1.60
1068		2.40
1012	1 set of springs has extra make contact	2.60
1031		2.30
1050		2.90
1060		2.10
1071		2.90
1075		3.10

Page 466

SWITCHBOARD

Four Party Line

264		$5.50
265		5.50
266		5.50
267		5.50
270		5.50
310		5.50
315		5.50
317		3.75
319		3.75
320		6.50
321		3.75
322		5.50
323		5.50
324		6.50
326		5.50
328		3.75

Page 467

KEYS—Continued

Code No.	PUSH BUTTON Strips—Order Wire	Price Per Strip
4		$ 7.50
26		7.50
61		7.50
179		7.50
206		10.00
217		7.50
260		10.00
281		10.00
301		8.00
309		8.00
312		10.00
314		10.00
318		8.00
313		17.50
330		10.00

Page 468

INDIVIDUAL—ORDER WIRE

Code No.	Price Each
5	$1.45
24	1.80
60	1.75
66	2.15
68	1.75
93	1.00
121	1.75
162	2.00
163	2.00
167	1.75
172	1.75
254	1.75
255	1.75
273	1.50
296	1.80
300	1.50
302	1.75
303	3.00
269	1.50

Page 469

LAMPS

SWITCHBOARD

All lamps in broken packages, less than 100, 35c each.

Full packages of 100 and over, 35c each, less 5%.

500 and over, less 10%.

Rebate of 2c allowed per lamp for lamps of Kellogg make only, provided order for new lamps (at regular prices) is given equivalent to the amount returned for credit.

Voltage is designated by figure given in code number, as 24-A is a 24-volt lamp.

Stand Electric Light Bulb for Use as Ringing Resistance Lamp

Code No.		Price Each
110-A	110-volt—15 watt	$0.25

Page 470

PLATES—NUMBER

2		$0.08
3		.08
5		.10

Code No.		Price Per 100
10	1 to 49	$ 8.75
	50 to 99	6.25
	100 to 199	5.00
	200 to 299	4.50
	300 to 399	4.00
	400 to 499	3.60
	500 and over	2.50
	Single letter	40.00

Note: No. 10 plates with more than 3 figures, more than 1 letter, or a combination of figures and letters is special. Price only on application.

88	Less than 1000	$8.00
	1000 and over	6.00

Page 471

PLUGS

SWITCHBOARD

Code No.		Price Each
3-2	Cond	$0.75
26-2	Cond	.75
42-2	Cond. On Combined Drops and Jacks	.75
44-1	Cond. Test Plug	.75

Page 472

13-3	Cond	$1.10
55-2	Cond	.80
70-2	Cond	.80
82-3	Cond	1.25
91-3	Cond	1.10
92-2	Cond	.80
106-3	Cond	1.10
109-2	Cond	.80
122-2	Cond	.80
130-2	Cond	.80
137-3	Cond	1.10
138-2	Cond	.80
141-2	Cond	.80
144-2	Cond	1.15
165-3	Cond	1.10
168-2	Cond	.80
187-2	Cond	.80
195-2	Cond	.80
211-2	Cond	.80
111-3	Cond	1.25
193-2	Cond	.80

Page 473

175-3	Cond	$1.25
176-3	Cond	1.75
177-3	Cond	1.75
185-3	Cond	1.25
191-3	Cond	1.25
199-3	Cond	1.10
201-3	Cond	1.10
202-3	Cond	1.25
194-3	Cond	1.25

OPERATORS'

16-3	Cond	$2.50
75		1.25
107		1.25
148-2	Cond	1.25

Page 474

25-4	Cond	$2.50
81-6	Cond	3.70
131-5	Cond	1.50
136-4	Cond	2.50
139-4	Cond	2.50
145-4	Cond	1.25
146-4	Cond	1.25
182-4	Cond	1.25

TEST

23-4	Cond	$3.50
190-4	Cond	3.50

DUMMY

		Price Per 100 Less Than 1000	Price Per 100 Lots of 1000
124		$10.00	$7.50
132		8.25	6.25

Page 475

PLUGS—Continued

DUMMY

Code No.	Price Per 100 Less Than 1000	Price Per 100 Lots of 1000 and Over
133-B	$8.35	$6.25
134-B	6.25	5.25
135-B	7.50	5.75
142	5.00	3.75
149-B	7.50	5.75
83	1.00	.75
84	1.00	.75
85	1.00	.75
86	1.00	.75
87	1.00	.75
88	1.00	.75
93	5.00	3.75
94	5.00	3.75
95	5.00	3.75
96	5.00	3.75
97	5.00	3.75
98	5.00	3.75
101	1.15	1.00
163	7.50	5.75
186	1.15	1.00

Page 476

POSTS—BINDING

Code No.	Price Per 100
1	$ 7.00
2	5.60
4	14.75
5	14.75
6	56.40
7	5.15
11	2.75
12	5.60
13	6.35
15	35.45
16	10.35
17	10.00
18	12.00
20	8.50
21	10.00

Page 477

22	$10.35
25	14.25
26	12.25
29	10.50
31	5.60
33	8.25
40	5.75
41	20.00
44	10.35
59	2.75
60	7.75
61	10.25
63	3.50
65	2.50
66	3.60
67	3.50
68	7.50
Pe. 36493	12.00

Page 478

PUSH BUTTONS

Code No.	Price Each
3	$1.00
4	.75
5	.50
6	2.65
8	.50
14	.75

Page 479

RACKS—CONNECTING

Code No.	Price Each
1	$0.35
2	.35
3	.35
4	.60
5	.50
6	.50
7	.65
8	.30
9	.45
10	.55
11	.65
15	.25
16	.55
23-A	.60
23-B	.60
23-C	.60

Code No.	Price Per 100
Pc. 5034 Connecting Rack for No. 28 Stand	$20.00
Pc. 5042 Connecting Rack for No. 39 Stand	25.00

Page 480

Code No.	Price Per 100
Pc. No. 5307	$25.00
Pc. No. 6634	20.00

	Price Each
21	$7.75
22	5.00

JUNCTION BOXES

Code No.	Price Each
2505-B	$1.05
2509-B	1.85
2513-B	2.70
2517-B	3.55
2521-B	4.35
2525-B	5.20

Page 481

RECEIVERS—

SUBSCRIBERS

F41-A	$2.00
41-A	2.00
F41-B	2.50

Page 482

OPERATORS'

14-A	$2.25
46-A Less Band and Cord	2.25
46-B Less Band and Cord	2.75
65-A Less Band and Cord	2.25
65-B	2.75

RECEIVER HEAD BANDS

2	$1.00
3	1.75
12	.40

Page 484

RELAYS—2000 TYPE

The following relay prices are less coils and covers; add to price of relay less coils, the price of coils used to make price of complete relay.

Mounting strips of 10 and 20 are included in the price of relays provided the 10 per strip mounting is equipped with 7 or more and the 20 per strip equipped with 13 or more. If equipped with less an extra charge will be made for the mounting strips.

Page 484—Continued

RELAYS—2000 TYPE—

Continued

Add to the price of relay 12½c for each relay when furnished with cover. One cover may house two relays.

Code No.	Price Each	Code No.	Price Each
2001	$1.25	2020	$2.25
2002	1.50	2021	2.50
2003	1.95	2025	2.50
2004	2.25	2028	2.25
2006	1.25	2034	1.65
2007	1.65	2036	1.35
2008	2.25	2063	3.00
2009	2.60	2065	1.75
2019	2.25	2075	2.00

Page 485

2005	$2.00	2045	$1.25
2022	1.25	2048	1.25
2023	2.80	2049	1.25
2027	2.70	2056	1.25
2029	1.25	2059	1.35
2030	1.25	2077	2.40
2031	2.50	2078	1.10
2037	1.25	2079	2.15
2039	2.10	2080	2.25
2042	2.50	2081	2.10
2043	1.25	2089	2.50
2044	1.35		

Page 486

2017	$2.75	2066	$1.15
2018	2.90	2067	1.30
2052	4.25	2068	2.40
2057	2.90	2082	2.30
2060	3.00	2083	2.50
2061	2.45	2085	3.75
2062	1.75	2086	1.75
2064	1.90		

COILS—RELAY

S-FJ	$1.75	S-GN	$0.90
S-FS	1.75	S-BW	.75
S-FU	1.75	S-BX	1.20
S-GC	1.05	S-BY	1.45
S-GM	.85	S-BZ	1.00

Page 487

Single Wound

S-D	$0.80	S-Z	$2.10
S-E	.80	S-AB	2.75
S-F	.75	S-AE	2.25
S-G	.80	S-AH	1.20
S-H	.80	S-AJ	.85
S-K	.90	S-AK	.90
S-L	.75	S-AL	1.45
S-M	1.00	S-AN	.95
S-N	1.10	S-AP	1.05
S-P	1.10	S-AQ	1.20
S-Q	1.10	S-AR	1.15
S-R	1.10	S-BC	1.25
S-S	1.15	S-BL	.75
S-U	1.25	S-BM	1.40
S-V	1.25	S-BU	1.30
S-W	1.50	S-EB	.75
S-X	1.80	S-EQ	.75
S-Y	1.65	S-DL	2.85

Concentric Wound

C-J	$0.95	C-P	$1.30
C-K	1.15	C-Z	1.45
C-M	.90	C-DG	1.35
C-N	1.10	C-DQ	1.30

Page 488

RELAYS—2000 TYPE—Cont'd

Parallel Wound

Code No.	Price Each	Code No.	Price Each
P-C	$1.00	P-L	$2.20
P-D	1.00		

Tandem Wound

T-C	$1.20	T-Z	$1.05
T-F	1.35	T-AX	2.85
T-G	1.10	T-AT	1.50
T-J	1.00	T-AV	1.00
T-K	1.15	T-BY	1.30
TM	1.20	T-BM	1.10
T-R	1.00	T-CB	1.35
T-T	1.00	T-CD	1.80
T-U	1.25	T-CE	1.35
T-Y	1.35	T-CN	1.50

Single Wound

S-CA	$0.75	S-CN	$1.20
S-CB	.80	S-CP	.80
S-CC	.80	S-CQ	.80
S-CD	.85	S-CR	.90
S-CE	.75	S-CS	.85
S-CF	.85	S-CT	.80
S-CG	1.00	S-CU	1.55
S-CH	1.90	S-CV	.80
S-CJ	1.00	S-CW	.75
S-CK	2.05	S-CX	.75
S-CL	.90	S-CY	.80
S-CM	1.10	S-CZ	.90

Page 489

STRIPS—MOUNTING

For 2000 Type Relays

Code No.	Price Per Strip	Code No.	Price Per Strip
1000	$2.00	1008	$8.00
1001	2.80	1009	.75
1002	3.20	1012	.75
1003	4.00	1013	.75
1004	4.00	1014	.75
1005	5.60	1015	3.20
1006	6.40	1016	6.40
1007	8.00		

RELAYS
No. 10 Type

Code No.	Price Each	Code No.	Price Each
26-A	$1.65	26-G	$1.35
26-B	1.35	26-H	2.35
26-C	1.75	21-A	1.75
26-D	1.70	21-B	1.80
26-E	1.40	561-A	2.25
26-F	2.25	567-A	2.65

For No. 10 Type Relays

Code No.	Price Per Strip	Code No.	Price Per Strip
16	$3.00	375	$4.50
62	.50		

Page 490

88	$6.60	408	$7.20
376	6.00	459	6.00
377	9.00		

LINE RELAYS
No. 600 Type

Price on Application

RELAYS

Code No.	Price Each	Code No.	Price Each
355-A	$ 6.50	546-C	$10.00
564-A	14.75	546-D	10.50
546-A	8.65	555-A	8.00
546-B	8.50		

Page 491

RINGERS—

NON-ADJUSTABLE

With Gongs

Code No.	Price Each
78-A	$2.00
78-D	2.10
78-G	2.30
78-H	2.30
Add to regular price of each complete No. 78 type ringer with cow gongs	$0.70
Add to regular price of each complete No. 78 type ringer with sleigh gongs	1.30
Add to regular price of each complete No. 78 type ringer with tea gongs	.25
Add to regular price of each complete No. 78 type ringer with wood gongs	.70

ADJUSTABLE

With Gongs

Code No.	Price Each	Code No.	Price Each
79-A	$2.10	84-D	2.10
79-C	1.85	84-G	2.30
79-D	2.20	85-B	1.85
79-F	1.85	85-C	1.85
79-G	2.40	86-A	2.00
84-A	2.00	86-C	1.75
84-C	1.75		

Page 492

HARMONIC

With Gongs

72-A	No. 1, No. 2, No. 3, No. 4	$2.75
73-A	No. 1, No. 2, No. 3, No. 4	2.75
74-A	No. 1, No. 2	2.75
87-A	No. 1, No. 2, No. 3, No. 4	2.75
88-A	No. 1, No. 2, No. 3, No. 4	2.75
89-A	No. 1, No. 2	2.75

VIBRATING

Price on Application

RINGERS AND DROPS COMBINED

3-A	$15.25
3-D	15.25
3-E	15.70

For mountings for above, see last column.

SIGNALS MECHANICAL

Code No.	Price Each
7-A	$2.35
7-B	2.25
7-C	2.25
7-D	2.35
7-E	2.35
7-F	2.45
7-G	2.25
7-H	2.75
8-A	2.20
8-B	2.20
8-C	2.20
8-D	2.20
8-E	2.20
12-A	1.40
12-B	1.40
12-C	1.80
14-A	2.75
14-B	2.75

The above price includes the mounting provided a sufficient quantity of mechanical signals are ordered to fill more than one-half of mounting space. If less than one-half mounting capacity is ordered, a charge will be made for the mounting.

Page 493

SEATS—PLUG

Code No.	Price Each	Code No.	Price Each
1	$0.25	15	$0.50
2	.10	16	.50
3	.10	17	.10
4	.10	18	.10
5	.10	19	.10
6	.10	20	.50
7	.10	21	.15
8	.32	22	.25
9	.03	23	.50
10	.10	24	.50
11	.10	25	.50
12	.10	26	.35
13	.25	27	.50
14	.25		

Page 494

STRIPS—

DESIGNATION

8	$1.25	19	$1.10
9	1.25	20	.75
10	1.10	21	.75
12	1.25	23	.75
13	.75	26	1.10
15	1.10	28	.75
16	1.10	30	1.25
17	.75	33	1.10
18	.75		

Page 495

14	$0.75	34	$0.55
24	.50	35	.75
25	.55	38	.75
27	.55	39	.75
29	.75	40	.75
31	.75		

JUMPER

Code No.	Price Per Strip	Code No.	Price Per Strip
1	$1.50	21	$3.00
2	1.50	26	2.10
3	1.50	31	1.50
5	2.10	35	2.75
6	1.50	39	2.00
7	3.00	41	2.50
12	1.75	43	2.35
16	1.55	46	2.25
17	1.75	49	3.00
18	1.80		

Page 496

8	$1.50	28	$2.70
10	1.55	29	.90
14	2.40	30	1.90
19	1.80	34	3.00
20	3.00	38	3.40
22	3.00	40	1.90
23	2.40	42	2.65
24	6.00	44	2.65
25	4.80	50	1.50
27	2.10	52	.90

TERMINAL

21	2.50

Page 497

5	$2.50	35	$1.90
10	2.00	36	1.15
11	1.50	39	1.90
14	1.50	41	1.00
16	2.00	42	1.25
19	2.00	43	2.00
22	2.00	44	1.90
29	2.00	45	1.25
30	1.50	46	2.50
31	1.00	47	1.40
32	.75	48	2.00
33	1.50	49	1.25
34	1.25		

Page 498 **STRIPS—Continued**

MOUNTING—Arrester

Prices on Application

Coil—Resistance

Code No.	Price Per Strip
229	$0.75

Coil—Retardation

85	$3.00	319	$0.20
163	1.50		

Condenser

289	$2.00	356	$0.75
334	2.50	370	1.65
335	1.00		

Page 499 **For Condensers**

371	$2.25	374	$2.85
372	2.55	458	1.80
373	3.30		

For Drops

117	$2.60	260	$3.00
118	2.60	296	1.50
130	3.00	409	2.00
149	1.75	427	3.00
259	1.50	433	2.50

Drops and Jacks Combined

93	$2.75	207	$3.00
114	1.25	257	2.00
162	4.00	306	1.50
178	2.00	395	2.25

Page 500

258	$4.00	412	4.00
263	4.00	425	4.00
294	4.00	426	4.00
297	4.00	431	4.00
329	4.00	448	2.00
333	2.00		

Mechanical Signals

139	$1.10	205	$1.10
145	.50	465	3.00
200	1.75		

Page 501

Miscellaneous Blanks

Prices on Application

Key

400	$2.00	435	$1.75
401	2.00	453	2.00
402	2.00		

Ringer Drop and Jack

455	$1.05

Page 502

Meter and Automatic Dial

Prices on Application

SWITCHES—HOOK

Code No.	Price Each	Code No.	Price Each
100	$0.50	113	$0.80
101	.80	116	1.10
103	.85	123	1.10
105	.85		

PLUG

5	$1.75	7	$1.75
6	1.90		

Page 503

TOOLS

1	$1.00	20	$0.50
3	2.00	21	.50
4	1.50	22	.50
8	.05	24	.50
9	.05	25	.15
10	.05	27	.25
11	.50	28	1.00
12	.75	29	1.15
13	.75	30	1.00
14	.75	31	1.00
15	.75	32	3.00
16	1.25	33	2.50
17	1.25	35	3.00
18	.35	36	3.00
19	.75	37	1.00

Page 504

TOOLS—Continued

Code No.	Price Each
38	$0.60
39	2.75
40	5.00
41	5.50
42	.55
43	1.35
44	1.35
45	6.00
46	4.00
47	4.00
48	4.25
49	4.25
50	4.50
51	3.50
52	1.00
53	4.00
54	3.50
55	3.50
56	1.20
57	.15
59	.10

TRANSFORMERS

1-C	$20.00
2-A	20.00
3-A	15.00
5-D	20.00
7-A	20.00
9-A	15.00
19-A	20.00

Page 506

TRANSMITTERS

For Magneto and Common Battery Telephones

Code No.	f. o. b. Chicago, Ill.
22-C	$2.00
22-L	2.00
22-LC	2.00
23-C	2.00
23-L	2.00
105-L	2.00
105-C	2.00
105-LC	2.00

When mouthpiece is not desired, deduct 5c.

No. 64 Type—No Back But With Mouthpiece

Code No.	Price Each
32-C	$1.85
32-L	1.85
32-LC	1.85
64-C	1.85
64-L	1.85
64-LC	1.85

When mouthpiece is not desired, deduct 5c.

Grabaphone Type

Code No.	f. o. b. Chicago, Ill. Price Each
50-L	$2.25
50-C	2.25
50-LC	2.25
58-C	2.25
58-L	2.25
58-LC	2.25

Page 507

TRANSMITTERS—Continued

Operators

Code No.	Price Each
55-C With Cord	$2.50
55-L With Cord	2.50
55-LC With Cord	2.50
76-C Less Cord	3.75
76-L Less Cord	3.75
76-LC Less Cord	3.75
1076-C Less Cord	4.00
1076-LC Less Cord	4.00

Transmitter Backs

Piece No.	Price Each
5755	$0.15
10259	.15
27505	.15
29748	.15
34155	.15

Transmitter Adapters

5742	$0.10
6689	.25
8274	.15
8545	.25
33860	.20

Page 508

MOUTHPIECE TELEPHONE

Piece No.		Each
29779	Less than 50	$0.20
	50 to 200	.17
	200 and over	.15
34419	Less than 50	.20
	50 to 200	.17
	200 and over	.15
38191		.35
49363		.35

Operators

	Each
29776	$0.50

Receiver Shells

No.	Each
27944	$0.50
32307	.25

WEIGHTS—CORD

4	$0.40
6	1.25
7	1.00
8	1.00
9	.35
10	1.00

Notice!

This Condensed Apparatus Price List is based upon our Catalogue Number 7, which is a complete listing of all Kellogg products. If you do not have a copy of this catalogue, kindly advise us promptly so that we may send you one.

KELLOGG SWITCHBOARD & SUPPLY COMPANY

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San Francisco, Calif.
1054 Mission St.

Use—Is the Test