COMMON BATTERY TELEPHONES
BULLETIN NO. 91
1916

Printed in booklet form, 7.5 X 10 inches, gutter bound 16 pages on 20 pound coated stock using the letterpress method. This piece was two hole punched on the left side. Part of a catalog set containing 13 booklets and several single sheet brochures ranging in dates from 1914 to 1918 and bound under a separate hard cover using Chicago screws.

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COMMON BATTERY TELEPHONES

Bulletin No. 91
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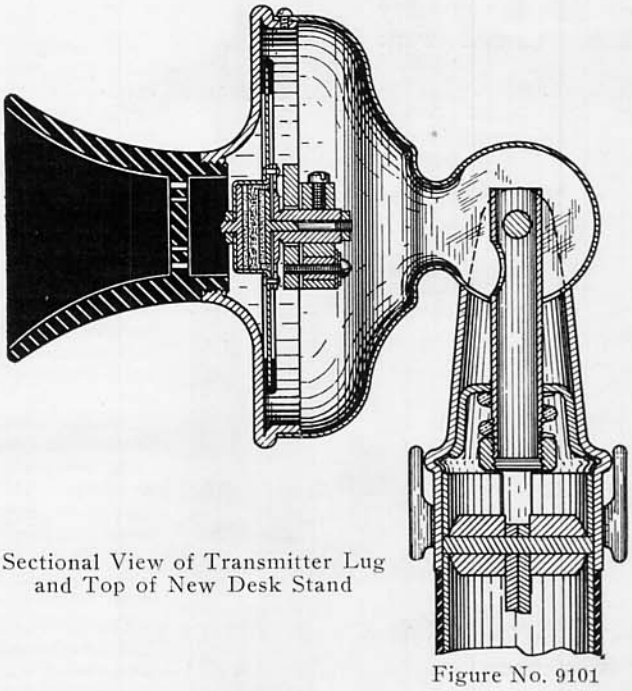
No. 97 C.B. Induction Coil-Condenser Desk Stand

Its Superiority Proved in Service Use is the Test

Kellogg Switchboard & Supply Co.
Chicago, Ill.

Kellogg No. 97 Common Battery Induction Coil—Condenser Desk Telephone



Sectional View of Transmitter Lug and Top of New Desk Stand

Figure No. 9101

In the construction of all our stands we use no castings of any kind. All metal parts are made from punchings of sheet brass, which not only insure greater strength but add greatly to the appearance.

We wish to call special attention to the design of the head and transmitter lug. These parts are made of heavy sheet brass drawn into the desired shape and cannot be broken with the roughest abuse. The transmitter back and lug is made in one piece which prevents any possibility of the transmitter working loose from the lug. These two parts—the head and lug—fit together in such a manner as to make a perfectly smooth joint which cannot bind or work loose. There are no screw heads, nuts or other projecting parts to catch the clothing. The construction of these parts is clearly shown in the sectional drawing.

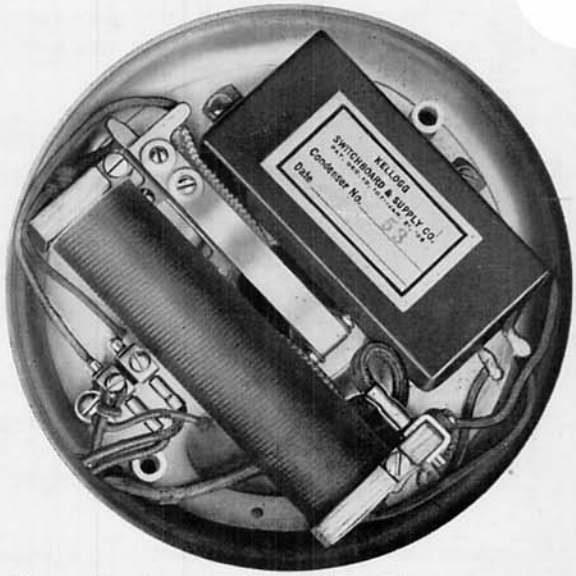


Figure No. 9102 Base No. 97 Desk Stand, showing accessibility of every part

Cross-Sectional View of Code No. 97 Desk Stand

A Transmitter head and lug punched from heavy sheet brass—unbreakable. Cannot work loose.

B Flexible stranded copper transmitter cords. Our cord manufacturing equipment is unsurpassed.

C Punched heavy brass hookswitch, nickel plated and polished, with correctly rounded edges that prevent cutting of receiver.

D Hookswitch proper (*C*) riveted to lever portion of switch.

E Heavy silver contact springs.

F Steel base, black enameled. Proper size and weight.

G Vertical steel band for holding base in position.

H Steel base plate covered with heavy green felt. Diagram of circuit on inner face.

J Buff Felt inserted at end of hookswitch lever, to do away with metallic sound when receiver is removed from and placed on the hook. Practical refinements that make for better telephony.

K Part of hookswitch lever from the toggle joint to the contact springs—brass, dull nickeled.

L Tubular standard of steel, with outside covering of polished hard rubber, or Kellogg Bakelite. Of proper height and proportion.

M Heavy steel spiral spring which keeps tension firm on transmitter. This spring is contained in a brass cap and below the spring is shown a steel ring for keeping the transmitter cords in place.

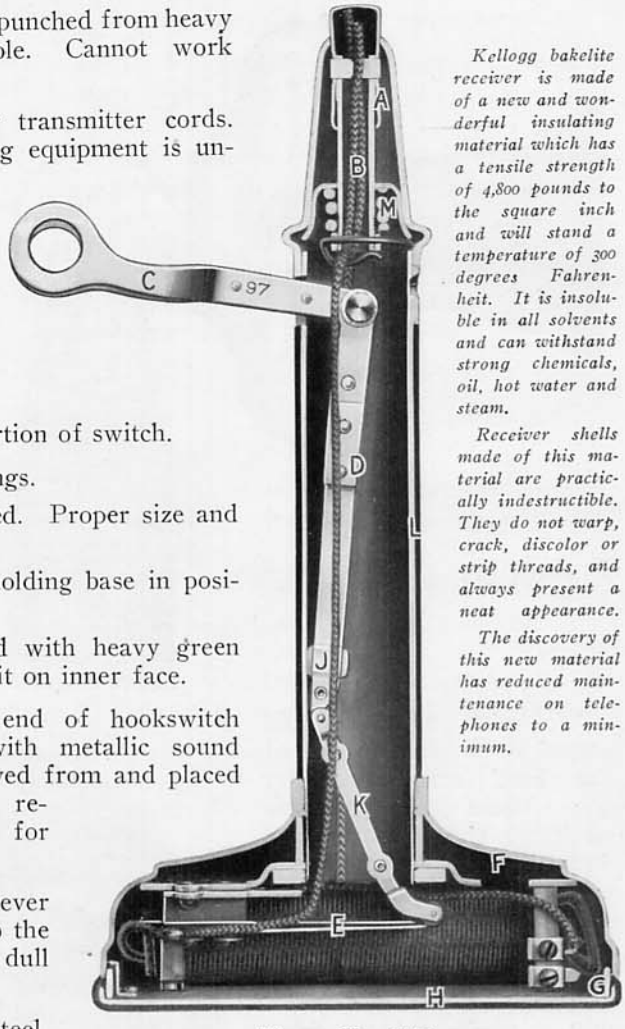


Figure No. 9103

Kellogg bakelite receiver is made of a new and wonderful insulating material which has a tensile strength of 4,800 pounds to the square inch and will stand a temperature of 300 degrees Fahrenheit. It is insoluble in all solvents and can withstand strong chemicals, oil, hot water and steam.

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

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

The Induction Coil Condenser Stand

Consider These Features

Two-conductor cord advantages with Kellogg:

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

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

1	2	3	
1	3	2	and five of
2	1	3	them are
2	3	1	*Wrong*
3	1	2	
3	2	1	

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

This statement is the result of actual commercial tests.

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

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

Kellogg Standard Receiver:

In receiver design, the Kellogg Company secures loudness and clearness of tone and perfect articulation. To secure loudness, the receiver is so arranged that the voice currents produce the largest possible movements of the receiver diaphragm in both directions from its normal position.

The Kellogg diaphragm is constructed of a special "ferrotype" metal, which is rust-proof and gives the most efficient service. The Kellogg receiver is described in great detail in our Magneto Telephone Bulletin No. 79.

The complete Kellogg receiver is assembled in the most rigid and substantial manner possible, within a durable containing case.

The Kellogg Company's receiver cord has been constructed with exceptional care. The entire cord is made with the same attention to detail as that with which the terminals are made and affixed, and a long life with freedom from cord troubles is the result.

Other Advantages:

No. 97 Stand is indestructible—repair parts unnecessary.
No rattle to hookswitch.
Weight is in the *right* place.
Accessibility and practicability in arrangement of apparatus in base of stand.
Absolutely unequaled transmission for either short or the longest distances.

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

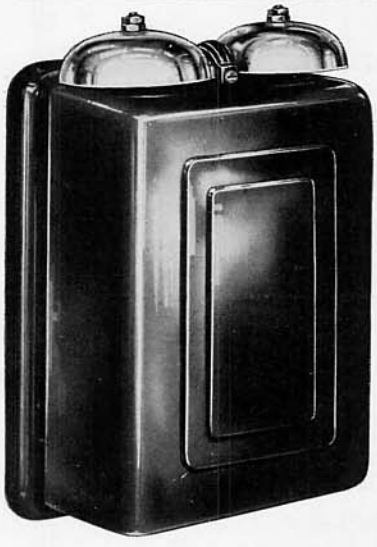


Figure No. 9104

Code No. 259 Desk Stand Box

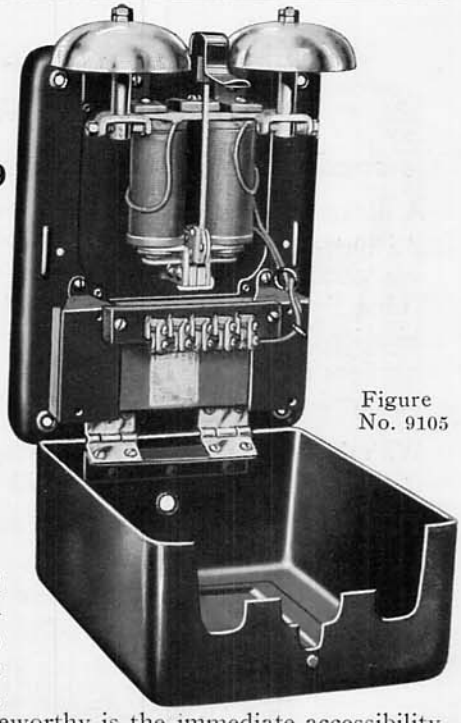


Figure No. 9105

Our Code No. 259 Enameled Steel Bell Box, shown above, is a very popular product of the Kellogg Company and owing to its appearance and advantage, has come into popular use on Common Battery lines.

One feature of it which is especially noteworthy is the immediate accessibility, the whole front cover swinging down as shown in the above illustration. This set can be made either 1st, 2nd or 3rd party by simply changing the armature, and can be made 4th party, straight line or biased by changing ringers. Wall Space, 6 x 7¾ inches.

CODE NUMBER	RINGER		CONDENSER		REMARKS
	Code	Resistance	Code	Capacity	
257	14A	1000	12	1 M. F.	Straight Line
258	14C	500	12	1 M. F.	Straight Line
259	26A	Harmonic	12	1 M. F.	33⅓—50—66⅔—16⅔
338	47A	Harmonic	12	1 M. F.	30—42—54—66

New Oak Desk Set Box

Harmonic and Straight Lines

Figure No. 9106

We show here the latest type oak bell box for common battery service. Light, compact, handsome in appearance. Can be furnished in special finish if desired. A very popular type of desk stand box. No. 347—No. 26 ringer. No. 345—No. 47 ringer No. 349—1000 ohm ringer.

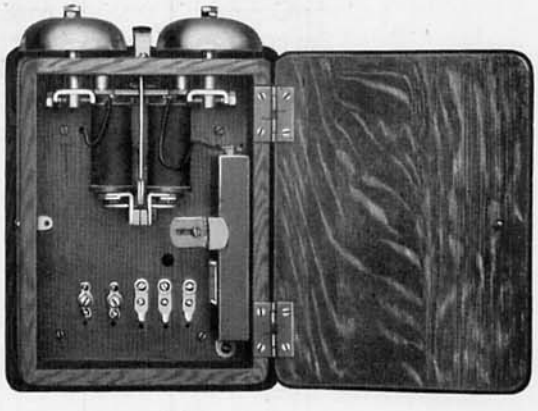


Figure No. 9107

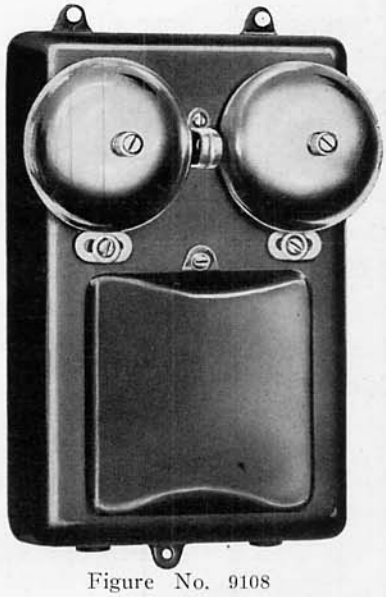


Figure No. 9108

Code No. 75 Desk Stand Box

We here present a type of desk set box, which is as neat and compact as could be desired. The box is made of steel and very shallow, thus permitting mounting in a narrow space, which makes it convenient for desk work.

By the removal of the front cover the binding posts and the ringer are exposed, making it convenient for placing cords and adjusting.

The list of code numbers on following page is for standard equipments carried in stock and can be shipped on short notice

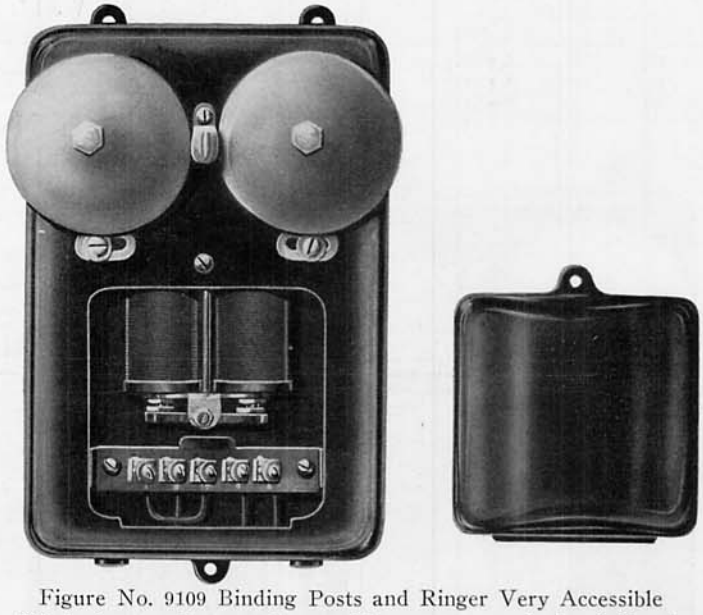


Figure No. 9109 Binding Posts and Ringer Very Accessible

Our No. 97 desk stand, together with any one of the following desk set boxes, will constitute a complete desk telephone.

CODE NUMBER	RINGER		CONDENSER		WALL SPACE
	Code	Resistance	Code	Capacity	
75	13A	1000 ohm	12	1 M. F.	5 x 7½ inches
80	13A	1000 ohm	16	2 M. F.	
81	13C	500 ohm	12	1 M. F.	
82	13C	500 ohm	16	2 M. F.	

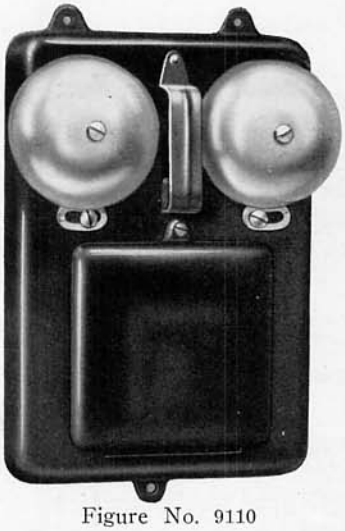
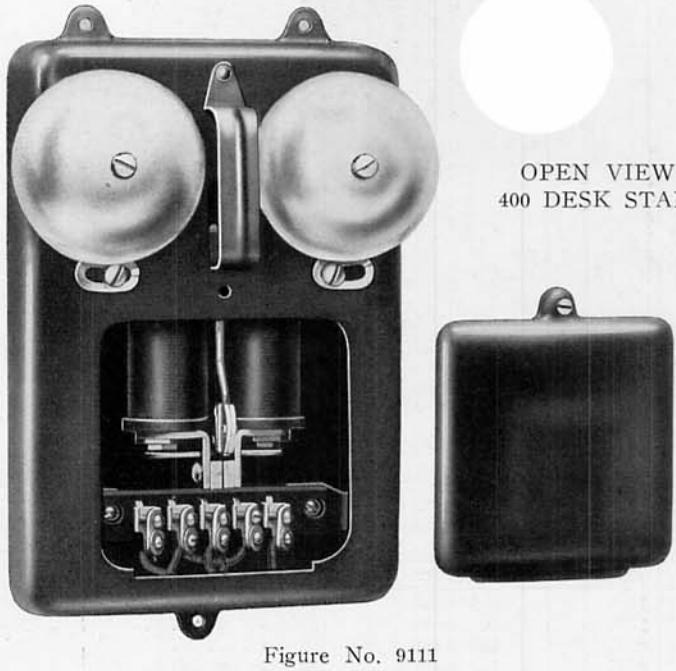


Figure No. 9110

Code No. 400 Desk Stand Box

The Code No. 400 Enameled Steel Desk Stand Box is the latest type of Harmonic Bell Boxes. It has the same equipment as contained in the No. 259 Box, but is very compact, occupying the same space as our No. 75 Box. This box is built to give long reliable service under severe operating conditions.

CODE NUMBER	RINGER		CYCLES	WALL SPACE
	Code	Resistance		
400	62A	4 party	33⅓—50—66⅔—16⅔	5 x 7½ inches
400A	63A	4 party	30 —42—54 —66	
400B	64A	2 party	20—60	



OPEN VIEW CODE NO. 400 DESK STAND BOX.

Figure No. 9111

Short Backboard Telephones

COMPACT

SYMMETRICAL

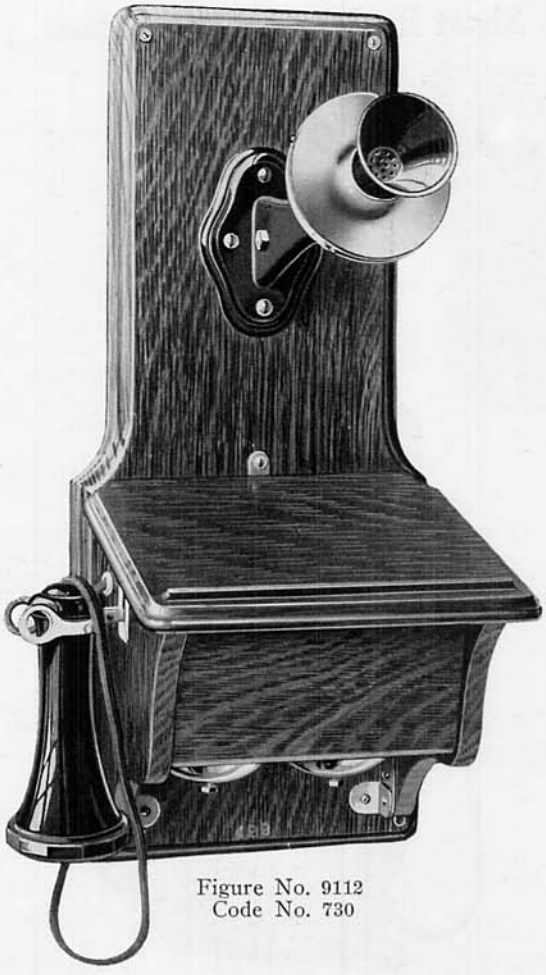


Figure No. 9112
Code No. 730

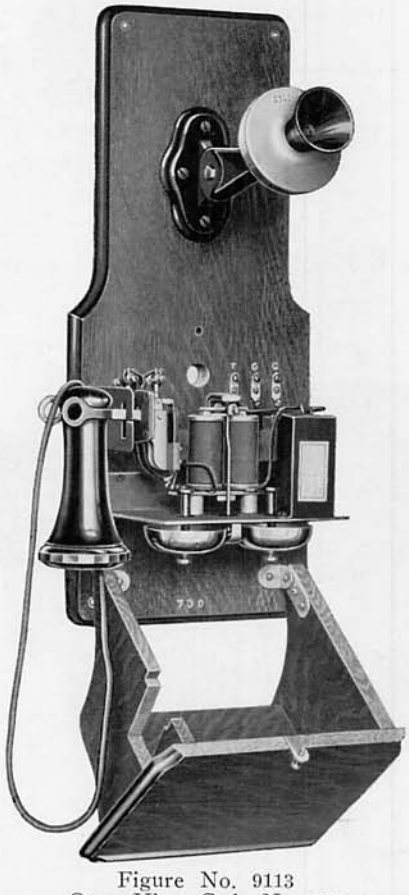
Many of our customers prefer a smaller, more compact wall set. To meet these demands we have the splendid, serviceable instrument shown in the accompanying illustrations.

This telephone, while very compact, provides sufficient room for the working parts.

Many of our large customers use this type of instrument exclusively where they previously used the long backboard type. To those requiring a wall set of small dimensions and yet one that contains the requisites necessary for good speech transmission, and reliable service, this telephone is strongly recommended.

Short Backboard Telephones

EVERY PART PRACTICAL



EVERY PART INSTANTLY ACCESSIBLE

Figure No. 9113
Open View Code No. 730

In this set 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 and thoroughly insulated.

Any desired equipment can be had in this style of telephone. We give on the following page a list of equipments.

Wall space occupied—8½x19 inches.

Short Backboard Telephones

CODE NUMBER	RINGER		CONDENSER		REMARKS
	Code	Resistance	Code	Capacity	
730	54A	1000 ohm	66	2 M. F.	Straight Line
741	33A	1000 ohm	66	2 M. F.	Biased
746	26A	Harmonic	66	2 M. F.	33⅓—50—66⅔—16⅔
745	47A	Harmonic	66	2 M. F.	30—42—54—66

Our experience and the manufacturing facilities and engineering talent at our command put us in position to furnish telephones for use with any standard make of common battery switchboard or for use in connection with any common battery four-party selective system now in service with any Independent operating company.

The Famous Kellogg Reverse Type Transmitter

CROSS SECTIONAL VIEW OF TRANSMITTER

OVER TWO MILLION OF ONE TYPE IN OPERATION TODAY

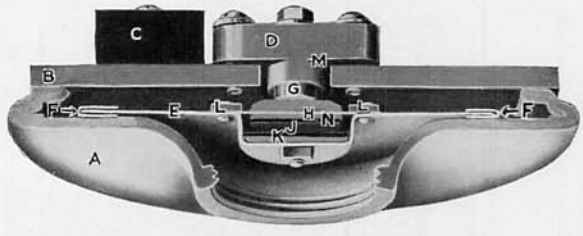


Figure No. 9114

A Transmitter front punched from heavy sheet brass; one piece.

B Transmitter bridge or solid back, dull nickeled.

C Hard rubber mounting block for terminal.

D Rear electrode block, brass, dull nickeled.

E Transmitter diaphragm, made of aluminum.

F Heavy white rubber gasket.

G Post of rear electrode fastened to rear electrode block by a set screw.

H Mica electrode diaphragm, fastened to aluminum diaphragm.

J Space for granulated carbons.

K Front electrode with highly polished carbon, fastened by screw and nut to diaphragm.

L Aluminum ring riveted onto the diaphragm, holding the mica diaphragm.

M Hard rubber insulation.

N Rear electrode with highly polished carbon.

The Kellogg Steel Residence Set

ORIGINALITY IN DESIGN

DISTINCTIVELY KELLOGG

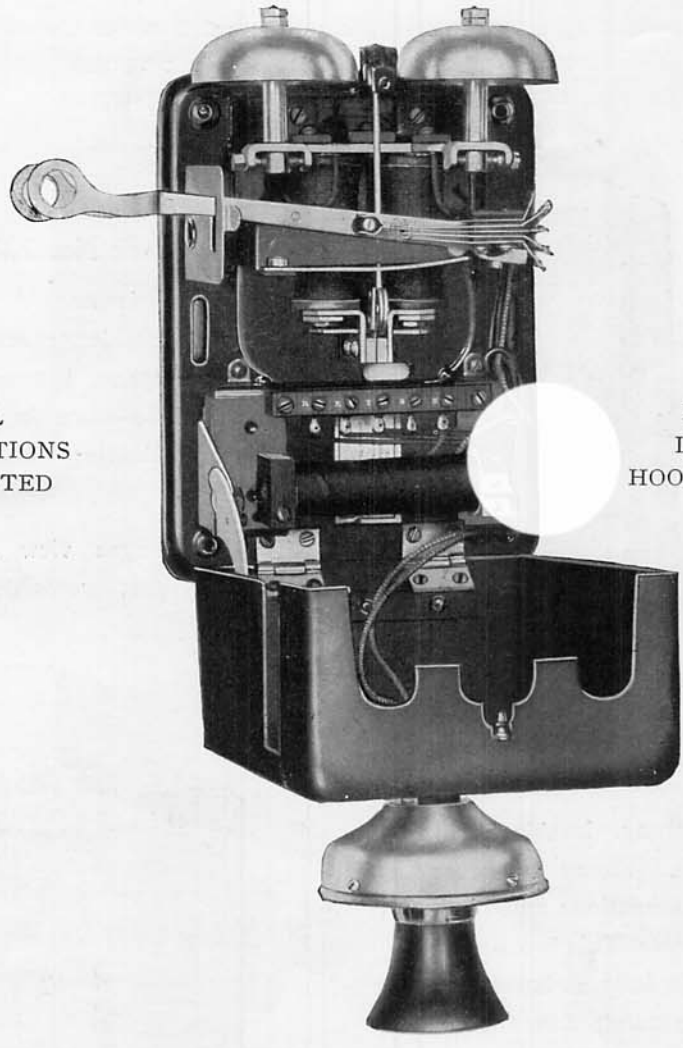
Figure No. 9115
Code No. 716

This Kellogg steel Residence Set is unique in that it can be used interchangeably as a party or straight line set and that it overcomes all of the objectionable features of other telephones.

The box consists of but two parts—back plate and cover—made entirely of mild planished steel, japanned finish; equipped with standard Kellogg apparatus.

Every part accessible. All parts exposed on opening door, thus facilitating work of making line connections and adjustment.

ALL
CONNECTIONS
INSULATED



LONG
LEVER
HOOKSWITCH

Figure No. 9116. Open View Code No. 716
Wall Space, 5¾x7¾ inches

This set is carried in stock with the following equipments:

CODE NUMBER	RINGER		CONDENSER		REMARKS
	Code	Resistance	Code	Capacity	
716	14A	1000 ohm	16	2 M. F.	Straight Line
742	33A	1000 ohm	16	2 M. F.	Biased
719	26A	Harmonic	16	2 M. F.	33⅓—50—66⅔—16⅔
727	47A	Harmonic	16	2 M. F.	30—42—54—66

Oak Residence Sets

For those desiring a wood residence set in preference to the steel, we have a number of different equipments. These sets are manufactured with the usual Kellogg skill and care and contain standard apparatus.

Figure No. 9117

Code No. 733

Here is an oak finish wood residence set, that is compact, trim in appearance—sure in operation, having standard parts.

The open view shows every part accessible with our strong, durable hookswitch. Plenty of room for connections and binding posts. This box on the wall is fully as handsome as our standard steel common battery set.

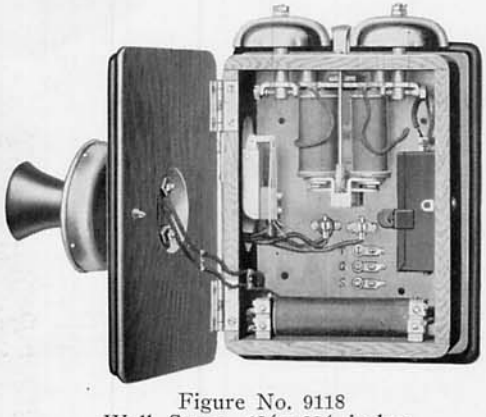


Figure No. 9118
Wall Space, 6½ x 8½ inches

CODE NUMBER	RINGER		CONDENSER		REMARKS
	Code	Resistance	Code	Capacity	
729	54A	1000 ohm	62	2 M. F.	Straight Line
738	33A	1000 ohm	62	2 M. F.	Biased
733	26A	Harmonic	62	2 M. F.	33⅓—50—66⅔—16⅔
734	47A	Harmonic	62	2 M. F.	30—42—54—66

Extension Bells

We carry a large and varied stock of extension bells and are prepared to fill promptly any and all requirements for this line of equipment. Our extension bells are made from the same material and after the same general plans as our desk set boxes, illustrated on the preceding pages. The only difference is in the number of binding posts, the extension bell requiring but two, the desk set box five.

In the following list are given the code numbers of some of the more commonly used extension bell boxes:

CODE NUMBER		RINGER		CONDENSER			
Oak	Steel	Code	Resistance	Code	Capacity		
	14A	13A	1000 ohm	12	1 M. F.		
	14B	13C	500 ohm	12	1 M. F.		
	15A	13A	1000 ohm	16	2 M. F.	See	
	15B	13C	500 ohm	16	2 M. F.	Figure	
	20A	19A	1000 ohm	12	1 M. F.	Number	Equipped with Cow Bell Gongs
	20B	19B	80 ohm	12	1 M. F.	9108	
	20C	19C	500 ohm	12	1 M. F.		
	20D	19D	1600 ohm	12	1 M. F.		
	42A	31A	4 party	12	1 M. F.		Harmonic
31A		17A	500 ohm	12	1 M. F		
31B		17B	1000 ohm	12	1 M. F.		
33A		17A	500 ohm	16	2 M. F.		
33B		17B	1000 ohm	16	2 M. F.		

Kellogg Bakelite

An ideal material has at last been found for the manufacture of receiver shells and mouthpieces. It is KELLOGG BAKELITE.

It will not discolor, crack or warp, is not affected by heat or moisture and will not break under unbelievably rough usage.

Continual handling tends to increase the polish and does not give it a fuzzy olive green color, as is often the case with hard rubber.

It is light in weight, will not burn when subjected to a flame.

KELLOGG BAKELITE receiver shells and mouthpieces are made to give indefinite service, thereby eliminating the expense due to the continual breaking of these parts made of other materials.

Write for Booklets on Kellogg Bakelite.

Figure No. 9119

Repeating Coils

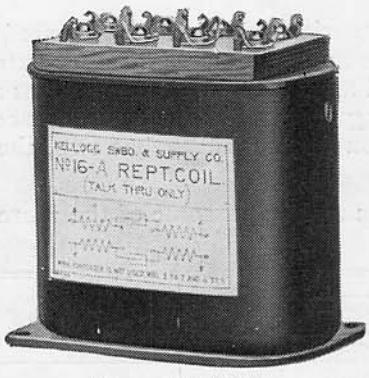


Figure No. 9120

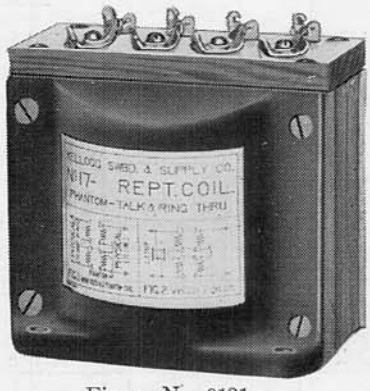


Figure No. 9121

One of the great advances in telephony of recent years is the improvement in repeating coils. Kellogg coils are properly designed and built, they have increased efficiency of transmission and effected material savings in construction.

The conditions under which repeating coils are used vary greatly according to local requirements.

The Kellogg Switchboard & Supply Company has recently developed two new repeating coils which meet all the requirements of modern telephone practice.

The No. 16-A repeating coil shown in Figure 9120 is the most efficient on the market for talking purposes.

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

No. 17-A coil shown in Figure No. 9121 is the ring-through type and is as efficient for talking as the No. 16-A type.

No. 17-A repeating coil has four parallel windings, 26 ohms to each winding.

Where it is necessary to use repeating coils in cord circuits, some thought should be given to the class of service in which they are used, as to whether the coil should be of the ring-through or non-ring-through type.

The No. 16-A type repeating coil is usually used to connect common battery lines to common battery, toll or magneto lines.

When local to toll cord circuits are arranged with keys to cut off battery for use on toll to toll connections the ring must be repeated in order to operate the ring off drop and a No.17-A coil should be used.

Where two well balanced metallic telephone circuits exist, Kellogg No. 17-A repeating coils make it possible to obtain a third circuit without stringing additional wires, which, under good conditions, is more efficient for transmission than either of the original circuits. The two original circuits are called physical or real circuits, and the third circuit, a phantom or derived circuit.

The introduction of repeating or retardation coils makes it possible to use the two wires of the first physical circuit for one wire or leg of the phantom circuit, and the two wires of the second physical circuit for the second wire or leg, thus obtaining a third circuit over which conversation can be carried without interfering with the conversation on the two original circuits.