KELLOGG SWITCHBOARD AND SUPPLY COMPANY
CHICAGO, ILLINOIS

Magneto Telephones Bulletin 38
1909

A 40 page bulletin detailing the instrument types available for magneto use. Also in this bulletin are detailed circuit drawings.This PDF is missing pages 1-2 and page 31 which were not present in the original used for scanning. The drawings that are numbered have also been added to the Kellogg drawings PDF.

Adobe Document Scanned and Produced by Mike Neale, Member of
Antique Telephone Collectors Association US
Telephone Collectors International US

www.kelloggtelephone.com
www.federaltelephoneradio.com
www.redbartelephone.com
www.selectophone.com
www.strombergcarlsontelephone.com

www.telephonecollectors.org

www.atcaonline.com

pressed beadings have been avoided as such are convenient receptacles in which dust and dirt accumulate and at the same time detract from the beauty of the set.

The wiring in a subscriber's set is one of the most vital features in the whole construction of a telephone. It makes no difference how perfect each piece of apparatus is, if the wiring is defective at any point the instrument is useless.

Wiring

Our instruments are wired with exceptional care by experienced workmen.

All connections between the various pieces of apparatus are made with tinned copper wire securely fastened at all junction points and, with the exception of the generator connections, carefully soldered. Any exposed wire on the inside of the telephone which might in any way be brought into contact with any other wire or any piece of apparatus is carefully insulated with waxed cotton sleeving.

All the wires on the backboard are sealed into grooves with beeswax, thus preventing the entrance of any moisture and at the same time giving a finished appearance to the back of the cabinet.

Inspection and Test

Upon the completion of the telephone, it is sent direct to the inspection department where each detail of manufacture is examined to see that every part is perfect and that each instrument is properly tested and adjusted for actual working conditions. Upon receiving the tester's O. K., it is securely packed in a strong box ready for shipment.

For detailed descriptions of the apparatus used in the manufacture of our magneto telephones see Bulletin No. 25 on Magneto Telephone Parts.

COMPACT TYPE TELEPHONE

The compact type of telephone is used to a greater extent than all other types of magneto telephones combined. The reason for this is that it satisfies a greater number of conditions than any other yet produced. The apparatus is easy of access, it is neat in appearance; its wiring is simple. As all the apparatus is enclosed in a single cabinet, it utilizes a comparatively small amount of space, as the name implies and is easy to handle and install.

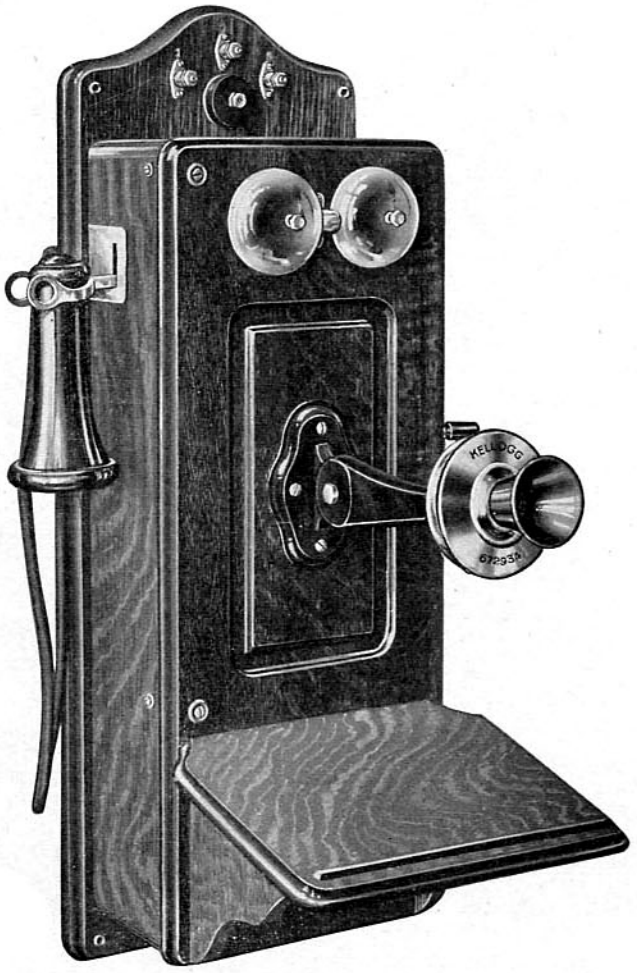


Figure 1

Appearance

Figure 1 gives a good idea as to the outside appearance of the set. All exposed metal work with the exception of the transmitter arm is nickel plated and polished. The arm has a black enamel finish and with the nickel plated screws and transmitter makes a very pleasing effect.

Arrangement of Equipment

An idea of the arrangement of the equipment in the interior of the instrument can be had by referring to Figure 2 which clearly shows each piece of apparatus as well as a portion of the wiring. The transmitter connections are made of stranded copper wire with a double insulation. These wires lead from the transmitter through the hollow arm to the inside of the door and here they are held in place by a suitable clamp.

Figure 2

From here one wire goes to one terminal of the battery and the other is soldered to a connector to which is already attached a wire that is carried through a slot in the backboard to the primary of the induction coil.

Note:—These compact sets are also made with all parts of the circuit highly insulated for use on lines near high tension circuits.

Transmitter Connections

In this way the hinges form no part of the talking circuit which is an important feature in the design of a telephone for the reason that a poor contact quite frequently occurs at this point. The presence of the hinges in the ringer circuit presents no serious obstacle to the high potential current such as is used for ringing.

Binding Posts

Any compact telephone can be furnished with the binding posts on the inside of the box or on the backboard above the box as specified by the customer. Unless otherwise specified all sets will be shipped with exposed posts.

Series Telephones

The compact series set is constructed with an 80 ohm ringer and a three bar generator and is used to a great extent on individual lines, the bridging sets replacing it in most instances for party line service.

Series Circuit

In Figure 3 we show a diagram of the wiring used in our standard series compact set. The various lines show the connections between the different pieces of apparatus; for example, the line numbered 44 represents the wire connecting the receiver binding post with the line binding post. The small simplified diagram is given so that one can see at a glance the circuit used, but does not show the actual wiring employed.

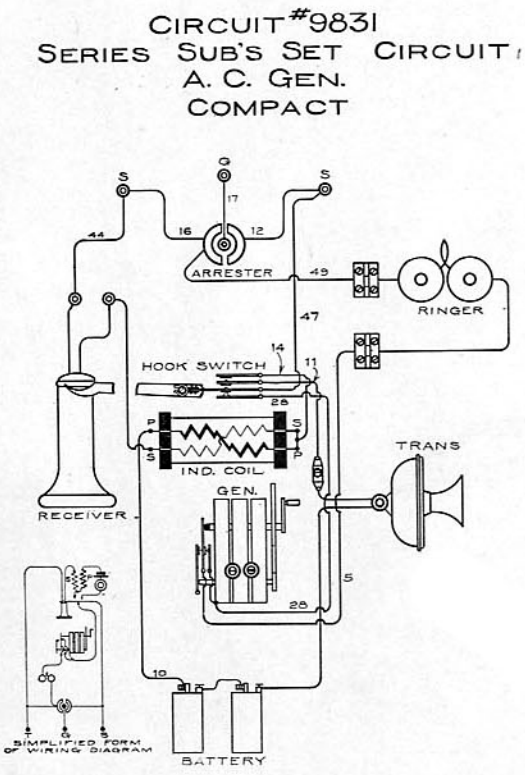


Figure 3

Size of Cabinet

While Figure 1 shows a four bar bridging set it also gives a very clear idea of the appearance of a series set, which is practically identical except that it contains a three in place of a four bar generator, the size of the cabinet remaining the same. When the five bar generator is required a cabinet is used which is identical in all respects except that it is one inch wider providing ample room for the larger generator. Fig. 2.

Bridging Circuit

The wiring of a standard bridging compact set is slightly different from that of the series set as will be noted by reference to Figure 4. The principal change is in the connection of the generator and ringer. It will be noted that upon turning the generator crank the ringer is automatically cut out of the circuit.

Condenser Punching

In all the sets wired with this circuit a condenser punching is provided so that a condenser can be installed at any future time without changing the

wiring of the set in any way. All that is necessary to install the condenser, is to remove the wires from the punching and connect them to the condenser terminals. This feature is considered by our customers to be a great convenience, as it allows them to install an ordinary condenser on the inside of the telephone cabinet, while with the ordinary telephone it is necessary to procure a special condenser and place it on the outside of the telephone or on the wall near by; in any event a poor looking job. This circuit is used by us in bridging subscribers' sets having three bar generators and 80 ohm ringers as well as five bar generators and 2500 ohm ringers and all intermediate equipments.

Equipments

The three bar, 80 ohm set is adaptable to individual lines where it has the advantage over the series set in that it does not ring its own bell in calling central.

The five bar generator and high wound ringer sets are admirably adapted for use on the longest heavily loaded farmers' lines, while a four bar, 1000 ohm set will work satisfactorily on a line of moderate length with 10 or 12 phones depending entirely upon the condition of the line.

CIRCUIT 9818
BRIDGING SUB'S SET CIRCUIT
COMPACT

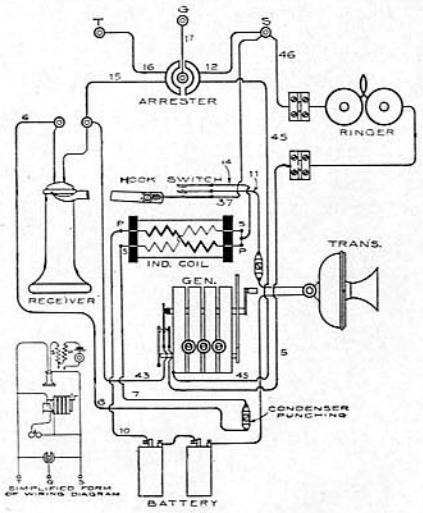


Figure 4

It frequently happens that on heavily loaded lines some party fails to hang his receiver on the hook. This not only allows the batteries to run down but leaves the receiver bridged across the line in series with the secondary of the induction coil.

This forms a very low resistance path for the generator current, consequently such a small portion of the same passes through the ringers of the other telephones on the line that they fail to respond. To overcome this difficulty we have made use of the fundamental principle of electricity—that a condenser offers a small resistance to high frequency alternating current and a high resistance to a low frequency alternating current—and placed a low capacity condenser in the secondary circuit.

Use of Condenser

This offers ample resistance to the low frequency ringing current to cause a sufficient flow through the ringers to operate them satisfactorily and at the same time the resistance offered to the high frequency talking current is negligible.

A simplified diagram of such a circuit is shown in Figure 5.

The actual wiring of the set is the same as shown in Figure 4 with a condenser inserted in the place of the condenser punching.

Bridging Circuit with Condenser

In rural telephone service it has always been considered, that, to be able

Secret Signals on Metallic Lines

to ring central without ringing the other parties on the line and to ring any party on the line without ringing central, is a great advance in the art. The Kellogg Company has devised such a scheme which is so simple that it adds but slightly to the cost and complication of the instrument. Its small cost and positive action recommends it to any one desiring this class of service.

Connections to Line

This scheme is for use on metallic lines only. In addition to the two line wires a ground connection is provided at each telephone as indicated in Figure 6 which shows the complete system with four telephones connected. With this type of telephone it will be noted that the left post is connected to the sleeve and the right post to the tip of the line which is just the reverse arrangement used for standard instruments. This arrangement is used to avoid complications in the wiring of the set.

Grounding Key Circuit

The diagram of the circuit employed in wiring these telephones is shown in Figure 7. The only piece of apparatus required in addition to that used in a standard bridging telephone

CIRCUIT #9819
BRIDGING SUB'S. SET CKT.
A.C. GEN. & COND. IN SECONDARY
COMPACT

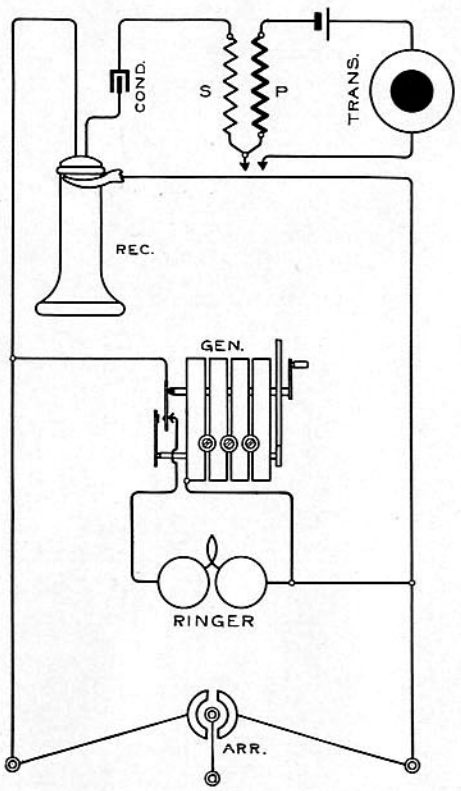


Figure 5

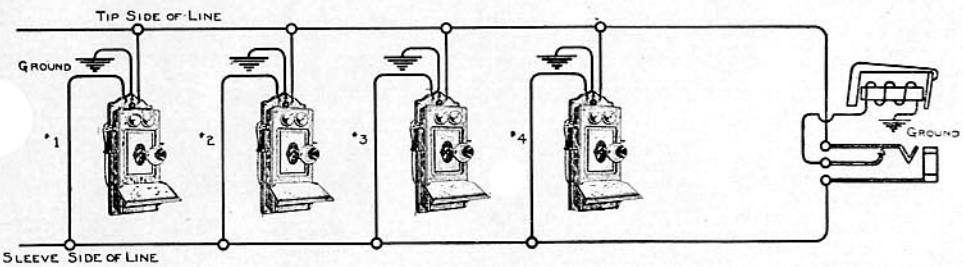


Figure 6

is the grounding key. Normally the generator is bridged across the line through the break contact in the grounding key.

To ring any party on the line, all that is necessary is to turn the generator crank using the proper code of rings. This will not affect the drop at the switchboard as it is connected to ground from one side of the line.

When the subscriber desires to call central, he presses the grounding key which completes a circuit through the swichboard drop and at the same time breaks the circuit with the other telephones on the line. Now upon giving the generator a turn the drop is thrown and the other parties on the line are not aware of the fact.

Grounding Key Telephone Equipments

This type of telephone can be furnished with any size generator or any resistance ringer, the same to be determined by the conditions to be met, as in standard bridging sets.

CIRCUIT #9827
BRIDGING SUB'S SET CIRCUIT
A. C. GEN.-GROUNDING KEY
COMPACT

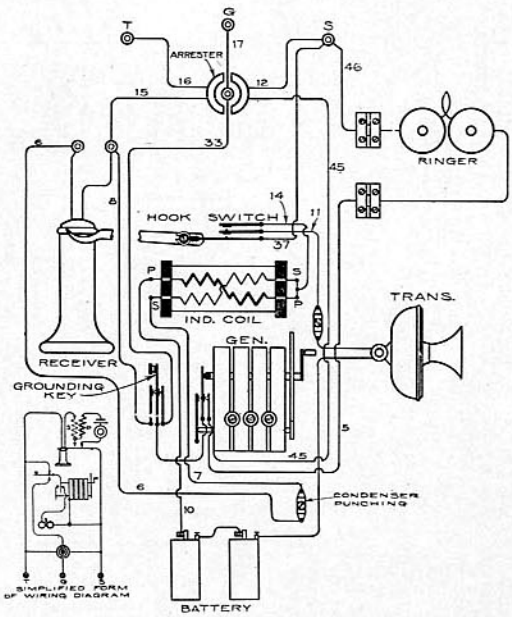


Figure 7

Grounding Key and Condenser Circuits

Should the additional feature of the condenser in the secondary be desired the same can be readily furnished as this is a popular equipment with many of our customers. Figure 8 shows a simplified diagram of the circuit using the condenser, while the actual wiring of the set is the same as shown in the preceding figure with condenser punching replaced by the condenser.

Equipping Old Telephones with Grounding Key

It frequently happens that a telephone company desires to change some of their old bridging instruments for use with a grounding key. It would require considerable work to install this key in the telephone in the manner that it is done in the factory, but we have designed a key mounted in an oak block together with all the necessary wiring (code No. 6 push button) for making the changes. (See Fig. 9.) No change will be required in the telephone whatever. The method of connecting is shown in the accompanying diagram. (Fig. 10.)

Secret Signals on Grounded Lines

To obtain these same features—ringing secretly of central and the subscribers on the line—in a telephone to be used on a grounded line is a very much more difficult undertaking than it was for a

CIRCUIT *9828
BRIDGING SUB'S. SET CKT.
COND. IN SECONDARY & GRD. KEY
COMPACT

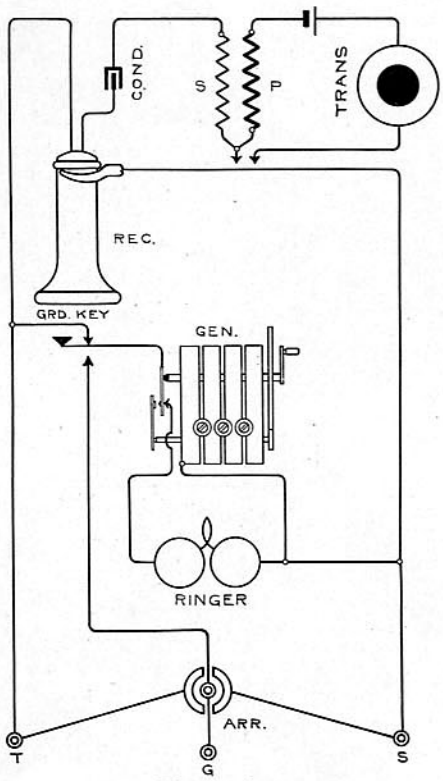


Figure 8

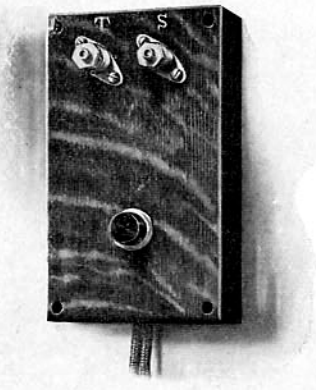


Figure 9

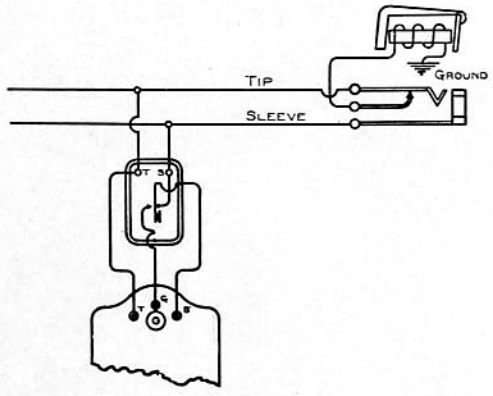


Figure 10

metallic line. As yet we have not been able to devise a scheme that we consider would be entirely satisfactory for this class of service due to the complication necessary at the switchboard.

Conservative Policy of Kellog Company

We are aware that several manufacturers are placing such apparatus on the market, but as the policy of this company is to furnish only such equipment as will work with entire satisfaction under most trying conditions, we have deemed it advisable to make none of this type of equipment until a higher state of perfection has been attained.

Pulsating and Alternating Current Telephones

However, we manufacture a telephone with which central can be called secretly and also the parties on the line can be called, but in doing this the switchboard drop is operated. The operator can usually tell if a party on the

CIRCUIT #9830
BRIDGING SUB'S. SET CIRCUIT
P. & A.C. GEN. RINGER PERMANENTLY BRIDGED
COMPACT

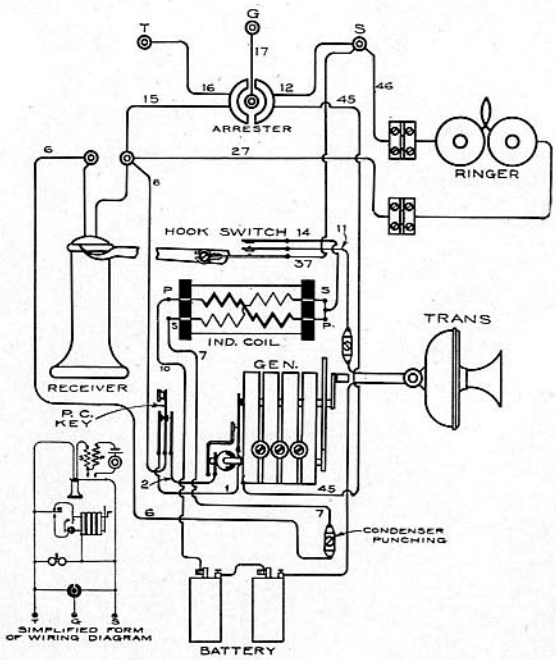


Figure 11

line is being called by the number of rings and consequently restores the drop without listening in. To aid in discerning a coded call we manufacture a combined ringer and drop for use on such lines. For descriptions and cuts of the same we refer the reader to our Bulletin No. 9.

Operation of P. and A. Telephone Circuits

The wiring used in this type of set is shown in Figure 11. The peculiar feature in this equipment is in the construction of the generator. This is de-

signed to give both alternating and pulsating current. The alternating current is used for ringing other parties on the same line and is normally connected. To call central the subscriber presses the key which connects the pulsating current to the line. This will operate the drop but will not affect the ringers on the line as they respond only to alternating current. The pulsating current tends to pull the tapper over in the same direction all the time and as it is held over to the proper side by a small spring there can be no action.

CIRCUIT *9829
BRIDGING SUBS. SET CKT.
PULS. & A.C. GEN. - COND. IN SECONDARY
RINGER PERMENANTLY BRIDGED
COMPACT

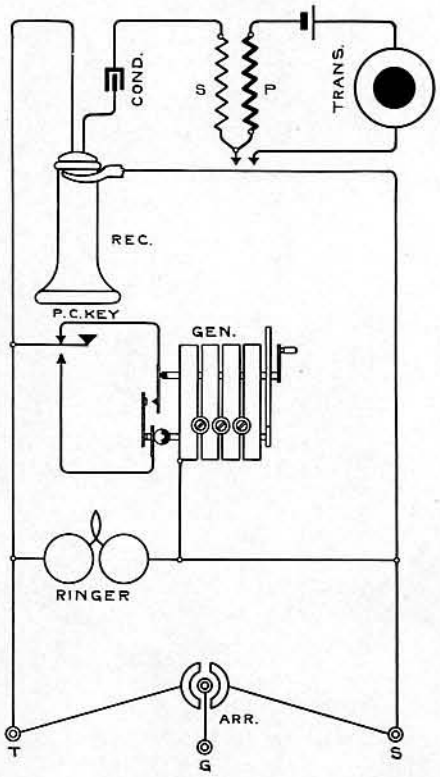


Figure 12

Equipped with Condenser

These sets can be provided with any desired equipment. The condenser can be used to advantage in this type of telephone and a sketch of the circuit for the same is shown in Figure 12 and for the actual wiring reference can be made to the preceding diagram.

Central Checking Telephones

Some telephone companies desire to give service in which the subscribers on a line are not permitted to call one another but must first call central and she will call the desired party in the usual way. A telephone to satisfy this class of service is equipped with a generator producing pulsating curent only. This will cause the drop at central to fall but will not affect the ringers on the line for the reasons set forth in the preceding paragraphs. Instruments of this type are frequently spoken of as "central checking telephones."

CIRCUIT 9822
BRIDGING SUB'S. SET CIRCUIT
P. C. GEN. RINGER PERMANENTLY BRIDGED
COMPACT

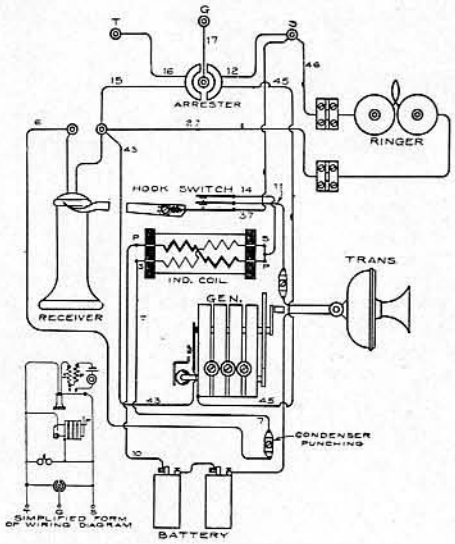


Figure 13

This set can be furnished with any desired equipment. In Figure 14 we show a simplified diagram of the circuit for this kind of telephone equipped with a condenser in the secondary circuit.

The code system of ringing telephone bells is one of the disagreeable features of party line service. Many times the wrong party answers the call due sometimes to careless ringing and other times to a misunderstanding of the signal. In any event some one is apt to lose his temper. To overcome this trouble we have devised several selective ringing systems for magneto exchanges.

Pulsating Current Generator

In Figure 13 we show a wiring diagram of such a telephone. It will be noted that it is very similar to the standard bridging circuit shown in Figure 4, the only difference being that the ringer in the latter circuit is not cut out by the generator shunt for the reason that the subscriber is not able to ring his own bell due to the fact that his telephone is equipped with a pulsating current generator.

CIRCUIT NO. 9823
BRIDGING SUBS. SET CKT.
PULS. GEN-COND. IN SECONDARY
RINGER PERMANENTLY BRIDGED
COMPACT

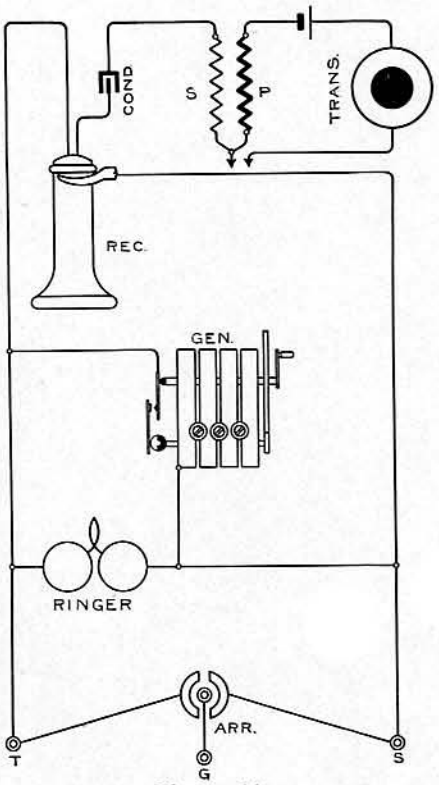


Figure 14

Equipment

Selective Ringing

Two Party

Our two party system is extremely simple employing the divided circuit scheme as illustrated in Figure 15. In this diagram a "master key" common to all the ringing keys in an operator's position, is used for switching the generator to either side of the line. To ring the first party the operator connects the generator to the tip side of the line by means of her "master key" and rings in the usual way. This causes the ringing current to flow over the tip of the line through the ringer, in the first party's telephone to ground. It will be noticed that the binding posts of the second party's instrument are connected to the line in the opposite way from those of the first party—that is, the tip post is connected to the sleeve instead of the tip side of the line, etc.

Master Key

Divided Current

Any number of telephones may be bridged across the line with one-half of the ringers connected from either side of the line to ground. By this

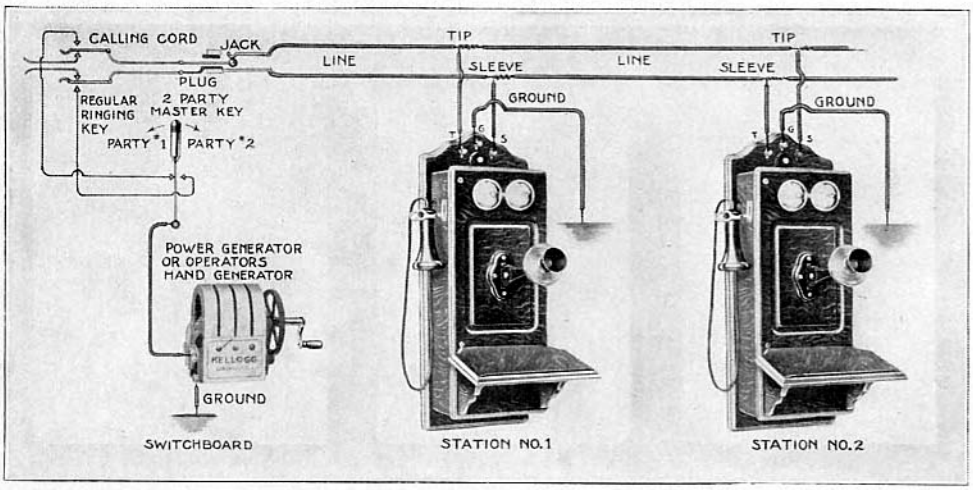


Figure 15

divided circuit arrangement only one-half of the subscribers will be disturbed when a party is signaled, which for a heavily loaded line is great advantage.

A. C. Generator

In Figure 16 we show the wiring diagram of a regular two party set with an alternating current generator and in Figure 17 we show a simplified diagram of a circuit for the same type of set equipped with a pulsating current generator. Either set is equally satisfactory for this service and can be furnished with any desired equipment.

P. C. Generator

CIRCUIT #9824
BRIDGING SUB'S. SET CIRCUIT
A. C. GEN.– 2 PARTY
COMPACT

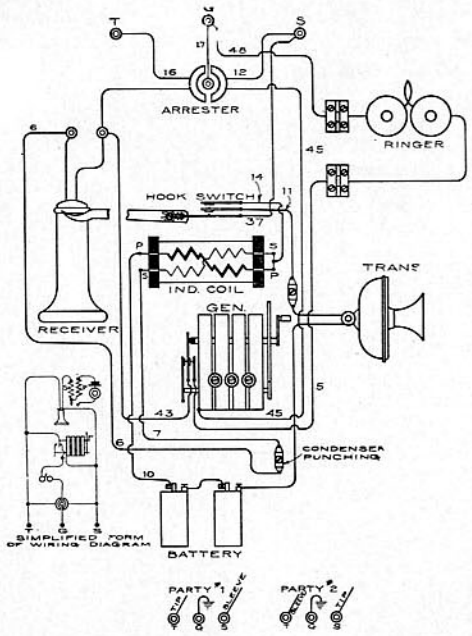


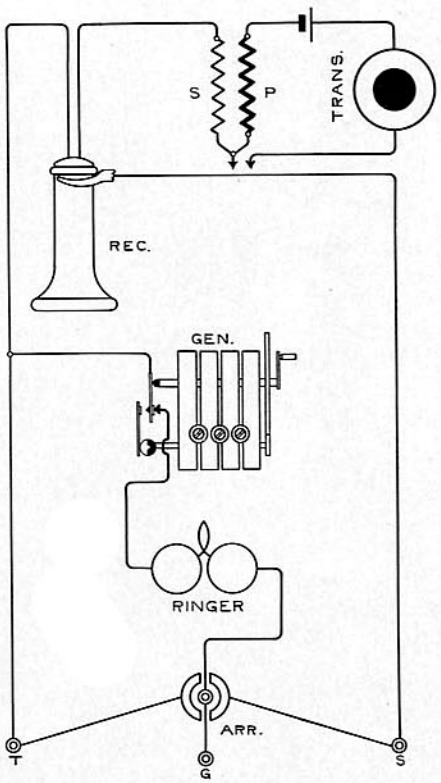
Figure 16

This ringer is preferably wound to a resistance of 2,500 ohms, and is provided with an adjustable biasing spring to hold the armature against one of the pole pieces, thereby making it possible to ring only the bell with the right polarity of current, the wrong polarity simply tending to attract the armature of the ringer in the same direction as the tension of the biasing spring.

Four Party Selective System

Referring to Figure 18 which shows a complete diagram of our four party selective ringing magneto system, it can be seen that each subscriber's instrument consists of a regular talking circuit, differing in no way from that of the standard bridging subscriber's set, and a signaling outfit which consists of a bridging generator with an automatic switch to cut it out of circuit when not in use, and a special high wound ringer.

CIRCUIT #9825
BRIDGING SUBS. SET CKT.
PULS. GEN - 2 PARTY
COMPACT



Biased Ringer

Figure 17

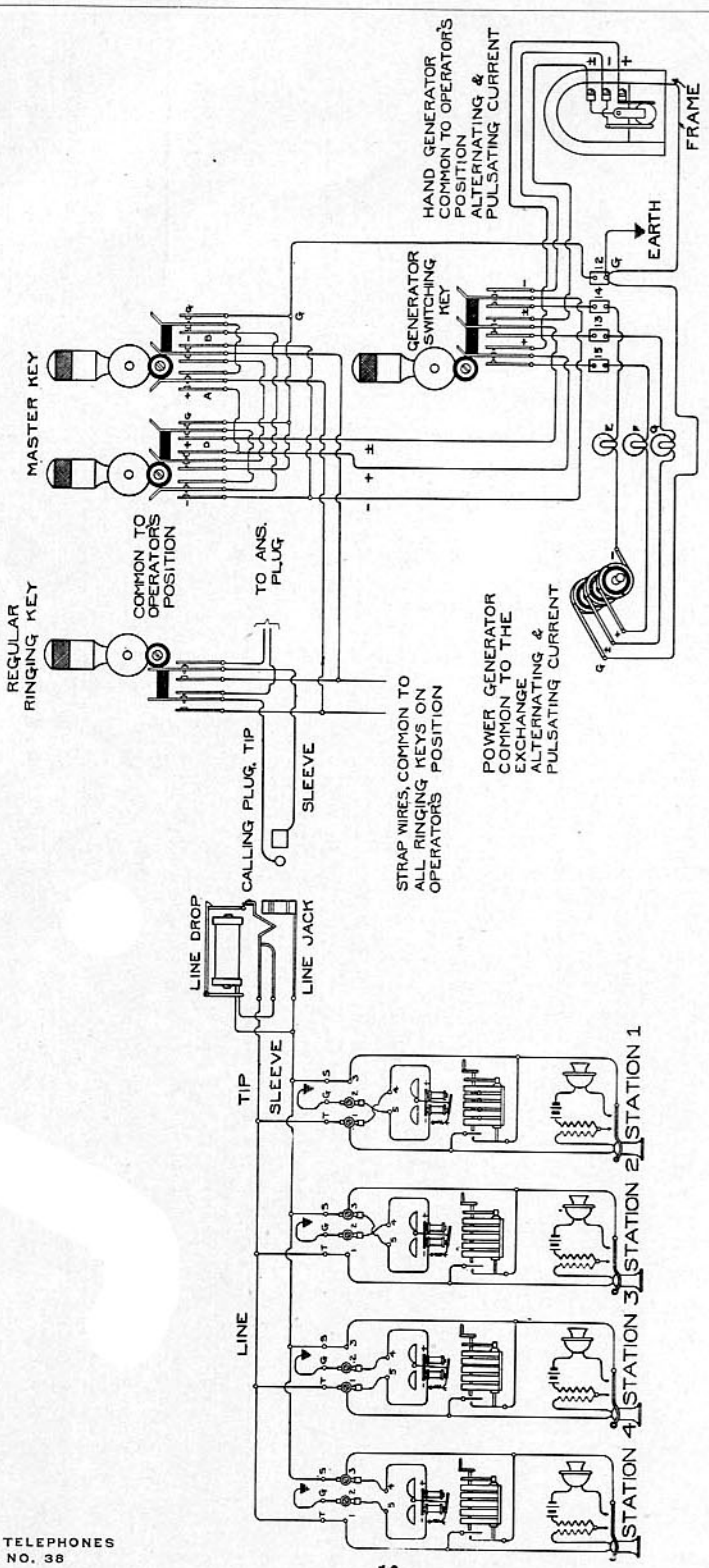


Figure 18

Complete diagram of Kellogg Four Party Magneto Selective Ringing System.

Switching Device

In order to make the telephones interchangeable as regards the station, the ringer is provided with a switching device. This consists of two cords with tips Nos. 4 and 5 attached to the ringer terminals and three binding posts Nos. 1, 2 and 3 arranged to hold these tips. Thus to adapt a telephone to serve for any of the four stations, these cords are connected as per a printed code, which is supplied with each instrument. Figure 19 clearly shows the proper connections for each of the four parties as well as the wiring of the set.

Connection to Line

The selective telephones should always be connected to the line wiring in the same manner, i. e., by connecting the left hand binding post to the tip side and the right hand binding post to the sleeve side of the line circuit and the middle binding post to "ground," which latter can be a water pipe or regular ground rod of iron driven into a place where it will be in contact with moist earth during the entire year.

Two Party on Grounded Line

These sets have been used to a large extent for two party service on a grounded line. For this work the first and third party are used, connecting the sleeve binding post as well as the middle binding post to ground.

Condenser

These telephones can be furnished with a condenser in the secondary circuit the same as in the other bridging telephones described. (See Figure 20)

Line Drop

Selective party lines should terminate at the exchange switchboard in low wound line drops arranged to be cut out of circuit when the plug is inserted in the corresponding spring jack.

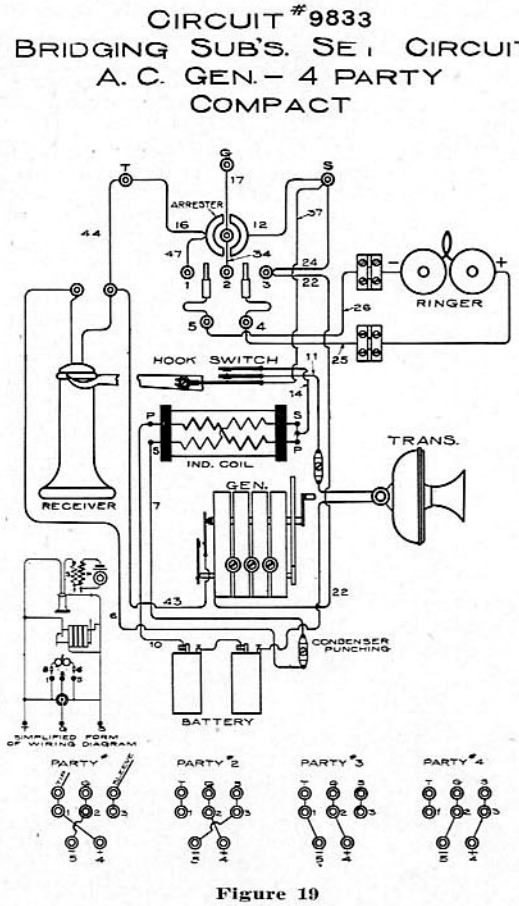


Figure 19

The function of this low wound drop is to consume enough current from the generator of a party calling the exchange so that the other ringers on the same line will not operate and as far as disturbance from signaling is concerned, each party will have the same advantage as on an individual line.

Besides the low wound drop for each party line it will be necessary to

supply the switchboard with generators capable of giving positive (+) and negative (—) pulsating current for selecting purposes in addition to the alternating (⏦) current used for regular ringing and master keys common to each operator's position to switch the different generator currents to the regular ringing keys. Figure 18 shows the complete wiring of this exchange apparatus.

Switchboard Equipment

To call a subscriber on any one of these party lines the operator first sets the master key to correspond to the party desired, and with the plug inserted in the line jack of that circuit, she rings with the regular ringing key in the usual manner. The operation of the master key simply switches the generator current required, to operate the desired station, to the strap wires, which are common to all of the keys in an operator's position, so that any cord circuit can be used in calling. When the levers of the master key are in an upright position, alternating generator current is on these strap wires, so that the switchboard can be operated for regular service.

CIRCUIT #9834
BRIDGING SUB'S. SET CKT
4 - PARTY
COMPACT

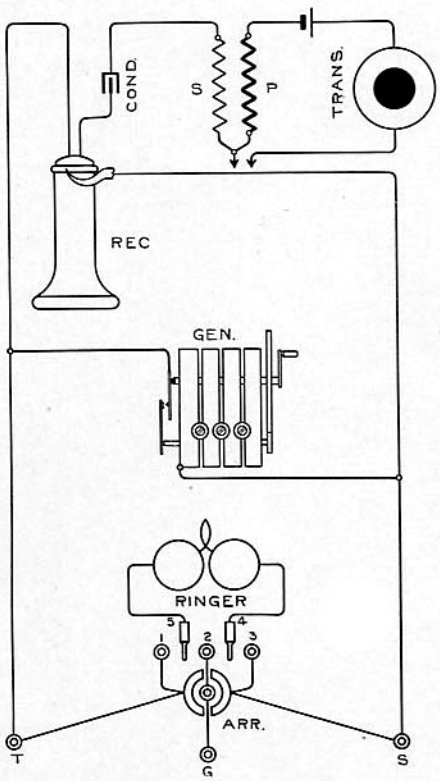


Figure 29

Since the introduction of the Harmonic System of selective ringing for Common Battery Systems by us several years ago, there have been many important changes made in the system of supplying ringing current, so that it is now possible at a small expense to install what is called a Frequency Pole Changer which will supply ringing current of different frequencies in the same manner in which our original multi-cicle ringing machines were used for large Common Battery installations.

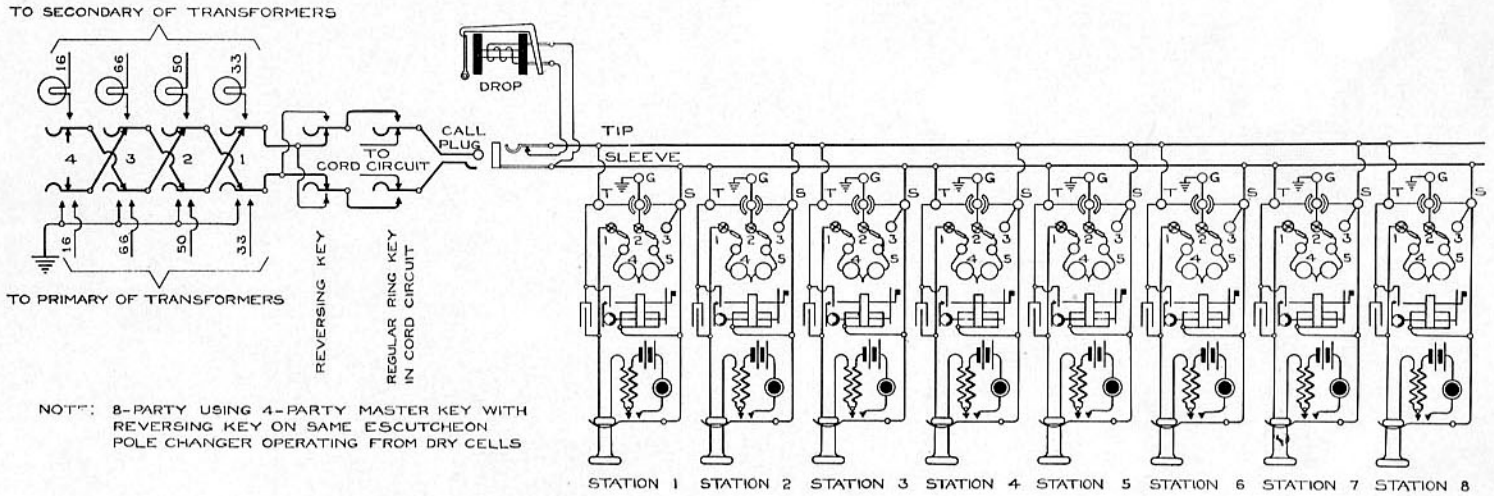


Figure 21

By this system it is now possible to furnish selective eight party service on Magneto lines by wiring the ringers of four telephones from each side of a metallic line to ground. In Figure 21 is illustrated an eight party circuit showing the wiring of the telephones in connection with the line; also the wiring of the ringing circuit at the exchange. For a complete description of the exchange equipment and wiring see Bulletin No. 26.

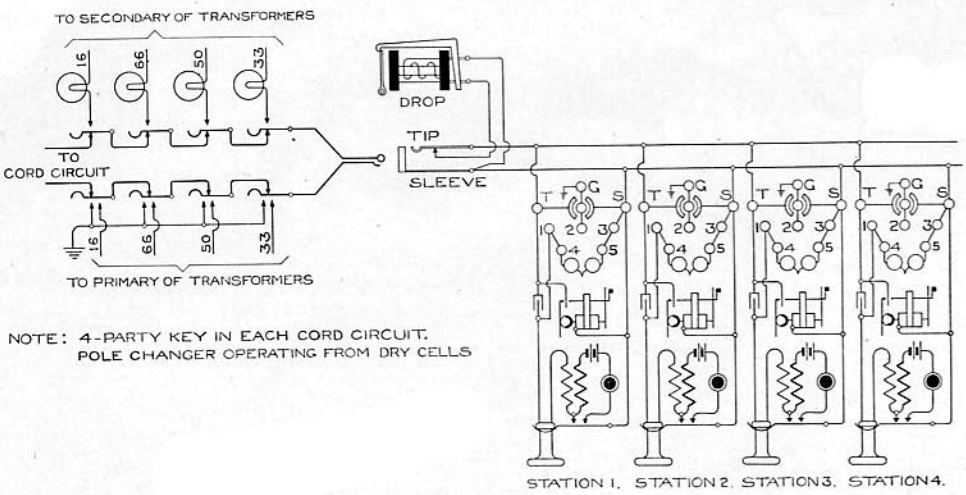


Figure 22

CIRCUIT NO. 9832
BRIDGING SUB'S SET CIRCUIT
A. C. GEN. 4 & 8 PARTY HARMONIC
COMPACT

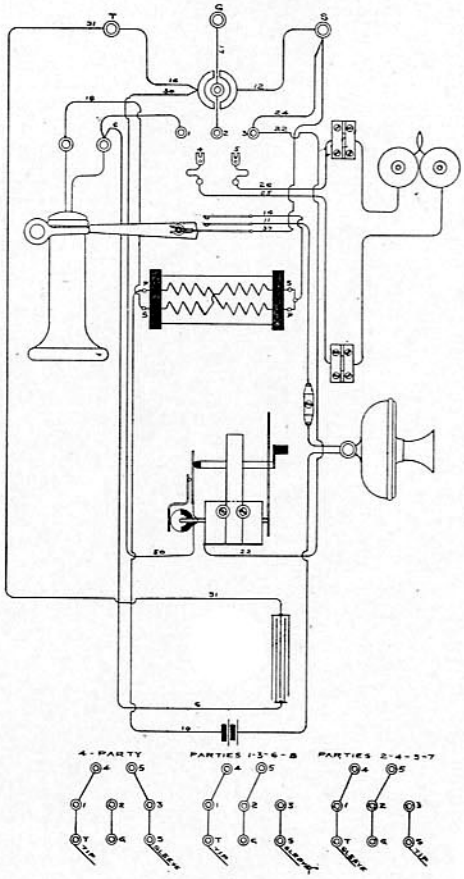


Figure 23

Circuit and Connections

In Figure 22 a circuit of the connections for a four party system is shown in which the ringing as well as the talking circuit is metallic. A wiring diagram of our four or eight party frequency selective ringing telephone is shown in Figure 23. This diagram includes the plan of connections for either four or eight party service.

Ringer

The distinguishing feature in this telephone is the construction of the ringer which is especially designed to respond only on a current of a fixed frequency. For a complete description and illustration of this ringer see Bulletin No. 26.

COMMON BATTERY TYPE MAGNETO TELEPHONES

General Appearance

Our Common Battery Type Magneto Telephones have met with considerable favor with many of our custumers. This instrument as the name implies is made to have the appearance of a regular common battery instrument. The accompanying illustrations show very clearly the appearance as well as the interior equipment of this set. (Figures 24 and 25.)

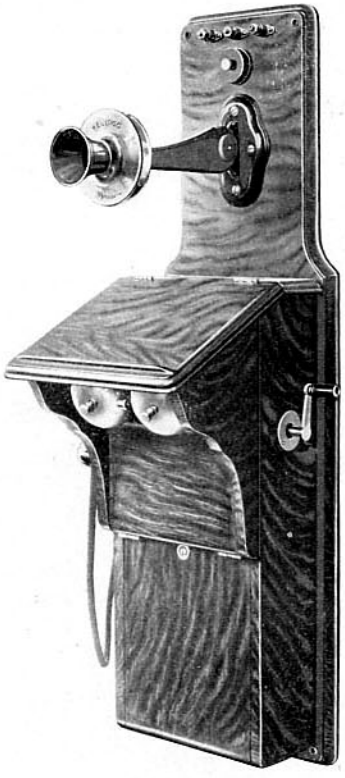


Figure 24

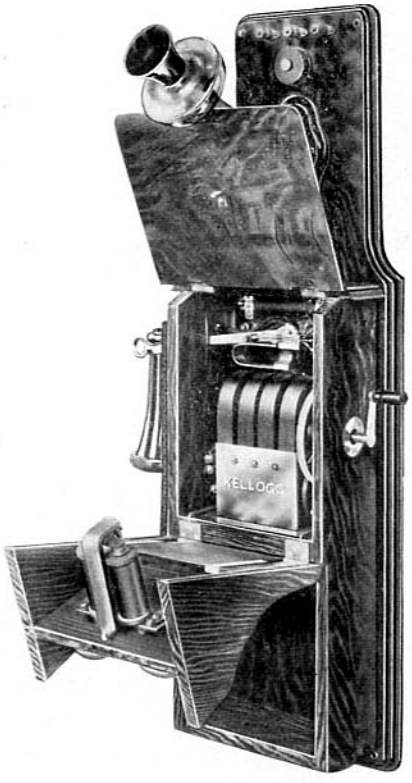
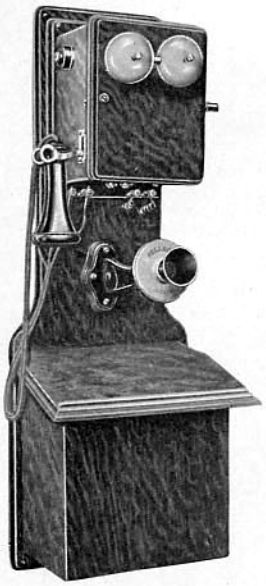


Figure 25

Series or Bridging

This type of instrument can be furnished in either series or bridging. The bridging type can be had with any desired equipment. These sets are wired by the same circuits as the compact sets just described.

DOUBLE BATTERY BOX TELEPHONES



Removable Battery Box

Figure 26

Our double battery box type telephones, as shown on this page are the standard for wet battery instruments. They are manufactured with the same care and from the same apparatus as used in all Kellogg telephones. The magneto box contains the generator, induction coil, ringer and hookswitch and is so designed that it can be easily removed from the backboard without unsoldering any connections. (Figures 26 and 27.)

The battery box is also easily removed exposing the batteries for inspection. They rest on a metal shelf fastened to the backboard. Dry cells may be used with this telephone if desired.

Equipment

The instruments can be furnished in either bridging or series as desired. The bridging set will be furnished with either three, four or five bar generators and any ringer resistance specified. The wiring for the series set is shown in Figure 28 which is the same as for the compact series instruments except that it becomes necessary to furnish transmitter and battery binding posts since this equipment is not contained in the same cabinet with the rest of the equipment. Figure 29 shows the wiring for a regular bridging subscriber's set and Figure 30 shows the wiring and connecting diagrams for a four party pulsating selective system.

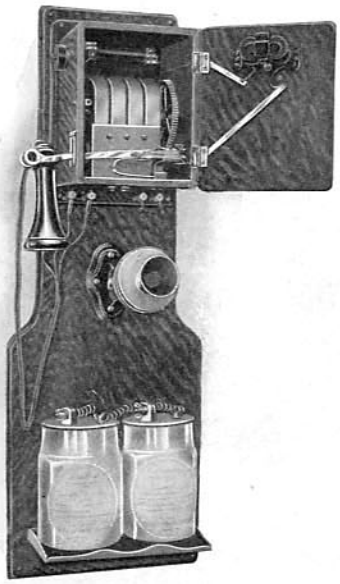


Figure 27

CIRCUIT #7278
SERIES SUB'S SET CIRCUIT
REGULAR

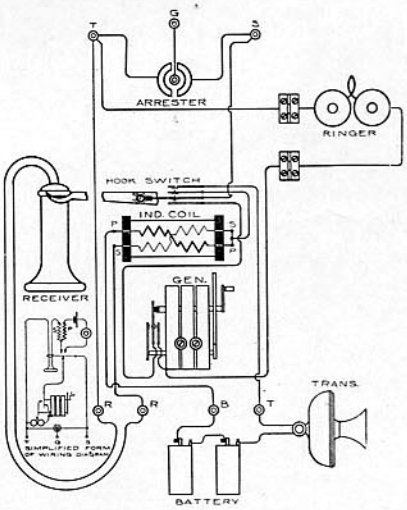


Figure 28

CIRCUIT #751
BRIDGING SUB'S. SET CIRCUIT
4 PARTY PULS.

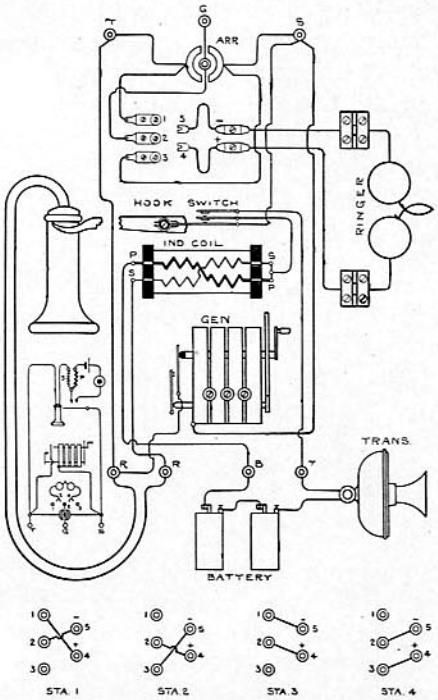


Figure 30

CIRCUIT #2482
BRIDGING SUB'S. SET CIRCUIT
REGULAR

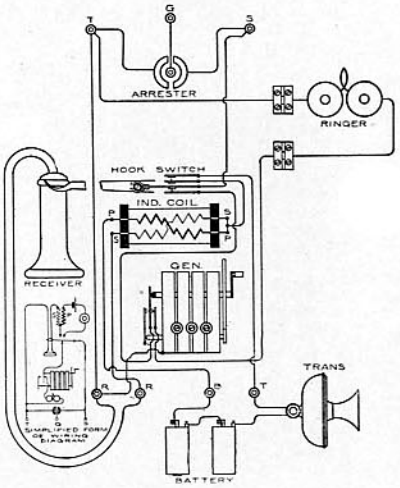


Figure 29

SINGLE BATTERY BOX TELEPHONES

Figure 31

Equipment

The single battery box telephone shown in Figure 31 is identical with the double battery box type just described except that the battery box and the lower part of the backboard are made narrower, to accommodate one wet cell or two cells of dry batteries. These sets will be furnished in either bridging or series. The bridging sets can be had with three or four bar generators and any desired resistance of the ringer. The circuit used in wiring these sets is the same as for the double battery box type.

RESIDENCE TYPE TELEPHONES

Figure 32

Series or Bridging

Our residence or hotel type telephones as shown in Figure 32 can be furnished with either bridging or series equipment. This set is especially desirable when a small sized instrument is wanted. At the bottom of the backboard two binding posts are provided to give connection with the batteries which are located outside of the telephone cabinet, in the basement or some nearby closet. The wiring for a series set is shown in Figure 33, while the bridging wiring is shown in Figure 34. These circuits are very similar to those described under double battery box telephone.

CIRCUIT #7279
SERIES HOTEL SET CIRCUIT

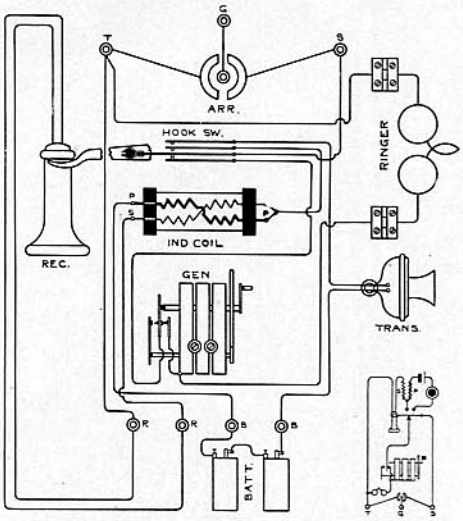


Figure 33

CIRCUIT #10374
BRIDGING HOTEL SET CIRCUIT

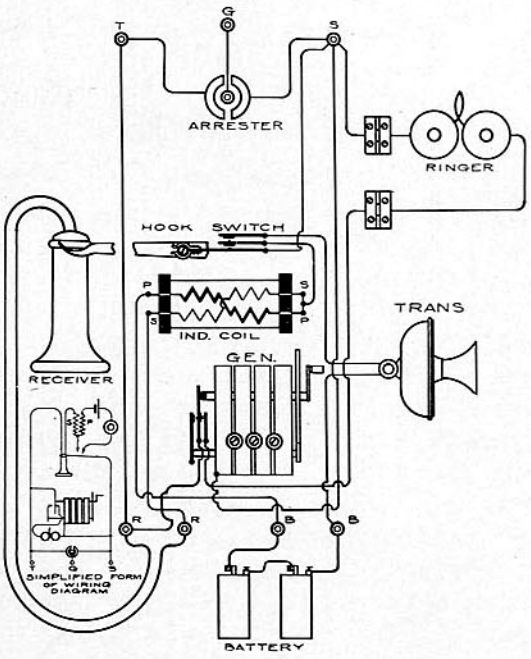


Figure 34

THE PORTABLE DESK TYPE TELEPHONE.

Figure 35

Appearance

The Kellogg Portable Desk Type Telephone consists of a Desk Stand (Figure 35) and a desk set box containing the ringer, induction coil and generator. (Figures 36 and 37.) Binding posts are provided at the top of the latter on the backboard for the line and ground connections, the posts at the bottom are provided for battery and desk stand connections.

Convenient Office Phones

These instruments are especially convenient for office use and are preferred by many for residence use. The appearance of the set is much more pleasing in many instances than the wall type. The desk set box can be placed at the end of the desk or any convenient out-of-way place leaving only the desk stand in view.

Figure 36

New Stand

We take especial pleasure in offering to the telephone public our new **INDESTRUCTIBLE DESK STAND** and we feel sure that it cannot help but meet with the approval of the most severe critics.

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 consequently **CANNOT BE BROKEN** with the roughest usage. These two parts—the head and the lug—fit together in such a manner as to make a perfectly smooth joint which cannot bind or come loose. The lug and transmitter back are formed in one piece which prevents any possibility of the transmitter working loose. There are no screw heads, nuts or other projecting parts to catch the clothing or receiver cord. The construction of the upper part of the stand is clearly shown in the accompanying sectional drawing. (Figure 38.)

Lug and Transmitter Back in One Piece

Figure 37

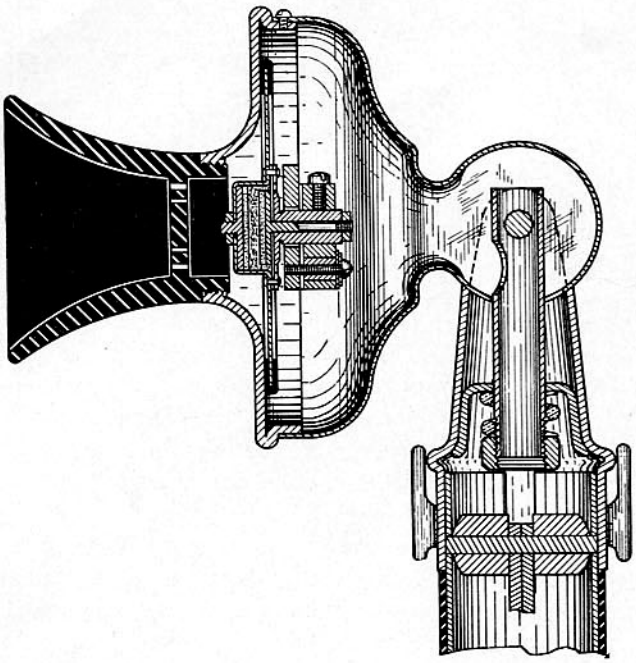


Figure 38

Hook Switch

This stand is extremely neat in appearance being finished in nickel and polished hard rubber. All working parts of the stand are enclosed in the base and hollow standard and are exposed to view by the removal of the base plate. The hookswitch is what is known as our toggle joint type on account of the joint in the lever, which makes possible a long movement of the springs for a small motion at the receiver hook.

All Parts Insulated

The switch springs are all in the base and easy of access. The transmitter is hinged at the top of the stand and is connected to the proper terminals in the base by two cords. All exposed metal parts are carefully insulated so there is no chance of the subscriber receiving an electric shock while using the instrument.

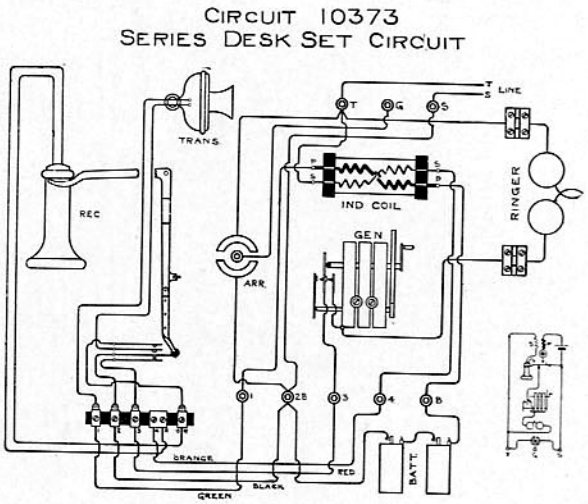
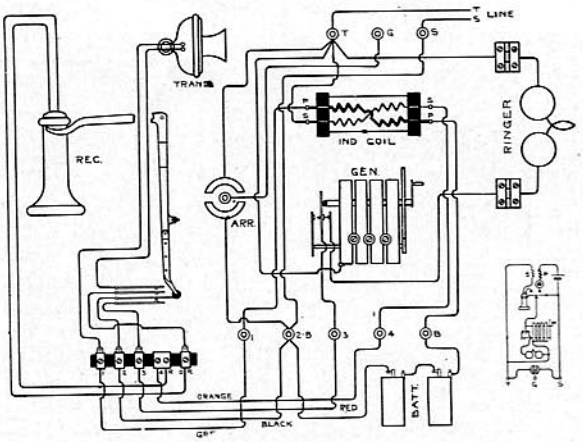


Figure 39

Wiring

In Figure 39 is shown the wiring for a series telephone while Figure 40 shows the same for a standard bridging instrument. It will be noticed in both of these circuits that the four conductors leading from the stand to the box are marked Green, Black, Red and Orange. These colors correspond to the colored tracers in the desk stand cord. Green should connect with binding post No. 1, Black with No. 2, Red with No. 3, and Orange with No. 4. To further aid the customer in connecting the set we have also stamped the numbers 1, 2, 3, 4, on the cord terminals corresponding with the binding posts 1, 2, 3 and 4 respectively with which they are to be connected.

CIRCUIT #8980
BRIDGING DESK SET CIRCUIT
A.C. GEN.



Connection of Cord

Figure 40

Bridging Equipment

This type of telephone is also used to some extent on party lines and consequently we have a number of different equipments to satisfy such conditions. Figure 41 shows the wiring of a regular bridging equipment with a condenser in the secondary circuit while in Figure 42 a similar equipment with a grounding key is shown. Any of the bridging desk sets so far described can be furnished with 3, 4 or 5 bar generators and any ringer resistance desired.

CIRCUIT #10372
BRIDGING DESK SET CIRCUIT
A.C. GEN. & COND. IN SECONDARY

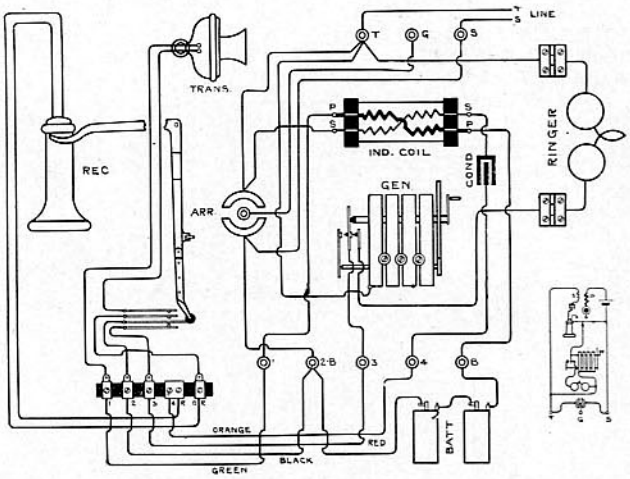


Figure 41

Party Line Equipment

In Figure 43 the wiring is shown for our four party pulsating system which has been fully explained in the preceding pages. Our four or eight party harmonic equipment can also be provided in this type and the wiring for the same with the connecting diagram is shown in Figure 44.

CIRCUIT No. 9841
BRIDGING DESK SET CIRCUIT
WITH GROUNDING KEY

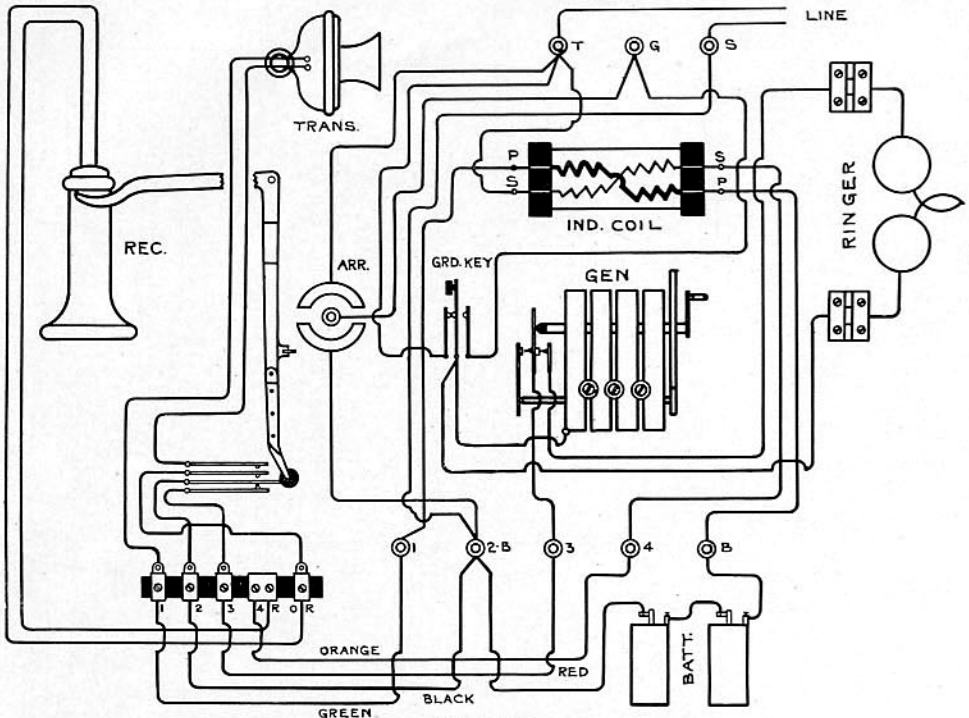


Figure 42

CIRCUIT No. 10375
BRIDGING DESK SET CIRCUIT
4 PARTY PULSATING

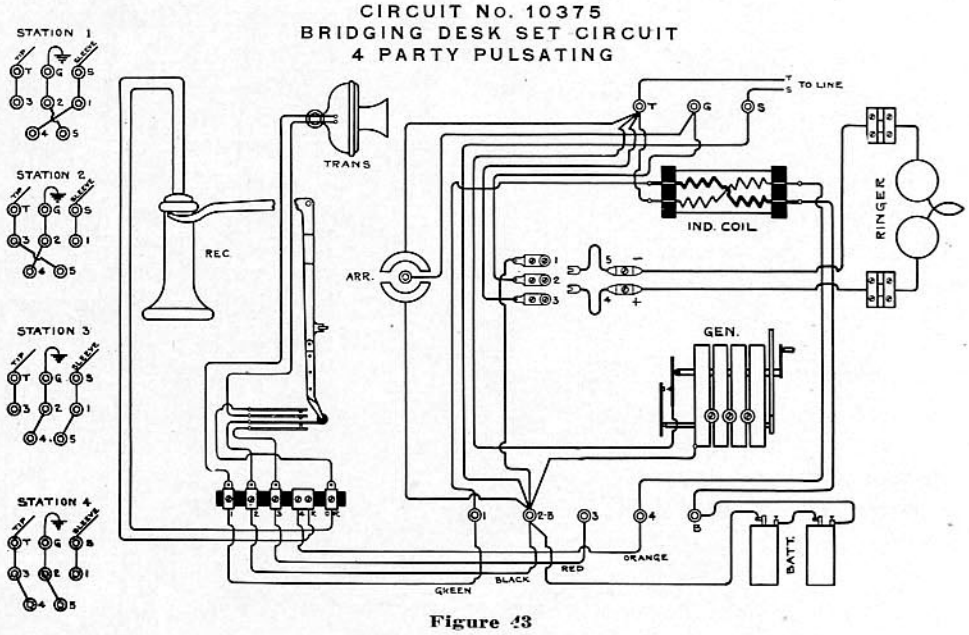


Figure 43

wall type telephone, thereby making the maintenance cost of a desk set on the same footing with the wall telephone. This saving will appeal to the telephone manager, while the great convenience provided by its use will be fully appreciated by the subscriber.

The cylindrical box encloses the hook-switch and cord connections and to it the transmitter is adjustably attached. The hook-switch springs are German silver with platinum contact points and are entirely insulated from the metal of the case and receiver hook. The adjustable lever arms and base are made from steel, highly nickel plated, and will stand severe abuse without breakage.

Mounting Bases

The mounting bases, shown in Figure 46 are made in three shapes for fitting the adjustable telephone to the various mounting surfaces. Base "A" is designed for attaching to a flat top desk or table; "B" to either end of the roll top desk; and "C" to a flat vertical surface or wall.

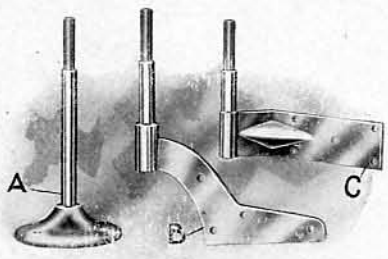


Figure 46

Circuits

The adjustable desk telephone uses the same circuits as the standard portable desk type instruments with slight variations such as the arrangement of the hook-switch springs and binding posts.

CODE NUMBERS

No. 18 Desk Stand—Adjustable telephone for roll top desks, single length extension of 17½ inches, fitted with a No. 22-L transmitter, No. 12-A receiver with green silk cord, and a four conductor, six foot green silk desk cord. (See Figure 47)

No. 19 Desk Stand—Same as No. 18 with a double length extension of 27½ inches.

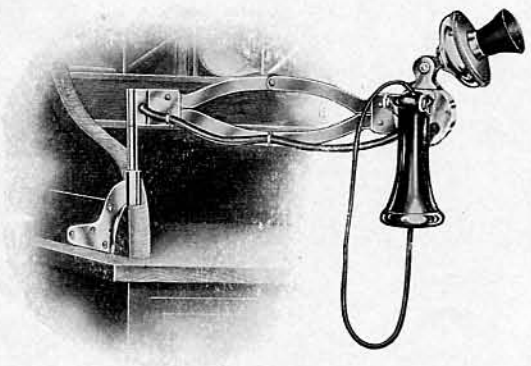


Figure 47

No. 20 Desk Stand—Adjustable telephone for walls or other vertically flat surfaces, single length extension of 17½ inches, fitted with a No. 22-L transmitter, No. 12-A receiver with green silk cord, and a four conductor, six foot green silk desk cord, is the same telephone as shown in Figure 47 but with mounting base "C" Figure 46.

No. 21 Desk Stand—Same as No. 20, but with a double length extension of 27 inches.

No. 22 Desk Stand—Adjustable telephone for flat top desks or other horizontally flat surfaces, single length extension of 17½ inches, fitted with a No. 22-L transmitter, No. 12-A receiver with green silk cord, and a four conductor, six foot green silk desk cord with mounting base "A" Figure 46.

No. 23 Desk Stand—Same as 22, but with a double length extension of 27½ inches. (See Figure 45.)

Note:—The above code numbers represent desk stands only, without desk set boxes. When orders for complete telephones are desired these desk stands are to be substituted for the No. 28 desk stand in the following list of Desk Sets. (Page 40.)

BATTERY BOX.

In the use of local battery hotel or desk type telephones it has always been a source of perplexity what disposition to make of the batteries. The usual custom is to place them in the basement or a closet, either of which is undesirable as it not only requires additional unsightly wiring but the batteries are usually unprotected and apt to be knocked over and as a natural consequence the telephone is put out of commission by a carbon breaking or a wire being torn loose.

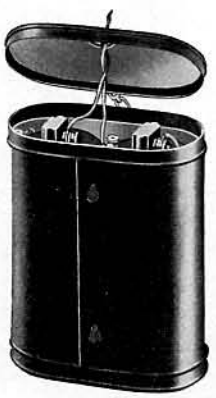


Figure 48

We are now in a position to offer our customers the Paragon Battery Box (Figure 48) which is designed to hold two standard size (No. 6) dry cells. This box is made of sheet steel finished in black Japan and is lined throughout with heavy fibre thus preventing the short circuiting of the batteries by coming in contact with the metal. The cover is attached to the box by a nickle plated chain to prevent it being misplaced. Holes are provided in the top and bottom for bringing in the wires.

This box is so designed that it can be easily attached to any desired surface and can be detached without removing any screws. For desk use it is exceedingly convenient as it can be placed beneath or on the end of the same, back of the desk set box.

EXTENSION BELLS.

It is often very convenient to have an additional bell in a different part of the building from that in which the telephone is located so that a signal will surely be heard even though there is no one near the telephone itself. For this purpose we manufacture a number of different types of extension bells.

The following is a list of code numbers of extension bells with the various resistances and types of ringers suitable for the different classes of magneto service.

STANDARD RINGER			BIASED RINGER		
Oak Woodwork	Walnut Woodwork	Ringer Resistance	Oak Woodwork	Walnut Woodwork	Ringer Resistance
37A	39A	80 ohm	38B	40B	2500 ohm
37C	39C	1000 "	38C	40C	1000 "
37D	39D	1600 "			
37F	39F	2500 "			
37G	39G	500 "			
37H	39H	2000 "			

Memoranda

WALL TYPE TELEPHONES

All wall telephones will be equipped with our No. 22 transmitter No. 20 pressed steel arm, platinum pointed hook-switch and No. 18-A (hard rubber shell) receiver unless otherwise specified.

Also two cells of dry battery will be furnished with each compact, single battery box and common battery types of telephones and two wet cells with each double battery box type telephone.

CODE NUMBERS				TYPE	GEN.	RINGER	CIRCUITS	
Concealed Posts		Exposed Posts						
Oak	Walnut	Oak	Walnut				Drg. No.	Fig. No.
				SERIES TELEPHONES				
2485	2486	2614	2615	Compact	3 Bar	80 ohm	9831	Fig. 3
2536	2537	2606	2607	"	3 "	80 "	9818	Fig. 4
		2414	2413	Com'n Bat. type	3 "	80 "	7277	
		2032	2033	Hotel No. 26 Arm	3 "	80 "	7279	Fig. 33
		2042	2043	Single Bat. Bx.	3 "	80 "	7278	Fig. 28
				STANDARD BRIDGING TELEPHONES				
2536	2537	2606	2607	Compact	3 Bar	80 ohm	9818	Fig. 4
2465	2466	2550	2551	"	4 "	1000 "	"	"
2521	2522	2594	2595	"	4 "	1600 "	"	"
2523	2524	2596	2597	"	5 "	1000 "	"	"
2499	2500	2576	2577	"	5 "	1600 "	"	"
2529	2530	2602	2603	"	5 "	2000 "	"	"
		2660	2661	"	3 "	1000 "	9818	Fig. 4
		2688	2689	Pony Comp.	5 "	1000 "	9818	"
		2696	2697	" "	5 "	1600 "	9818	"
		2649	2650	Hotel No. 26 Arm	3 "	1000 "	10374	Fig. 34
		2651	2652	Hotel No. 26 Arm	4 "	1000 "	"	"
		2653	2654	Hotel No. 26 Arm	4 "	1600 "	"	"
		2643	2644	Com'n Bat. type	4 "	1000 "	9818	Fig. 4
		2645	2646	" " "	4 "	1600 "	"	"
		2647	2648	" " "	5 "	1600 "	"	"
		2076	2077	Doub. Bat. Box	4 "	1000 "	2482	Fig. 29
		2078	2079	" " "	4 "	1600 "	"	"
		2084	2085	" " "	5 "	1000 "	"	"
		2086	2087	" " "	5 "	1600 "	"	"
		2060	2061	Sing. " "	4 "	1000 "	"	"
		2062	2063	" " "	4 "	1600 "	"	"
				BRIDGING TELEPHONES with No. 28 Condenser in Secondary				
2467	2468	2552	2553	Compact	4 Bar	1000 ohm	9819	Fig. 5
2525	2526	2598	2599	"	4 "	1600 "	"	"
2501	2502	2578	2579	"	5 "	1600 "	"	"

NOTE: — Telephones having no code numbers can be ordered by specifications.

CODE NUMBERS				TYPE	GEN.	RINGER	CIRCUITS	
Concealed Posts		Exposed Posts						
Oak	Walnut	Oak	Walnut				Drg. No.	Fig. No.
Bridging Telephones with Grounding Key								
2479	2480	2564	2565	Compact	4 Bar	1000 ohm	9827	Fig. 7
2527	2528	2600	2601	"	4 "	1600 "	"	"
2511	2512	2588	2589	"	5 "	1600 "	"	"
Bridging Telephones with No. 28 Condenser in Secondary and Grounding Key								
2481	2482	2566	2567	Compact	4 Bar	1000 ohm	9828	Fig. 8
2543	2544	2612	2613	"	4 "	1600 "	"	"
2513	2514	2590	2591	"	5 "	1600 "	"	"
Bridging Telephones with Pulsating Current Generator								
2471	2472	2556	2557	Compact	4 Bar	1000 ohm	9822	Fig. 13
		2628	2629	"	4 "	1600 "	"	"
2503	2504	2580	2581	"	5 "	1600 "	"	"

NOTE: — Telephones having no code numbers can be ordered by specifications.

Memoranda

CODE NUMBERS				TYPE	GEN	RINGER	CIRCUITS	
Concealed Posts		Exposed Posts						
Oak	Walnut	Oak	Walnut				Drg. No.	Fig. No.
Bridging Telephones with Pulsating Current Generator and No. 28 Condenser in Secondary								
2473	2474	2558	2559	Compact	4 Bar	1000 ohm	9823	Fig. 14
2505	2506	2582	2583	"	5 "	1600 "	"	"
		2671	2672	"	4 "	1600 "	"	"
Bridging Telephones with Pulsating and Alternating Current Generator and Key								
2546	2547	2548	2549	Compact	4 Bar	1000 ohm	9830	Fig. 11
Bridging Telephones with Pulsating and Alternating Current, Generator and Key with No. 28 Condenser in Secondary								
2483	2484	2568	2569	Compact	4 Bar	1000 ohm	9829	Fig. 12
2531	2532	2604	2605	"	4 "	1600 "	"	"
2515	2516	2592	2593	"	5 "	1600 "	"	"

NOTE: — Telephones having no code numbers can be ordered by specifications.

Memoranda

SELECTIVE PARTY LINE TELEPHONES

CODE NUMBERS				TYPE	GEN.	RINGER	CIRCUITS	
Concealed Posts		Exposed Posts						
Oak	Walnut	Oak	Walnut				Drg. No.	Fig. No.
TWO PARTY WITH ALTERNATING CURRENT GENERATOR								
2538	2539	2608	2609	Compact	3 Bar	1000 ohm	9824	Fig. 16
2475	2476	2560	2561	"	4 "	1000 "	"	"
2507	2508	2584	2585	"	5 "	1600 "	"	"
TWO PARTY WITH PULSATING CURRENT GENERATOR								
2477	2478	2562	2563	Compact	4 Bar	1000 ohm	9825	Fig. 17
2509	2510	2586	2587	"	5 "	1600 "	"	"
FOUR PARTY PULSATING WITH BIASED RINGER								
2541	2542	2610	2611	Compact	3 Bar	1000 ohm	9833	Fig. 19
				"	3 "	1600 "	"	"
2489	2490	2572	2573	"	3 "	2500 "	"	"
				"	4 "	1000 "	"	"
2616	2617	2618	2619	"	4 "	2500 "	"	"

NOTE: — Telephones having no code numbers can be ordered by specifications.

Memoranda

CODE NUMBERS				TYPE	GEN.	RINGER	CIRCUITS	
Concealed Posts		Exposed Posts						
Oak	Walnut	Oak	Walnut				Drg. No.	Fig. No.
		FOUR PARTY PULSATING WITH BIASED WRINGER — CONTINUED						
				Do. Bat. Box	3 Bar	1000 ohm	751	Fig. 30
				" " "	3 "	2500 "	"	"
				" " "	4 "	1000 "	"	"
		2174	2175	" " "	4 "	2500 "	"	"
				Sing. Bat. Box	3 "	1000 "	"	"
				" " "	3 "	2500 "	"	"
				" " "	4 "	1000 "	"	"
		2168	2169	" " "	4 "	2500 "	"	"
		FOUR PARTY PULSATING WITH BIASED RINGER AND NO. 28 CONDENSER IN SECONDARY						
		2574	2575	Compact	3 Bar	2500 ohm	9834	Fig. 20
		FOUR AND EIGHT PARTY HARMONIC						
		2675	2676	Compact	1 Bar	4 party	11461	Fig. 23
		2677	2678	Hotel	1 "		11463	
		2679	2680	C. B. Type	1 "		11461	

Specify parties desired.

NOTE: — Telephones having no code numbers can be ordered by specifications.

Memoranda

PORTABLE DESK TELEPHONES

A No. 28 Desk Stand will be furnished with any of the following Desk Set Boxes to make a complete Portable Desk Telephone.

Each desk telephone will include two cells of dry battery unless otherwise specified.

The Desk Stand will be equipped with a No. 18 receiver and green silk cord, and a four conductor 72 inch green silk desk stand cord unless otherwise specified.

Portable Desk Telephones in which the ringer and generator are mounted in separate boxes will be furnished on special order.

CODE NUMBER		GENERATOR	RINGER	CIRCUITS	
Oak	Walnut			Drg. No.	Fig. No.
		SERIES DESK SET BOX			
2201	2202	3 Bar	80 ohm	10373	Fig. 39
		BRIDGING DESK SET BOX			
2195		3 Bar	1000 ohm	8980	Fig. 40
2207	2208	4 "	1000 "	"	"
2209	2210	4 "	1600 "	"	"
		5 "	1000 "	"	"
2234	2235	5 "	1600 "	"	"
		5 "	2000 "	"	"
		5 "	2500 "	"	"
		BRIDGING DESK SET BOX WITH NO. 28 CONDENSER IN SECONDARY			
2211	2212	3 Bar	1000 ohm	10372	Fig. 41
2213	2214	4 "	1000 "	"	"
2215	2216	4 "	1600 "	"	"
2232	2233	5 "	1600 "	"	"
		BRIDGING DESK SET BOX WITH GROUNDING KEYS			
2203	2204	4 Bar	1000 ohm	9841	Fig. 42
2206	2207	4 "	1600 "	"	"
2198	2199	5 "	1600 "	"	"
		BRIDGING DESK SET BOX WITH FOUR PARTY BIASED RINGER			
2217	2218	3 Bar	1000 ohm	10375	Fig. 43
2219	2220	3 "	2500 "	"	"
		BRIDGING DESK SET BOX WITH FOUR AND EIGHT PARTY HARMONIC RINGER			
2230	2231	1 Bar Specify parties desired.	No. 26 Ringer	11462	Fig. 44

NOTE:—Desk Set Boxes having no code numbers can be ordered by specifications.