BULLETIN NO 1
CIRCA 1900

A description of the station apparatus available in 1900. This document was originally beloved to have originated in 1897 at the beginning of Kellogg's operations. However it has been pointed out that a mention in the frontispiece of three years having passed since the founding of the company, so the issue date of this document is now believed to be 1900.

Adobe Document Produced by Mike Neale, Member of
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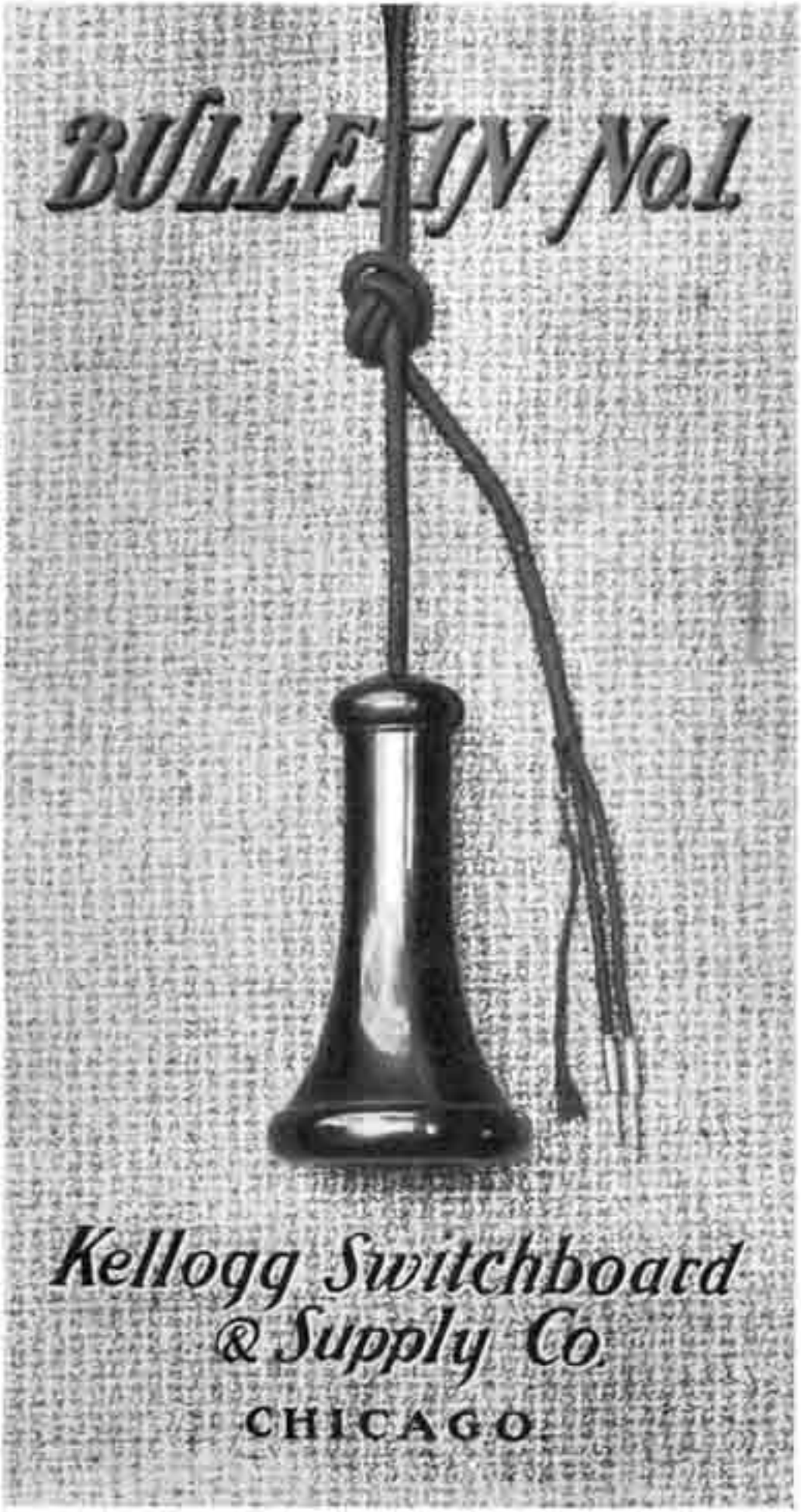


The factory is at the corner of Green and Congress Streets

KELLOGG TELEPHONES

DURING the past three years the manufacturing facilities of the Kellogg Switchboard and Supply Company have been entirely occupied in manufacturing apparatus for very large exchanges, thus rendering it impossible to seek or take such business as equipping or furnishing supplies to small exchanges. By reason of the recent establishment of a large factory in Chicago, trebling the amount of floor space and machinery previously available, the company is now prepared to furnish all kinds of telephonic apparatus for both large and small exchanges, and will be glad to fill orders of any size, ranging from one or a part of one telephone to complete exchanges of ten thousand or more subscribers.

It is the aim of the Kellogg Company to produce the finest telephone apparatus in the world: finest in design, finest in workmanship and finish, finest in quality, and, as a natural consequence, finest in results secured. In our line of telephone instruments we are confident that we have not fallen short of this purpose. The instruments will *speak for themselves.*

This little pamphlet will treat only of Kellogg telephones, which are made in many varieties to meet the demands of any kind of service.

The Kellogg Receiver

RECEIVERS

ONE of the most important parts of a telephone, and one that probably requires more care in design and execution than any other, is the receiver, which must be adapted to withstand the rough usage of careless users and at the same time maintain a permanent adjustment. The two points in the construction of the receiver that have given the most trouble in the past are the adjustment of the diaphragm with respect to the pole-pieces and the attachment and construction of the binding-posts. Still another point which in cheap receivers is a source of endless trouble is that of the material from which the shell is made. These points have been given the most careful attention in designing

the Kellogg receiver, which together with great care in its manufacture have resulted in a practically perfect instrument.

We believe that the manufacturers of receivers should know more about adjusting them than subsequent users, and that if provisions are made for maintaining this adjustment permanent, throughout the life of the receiver, any means of subsequent adjustment are a detriment rather than an advantage; we have, therefore, disposed of the source of trouble due to adjustment in this manner.

The binding-post nuisance has been gotten rid of by omitting binding-posts entirely. Instead, connectors are carried on an insulating block on the permanent magnet. These are completely enclosed within the shell, and are readily accessible by removing the tail-cap which screws upon the main portion of the shell. The cord passes through a small hole in this tail-cap and is secured to a metal eye on the magnet in such manner as to relieve the conductors of all strain. This receiver requires no special cord, as any standard cord may be made to answer by merely cutting off one end.

All parts of the shell of our standard receiver are composed of the best grade of hard rubber, unless otherwise specified. Composition shells will be furnished, however, at a considerably less price, but only when distinctly specified.

The magnets are of horse-shoe form bent from a single piece of special magnet steel. The pole-pieces are of soft Norway iron securely fastened, carrying coils wound with the best grade of silk-covered magnet wire. The magnets are secured to the shell at a point near the diaphragm so that practically no changes in adjustment will be caused by variations in temperature due to the unequal rates of contraction and expansion of hard rubber and metal.

The external appearance of this receiver is exceedingly pleasing, the simple graceful curves and the highly polished rubber giving it an elegance which is at once an evidence of its high grade.

TRANSMITTERS

THE transmitter is another of the most vital parts of a telephone instrument, and while it is not subject to such rough usage as the receiver it is likely to have a class of troubles peculiar to itself. The thousands of Kellogg transmitters now in use testify to the fact that they have received the amount of attention merited.

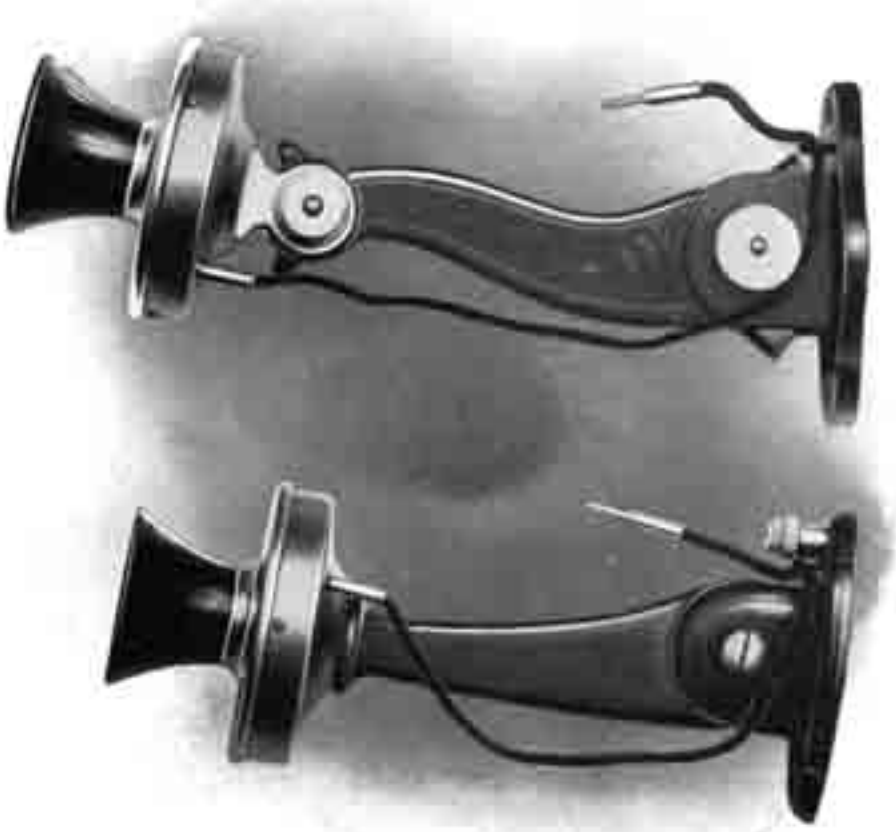
The diaphragm is of metal surrounded by a soft rubber gasket, insuring flexibility, and is mounted in a heavy front piece of turned brass. Both electrodes are formed of thin carbon blocks soldered to brass blocks; the front electrode being secured to the diaphragm by a threaded portion on the brass block and a small hexagonal nut. The rear electrode is mounted firmly on a heavy brass bridge-plate carried on the transmitter front, the distance between the electrodes when at rest being accurately determined and permanently maintained. The best grade of granular carbon is used and is confined between the electrodes by an enclosing ring. The working parts of the transmitter are carried in a spun brass shell, which is secured to the front of the transmitter arm. All metal portions of the transmitter are highly nickel-plated, which, together with the black hard rubber mouth-piece, makes it present a very attractive appearance. In ordering, parties should state whether the transmitter desired is to be used for local battery or common battery work, as there are slight differences between the two, rendering each particularly fitted for the purposes they are to serve.

These transmitters are perfectly adapted for either local or long distance work, and possess great power without that disagreeable harshness usually found in so-called long-distance transmitters. The quality of tone is the nearest to that of the human voice of any transmitter yet produced.

TRANSMITTER ARMS

TWO styles of transmitter arms for wall sets are regularly furnished with our instruments and are shown in the accompanying cut. One of these is provided with a double-hinged joint so that the transmitter may be always maintained in a vertical position. The other arm is provided with a single joint only, as is the usual practice. The double-jointed arm has some advantages over the single and looks better upon large sized telephone sets, such as the ordinary series or bridging instrument. The single joint arm, however, presents a neater appearance in connection with our common battery sets on account of its smaller size and more trim outlines.

Great attention has been paid in the manufacture of these arms, to the securing of good electrical contacts in the transmitter circuit, and also to the production of a joint that will not work loose.



Double and Single Jointed Transmitter Arms

THE HOOK SWITCH

THE Kellogg hook switch is undoubtedly the simplest yet produced. Its design is such that all parts are in plain sight and are therefore readily accessible for cleaning or repairs. Only the best grade of German silver and brass is used in its construction, and all contact points are made of real platinum. The hook lever itself, and the base upon which it is mounted, form no part of the actual circuits, and in fact are insulated from the circuits of the telephone. By this construction a great advantage is obtained over those forms of hook switches where the lever itself forms a part of the circuit, as poor contacts become practically out of the question.

It is perhaps sufficient to say that, in spite of the fact that we have put out many thousands of these switches during the past two years, we have yet to learn of a single case of trouble with them.

MAGNETO GENERATORS

THE magneto generators used in our telephones for regular exchange service, are of either the three or four magnet type, according to whether they are to be used for series or bridging work. The magnets are bent from heavy bars of the best grade magnet steel, magnetized so as to obtain the greatest possible strength and long life. Their permanency is guaranteed, and this is a point that purchasers of telephone instruments cannot afford to overlook.

Their armature cores are laminated, being composed of thin sheets of very soft iron bolted together instead of being cast in a single piece, as was the old method and as is now done in many of the cheaper grades of instruments. The armature, after being thoroughly insulated, is wound to a resistance suitable for obtaining the best results in the particular service demanded. Only the best quality of silk-

insulated copper wire is used, and great pains are taken to prevent short or open circuits which, when they occur, render the generator inoperative. The gears are of cast brass, having very wide faces, which are cut to insure perfect running. The pinion is attached to the armature shaft in a flexible manner, which serves to prevent the unpleasant jerking experienced in turning most generators. The gears run almost noiselessly, and will last throughout the life of any telephone. The magnets of the generator are either highly nickel-plated or coated with a fine grade of enamel. The first looks perhaps a little better at first, but does not wear as well as the enamel. We recommend the use of the enamel, although we are prepared to furnish either style of finish at the same cost.

THE RINGER

THE call-bell or ringer used on the Kellogg telephones is constructed with the same degree of care as that found on the generator. The armature and cores are of the best grade of annealed soft iron, and all parts are assembled in a thoroughly durable manner. The magnets are wound with the best grade silk-covered copper wire; the ringers for series or ordinary exchange work being wound to 80 ohms and those for bridging work to 1,000 ohms. The cores for the bridging instruments are made much longer than those for the series, in order to give the proper amount of winding space. The resistances of the series and bridging ringers, respectively, are such as our experience has shown us will give the best results for series and bridging work. We can wind these ringers to any reasonable resistance but will make a small extra charge for departing from our standard. In by far the greater number of cases, however, other resistances than these standards will make no improvement and may be a step in the wrong direction. The adjustment of this ringer is one of its best features, being permanent and at the same time delicate. It is effected by

the turning of a single screw which is so arranged that it will not work loose, either in transportation or by the jar brought about by constant use.

The Kellogg Portable Desk Telephone

COMPLETE TELEPHONES
PORTABLE DESK STANDS

THE instrument illustrated on this page carries with it an air of simplicity which is at once a characteristic of elegance. The lines are graceful and, together with the highly finished hard rubber and nickel-plated surfaces on the exterior and the neat green silk conducting cords, give it the finest appearance of any portable telephone yet produced. This instrument is provided with the regular Kellogg transmitter and receiver, and with the necessary calling

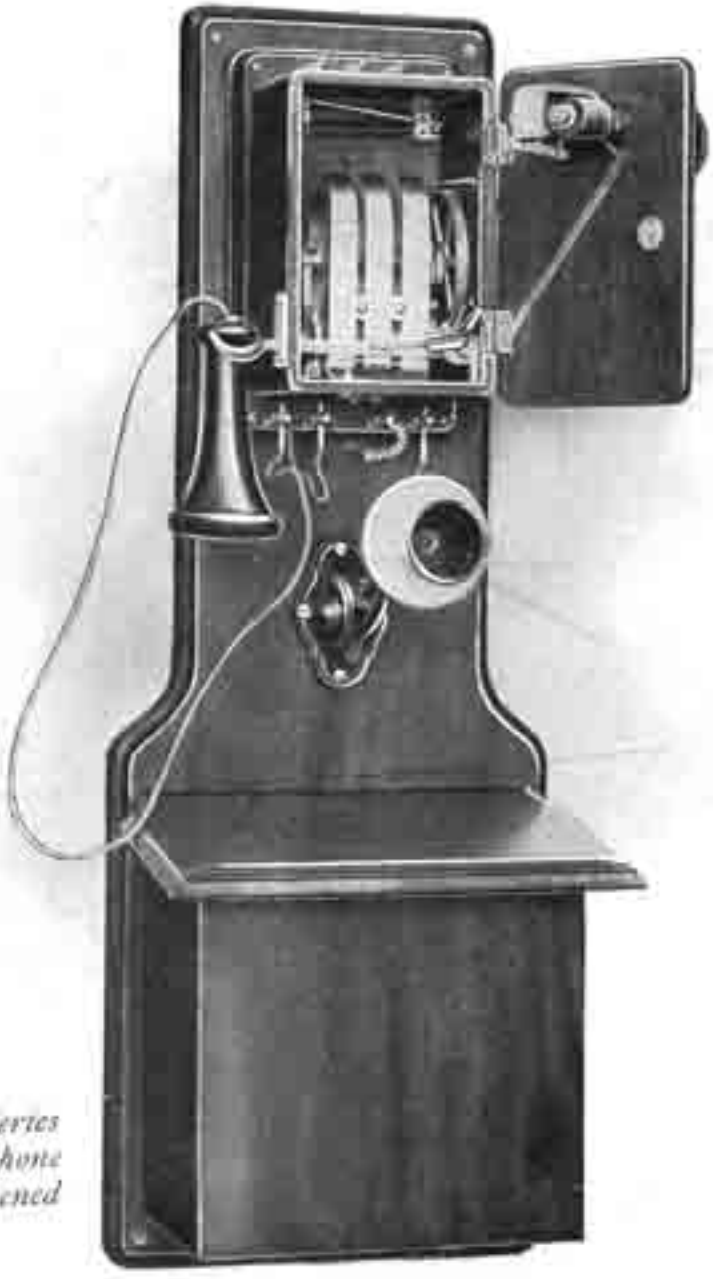
apparatus to adapt it for the system with which it is to be used. The hook switch springs are carried within the tube supporting the transmitter, and so mounted that it is practically an impossibility for them to get out of order. The contacts of the switch hook are all wired down to a connecting rack in the base, to which the terminals of the green silk cords are attached. With each desk stand is furnished a magneto generator and ringer, mounted either in one box or separately, as desired. The standard woodwork may be either of oak or walnut, but if required to match surrounding fixtures, mahogany or any other fancy wood may be used.

STANDARD SERIES TELEPHONE

ON this and the page following are shown views of our standard series telephone adapted for use either by any telephone exchange using magneto generators for calling, or for private line service, as between a house and an office. The transmitter, receiver, generator, ringer and hook switch are all of the type heretofore described, wired and assembled in the neatest possible manner so as to give almost positive

The Kellogg Series Telephone

assurance against circuit trouble. The bell boxes are readily removable from the back boards, there being no wires extending through the bottom of bell box and through the backboard, as is often the case in cheap instruments. The battery box is removable, being detached by giving it a sharp rap from beneath with the fist, and there is an iron shelf secured to the backboard for the support of the two cells of ordinary battery. The cut on page 14 shows the battery shelf, and also how the instrument looks with the battery box removed. The woodwork will be furnished at our standard prices in either quartersawed oak or walnut, and will also be furnished in mahogany or other woods at an additional cost. All woodwork is free from cracks, splits or objectionable knots, is thoroughly seasoned, and is finished to secure both elegance and durability The battery box shown in the cuts on this page is of our standard type, although at a very slight additional cost we can furnish "Tandem Battery Boxes" of the type shown on pages 15, 16 and 17. In these latter, the two battery shelves are provided and arrangements made for wiring the batteries together in series, as before



Series Telephone Opened

STANDARD BRIDGING TELEPHONE

THE two cuts on this page and the next show one of our standard bridging bell telephones adapted for bridging party line service or for regular exchange work, but particularly for the former. All parts of this instrument are the

The Kellogg Bridging Telephone

same as those of the series instrument with the exception of the generator and the ringer. The ringer, as stated elsewhere, is provided with very long cores, and is wound to 1,000 ohms, while the generator is provided with four

magnets instead of three, and with an automatic cut-in on the shaft.

We believe that for heavily loaded bridging lines these instruments will give satisfaction where most others would

Bridging Telephone Opened

fail to work. We say this because the generators are very powerful and the ringers exceptionally sensitive. As for the transmitter and receivers, they will talk over any line over which it is possible to send signals.

TANDEM BATTERY BOXES

Bridging or Series Telephone Tandem Battery Box

THIS illustration is representative of our regular magneto instruments, with "Tandem Battery Boxes." The electric features of the instrument are identical with those already described, the only difference being in the battery boxes. This type of instrument is very popular in some sections of the country and is recommended to those who desire to give their patrons something radically different in appearance from the old style instrument of the Bell Company.

AUTOMATIC CALLING SYSTEM WITH LOCAL BATTERIES

THIS instrument is adapted for our system using local batteries, but otherwise having all the advantages of automatic calling usually found only in strictly common battery systems. No magneto generator is provided, and in fact there is nothing in the bell box but the ringer, the hook switch and induction coil. The People's Telephone Co., of Wilkes-Barre, Pa., have 1,200 instruments of this type, and we have also equipped several other exchanges with this general type of instrument. This, of course, is furnished either with the long or wide type of battery box.

Instrument for Automatic Calling System

We also make this instrument in the general style shown on page 19, room being provided for two cells of dry battery. This latter makes an exceedingly attractive set, especially adapted for use in small exchanges where it is desired to secure the advantages of automatic signalling, and where no suitable means are available for charging storage batteries for a complete common battery system.

To those, also, who are opposed to the use of a centralized talking battery but desire the advantages of automatic calling these types of telephones will prove attractive.

DIVIDED EXCHANGE

IN the Kellogg divided exchange multiple system, wherein it is possible to provide connections for as many as 30,000 subscribers' lines in a single exchange, the switchboard is divided into four divisions, each bearing a designating letter, as, for instance, A, B, C, D. By pressing one of the four buttons on the telephone instrument, the call is automatically registered on the particular division of the switchboard at which the line of the party called for terminates.

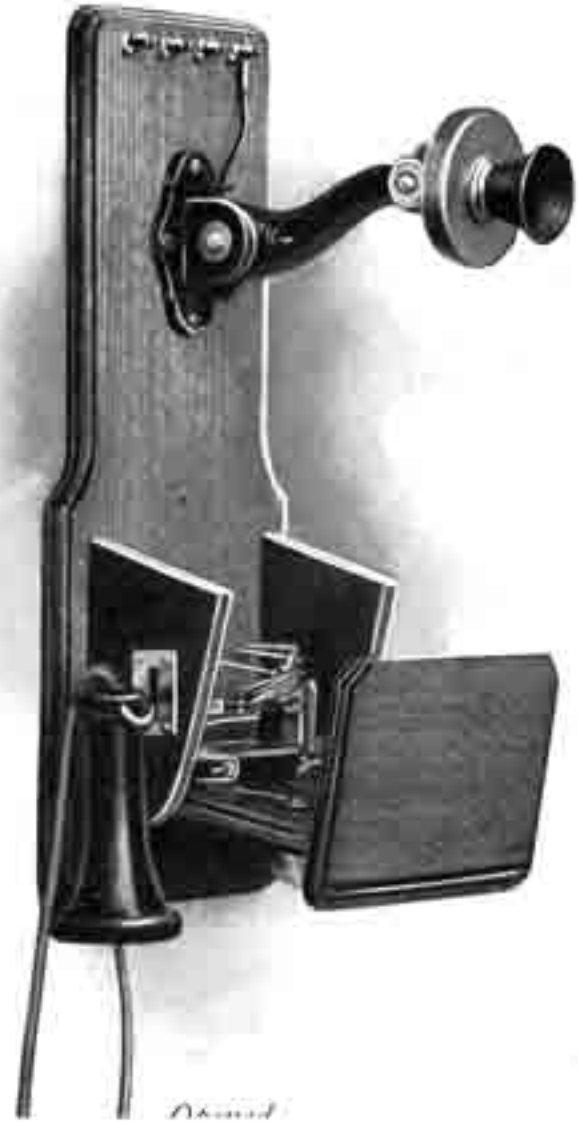
The instrument shown herewith is adapted for such a system and of course will interest only those who contemplate the installation of an exchange having a capacity greater than six or eight thousand subscribers. Among others the exchange of the Cuyahoga Telephone Company at Cleveland, Ohio, is equipped with these instruments. This exchange has a present equipment of 5,760 lines and we are now at work on an extension for it, bringing its capacity up to 9,800 lines, this making it *the largest switchboard in the world.* At present the switchboard having the largest ultimate capacity in the world is that built by us for the Kinloch Telephone Company of St. Louis, with a present capacity of 8,800 lines.

Four Button Telephone

COMMON BATTERY SYSTEM

THE latest far-reaching development in modern telephony has been the introduction of the common battery system in modern exchanges. In fact, some believe that an exchange is not strictly up-to-date unless so equipped. The instruments illustrated on this and succeeding pages are designed particularly for common battery work, and have been subject to much commendation on account of their small size, neat appearance and extreme simplicity of their parts. Two

Common Battery Telephone



Latest Type Common Battery Telephone

leaving all parts exposed and open to inspection. We believe this is the first box ever produced in which the hook switch and all parts except the ringer are mounted directly on the backboard. This style of box has several advantages, one of which is that the various parts of the box cannot warp and thus cause unsightly cracks or openings between its various

styles of these instruments are made, in one of which the lid and front of the enclosing box are hung so as to swing down in the manner illustrated, thus exposing all parts to view. In our latest, and we think most desirable form, however, the box is hung at the upper edge so as to swing up against the backboard,

Opened for Inspection

CABINET DESK TELEPHONE

FOR business offices, hotel lobbies, or halls of fine residences, we offer this cabinet desk telephone as the handsomest piece of telephone apparatus of its kind yet manufactured. The cabinet is of fine selected quarter-sawed oak, joined and finished in a thoroughly workmanlike manner. All metal parts of the apparatus are either nickel-plated and highly polished or are finished in black enamel. All of the apparatus of the telephone is in plain sight, those parts not requiring to be handled being enclosed in a compartment having a bevel plate-glass front. The entire top portion of the cabinet is removable to allow the inspector access for repairs or adjustment. The generator crank projects from the upper right hand portion of the cabinet, while the hook switch lever projects in the same manner from the left hand portion, as shown.

Cabinet Telephone

We make this set for any type of telephone service, for the common battery, automatic calling with local batteries, or the regular magneto system.