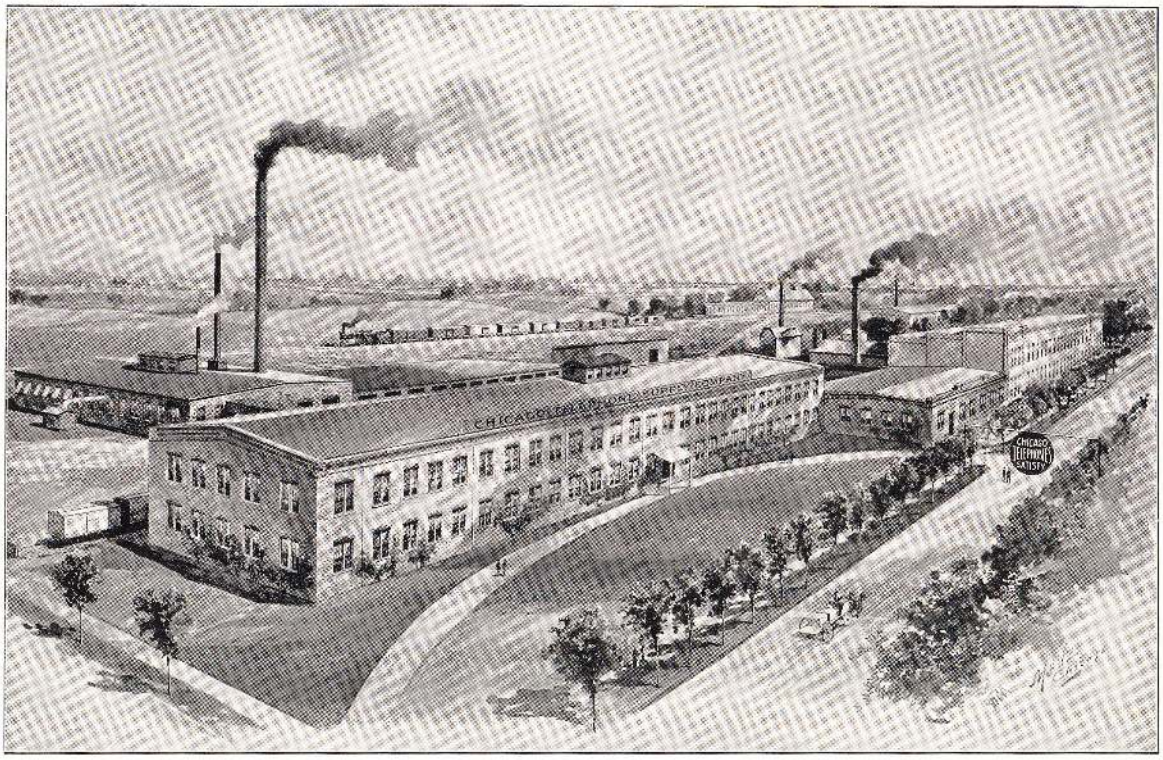
MAGNETO TELEPHONE APPARATUS

Catalogue
No. 51

CHICAGO TELEPHONE SUPPLY CO.
Manufacturers of Telephones & Switchboards
ELKHART INDIANA



WHERE CHICAGO TELEPHONES ARE MADE

MAGNETO
Telephone Apparatus

CATALOG No. 51

CHICAGO
TELEPHONE SUPPLY
COMPANY

Makers of Telephones and Switchboards

ELKHART, INDIANA

INDEX

Service Guarantee

IF we were asked to present one and only one argument why we claim Chicago Telephones to be best, we would unhesitatingly say---"Because it is the only telephone made that is protected by an unlimited Service Guarantee." That tells it all. We show absolute faith in the durability and efficiency of our telephones by issuing to each customer, without charge, a policy which binds us legally not only to pay for all materials needed to make necessary repairs, but also to pay for the time and expenses of your trouble man in making such necessary repairs. We do not place a time limit of one or five years on this Service Guarantee, but say to you that for so long as you use Chicago Telephones we will protect you against repair expense.

This Service Guarantee is our method of giving practical expression of our claim for superiority. It is the result of perfecting our product by specializing, and by knowing intimately the needs of service in magneto exchanges as well as the rigid requirements of bridging party lines. Our special facilities and modern methods of manufacturing, the employment of experts who know how, and the designing of our apparatus along scientific lines enable us to make the best telephone and one which we know will give excellent service for a life time. The fact that no other factory dares duplicate our Service Guarantee establishes beyond doubt the prestige of Insured Chicago Telephones.

Fac-similes of our Guarantee and Policy appear on the opposite page. Read them over and you will be convinced that they are valuable assets which you cannot afford not to possess.

Series_____ Paid Up Capital $500000.00. No. 3100

TELEPHONE TROUBLE INSURANCE.

THE

CHICAGO TELEPHONE SUPPLY COMPANY

OF THE CITY OF ELKHART, INDIANA,
BY THIS POLICY

Does Insure_____

*of*_____, *from the*_____

*day of*_____, *19 ..., at noon for the term of one year and indefinitely in excess of one year as hereinafter provided, against all trouble in the*_____*CHICAGO TELEPHONES numbered*_____, *and the said Company will reimburse the Assured therefor in accordance with the terms and provisions of this Policy.*

The amount of such reimbursement to be the actual cash value of the material required to place the telephones in perfect repair and the time of the regular trouble man or inspector who makes such repairs, same being computed at the rate of the regular wages paid him by his employers, and to be paid to the Assured within sixty days after due notice and proofs of same shall have been made by the Assured, and received at the office of said Company.

AND IT IS HEREBY UNDERSTOOD AND AGREED by and between this Company and the Assured, that this policy is made and accepted upon the following terms and conditions, which are hereby declared to be part of this Contract, and are to be used and resorted to in order to determine the rights and obligations of the parties hereto, viz.:

1. That the telephones insured under this Policy shall be installed and maintained in accordance with the appropriate diagram printed on the back of this Policy and the specifications thereto appended.
2. That the Assured can and will truthfully certify that the trouble for which claim is made was wholly within the instruments themselves, and that no part of the claim is for line trouble, loose connections outside of the telephones, switchboard trouble, or for battery connections or renewals, or for malicious or wanton tampering with the instruments by anyone
3. In case of trouble the Assured shall give immediate notice thereof to the Company, and within thirty days shall furnish on the blank provided for that purpose, a particular account of said trouble, stating the time, nature and circumstances of same, the parts and material necessary to repair same and the actual time consumed by the trouble man in reaching and remedying the trouble.
4. On receipt of notice, as provided in paragraph three, the Company will furnish blanks for proving claims.
5. That the Assured shall make all repairs necessary with all possible dispatch and in the most economical manner consistent with first-class service.
6. It is furthermore hereby expressly provided and mutually agreed that this Policy shall remain in force indefinitely in excess of one year, for so long a time as the Assured shall purchase no less than_____ CHICAGO TELEPHONES during each interval of one year from the date of this Policy.

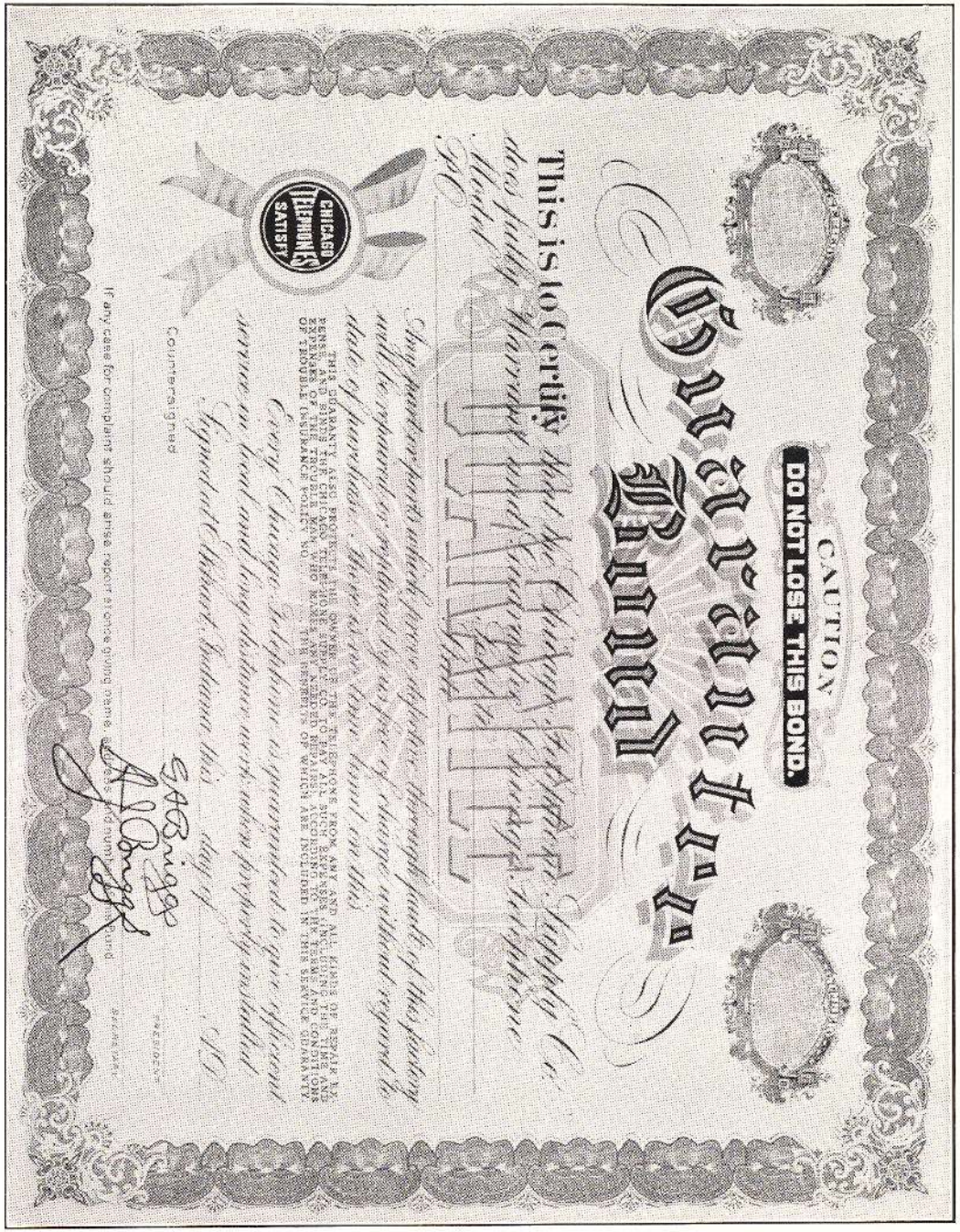
CHICAGO TELEPHONE SUPPLY CO. CORPORATE 1902 SEAL MAINE

In Witness Whereof, the Chicago Telephone Supply Company has caused this policy to be signed by its President and attested by its Secretary, in the city of Elkhart, Indiana, this_____day of_____ A. D., one thousand nine hundred and_____

G A Briggs *President*

A J Briggs *Secretary*

Countersigned,



Prices

OUR ability to offer such reasonable prices to our customers is explained by the fact that we specialize in making magneto telephones. We have done nothing else for twenty years. Our productive and organizing ability has been devoted to that single purpose and as a result we can make better telephones in larger quantities at a lower cost than our competitors.

Terms

Thirty Days Net, or 2% discount for cash.

In order that we may establish your account on a credit basis we ask our new customers to accompany their initial order with bank reference or commercial rating. By so doing needless delay can be avoided.

If desired, goods will be shipped C. O. D. by express or parcel post, or if by freight, with our sight draft attached to bill of lading.

Please furnish us with specific shipping instructions, and order by code number wherever possible.

Chicago Bridging Telephones

On the following pages we illustrate the various styles of what are unquestionably the best bridging telephones that can be made.

Their sturdy qualities of strength and durability are a guarantee of long life, and their delicate sensitiveness is positive assurance of reliable and efficient service. The perfect adaptation of each part to the work it must perform is the outcome of tireless energy and constant watchfulness devoted through a long period of years to the realization of a single purpose. We have had but one ambition and that is to be known as the makers of the best bridging telephone that it is possible to produce. "Knowing how" has enabled us to realize that ambition and as exclusive manufacturers of quality telephone apparatus, we now stand pre-eminent.

Description of Different Styles

STYLE A Telephones are regular bridging code signal, party line instruments.

STYLE B Telephones are equipped with low capacity condensers in secondary circuit. Will ring last telephone on line with receivers of every intermediate telephone removed.

STYLE C Telephones are equipped with direct current generators to throw drop at central without ringing other telephones on same line. Other telephones cannot be signalled by this style instrument.

STYLE D Telephones are equipped with push buttons to ground generator. When installed on metallic circuit with proper equipment at Central will ring other telephones on same line by code signal without calling Central; or by using push button will call Central without ringing other bells on the line.

STYLE E Telephones are equipped with push buttons for producing either direct or alternating current. (A combination of Styles A and C.)

STYLE F Telephones are equipped with condensers like Style B, and push buttons for grounding generator like Style D.

CHICAGO TELEPHONES of any style will be wired for divided circuit without extra charge, if desired.

Telephones for four-party circuits can be furnished to meet any legitimate conditions.

Bridging Telephones

Chicago de Luxe

THE De Luxe Bridging Telephone is all that its name implies,—combining beauty, elegance, symmetry and exact balancing of parts. It embodies all of the latest and best features in telephone construction and is encased in the popular compact cabinet of an improved design, finished in hand rubbed quarter sawed golden oak. It is not only handsome in appearance, but is durable, efficient and absolutely reliable.

On page 12 we show the open cabinet and call particular attention to the accessibility of parts and to our method of mounting in most convenient position possible. On the following pages we have given detailed description of apparatus and explained why the talking, receiving and ringing qualities of Chicago Telephones are superior to all others. The wiring is simplified so that each circuit may be easily traced. The connections between the cabinet and door are made by soldering the tinned copper wire to specially designed hinges, insuring positive and permanent contacts. The bi-polar lightning arrester is a part of the regular equipment of each telephone and has proven so dependable that we guarantee our telephones against damage by lightning, providing they are properly installed in accordance with printed instructions which we enclose in each telephone. The line binding posts are regularly mounted outside, as shown in illustration, but when desired we will mount inside the cabinet.

The DeLuxe Telephone is the finished product of twenty years specializing and is recommended to you as the best bridging telephone that it is possible to make.

CHICAGO DE LUXE TELEPHONE

Closed Cabinet

Bridging Telephones

SPECIFICATIONS

Bridging Generator.
Long Pattern Bridging Striker.
Short Lever Automatic Switch.
Platinum Contacts.
Genuine Solid Black Long Distance Transmitter.
Adjustable Transmitter Arm. Code No. 248.
Long Distance Induction Coil.
Bi-Polar Receiver and Cord.
Two Cells Dry Battery.
Bi-Polar Lightning Arrester.
The Finest Woodwork and Finish ever used in telephone work.
The Real Piano Finish.

Chicago De Luxe

DESCRIPTION

Code No. 15	Four-Bar Generator, 1,000-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 16	Four-Bar Generator, 1,600-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 17	Four-Bar Generator, 2,500-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 18	Five-Bar Generator, 1,000-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 19	Five-Bar Generator, 1,600-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 20	Five-Bar Generator, 2,500-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 21	Six-Bar Generator, 1,000-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 22	Six-Bar Generator, 1,600-Ohm Ringer, Quarter Sawed Oak Cabinet.
Code No. 23	Six-Bar Generator, 2,500-Ohm Ringer, Quarter Sawed Oak Cabinet.

CHICAGO DE LUXE TELEPHONE
Open Cabinet

Bridging Telephones

Chicago Glass Front

DESCRIPTION

CODE NO.

40 Four-Bar Generator, 1,000-Ohm Ringer.
41 Four-Bar Generator, 1,600-Ohm Ringer.
42 Four-Bar Generator, 2,500-Ohm Ringer.
43 Five-Bar Generator, 1,000-Ohm Ringer.
44 Five-Bar Generator, 1,600-Ohm Ringer.
45 Five-Bar Generator, 2,500-Ohm Ringer.
46 Six - Bar Generator, 1,000-Ohm Ringer.
47 Six - Bar Generator, 1,600-Ohm Ringer.
48 Six - Bar Generator, 2,500-Ohm Ringer.

For specifications see page 12.

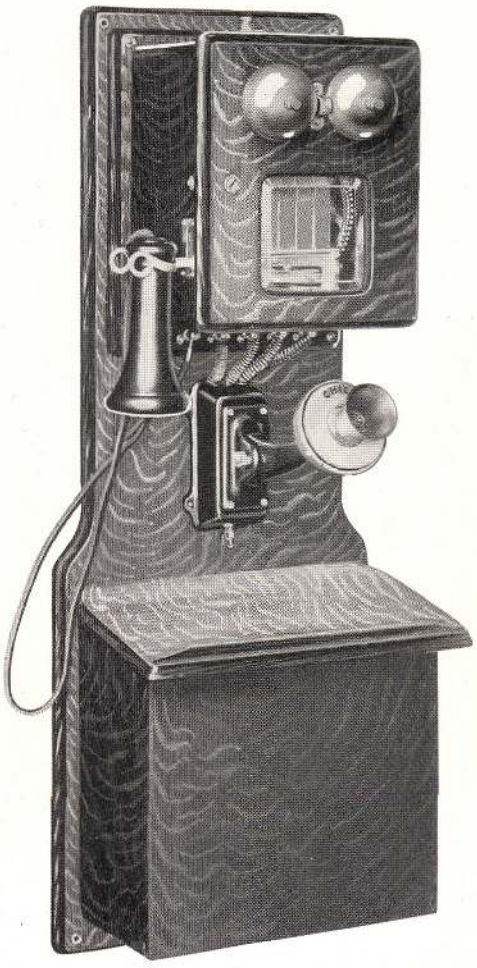
Chicago Wonder

DESCRIPTION

CODE NO.

30 Four-Bar Generator, 1,000-Ohm Ringer.
31 Four-Bar Generator, 1,600-Ohm Ringer.
32 Four-Bar Generator, 2,500-Ohm Ringer.
33 Five-Bar Generator, 1,000-Ohm Ringer.
34 Five-Bar Generator, 1,600-Ohm Ringer.
35 Five-Bar Generator, 2,500-Ohm Ringer.
36 Six - Bar Generator, 1,000-Ohm Ringer.
37 Six - Bar Generator, 1,600-Ohm Ringer.
38 Six - Bar Generator, 2,500-Ohm Ringer.

For specifications see page 12.



Series Telephones

Chicago Exchange

These instruments are designed for exchange work where each telephone has a separate line to the switchboard.

The Chicago Series Generator will ring satisfactorily past partial short circuits and shunts, where no service can be secured with a light generator.

All Chicago Series Telephones, except Code No. 51, are equipped with the celebrated Chicago Genuine Solid Back Long Distance Transmitter, which is built like a watch.

Compact Type

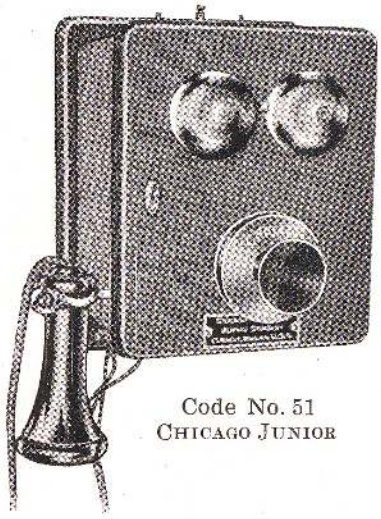
Code No. 50

SPECIFICATIONS

Series Generator.
Series Ringer Movement.
Short Lever Automatic Switch.
Platinum Contacts.
Genuine Solid Back Long Distance Transmitter.
Adjustable Transmitter Arm. Code No. 248.
Long Distance Induction Coil.
Bi-Polar Receiver and Cord.
Bi-Polar Lightning Arrester.
Two Cells Dry Battery.
The Finest Woodwork and Finish ever used in telephone work.
The Real Piano Finish.
Used on separate lines to switchboard, or on private lines of two instruments.

Private Lines

It frequently happens that a private line is needed in addition to exchange service. For instance, a merchant may want a private line to his residence; a physician may want such service from his office to the drug store; private families may want private connection between the home and the barn. In such cases as these, where the entire installation consists of a line with a telephone at each end we recommend the Chicago Junior Telephone. It is a high grade series instrument with all the well known Chicago parts mounted directly on the magneto box. This method of mounting economizes space and will appeal to those who require a private line. The batteries are not mounted in the cabinet but can be placed in the cellar, in a closet or in any other convenient place.



Code No. 51
CHICAGO JUNIOR

Chicago Desk Sets

Telephone companies who have in the past suffered more or less trouble with desk telephones will note with pleasure our latest design, which eliminates most of the trouble formerly experienced with that type of instrument. We have standardized the equipment and use the same transmitter, receiver, induction coil, generator, ringer and lightning arrester that are used with our wall type telephones.

We mount the generator, ringer and induction coil in a compact magneto box, quarter sawed golden oak finish, the dimensions of which are 8x5¾x4⅛", allowing ample space for the mounting of all parts in an accessible position. This arrangement enables us to use a three conductor cable which is more flexible and less liable to kink and wear than the four and five conductor cables used by other manufacturers. Just inside the door of the cabinet are located the cable terminals of an improved design, which permit the installation of new cables when necessary without unsoldering any connection. The same style of terminal is used with the terminal block mounted in the base of the desk stand. These terminals are plainly stamped with corresponding code numbers so that a new cable can be installed without directions or any tool except a screw driver.

The desk stand is sturdily constructed so as to withstand rough usage. It can be taken apart for examination or adjustment by the removal of one master screw as shown in Figures 1, 2, 3 and 4.

The hook switch is very simple and positive in operation. The German silver contact springs are located in the shaft of stand and are operated by the direct action of the hook. Hard rubber insulations are used throughout. The receiver cord and cable are of best quality copper tinsel covered with a heavy green moisture-proof silk braid.

The whole is protected against lightning by our regular bi-polar lightning arrester which is so efficient that we can guarantee our telephones against damage by lightning.

To sum up, — our Desk Telephones have grace of outline, compactness of construction, and unvarying efficiency, both mechanical and electrical.

FIG. 1—REMOVING MASTER-SCREW

FIG. 2—REMOVAL OF RECEIVER HOOK SWITCH

FIG. 3—STAND REMOVED FROM BASE

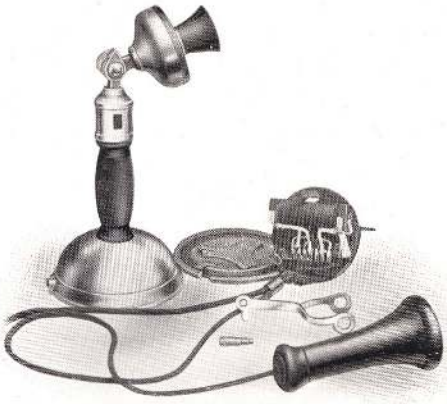


FIG. 4—STAND TAKEN ENTIRELY APART

DESCRIPTION

CODE NO.		CODE NO.	
60	Series.	65	Five-Bar Generator, 1,600-Ohm Ringer.
61	Four-Bar Generator, 1,000-Ohm Ringer.	66	Five-Bar Generator, 2,500-Ohm Ringer.
62	Four-Bar Generator, 1,600 Ohm Ringer.	67	Six-Bar Generator, 1,000-Ohm Ringer.
63	Four-Bar Generator, 2,500-Ohm Ringer.	68	Six-Bar Generator, 1,600-Ohm Ringer.
64	Five-Bar Generator, 1,000-Ohm Ringer.	69	Six-Bar Generator, 2,500-Ohm Ringer.

Chicago Solid Back Transmitter

CHICAGO TRANSMITTER
Code No. 256

The Transmitter is the most important of all telephone parts. Good service depends upon a sensitive, yet durable, transmitter capable of performing its functions at all times and under any and all conditions. It must be so constructed as to accurately transmit every possible voice tone from the lowest to the highest, and yet have the delicate mechanism required for this purpose so encased mechanically as to stand up in service for a lifetime.

The various parts which constitute the housing, must therefore be made of heavy, substantial materials. If lightly constructed they would not go together as rigidly as the exacting requirements of telephone transmission demand, and would have a tendency to respond to vibration and thereby distort or neutralize the vibration of the diaphragm and carbon granules. A comparison between a CHICAGO transmitter and any other will show you that our parts such as carbon chamber, bridge, and face plate are heavier than the similar parts of all other transmitters. We make them so at a greater expense, but the result is increased talking efficiency, excellent quality of articulation, clear, distinct tones, and greater length of life.

The carbon chamber or "button" is built with the same accuracy as the parts of a well made watch and adjusted by delicate instruments to insure absolute uniformity. Specially prepared polished carbon electrodes are used, with surfaces as hard and bright as a mirror. The carbon granules that we use are imported from France, and are made

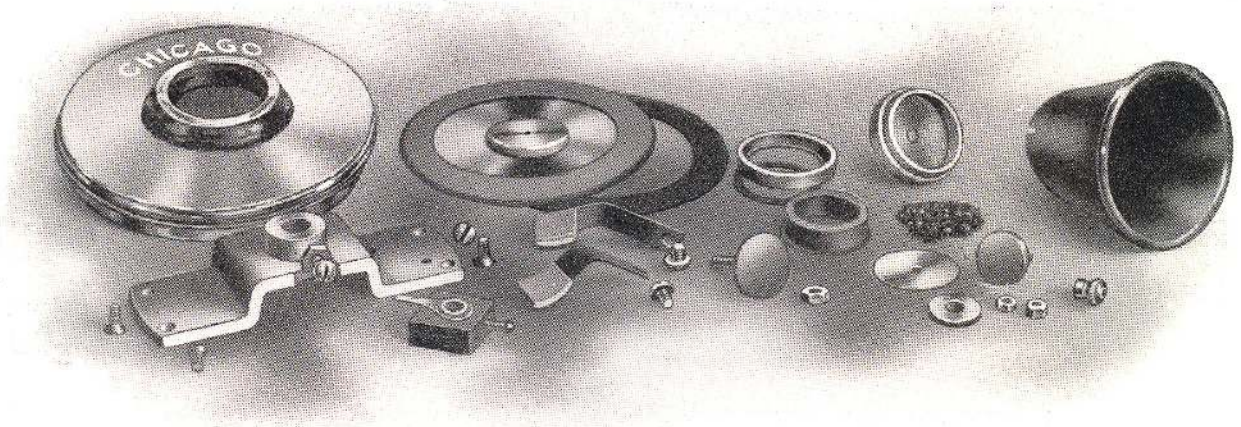
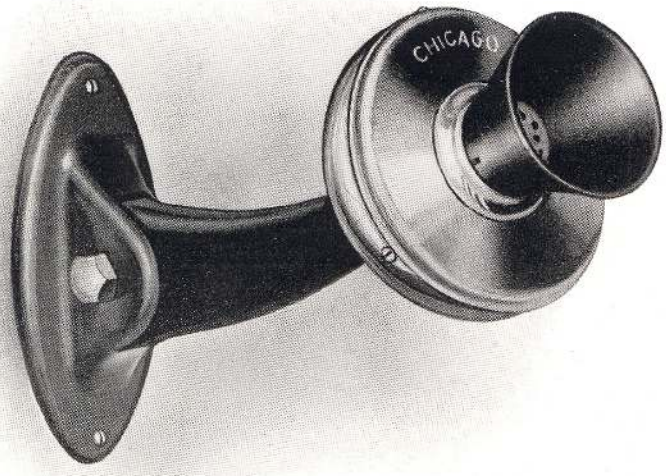


FIG. 5—CHICAGO TRANSMITTER — KNOCKED DOWN



CHICAGO ARM TRANSMITTER
Code No. 248

from the finest grade of special transmitter carbon. The size, density and hardness of these granules was determined only after exhaustive laboratory tests but the results have justified us in taking such exquisite care. No deterioration will result from continued use as they are not susceptible to extreme heat or cold; no annoying "frying" noises due to poor carbon; no packing due to metal particles in cheaper grades of carbon.

Our main diaphragm, which takes up the voice vibrations is made of frosted aluminum, around the edge of which is placed a rubber ring. This rubber ring or gasket is treated by a special process in order that it will not harden with age, and acts as a cushion so that side tones or foreign noises are not taken up.

We have given the question of battery consumption the careful consideration to which it is justly entitled and have with our usual thoroughness solved the problems which make the talking qualities of our transmitters superior to all others and yet reduce the amount of current used to the minimum. Comparative tests show conclusively that CHICAGO Transmitters use less battery than any other transmitter made.

The transmitter back cup covers and protects the other parts. It is attached to the face plate by four small screws. In the bottom of this cup are two holes for attaching to an adjustable arm, and one hole through which to bring out the battery terminals. Special back cups will be furnished so that CHICAGO Transmitters can be used on transmitter arms of other makes.

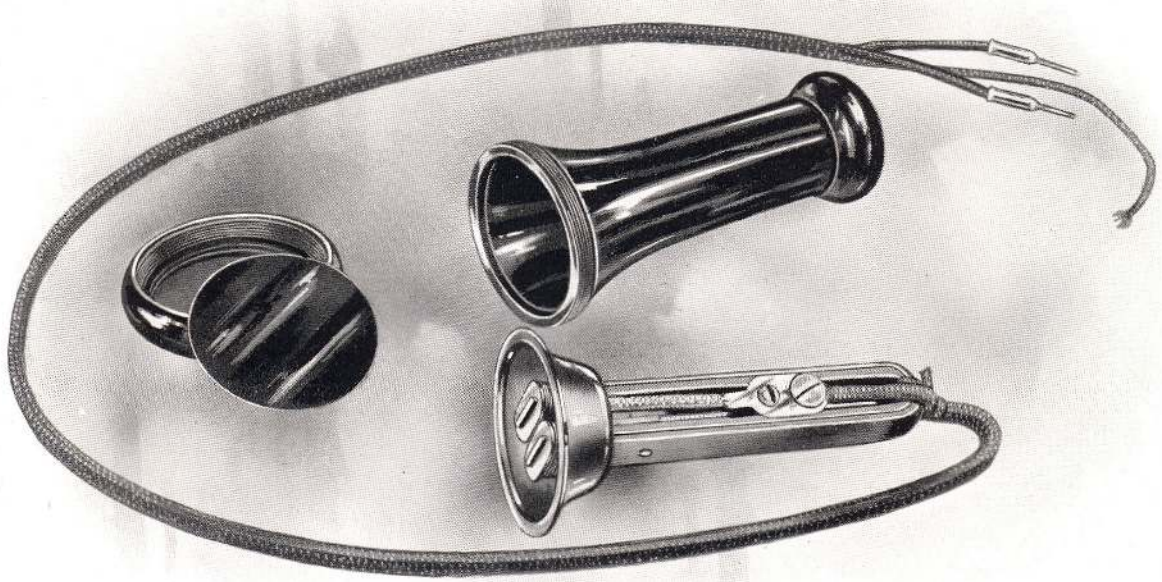
We have two standard styles of mounting. The "Pony" Arm, our Code No. 248, is used exclusively on Compact cabinets. The Code No. 247 Arm and Transmitter, with coil in base, is used on all double battery box telephones. These arms are made of pressed steel, finished with two coats of black enamel, which will not check or peel, but will retain the handsome gloss finish indefinitely.

CHICAGO ARM TRANSMITTER
Code No. 247

Chicago Receiver

The Receiver is second in importance only to the Transmitter. It must necessarily be more sensitive to sound vibration than the human ear, and so constructed as to convert into sound, and clearly and loudly interpret, the various impulses carried from the distant transmitter.

In designing the Chicago Receiver we first made it possible to have all parts accessible and self-contained and the construction so perfected as to make it thoroughly dependable for efficient service during a lifetime of use.



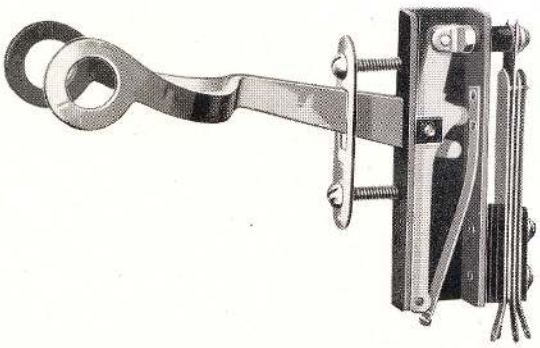
RECEIVER
Code No. 246

To insure permanency of the permanent horse-shoe magnet we have two laminated sections. Our reason for adopting this method of construction is fully explained under the head of "Generator." The size of this magnet was exactly proportioned to the size, diameter and weight of its diaphragm. The latter must be constantly attracted without being drawn out of shape. We have also insured an absolutely uniform distance between the electro-magnet and the diaphragm by careful, accurate machining and permanent adjustment.

A tough, durable, composition shell and a high grade moisture-proof worsted cord help to complete this standard bi-polar receiver which accurately and distinctly reproduces the tones of the human voice.

Chicago Receiver Hook Switch

The Perfect Hook Switch. Simple in Design. Positive in Action. Compact, Durable and Reliable.



CHICAGO SHORT LEVER HOOK SWITCH
Code No. 380

The contact springs are made of German silver with pure platinum contacts. They are separated by hard rubber insulations of sufficient thickness to prevent possible leakage of current. On account of the perpendicular arrangement there is no chance for dirt, metal particles, etc., to lodge between the platinum contacts and thus prevent a good, clean connection. They are rigidly mounted on the steel frame but insulated from it by a hard rubber block.

These contact springs are operated by the short lever and hard rubber plunger of an improved design, allowing the greatest possible leverage and a correspondingly long motion of the contact springs. The action is controlled by a tension spring, made of the finest spring steel. In order to make the contact between the lever and tension spring frictionless, we have adopted a roller contact, making it impossible for this point of contact to become harsh and rough by repeated use.

The receiver hook is removable without the use of tools, as is shown in Figure 6. By simply holding the hard rubber plunger down with one finger the hook can be pulled out. It can be inserted in the same manner. With this arrangement it is impossible to get the contact springs out of adjustment when removing the switch hook.

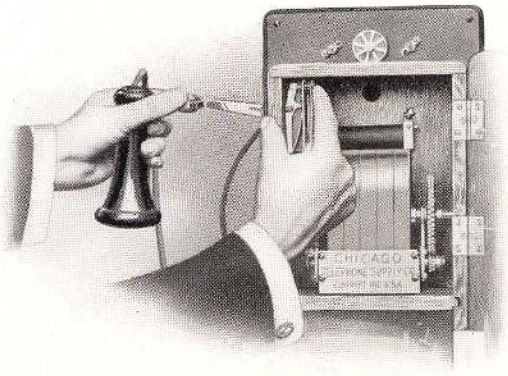


FIG. 6—REMOVING HOOK

Chicago Ringer Movement

BRIDGING RINGER
Code No. 251

Our ringers are noted for the clear, penetrating tones produced, and their extreme sensitiveness even under unfavorable line conditions. It is representative of the usual high standard maintained by the Chicago Telephone Supply Co. and is so carefully planned and the parts so accurately balanced that continued use will never decrease its efficiency.

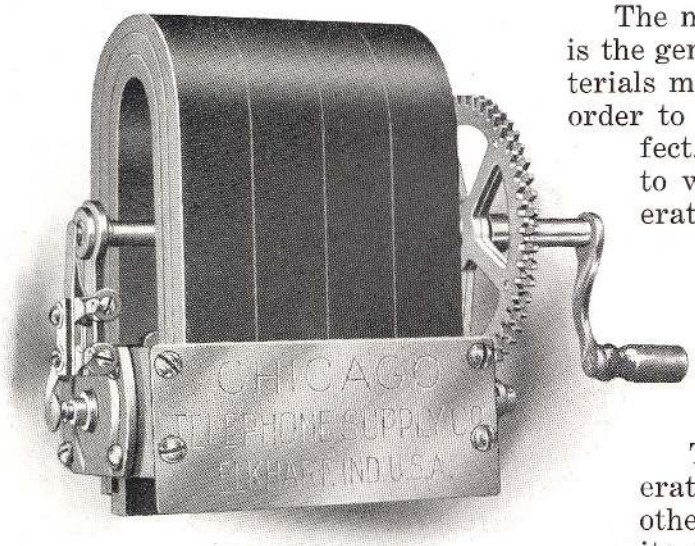
The use of extra long coils permits the use of larger gauge wire in their winding, thus increasing the sensitiveness of the ringer. We use a high grade silk insulated magnet wire which is wound about a core of soft annealed Norway iron. The permanent magnet is of course made of the highest grade magnet steel and will never lose its magnetism.

Instead of using small brass studs in the armature to keep it from coming into direct contact with the ringer cores, we permanently fasten to the inside of the armature a thin strip of copper which offers a parallel flat surface to the cores and eliminates chance of freezing.

The armature with its bell clapper attachment is made very sensitive on account of our needle point bearings. The adjusting screw enables you to secure a wide or short movement and the lock nut insures a positive and permanent adjustment. Special attention is called to our method of mounting ringer and gongs to cabinet. You will note that the gong supports are mounted directly on the ringer frame and held rigidly into position by machine screws, another insurance of permanency of adjustment.

SERIES RINGER
Code No. 249

The Chicago Generator

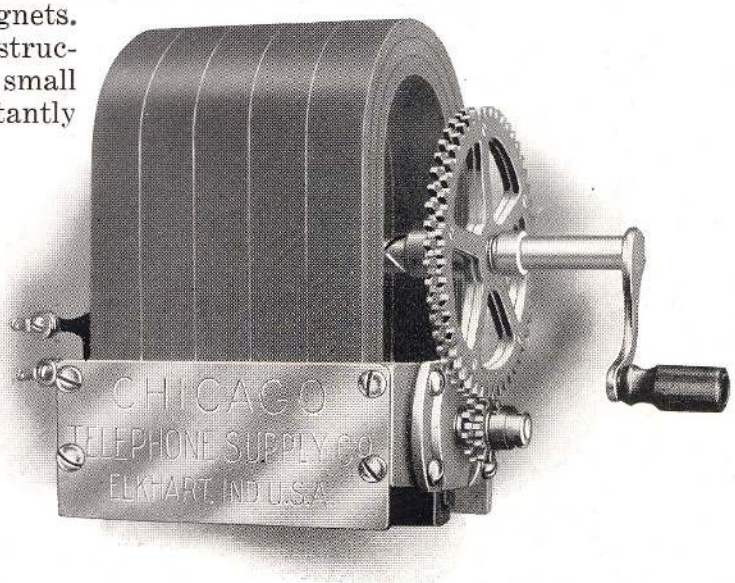


FOUR-BAR GENERATOR
Code No. 282

The most expensive part of a magneto telephone is the generator. In its construction the best of materials must be used and the greatest care taken in order to make it mechanically and electrically perfect. It must be sturdy and powerful in order to withstand hard usage, and capable of generating a sufficient amount of current to ring through the heaviest loaded lines.

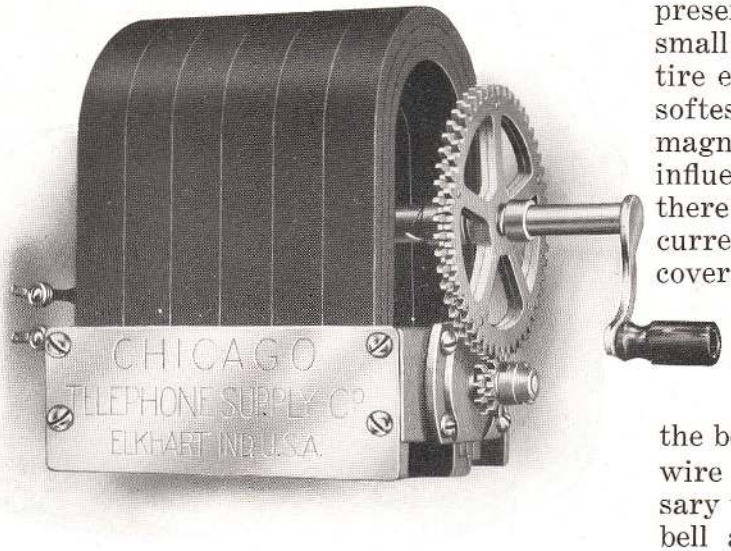
For the Chicago Generator we make the unqualified statement that it is the most powerful hand ringing apparatus made,and offer the following reasons why it is superior to all others:

The magnet bars used on Chicago Generators have a larger cross section than any other telephone magnet bars, which increases its power because the relative efficiency of a generator depends upon the strength of the magnetic field. Another factor of greatest importance in making a telephone generator is permanence of its magnets. To make a powerful magnet the analysis of the steel must be adapted to that purpose, and the quantity must be sufficient to saturate the field. These features are primary necessities. Next in importance, however, is permanence which depends upon the temper. The magnets must be heated to the point of recalescence and then chilled instantly. If the chilling process is slow, then the magnet will have soft spots in it, through which magnetism will leak like water through a sieve. For this reason, instead of making our magnets out of one piece, we make them out of three pieces in laminated form, one over the other. Each bar of a Chicago generator thus consists of three magnets. The obvious advantage of this method of construction will be easily recognized. Because of its small cross section a CHICAGO magnet chills instantly when immersed in water after being heated. It chills equally in the center as well as on the surface. Consequently, it is hard, has no soft spots, and as a magnet is absolutely permanent. The magnets used by our competitors are so thick that when exposed to the chilling medium they chill on the surface at once, but in the center of the bar they do not. Consequently the center has soft spots and a magnet so made is not permanent.



FIVE-BAR GENERATOR
Code No. 283

As with the magnets so also with the armature is the principle of lamination



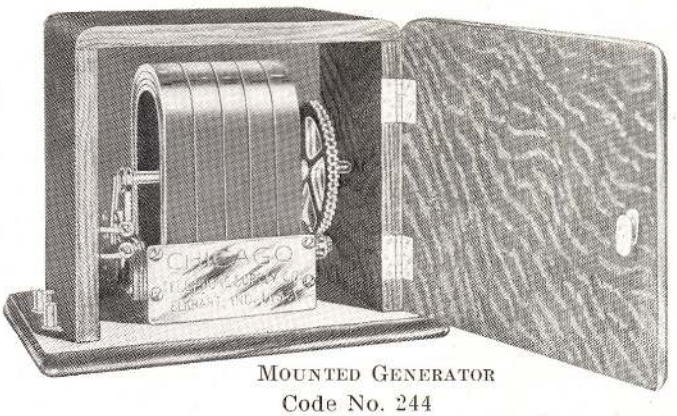
SIX-BAR GENERATOR
Code No. 284

preserved. The armature is made up of many small segments bound together so that the entire energy may be utilized, and made of the softest steel procurable that it will retain no magnetism when not exposed to magnetic influence. By using a laminated armature there is no current loss, due to stray or "eddy" currents. The armature is wound with silk covered magnet wire of highest quality. An exact balance is secured so that the number of turns of this magnet wire is sufficient to provide the required voltage to overcome the resistance of the bells and of the line, while the size of the wire is sufficiently large to provide the necessary volume of current or amperage for each bell and also to overcome the electrostatic capacity of the line.

The next feature of this generator to be considered is the gear wheel. You will recognize at once its common sense construction. Other types of telephones have gear wheels with milled teeth, which eventually wear down, causing the generator to turn hard and finally become inoperative. Our gear wheel on the contrary is made on the same principle as the gear wheels on a clothes wringer. It really consists of two gears, riveted together so the teeth on one are opposite the spaces between the teeth on the other, and vice versa. There can be no lost motion, and constant usage will not strain or wear. These gears never have and never will cause trouble, and will be just as good in twenty years as when first placed in service.

The shunt springs are made of German silver, arranged so that when the generator is not in operation the armature is short circuited in the Series generator, or open in the Bridging generator. This arrangement makes it practically impossible for an armature to be burned out by lightning.

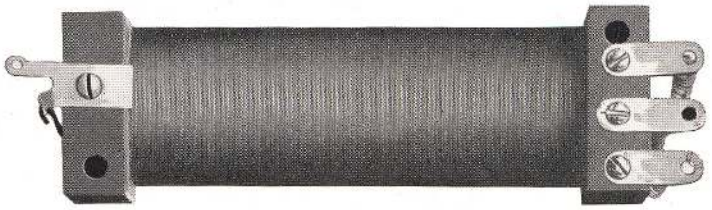
Chicago generators are made in three sizes — Four, Five or Six-bar. The Code No. 282 Four-Bar Generator is recommended for use on party lines on which not more than eight telephones are installed. The Code No. 283 Five-Bar Generator is designed for use on heavily loaded lines, where the conditions require a very powerful generator to ring every bell on the line strong and clear. The Code No. 284 Six-Bar Generator is really a step beyond the requirements of party line service, and is so large, heavy and powerful that it is the acme of party line luxury. It is specially designed for use at junction points where two or more heavily loaded lines are sometimes connected, or on lines of poor construction, or for those who wish to enjoy the greatest possible efficiency by having the best and most powerful, regardless of price.



MOUNTED GENERATOR
Code No. 244

Induction Coil

Code No. 453



Code No. 447

The function of the induction coil is to intensify the 3-volt current produced by the battery into a high voltage current so that it is possible to talk over long as well as short distances. Of course in order to secure the best possible results, it is necessary to have the primary and secondary windings of the coil in exact proportion, and perfectly balanced with the receiver and transmitter.

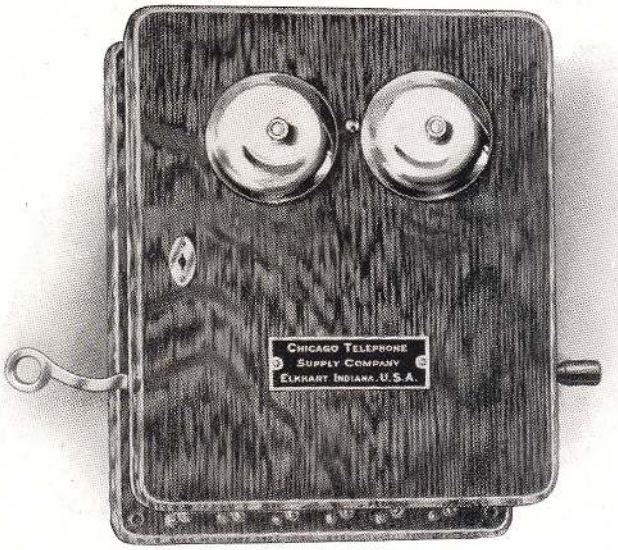
The excellent talking and receiving qualities of the Chicago Telephone may be partially explained by a perfectly designed induction coil, which our engineers have worked out with their usual painstaking care and thoroughness.

Silk insulated magnet wire is used for winding, each layer of which is separated by very thin paraffined paper. The ends are made of heavy fibre, and No. 20 annealed Norway iron wires are used for the core.

We have illustrated the four styles which are used with our different types of wall and desk telephones. They are mounted in a convenient and accessible position and are fastened to the cabinet with tinned clips and screws. This is an important feature, as it permits the removal of the coil without unsoldering any connections.

Code No. 451

Code No. 452

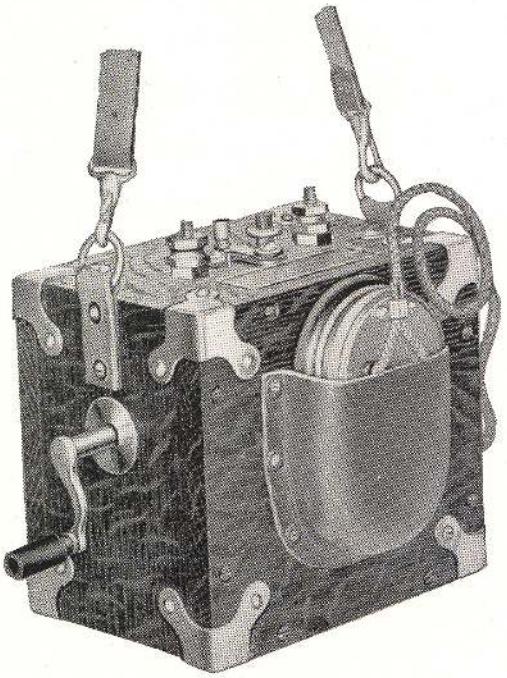


Chicago Magnetos

CODE NO.	DESCRIPTION
181	Series.
182	Four-Bar Generator, 1,000-Ohm Ringer.
183	Four-Bar Generator, 1,600-Ohm Ringer.
184	Four-Bar Generator, 2,500-Ohm Ringer.
185	Five-Bar Generator, 1,000-Ohm Ringer.
186	Five-Bar Generator, 1,600-Ohm Ringer.
187	Five-Bar Generator, 2,500-Ohm Ringer.
188	Six - Bar Generator, 1,000-Ohm Ringer.
189	Six - Bar Generator, 1,600-Ohm Ringer.
190	Six - Bar Generator, 2,500-Ohm Ringer.

Extension Bells

Code No. 237 Series
Code No. 237A 1000 Ohm
Code No. 237B 1600 Ohm
Code No. 237C 2500 Ohm



CHICAGO PORTABLE TEST SET
Code No. 318

The Chicago Portable Test Set

Code No. 318

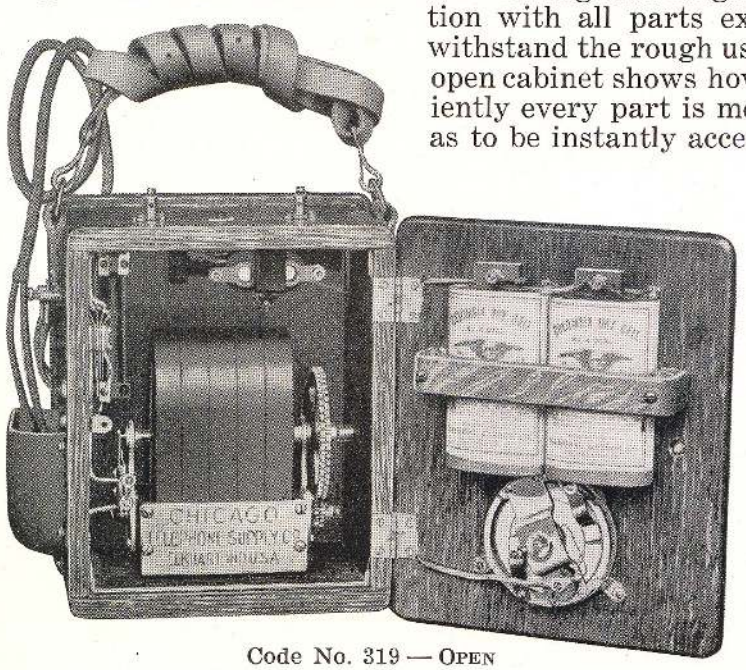
A very compact lineman test set for testing either ground or metallic circuit lines—to detect and locate grounds, crosses, and opens. This instrument, fully equipped, weighs just eleven pounds and measures 6″ high, by 6½″ wide, by 4¾″ deep. An adjustable shoulder strap for carrying is furnished with snaps at each end for engaging the rings with which the cabinet is provided. All parts are concealed with exception of the combination receiver-transmitter, which is placed in a snug leather pocket.

In order to make this instrument as small, light and convenient to carry as possible we were compelled to sacrifice certain talking qualities by using a combined receiver-transmitter without batteries. It is not primarily intended for conversational purposes, but a lineman will have no difficulty in making himself heard by operator if he talks in a clear distinct tone of voice.

Chicago Portable Test Set

Code No. 319

Our newly designed test set, known as our Code No. 319, is particularly recommended for use on long, heavy loaded farm lines as it possesses all the qualities of a portable telephone and will be furnished with either series or bridging equipment. We use our regular telephone generator, ringer and transmitter, but furnish a special watch case receiver and a pair of No. 4 Oval Columbia Batteries. This test set is guaranteed to give excellent service for both talking and ringing purposes. It is sturdy in construction with all parts except receiver concealed and built to withstand the rough usage to which it will be subjected. The open cabinet shows how conveniently every part is mounted so as to be instantly accessible.



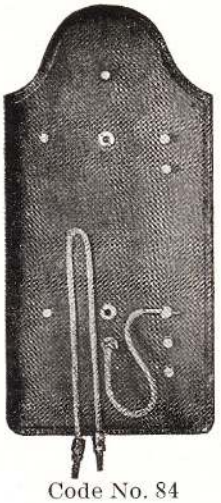
Code No. 319 — OPEN

Code No. 319 — CLOSED

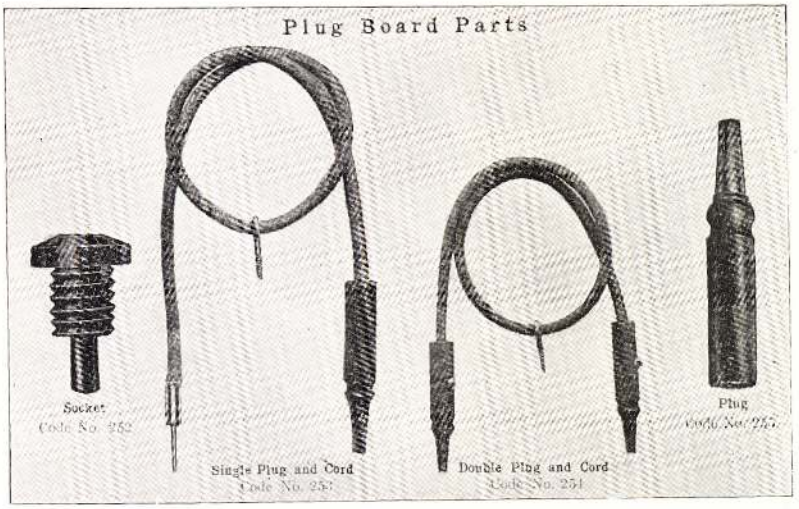
The Chicago De Luxe Telephone

With Mounted Gray Pay Station

The accompanying illustration shows our DeLuxe Telephone equipped with the regular three-slot Gray Pay Station. It is a popular combination as it dispenses with the regular transmitter arm, a swivel being used for mounting the transmitter. It combines the most efficient bridging telephone made with the Gray Automatic Pay Station, the reliability of which is well known. If desired this style of pay station may be placed at the side of the telephone instrument, a mounting plate being furnished for that purpose.



Code No. 84



Chicago Plug Board

A very simple switching device to be used in connection with extension bells and a telephone. For use on ground circuits only. Incoming signals are received by extension bells and the telephone is used for ringing out and talking. Detailed instructions for installing and operating will be furnished on request.

Chicago Magneto Switchboards

On the following pages we illustrate the various styles of Switch Boards that we manufacture, and describe as concisely as possible the various vital parts that enter into their construction. In the description of these parts and the explanation of the various functions they perform we have avoided the use of technical terms wherever possible, and have written in such language as will be clearly understood by the average layman who may be vitally interested in the management or operation of a telephone exchange, but who has had little practical experience in the selection of apparatus.

The technical telephone expert will recognize at a glance the many points of superiority which increase the efficiency of our Switch Boards and will appreciate our efforts to make their operation as speedy, simple and convenient as possible.

They possess every modern improvement that actual usage has demonstrated to be beneficial and lasting, and represent what is best in magneto Switch Board apparatus.

Cabinets

Our Switchboard Cabinets are made of highly polished quarter-sawed oak, reinforced with strip steel, making them sturdy and rigid in construction, as well as handsome in appearance. They are designed as compactly as possible and yet with ample space to permit the mounting of all equipment in a convenient and accessible position.

Each cabinet is a distinct unit but so designed and standardized as to permit the installation of additional sections when the growth of your exchange so demands. This flexibility and adaptability enables you to purchase the style of board best suited for your present needs and then add to the original equipment as needed.

If more than two operators' positions are installed, it will be necessary to install lamp transfer circuits and order wire keys in order that connections can be made between parties whose drops are located on widely separated parts of the board. Space for the installation of this equipment when needed is left in each cabinet and blue prints showing circuits will be furnished, together with detailed instructions.

We wire each cabinet for ultimate capacity but install only a sufficient number of drops and jacks, cord circuits, etc., to answer your present requirements. The cable of course is fanned out complete, and all terminals plainly tagged so that additional equipment can be added as needed.

Particular attention is called to the key shelf cable. In looping through from key to key enough slack is left so that each separate key can be lifted out from *top* of shelf and examined without unloosening any connections or interfering with the operation of the board in any way. This is an exclusive CHICAGO feature.

The various styles of cabinets appearing on pages 36 to 45 are standard, but we will gladly furnish special designs to meet your particular requirements.

Drops and Jacks

The Chicago Unit-type Self-Restoring Drop and Jack, Code No. 526, as shown in Fig. 7, is our latest improved design, the result of years of experimental work and exhaustive tests under actual line conditions.

We have perfected a Drop which years of service has demonstrated to be the most sensitive, accessible, durable, efficient and reliable switchboard signal made, and we invite a most thorough investigation on your part to prove these claims for superiority.

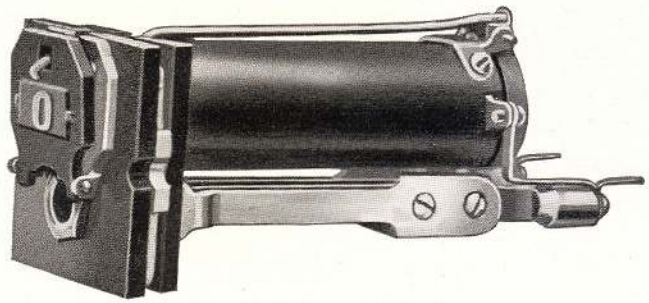


FIG. 7 — BRIDGING, Code No. 526
SERIES, Code No. 525

Each combined drop and jack is a unit and can be removed from board without interfering with any other drop and jack. Each drop is encased in a shell of Norway iron to prevent cross-talk.

We have secured a perfect balance between the armature and trigger so that the armature will respond to the slightest impulse of electrical current. At the same time, the adjustment and balance is so perfect that it will vibrate vigorously when stronger currents are induced.

In the construction of the drop coil we have a fixed or permanent core, accurately machined, which is riveted to the drop shell. The coil is a separate unit made to fit snugly over the core so that there may be no air space between the winding and core. With this construction, you will note that after the drop has been adjusted to the line, the distance between the armature and core is absolutely permanent.

The coil of each drop can be removed in *thirty seconds* without taking the drop from the board. It is simply necessary to go to the rear of board and lift the armature as shown in Fig. 8. Then loosen the screws fastening the clip terminals to each side of coil, and slip clips from beneath screws. Then give the coil a quarter turn to left and pull straight out as shown in Fig. 9. This simple operation is made without the use of any tools except a small screw driver, from the *rear* of board by one man, without unsoldering any connections or interfering with the operation of board in any way. The armature and trigger are removable from drop without tools, and in fact every part arranged so as to be instantly accessible and so as to be removed when necessary without interfering with any other part.

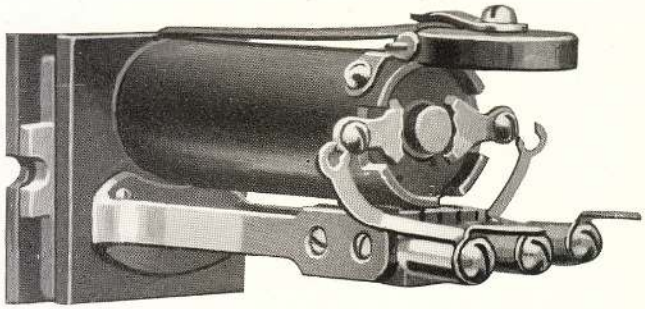


FIG. 8 — REAR VIEW WITH ARMATURE RAISED

For example,—if you wish to remove shell you need not remove drop shutter or front, which in fact need never be taken from board after once fastened to the metal drop frame. (See Fig. 10.) At any time that a rearrangement or replacement should make the removal of a complete drop and jack necessary the operation is extremely simple. The line wires are soldered to tail washers which have the holes slotted so that they can be removed by simply loosening the screws slightly and slipping the tail washer out. Then by going to the front of board and removing screws which hold drop to frame, the entire drop and jack can be brought forward out of the board.

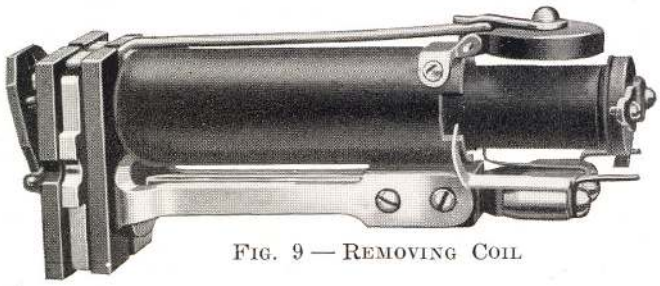


FIG. 9 — REMOVING COIL

The shell, core, drop coil, etc., are carefully insulated from mounting plate and frame by hard rubber insulations. The shutter is also thoroughly insulated from any remaining part of drop and thus chance of cross-talk through the night bell circuit, which otherwise might be made possible if the windings of two or more drop coils were crossed with core or shell of drop, is entirely eliminated.

The jacks are made with extra long, heavy German silver springs, mounted in a hard rubber block, which offers perfect insulation. On account of extra strength and length of these springs, they bear firmly on tip and sleeve of plug when inserted, insuring positive contact. They retain their spring tension even after many years of hard usage, but should it ever be necessary, new springs can be substituted by merely removing the two screws which hold the springs and hard rubber insulations together. The jack thimbles are also removable, and a jack wrench will be furnished so that such replacements, whenever necessary, can be made quickly and conveniently.

The night alarm on CHICAGO Switchboards is absolutely perfect. In operation it is simplicity itself for when the shutter falls, making contact with concealed night bell contacts, it is impossible for the bell not to ring, providing of course that the night bell operator's key, one of which is installed in each operator's set, is thrown into position. An excellent vibrating bell is installed for this purpose, with platinum contacts, and which is operated by two or three dry cells.

The various features above described insure a sensitive, durable and accessible signal, absolutely reliable, which invariably registers an incoming signal which is instantly called to operator's attention by the vigorous vibration of trigger which distinctly interprets code rings.

We would like to submit a sample for your careful examination and test.

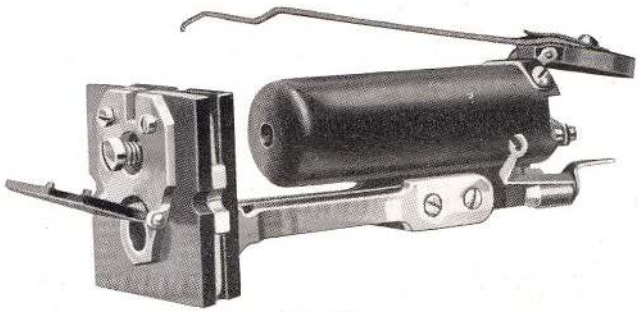
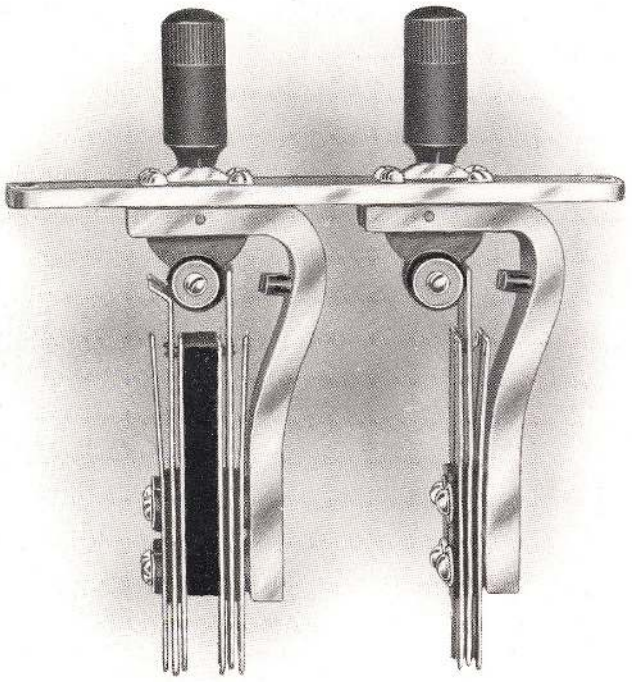


FIG. 10
Showing method of removing shell and coil without taking Drop and Jack from frame.



Code No. 313 — KEY

Cord Circuit Equipment

Each complete set of cord circuits, single supervision, consists of a pair of plugs with reinforced BB Premier Switchboard Cords, a high impedance clearing-out drop and a platinum pointed double ringing and listening key.

Double supervision cord circuits consist of double clear-outs, two low capacity condensers, a pair of plugs and cords, and our platinum pointed double ringing and listening key.

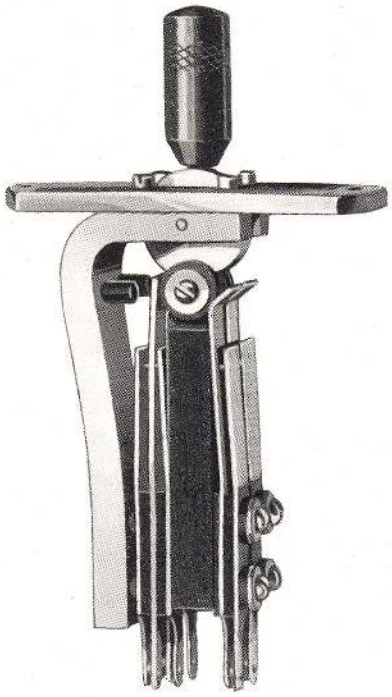
We particularly recommend double supervision as it not only insures a positive ring-off, but enables the operator to determine, without listening in, which one of the connected parties is calling. Another advantage is the non-ring through feature, which prevents the subscriber from ringing back on the other line. A blue print showing this improved circuit, and a more detailed description of its advantages will be gladly sent upon request. The illustrations on pages 36 and 37 show the arrangement of equipment on a switchboard equipped with double supervision cord circuits.

Keys

The Code No. 313 Double Ringing and Listening Key is considered as standard and is shown above. The front key is arranged for listening on either cord and ringing on the front cord, and the rear key is for ringing on the back cord. This style of key enables the operator to ring out on either line without taking down the connection.

German Silver springs, platinum contacts and pure hard rubber insulations are used, and so mounted as to insure clean positive contacts. The cam is fitted with frictionless roller bearings made of hard rubber. The key handles are also made of hard rubber, but have metal bushings so that the thread will never strip.

The key is built substantially and so perfectly designed as to perform its important function accurately and lastingly.



Code No. 310 — KEY

Operator's Equipment

Each position on our standard switchboards has a complete operator's set consisting of long distance transmitter with adjustable suspended arm; head band receiver with silk cord, plug and jack; induction coil; battery; powerful six-bar generator; hand and power generator switching key; and night bell switching key. On boards of more than one position a switching key is installed for cutting the operator's sets together, so that if necessary one operator can handle the entire switchboard.

Operator's Transmitter with Adjustable Arm

The regular Chicago Transmitter used with our switchboards insures perfect talking efficiency for local and long distance work. It is mounted conveniently with a suspended type adjustable arm.

A vertical adjustment is also made possible by our arrangement of transmitter cord and cord weights, which enables the operator to raise and lower the transmitter at will.

The swinging arm transmitter is considered as standard although the breast plate transmitter will be furnished if specified.

Operator's Head Band Receiver

The working parts of this receiver are mounted in an aluminum cup independent of the shell. By this method greater mechanical strength and permanent adjustment is secured. The diaphragm rests on the rim of the aluminum cup and is securely locked by the ear piece. The magnets are laminated, semi-circular in form, and will retain their strength indefinitely.

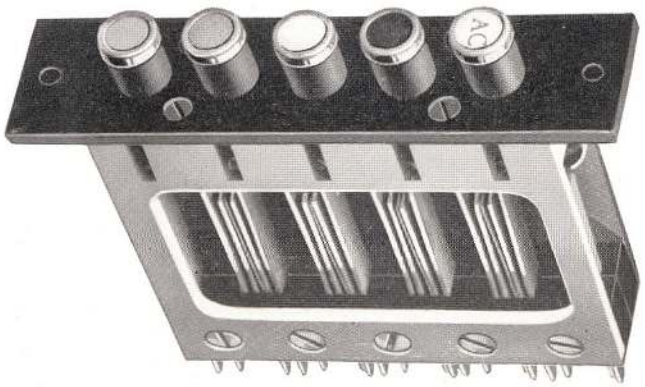
HEAD BAND RECEIVER
Code No. 230

To illustrate the strict attention that is paid to detail, we call attention to the metal bushings embedded in shell for holding the head band pivots, thus preventing wear of the shell. The band is made with leather covered steel and is self-adjusting to the operator's head.

Four Party Master Key

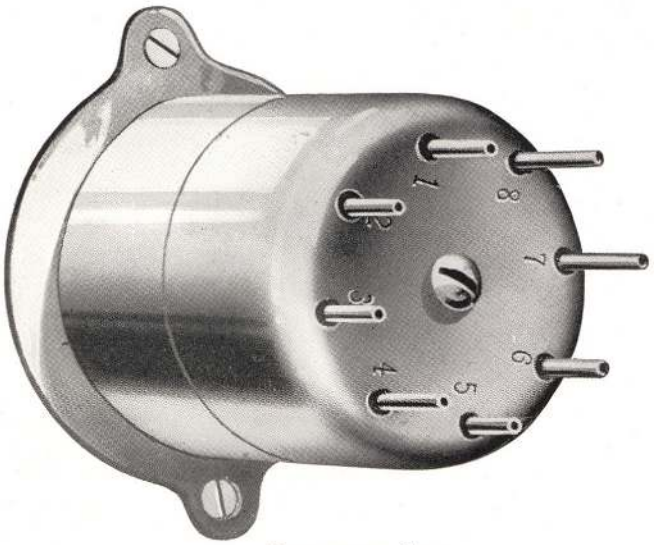
This Four Party Key is used in connection with our four party selective telephones. It has five push buttons, one for each of the four stations, and one to be pressed when four party lines are not in use, so that alternating current can be used on any cord circuit. Our circuit is very simple and our master key can easily be installed in your switchboard even though it is not regularly wired for four party work.

We will be glad to send blue print with full directions for installing, and detailed explanation how reliable four party service can be secured by using Chicago polarized ringers to respond to either positive or negative current.



FOUR PARTY MASTER KEY
Code No. 401

Repeating Coil



REPEATING COIL
Code No. 297

Whenever a metallic circuit is connected with a ground or common return line, the connection should be made through a repeating coil. By so doing, you avoid a physical connection between the ground and metallic circuits and eliminate the noise which would ordinarily result from an unbalanced line. Our Code No. 297 Repeating Coil is especially designed for switchboard cord circuit use and the windings are so perfectly balanced that high efficiency as a talk-through and ring-through coil is secured.

Operators' Chairs

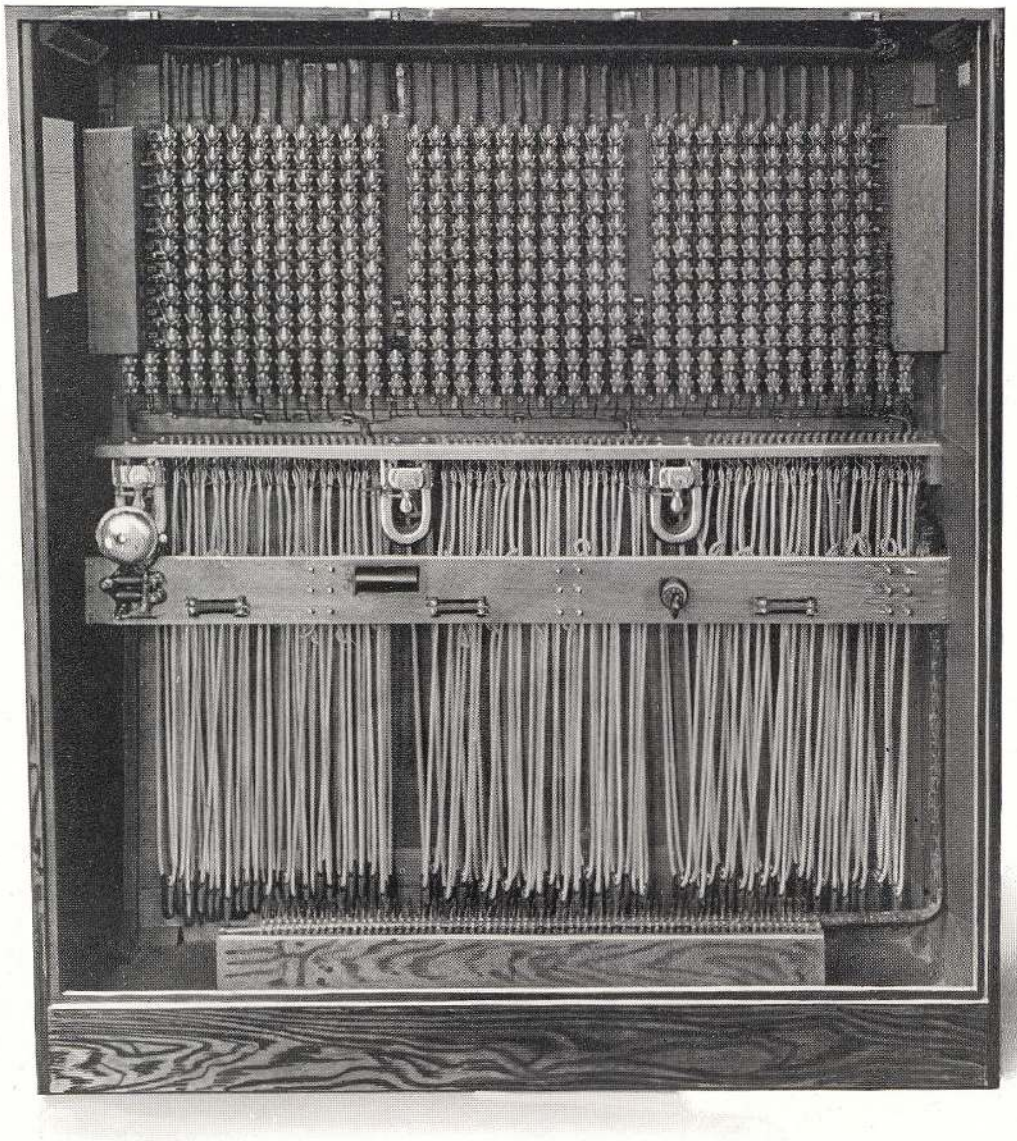
Specially designed for switchboard work. Substantially built, in oak or birch mahogany. They are very comfortable, and are made in two heights—one adjustable 18 to 24 inches, the other from 25 to 28 inches. In ordering please specify height desired and whether with cane or leather seat.

Chicago Bell Type Express Switchboards

CABINET, Code No. 350

Capacity — 300 Drops and Jacks.
30 Cord Circuits—double or single supervision.
2 Operators' positions, with either swinging arm or breast plate transmitters.

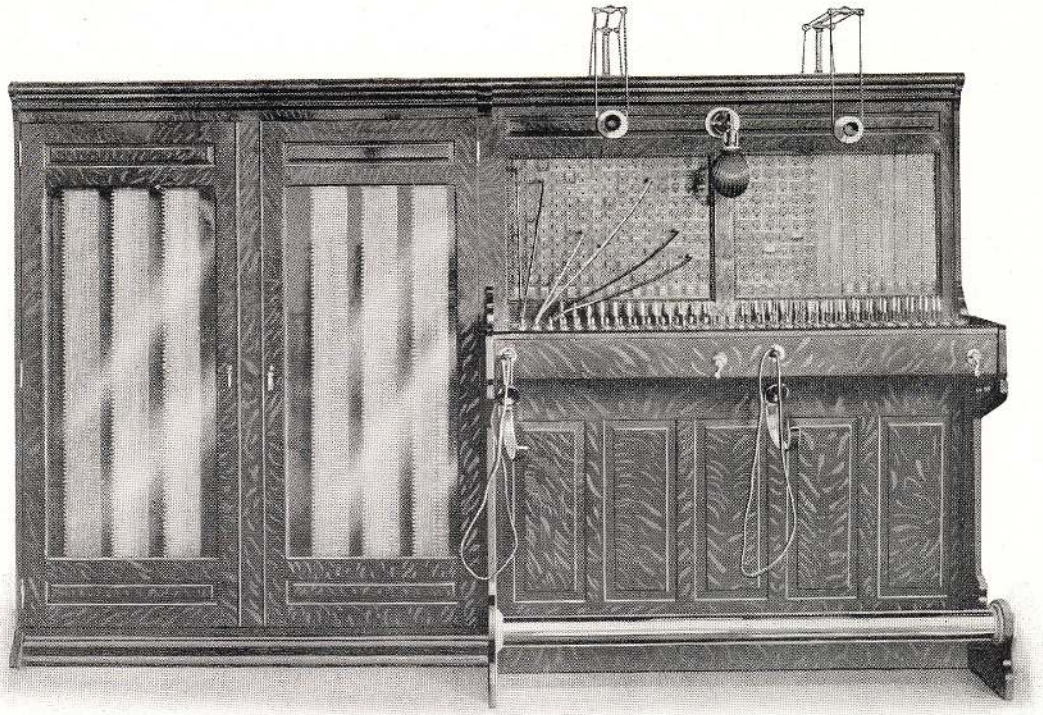
Chicago Bell Type Express Switchboards



CABINET, Code No. 350

Rear View — showing arrangement of cable, repeating coils, night bell relay, double supervision cord circuits, with condensers, double clear outs, etc.

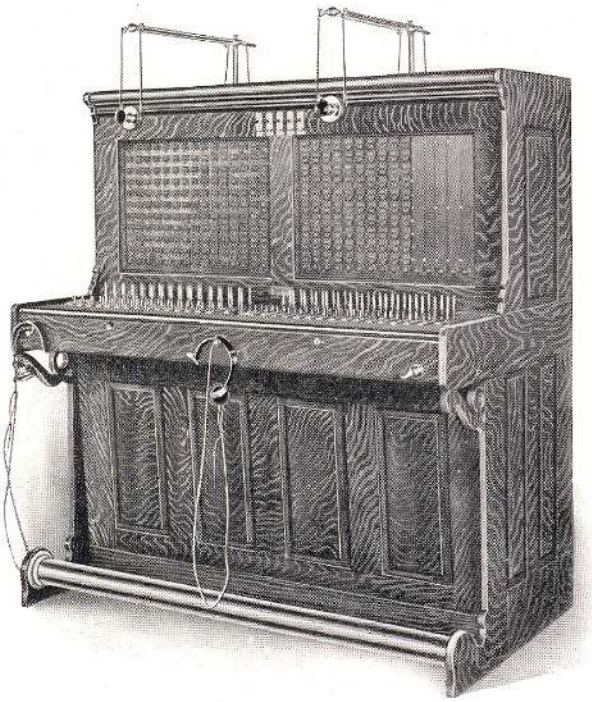
Chicago Bell Type Express Switchboards



Capacity—
300 Drops and Jacks.
30 Cord Circuits — double or single supervision.

Code No. 351

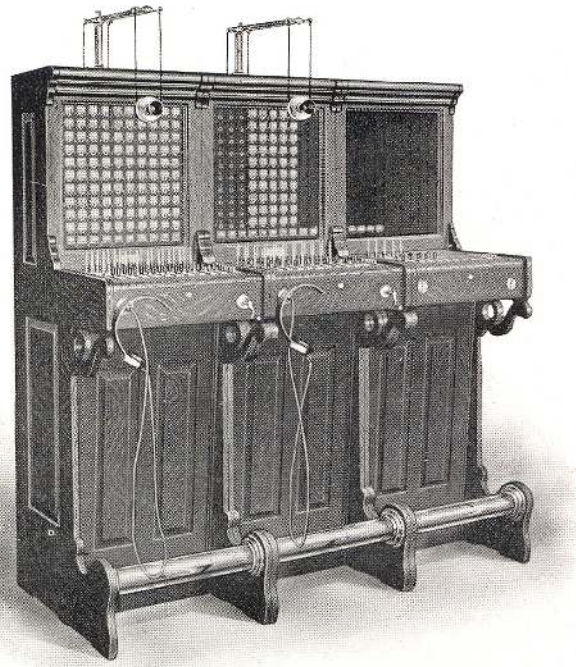
2 Operators' positions.
Special lightning arrester cabinet.



Code No. 353

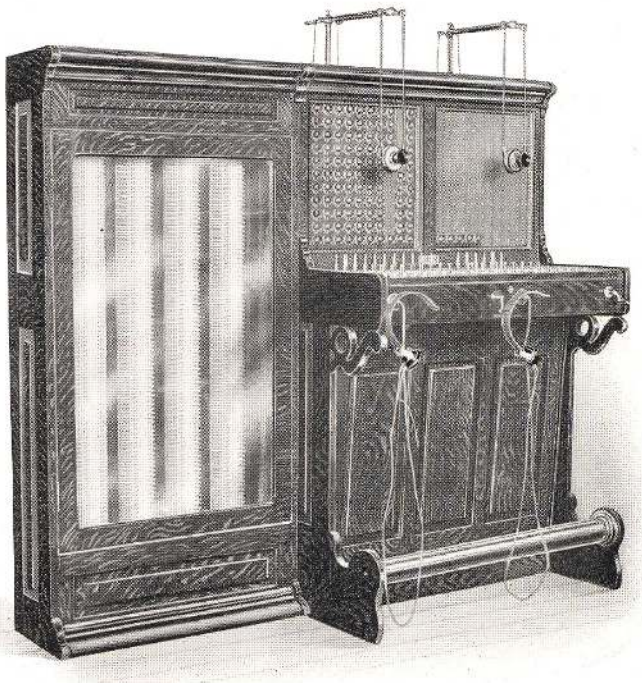
Capacity—
300 Drops and Jacks.
30 Cord Circuits — double or single supervision.
2 Operators' positions.

Chicago Bell Type Express Switchboards



Code No. 375

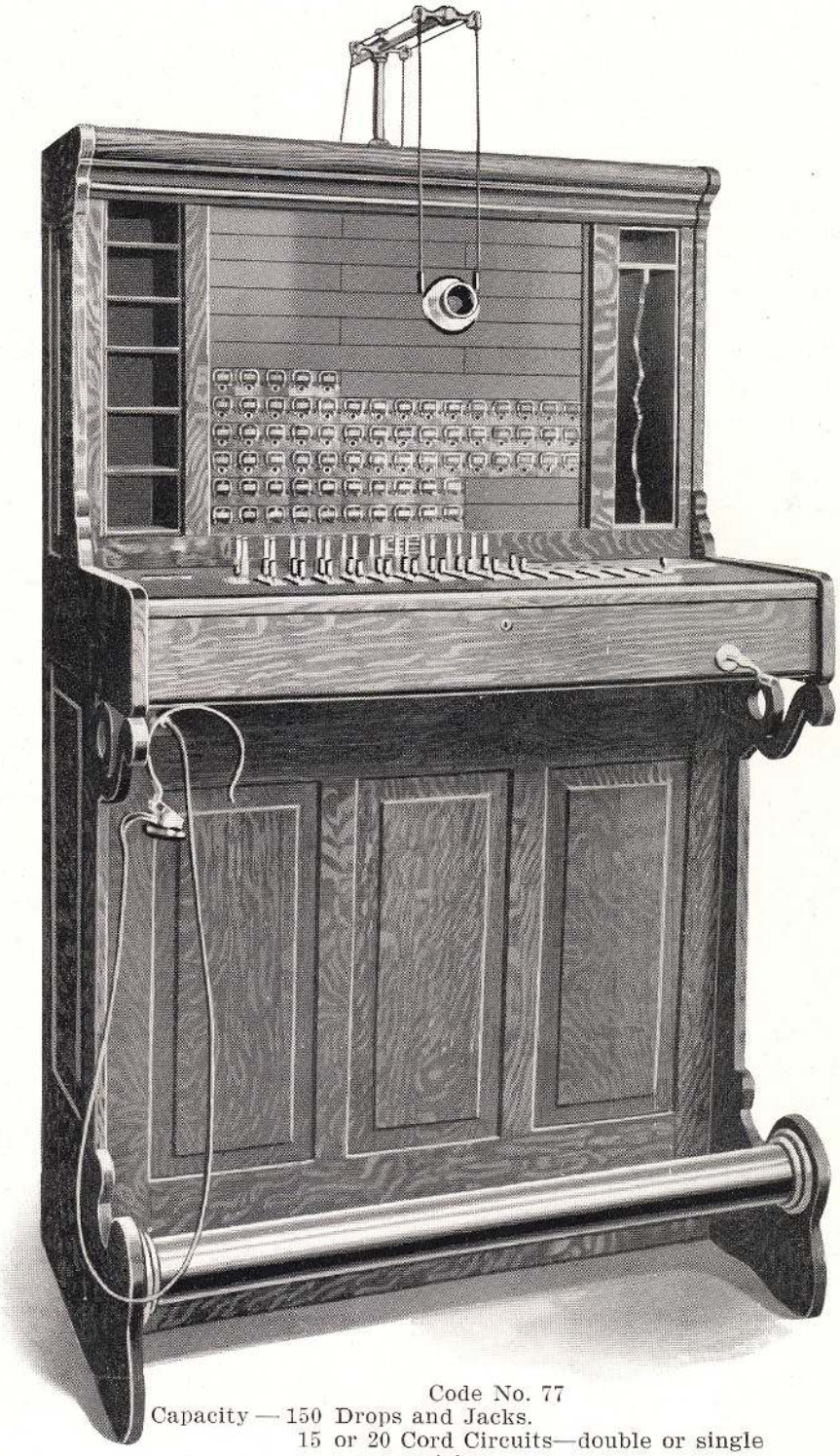
Showing standardized cabinets, allowing expansion as additional space is needed.



Code No. 76

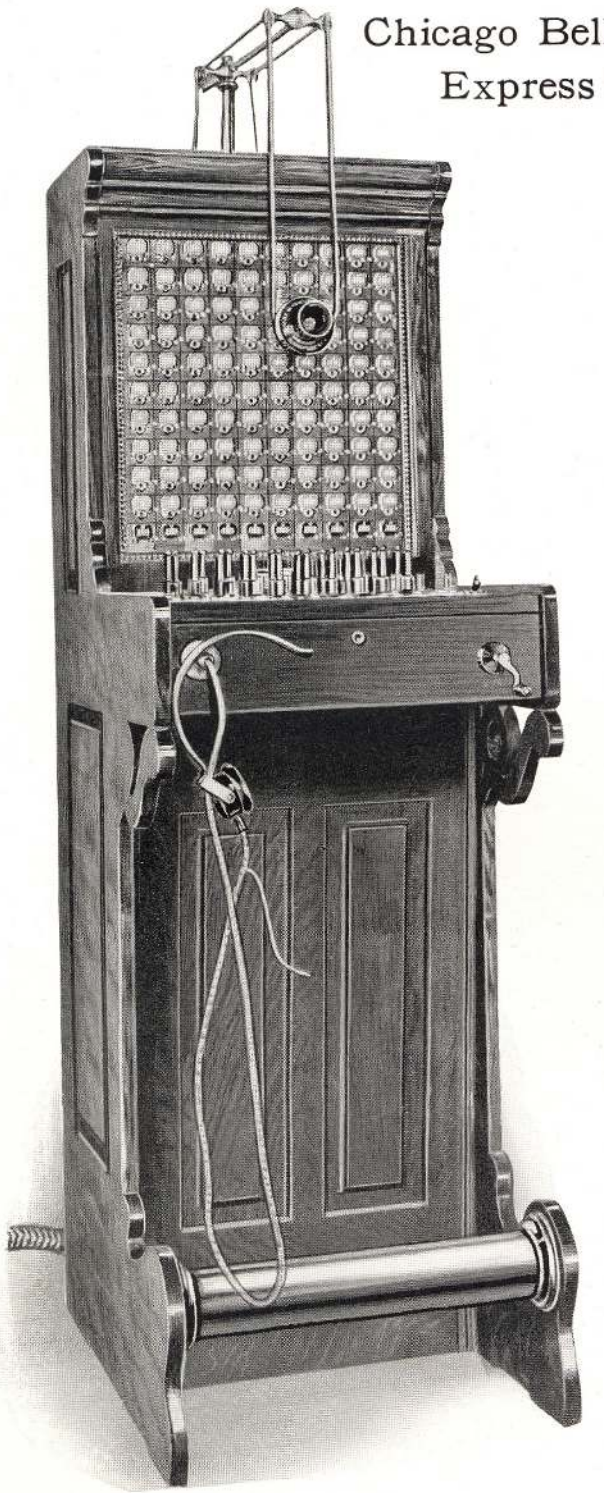
Capacity—
200 Drops and Jacks.
20 Cord Circuits — double or single supervision.
2 Operators' positions.
Special lightning arrester cabinet.

Chicago Bell Type Express Switchboards



Code No. 77
Capacity — 150 Drops and Jacks.
15 or 20 Cord Circuits—double or single supervision.
1 Operator position.

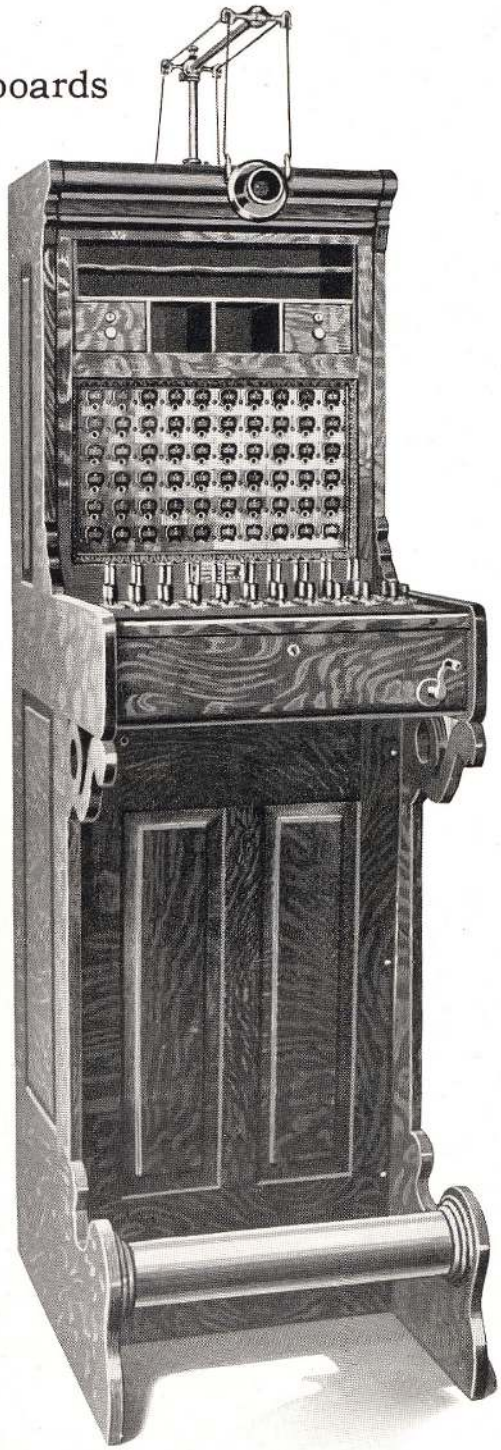
Chicago Bell Type Express Switchboards



Code No. 78

Capacity — 100 Drops and Jacks.
10 Cord Circuits.

Unit type cabinet — can be added to as your exchange grows.

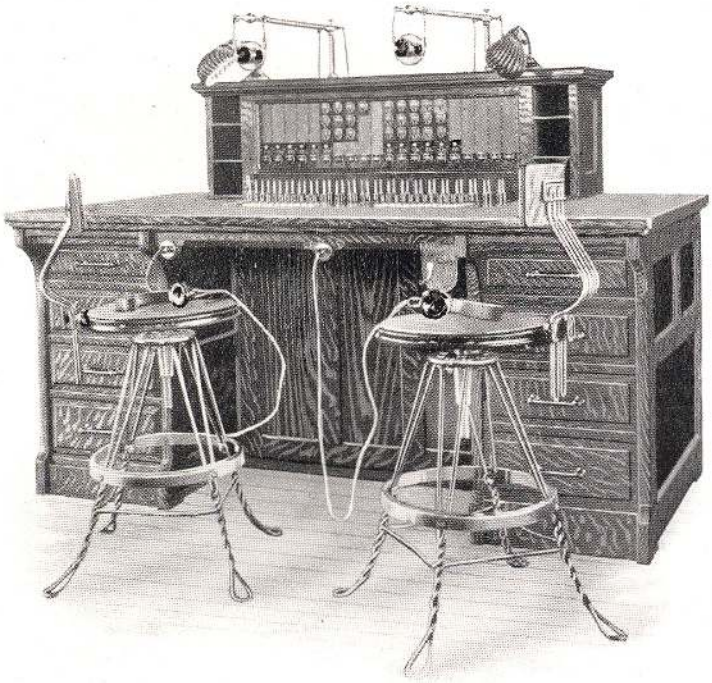


Code No. 73

Capacity — 50 Drops and Jacks.
10 Cord Circuits.

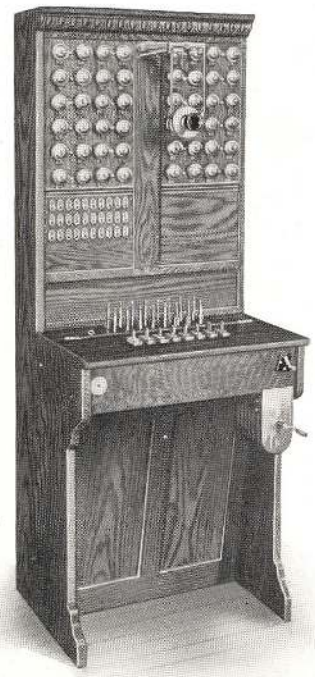
Showing convenient arrangement of compartments for toll tickets, ledger space and cash drawer.

Chicago Desk Type Switchboards



Code No. 357
Capacity — 100 Drops and Jacks.
20 Cord Circuits.
2 Operators' positions.

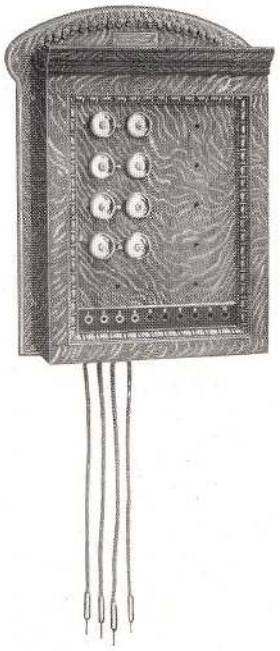
Code No. 361
Capacity — 50 Drops and Jacks.
10 Cord Circuits.



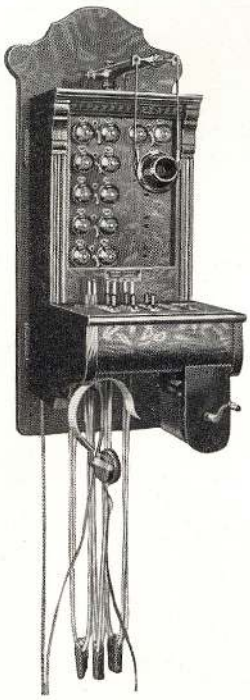
TOLL, Code No. 82

TOLL, Code No. 82
Capacity — 24 Ringers and Jacks.
8 Cord Circuits.

TOLL, Code No. 83
Capacity — 10 Ringers and Jacks.
5 Pair Cords and Plugs.
No operator set.
Use with regular telephone.



TOLL, Code No. 83

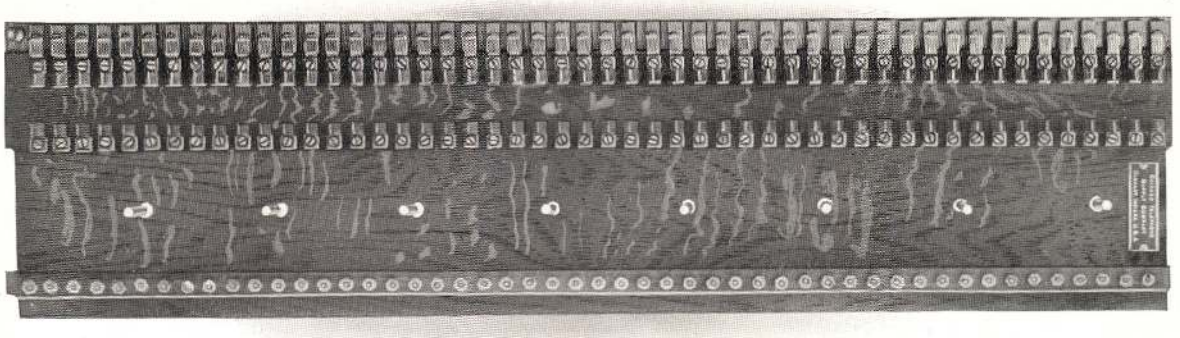


TOLL, Code No. 81

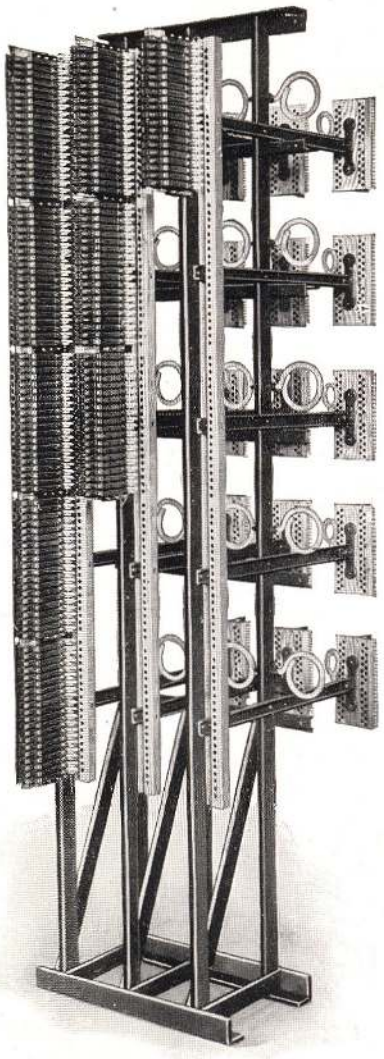
TOLL, Code No. 81
Capacity — 10 Ringers and Jacks.
5 Cord Circuits.

Code No. 74
Capacity — 20 Drops and Jacks.
5 Extra Toll Jacks.
6 pairs Cords and Plugs.
Arrester mounted on cabinet.

Code No. 74



DISTRIBUTING BOARD AND LIGHTNING ARRESTER
Code No. 86

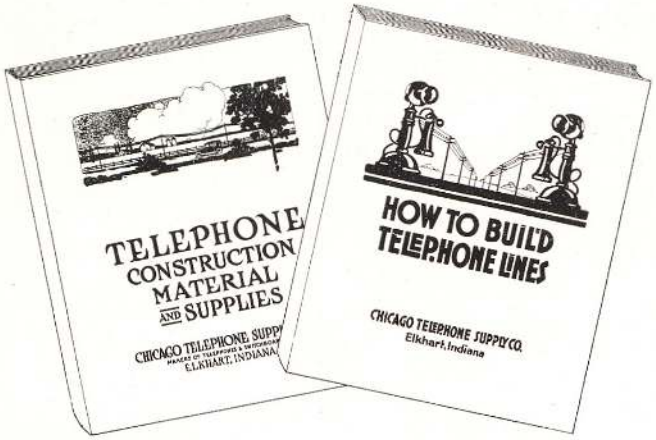


TYPE L DISTRIBUTING FRAME
AND PROTECTORS

Switchboard Protective Apparatus

Chicago Switchboards regularly are equipped with our No. 86 Special Distributing Board and Lightning Arrester, as shown above. This is the standard carbon block and mica fuse protector with cross connecting panel. Without extra charge we fan out the switchboard cable and connect to panels of 10, 25 or 50-pair capacity. In ordering be sure to specify whether for ground or metallic circuit.

We will furnish, when specified, the Cook Distributing Rack with No. 10 Cook Protector, which we particularly recommend where lines are in close proximity to high tension electric light or power circuits, or in localities subject to unusually severe electrical storms. This type of protective apparatus offers positive protection against damage by lightning and when used in connection with Chicago Switchboards we guarantee your drop coils against burn-outs. Write us for literature fully illustrating and describing Cook Protectors.



WE will be glad to send you our general supply catalog "Telephone Construction Material and Supplies" fully illustrating and describing everything needed for building lines and installing telephones. We carry a complete stock of construction material, supplies and tools and can make shipment immediately upon receipt of your orders.

Also ask us to send "How to Build Telephone Lines," in which we explain up-to-date construction methods, offer suggestions concerning practical and economical plans for laying out your lines and show estimates of material specifications which may be of value in determining your needs.

CHICAGO TELEPHONE SUPPLY CO.

MAKERS OF TELEPHONES AND SWITCHBOARDS.

Factory and General Offices

ELKHART, IND. U.S.A.