

**STROWGER AUTOMATIC**  
DIAL SYSTEMS

**STROWGER  
DIAL TELEPHONES &  
TELEPHONE PARTS**

CATALOGUE 4014

Made by  
**AUTOMATIC ELECTRIC COMPANY**  
CHICAGO, U. S. A.

*Exclusive Sales Agents*

*In United States and Possessions*

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22, Rue du Verger Antwerp, Belgium



# Strowger Dial Telephones

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## *and Telephone Parts*

# Strowger Telephones



**F**ORTY years, and more, of dial-telephone leadership have gone into the making of the superior telephones and accessories described herein. Pioneering the dial telephone in the United States and abroad, these telephones have received world-wide use because they are better telephones.

Continuous development by an extensive research and development organization has been conducted with, primarily, the following points in mind:

First, to produce instruments that would be representative of all that is most modern in telephone design.

Second, to make all designs practical, so as to assure the lowest first cost consistent with quality and the utmost in operating economy.

Third, to provide telephone users with instruments which, because of their pleasing appearance and ease of operation, they will be proud to have and to use.

We supply two general types of central-battery telephones, as well as telephones for special applications, and local-battery simplex-dialing telephones. Type 21 telephones are graceful designs of the conventional wall and desk styles. Monophones are an artistic and modern development of the cradle type telephone, which, as a result of public demand, is rapidly becoming the standard instrument. Monophones in color are in increasing demand for the better residences and well-appointed offices.

Standardization has made the telephone parts interchangeable, as far as possible, between wall and desk sets, and between Type 21 telephones and Monophones. This offers an unusual degree of operating economy, since only a limited stock of parts need be carried from which to make replacements in either the wall or desk styles. There are also corresponding economies in manufacture, resulting in a better value for the money expended.



# Strowger Dial Telephones

## The Monophone

The Monophone, in all styles, is furnished with two types of anti-sidetone booster circuits. Numbers 1-A to 4-A use a special three-winding induction coil, while Numbers 11-A to 14-A are of the "induction-coil-receiver" type.

The Monophone cradle is set back from the center of the base to allow space for mounting the

dial. A terminal block, to which all connections are made, is molded as a part of the bakelite base. A six-foot cord is furnished with each desk stand.

When ordering, give code number of dial number plate and dial card (see page 19), and ringer frequency desired.

### Dial Monophone Desk Sets Nos. 1-A and 11-A



Dial Monophone Desk Set No. 1-A and No. 11-A

#### The No. 1-A Monophone

(Requires Ringer Box No. 7006 or 7007)

Desk Set No. 1-A uses an anti-sidetone booster circuit which employs a special three-winding induction coil. As this induction coil is mounted in the ringer box, the ringer boxes listed below are required for use with the No. 1-A deskstands.

##### *Metallic Ringing*

	Code No.
Desk Set Complete .....	1001
Desk Stand Only .....	1003
Ringer Box .....	7006

##### *Ground Ringing*

	Code No.
Desk Set Complete .....	1002
Desk Stand Only .....	1003
Ringer Box .....	7007

#### No. 1-A Monophone Parts

	Code No.
Hand Unit .....	L-900-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730474-A
Desk Set Cord .....	D-542273-A

#### The No. 11-A Monophone

(Uses Conventional Ringer Box)

Desk Set No. 11-A uses a unique type of receiver, containing an induction coil which performs the same functions as the special induction coil of desk set No. 1-A. Since no external induction coil is necessary, a series-type ringer box is used. Hence, the No. 11-A desk stand may be used with any conventional ringer box containing a 1 M.F. or 2 M.F. condenser. With certain ringer boxes, simple circuit changes are required to correctly provide for the Monophone connections.

##### *Metallic Ringing*

	Code No.
Desk Set Complete .....	1101
Desk Stand Only .....	1103
Ringer Box .....	7004

##### *Ground Ringing*

	Code No.
Desk Set Complete .....	1102
Desk Stand Only .....	1103
Ringer Box .....	7005

#### No. 11-A Monophone Parts

	Code No.
Hand Unit .....	L-903-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730247-A
Desk Set Cord .....	D-542275-A
Resistance Coil .....	D-281634-A

*For Monophones with Dial Blanks, see page 12.*

*For Monophones in Color, see page 10.*



# and Telephone Parts

## The Monophone—Continued

### Dial Monophone Desk Sets Nos. 2 and 12

A dial Monophone Desk Set No. 2 or No. 12 consists of a hand unit, cradle and dial mounted on a small bakelite ringer box. The sound holes are on the bottom of the box, which is raised above the desk surface by four rubber feet, thus permitting the ringing to be clearly heard. The entire set is only 9 inches long, 5  $\frac{3}{4}$  inches wide and 7  $\frac{1}{4}$  inches high.

A six-foot cord is used for connecting the ringer box to a terminal block on which the line ends. This terminal block is permanently mounted, but the Monophone desk set is freely movable about the desk surface, or anywhere within a six-foot radius.

The terminal block and cover are of bakelite, 2  $\frac{1}{4}$  inches in diameter and 1 inch in height. To provide proper dialing conditions, ground ringing circuits contain two condensers. Metallic ringing circuits require only one.

When ordering, give code number of dial number plate and dial card (see page 19), and ringer frequency desired.

#### The No. 2 Monophone

This desk set contains a special three-winding induction coil and is wired in an anti-sidetone booster circuit. Interior parts are easily accessible by removing the baseplate.

##### Metallic Ringing

Monophone Desk Set ..... Code No. 2001

##### Ground Ringing

Monophone Desk Set ..... Code No. 2002

#### No. 2 Monophone Parts

	Code No.
Hand Unit .....	L-900-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730481-A
Terminal Strip .....	D-15513-A
Induction Coil .....	D-281901-A
Line and Cord Terminal Block .....	D-15430-A
Condensers (One or Two) .....	D-6897
Condenser Brackets (One or Two) .....	D-730219
Desk Set Cord (Metallic Ring.) .....	D-541871-A
Desk Set Cord (Ground Ring.) .....	D-542275-A



Dial Monophone Desk Set No. 2 and No. 12

#### The No. 12 Monophone

This desk set uses a hand unit containing an induction-coil-type receiver. The base of the telephone therefore contains no induction coil. The circuit is an anti-sidetone booster circuit.

##### Metallic Ringing

Monophone Desk Set ..... Code No. 1201

##### Ground Ringing

Monophone Desk Set ..... Code No. 1202

#### No. 12 Monophone Parts

	Code No.
Hand Unit .....	L-903-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730248-A
Terminal Strip .....	D-15513-A
Resistance Coil .....	D-281634-A
Line and Cord Terminal Block .....	D-15430-A
Condensers (One or Two) .....	D-6897
Condenser Bracket (One or Two) .....	D-730219
Desk Set Cord (Metallic Ring.) .....	D-541871-A
Desk Set Cord (Ground Ring.) .....	D-542275-A

For Monophones with Dial Blanks, see page 12.

# Strowger Dial Telephones

## The Monophone—Continued

### Dial Monophone Wall Sets Nos. 3 and 13



Dial Monophone Wall Set No. 3 and No. 13

These Monophones represent the wall set in its most convenient form. The user need not stand, but may be seated within a cord's length of the wall box. The convenience of a desk set is thus attained without sacrificing space on the top of the desk.

A Monophone of this type consists of a hand unit and cradle mounted on a black-japanned steel ringer box, of the enclosed-gong type. The dial is mounted at the most convenient angle, on the cover of the box. The base of the ringer box is interchangeable with that of Type 21 wall telephones and ringer boxes.

The wall set, complete with the hand unit, measures 9 inches in width and 12 inches in height, and projects 5½ inches from the surface on which it is mounted.

To provide proper dialing conditions, ground ringing circuits contain two condensers. Metallic ringing circuits require only one.

When ordering, give code number of dial number plate and dial card (see page 19), and ringer frequency desired.

#### The No. 3 Monophone

This wall set contains a special three-winding induction coil and is wired in an anti-sidetone booster circuit.

##### *Metallic Ringing*

Monophone Wall Set ..... Code No. 3001

##### *Ground Ringing*

Monophone Wall Set ..... Code No. 3002

#### No. 3 Monophone Parts

	Code No.
Hand Unit .....	L-900-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730474-A
Induction Coil .....	D-281901-A
Base Terminal Strip .....	D-15513-A
Cover Terminal Strip .....	D-15515-A
Condensers (One or Two) .....	D-6897
Bracket for One Condenser .....	D-73684
Bracket for Two Condensers .....	D-730100

#### The No. 13 Monophone

This set uses an induction-coil-type receiver. The base of the telephone therefore contains no induction coil. The circuit is an anti-sidetone booster circuit.

##### *Metallic Ringing*

Monophone Wall Set ..... Code No. 1301

##### *Ground Ringing*

Monophone Wall Set ..... Code No. 1302

#### No. 13 Monophone Parts

	Code No.
Hand Unit .....	L-903-AO
Dial Spring Assembly .....	D-730479-A
Monophone Switch .....	D-730247-A
Resistance Coil .....	D-281634-A
Base Terminal Strip .....	D-15514-A
Cover Terminal Strip .....	D-15515-A
Condensers (One or Two) .....	D-6897
Bracket for One Condenser .....	D-73684
Bracket for Two Condensers .....	D-730100

*For Monophones with Dial Blanks, see page 12.*



# and Telephone Parts

## The Monophone—Continued

### Dial Monophone Sets Nos. 4-A and 14-A

These sets may be used as extension stations for both incoming and outgoing calls, or they may be used as main-line telephones in connection with a ringer box. A set consists of a bakelite case supporting a hand unit, cradle and dial. The case, which is very compact, due to the elimination of the ringer, houses a condenser, a terminal strip and (in the No. 4-A) an induction coil.

The dial is mounted on a bracket, which may be located at either end of the box. This adjustable bracket permits mounting the set on a wall or on either end of a desk. In any of these positions the dial is presented at a convenient angle for dialing. The dial is mounted at the time of installation. A space of only  $3\frac{3}{4}$  inches by  $5\frac{1}{2}$  inches is required for the wall box.

An "L" bracket, which may be used to mount the Monophone at right angles to the supporting surface, is described on page 21.

When ordering, give code number of dial number plate and dial card (see page 19).



Dial Monophone Set No. 4-A and No. 14-A

#### The No. 4-A Monophone

This set uses a three-winding induction coil in an anti-sidetone booster circuit.

	Code No.
Dial Monophone Extension Set.....	4002

#### No. 4-A Monophone Parts

	Code No.
Hand Unit .....	L-900-AO
Monophone Switch .....	D-730514-A
Terminal Strip .....	D-15513-A
Induction Coil .....	D-281901-A
Condenser .....	D-6897
Dial and Bracket Assembly.....	D-84742

#### Monophone Extension Set No. 4

This set is the same as the No. 4-A with the exception that it has no provision for a dial. It can be used for answering-extension service on dial operated lines, or for both incoming and outgoing service on manual lines.

	Code No.
Monophone Extension Set.....	4001

#### The No. 14-A Monophone

This set uses a hand unit with an induction-coil-type receiver in an anti-sidetone booster circuit.

	Code No.
Dial Monophone Extension Set.....	1402

#### No. 14-A Monophone Parts

	Code No.
Hand Unit .....	L-903-AO
Monophone Switch .....	D-730518-A
Terminal Strip .....	D-15513-A
Resistance Coil .....	D-281634-A
Condenser .....	D-6897
Dial and Bracket Assembly.....	D-84742

#### Monophone Extension Set No. 14

This set is similar to the No. 14-A with the exception that it has no provision for a dial. With the exceptions due to this difference, the parts of this set and of the No. 4 are the same as those of the No. 14-A and 4-A respectively.

	Code No.
Monophone Extension Set.....	1401

# Strowger Dial Telephones

## Type 21 Telephones



The Type 21 Desk Stand

### The Type 21 Dial Desk Set

The desk stand of this set is of the offset-transmitter-post type. The base-plate may be removed by loosening one "non-losable" screw. A terminal block, which carries all connections, is molded as a part of the bakelite base. The dial is so mounted that it may be adjusted without being removed from the telephone. The hookswitch may be withdrawn from the post, without disturbing the wiring, by the removal of the base plate and one screw. The transmitter assembly is attached to the mounting neck by a simple hinge concealed in the shell, making a joint similar in appearance to a ball-and-socket joint.

A six-foot cord, "Sarco"-impregnated and silk-covered, is furnished with each desk stand. For description of ringer boxes for these desk sets, see page 17.

When ordering, give code number of dial number plate and dial card (see page 19), and ringer frequency desired.

Height 11 1/2 inches. Diameter of base 5 5/8 inches.

### Booster Circuit (Two-Winding Induction Coil)

#### Metallic Ringing

	Code No.
Desk Set Complete.....	2101
Desk Stand Only.....	2106
Ringer Box.....	7001

#### Ground Ringing

	Code No.
Desk Set Complete.....	2102
Desk Stand Only.....	2106
Ringer Box.....	7002

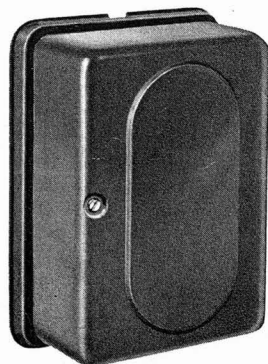
### Anti-Sidetone Booster Circuit (Three-Winding Induction Coil)

#### Metallic Ringing

	Code No.
Desk Set Complete.....	2115
Desk Stand Only.....	2117
Ringer Box.....	7006

#### Ground Ringing

	Code No.
Desk Set Complete.....	2116
Desk Stand Only.....	2117
Ringer Box.....	7007



The Ringer Box

### Desk Stand Parts

	Desk Stand No. 2106	Desk Stand No. 2117
	Code No.	Code No.
Receiver .....	D-5164-A	D-5164-A
Transmitter .....	D-38237-A	D-38237-A
Dial Spring Assembly.....	D-730479-A	D-730479-A
Hooksprings and Mounting Plate.....	D-78456-A	D-78458-A
Desk Set Cord.....	D-542275-A	D-542273-A

For Type 21 telephones with Dial Blanks, see page 12



# and Telephone Parts

## Type 21 Telephones—Continued

### The Type 21 Dial Wall Set

The base and cover of the wall set are of steel, finished in durable black japan. The cover, opened by turning a screw, may be readily removed after loosening a locking plate. The transmitter is mounted by a hinge similar to that used on the desk stand. All connections are made at terminal strips, permitting the circuit to be readily changed, when so desired. A zinc cover, or sub-base, fastened to the back of the base, protects the parts from dust and damage during shipment and installation. The sub-base is grooved and punched to receive the line wires from either the top or bottom.

The base of the wall set is the same as that of a ringer box, and a wall set may be converted to a ringer box, or vice versa, by changing the cover.

The wall set is 10 inches wide, 9  $\frac{5}{8}$  inches high, and 7  $\frac{1}{2}$  inches deep, measured over the transmitter and receiver. The base is 7  $\frac{1}{4}$  inches wide and 9  $\frac{5}{8}$  inches high.

To provide proper dialing conditions, ground ringing circuits contain two condensers. Metallic ringing circuits require only one.

When ordering, give code number of dial number plate and dial card (see page 19), and ringer frequency desired.



The Type 21 Dial Wall Set

#### Booster Circuit

(Two-Winding Induction Coil)

##### Metallic Ringing

##### Ground Ringing

	Code No.		Code No.
Wall Telephone Set.....	2110	Wall Telephone Set.....	2111

#### Anti-Sidetone Booster Circuit

(Three-Winding Induction Coil)

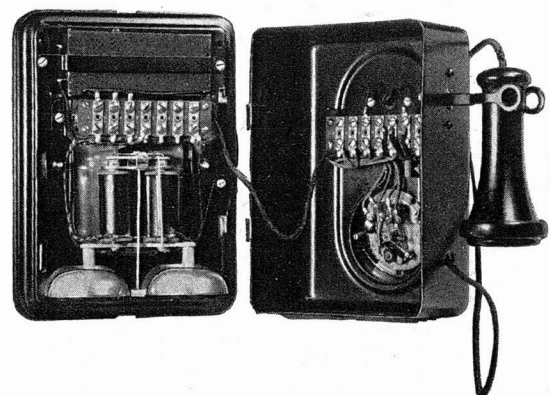
##### Metallic Ringing

##### Ground Ringing

	Code No.		Code No.
Wall Telephone Set.....	2118	Wall Telephone Set.....	2119

#### Wall Set Parts

	Wall Sets Nos. 2110, 2111	Wall Sets Nos. 2118, 2119
	Code No.	Code No.
Receiver .....	D-5164-A	D-5164-A
Transmitter .....	D-38237-A	D-38237-A
Dial Spring Assembly.....	D-730479-A	D-730479-A
Hooksprings and Bracket.....	D-730463-A	D-730502-A
Cover Terminal Strip.....	D-15515-A	D-15515-A
Induction Coil .....	D-281899-A	D-281900-A
Condensers (One or Two).....	D-6897	D-6897
Bracket for One Condenfer.....	D-73684	D-73684
Bracket for Two Condensers.....	D-730100	D-730100



Interior View of the Type 21 Dial Wall Set

For Type 21 Telephones with Dial Blanks, see page 12.

# Strowger Dial Telephones

## Monophones Nos. 1-A and 11-A, in Color

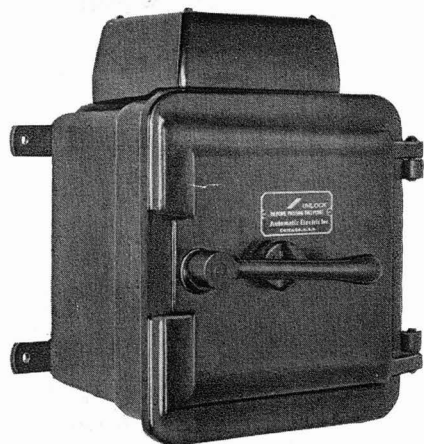
Monophone Desk Stand Nos. 1-A and 11-A may be obtained in ten standard colors, with either gold or chromium-plated fittings. The hand unit, base, and cradle are molded of solid colored plastics. The dial finger plate and stop, and the metal bands around the transmitter and receiver caps are finished in either heavy chromium-plate, highly polished, or in heavy pure gold-plate with a satin finish. Silk cords are furnished to match the color of the plastic material.

These Monophones are available in the following standard colors: Old Ivory, Royal Blue, Orchid, Maroon, Chinese Red, Jade Green, Nile Green, Mahogany, Walnut and Black. The Mahogany and Walnut finishes simulate the appearance of the natural woods.

Ringer boxes are furnished in black only.

When ordering, specify Monophone code number, color and metal finish, in addition to code number of dial number plate and dial card (see page 19).

## The Mine Telephone



This telephone is for use in mines, quarries, boiler rooms or wherever unusual strength and moisture-proof construction are desirable. The cast-iron case is heavily coated with black rust-resisting paint. It is provided with two doors, each moisture-proofed by means of a gasket.

The outer door has a cam-type locking handle, and a strong lock, normally protected by the handle. The telephone working parts are mounted on the inner door, which is opened only for installation and repair. The terminal block is mounted behind this door, and holes are provided in the top and bottom of the case for  $\frac{1}{2}$  inch conduit. A pipe-plug is furnished for plugging the unused hole.

The ringer is mounted under a cast-iron hood on the top of the case, and is fitted with three-inch, loud-ringing gongs. Ringer connections are made through insulated brass rods which pass through the case, making a water-tight connection. Coils are of enameled wire and all connecting wires are impregnated with "Sarco" moisture-proofing compound.

The Mine telephone uses an anti-sidetone booster circuit with a straight-line ringer. It can also be furnished without ringer, if so specified in order. The case is  $11\frac{1}{2}$  inches wide, 15 inches high and  $12\frac{1}{4}$  inches deep, over all.

When ordering, give code number of dial number plate and dial card desired (see page 19).



The Mine Telephone

Mine Telephone \_\_\_\_\_ Code No. 7102



# and Telephone Parts

## The Flush-Type Wall Telephone

All of the equipment of this telephone set is mounted on a bevel-edged steel plate, black-japan finished, which is designed to be mounted flush with the wall. The transmitter is so mounted on the plate that only the mouthpiece projects. The plate is perforated to permit the ringer to be heard distinctly. All common parts are interchangeable with those used in telephones of the Type 21 series. A straight-line ringer is used.

To protect the equipment on the back of the plate from dust and moisture, a sheet-iron outlet box is placed in the wall and the plate is fastened to the box. The outlet box has knock-outs for  $\frac{1}{2}$ -inch conduit, and measures 12 inches high,  $6\frac{3}{8}$  inches wide and  $4\frac{1}{16}$  inches deep. The face plate is  $7\frac{3}{8}$  inches wide and 13 inches high.

When ordering, give code number of dial number plate and dial card desired (see page 19).



The Flush-Type Wall Telephone

Flush-Type Wall Telephone—Series Circuit.....	Code No. 7101
Flush-Type Wall Telephone—Booster Circuit.....	7103

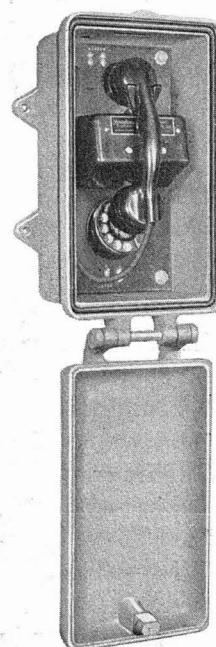
## The Weatherproof Monophone

The Weatherproof Monophone meets the need for a telephone which may be exposed to variable weather conditions, extreme humidity, or mechanical injury. It is specifically designed and much used for marine service. The telephone apparatus is contained in a heavy, cast-brass case, which is finished in battleship gray. The cover is sealed by a gasket, when closed.

The Monophone, which is similar to the Type No. 4 Extension Monophone, is mounted on a bakelite panel, upon which a dial is also mounted. The Monophone hand unit is equipped with a waterproof transmitter. Clips to keep the Monophone hand unit from swinging, when the telephone is used for marine service, are standard equipment. The case is  $10\frac{1}{4}$  inches wide,  $16\frac{1}{2}$  inches high, and projects  $8\frac{1}{2}$  inches from its mounting surface.

A separate ringer is used and should be ordered separately, if desired. The telephone uses an anti-sidetone booster circuit with an induction-coil-type receiver.

When ordering, give code number of dial number plate and dial card desired (see page 19).



The Weatherproof Monophone

Weatherproof Monophone .....	Code No. 7104
Weatherproof Ringer .....	7015

# Strowger Dial Telephones

## The Anti-Noise Monophone Hand Unit

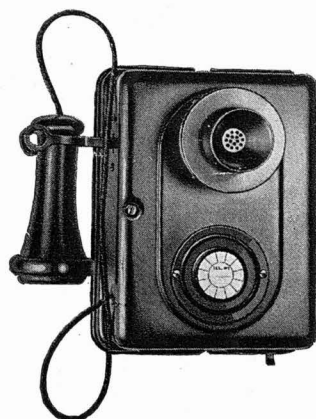


The Anti-Noise Monophone Hand Unit

A special Anti-Noise Monophone hand unit can be furnished for use under very noisy conditions such as are encountered in shops and engine rooms, or on trading floors and similar locations. The unit consists of a standard black handle equipped with a regular receiver, a special transmitter, and a special transmitter cap, or mouthpiece. The transmitter has a special diaphragm which is acoustically shielded from extraneous noises, by means of baffles. The mouthpiece is so formed that only a small tapered hole leads to the diaphragm. The combination of transmitter and mouthpiece very effectively cuts off all sounds not spoken directly into the transmitter.

	Code No.
Anti-Noise Monophone Hand Unit, Induction-Coil Receiver.....	L-915
Anti-Noise Monophone Hand Unit, Polarized Receiver.....	L-917

## Telephones With Dial Blanks



Type 21 Wall Set with D-49318-A Cover Plate

Any standard Monophone or Type 21 telephone may be supplied with the dial and its wiring omitted, and a plate placed over the dial hole. Such telephones are used in manual systems which are to be superseded shortly by automatic installations.

When ordering telephones for such service, give the code number of the corresponding dial telephone, and the code number of the dial cover plate, as listed below.

### Dial Cover Plates

The dial cover plate is of heavy brass and is fitted with a celluloid-covered number-card holder and number card.

	Code No.
Dial Cover Plate—Black-Japan Finished .....	D-49318-A
Dial Cover Plate—Gold Plated .....	D-49318-B
Dial Cover Plate—Chromium Plated .....	D-49318-C

## Telephones with Special Features

Peculiar climatic or operating conditions sometimes make it necessary to provide special features in telephone equipment. Strowger telephones can be supplied with any of the following features:

1. Rubber-covered interior wiring.
2. Rubber-insulated cords.
3. Metal parts brass instead of steel.
4. White-nickel finish for all parts not otherwise protected.
5. Metal insect-excluding screen over ringer box openings.

6. Waterproof transmitters.
  7. Transmitter cut-off buttons (Type 21 telephones only).
  8. Supersensitive transmitters.
  9. Impregnated coils.
- See also under Transmitters, page 18.

When ordering special telephones or Monophones, add the word "Special" to the code number of the corresponding instrument, and state as fully as possible what changes are desired.

*Dial cover ring 40 65167-A*  
*same 40 76462-A*  
*nut 40 77075*  
*celluloid 40 53073*



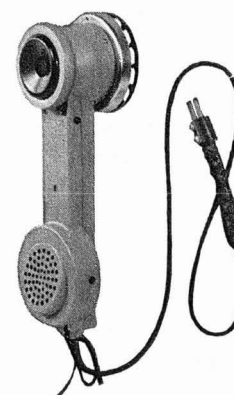
# and Telephone Parts

## The Hand Test-Telephone

The test-telephone is a hand unit with a light but strong aluminum-silicon alloy case, mounting a transmitter at one end and a receiver and dial at the other.

The receiver is wired in series with a condenser. Two push-buttons are mounted in the handle. When the telephone is to be used for monitoring a busy line, the button designated "C" is pushed before connecting to the line. This opens the transmitter circuit and prevents the flow of direct current, so that neither a "click" nor a loss of volume is caused in the telephones of the persons using the line.

The push-button designated "R" is pushed to connect a 1200-ohm resistance in series with the line for testing automatic switches over a maximum resistance loop.



The Hand Test-Telephone

	With Dial	Without Dial
	Code No.	Code No.
Telephone with Cord and Automatic Test Plug.....	L-940-A0	L-940-B0
Telephone with Cord and Test Clips.....	L-940-A2	L-940-B2
Telephone with Cord and Manual Plug.....	L-940-A6	L-940-B6

When ordered without dial, Dial Hole Cover can be supplied if desired.

### Mounting Bracket for Hand Test-Telephone

This bracket, for supporting a hand test-telephone on a wall or other vertical surface, consists of a black-japanned casting into which one end of the test telephone can be fitted.

	Code No.
Mounting Bracket .....	D-730370

## Monophone Parts

	Code No.		Code No.
Hand Unit, with Polarized Receiver, and Transmitter D-38192-A.....	L-900-A0	Cradle for Monophones Nos. 1-A and 11-A.....	D-62037-A
Hand Unit, with Induction-Coil Receiver, and Transmitter D-38192-A.....	L-903-A0	Cradle for Monophones Nos. 2 and 12.....	D-62043-A
Transmitter Cap .....	D-38210-A	Transmitter 5C-1, Regular Type.....	D-38192-A
Receiver Cap .....	D-67149-A	Current Range—.125 to .250 Amp.	
Hand Unit Shell.....	D-52048-A	Transmitter 5C-2, Weak-Current Type.....	D-38204-A
Base for Monophones Nos. 1-A and 11-A.....	D-47338-A	Current Range—.060 to .125 Amp.	
Base for Monophones Nos. 2 and 12.....	D-47157-A	Transmitter 5C-3, Weak-Current Type.....	D-38200-A
Wall Box for Monophones Nos. 4 and 14.....	D-49248	Current Range—Below .060 Amp.	
Wall Box for Monophones Nos. 4-A and 14-A.....	D-49462	Transmitter 5L, Local Battery Type.....	D-38217-A
		Receiver, Polarized Type.....	D-5154-A
		Receiver, Induction-Coil Type.....	D-5155-A

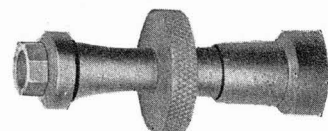
### Monophone Tools

A special tool is used for removing the receiver cap and the Monophone switch-cover; also for checking adjustment of Monophone-switch springs.

	Code No.
Monophone Tool .....	H-50754

A special spanner-wrench is used for removing the Monophone cradle.

	Code No.
Spanner-Wrench .....	H-43173



Monophone Tool H-50754

# Strowger Dial Telephones

## The Type 29 Coin Collector

### Single-Slot, Post-Payment



The Type 29 Coin-Collector

This coin-collector requires no special central-office equipment and may be used on all Strowger automatic individual and party lines (except two-party "jack-per-station" lines). The box is of black-japanned steel, approximately 9 inches high, 4 inches wide and 3 inches deep. The cash box and mechanism cover are separately locked and removed. A four-conductor cord is required between the telephone desk stand and ringer box.

The coin is suspended at the top of the coin-slot, by a lever, while the call is dialed. When the called station answers, the lever must be operated, collecting the nickel, before conversation can take place.

When ordering, specify whether all cash-box locks are to be opened by a common key or by individual keys.

	Code No.
Type 29 Coin-Collector—For telephone with series receiver.....	D-14022-A
Type 29 Coin-Collector—For telephone with polarized receiver.....	D-14022-B

## The Type 75 Paystation

### Multi-Slot, Prepayment

The Type 75 toll and local paystation is arranged for use with nickels, dimes and quarters. A paystation switch-train and associated equipment are required at the central-office.

The apparatus is mounted in a black-japanned steel box approximately 18 inches high, overall, by 7 inches wide, by 5½ inches deep. The door to the compartment containing the cash-box, and the mechanism cover, are secured by different types of locks and can be separately removed. An open type cash-box is ordinarily supplied, but a self-locking type, as described below, is supplied when specified. Burglar-alarm springs can also be provided.

When ordering, give code number of dial number plate and dial card desired (see page 19). Also specify type of coin-box and whether coin-box locks of different telephones are to be opened by a common key, individual keys, or individual keys plus a master-key.



The Type 75 Paystation

	For U.S. Coins Code No.	For Canadian Coins Code No.
Paystation—with Booster Circuit.....	75-A	76-A
Ringer Box for use with above.....	7001	7001
Paystation—with Anti-Sidetone Booster Circuit.....	75-C	76-C
Ringer Box for use with above.....	7006	7006

### Self-Locking Coin Box

This type of box is sealed at the telephone office by a wire and a lead seal. Insertion in the cash compartment of a paystation automatically prepares the box to receive coins, while removal of the box automatically closes and locks it. The cash compartment must be equipped with a Coin Receptacle Rail, which should be called for when converting paystations with open-type boxes.

	Code No.
Self-Locking Coin Box.....	G-6001-A



## *and Telephone Parts*

### The Type 750 Paystation

#### Multi-Slot, Post-Payment

This toll and local paystation is arranged for use with nickels, dimes and quarters. It is unique in being the only toll and local multi-slot paystation for dial operation which requires no special central-office equipment.

The paystation is finished in bronze and is approximately 18 inches high overall, by 7 inches wide by 5½ inches deep. Locks, keys, and cash-boxes are provided as described for the Type 75 Paystation.

Local calls are dialed in the regular manner, but a nickel must be dropped in the 5-cent slot when the called station answers, before conversation can take place. Coins placed in the wrong slot are automatically returned, but other coins cannot be refunded.

The transmission circuit is of the anti-sidetone booster type. A separate special ringer box is required.

When ordering, specify type of cash-box and locks, and give code numbers of dial number plate and dial card desired (see page 19).

	Code No.
Paystation for U. S. Coins.....	750
Paystation for Canadian Coins.....	751
Special Ringer Box.....	7008



The Type 750 Paystation

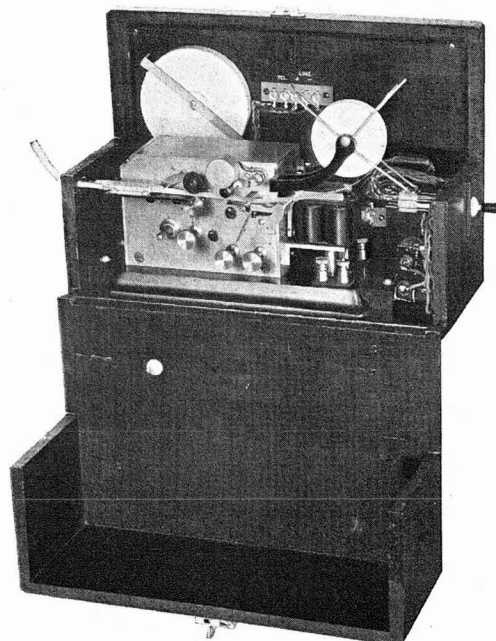
### The Telephone-Call Recorder

The Strowger Telephone-Call Recorder permits any subscriber calling a telephone which has been left unattended to record his own telephone number at the called station, provided that station is equipped with a Recorder. The apparatus consists of a special pen-register which is connected to the telephone line, by a key, when the subscriber leaves. Ringing current starts the apparatus, which causes a distinctive tone to be returned to the calling person, who thereupon dials his own number. The number is recorded on a paper tape, as a series of short dashes. The device automatically stops and is prepared for the next call after the number has been dialed and recorded.

The necessary modification of the central-office connector switches for this service can be readily accomplished on existing installations.

The mechanism, driven by clock-work, is contained in an ebony-finished wood cabinet 14¾ inches long, 6¾ inches wide and 10½ inches high.

Telephone-Call Recorder .....	8001
-------------------------------	------



The Telephone-Call Recorder

# Strowger Dial Telephones

## Local-Battery Telephones

### For Simplex Dialing

These telephones are used primarily on long metallic rural lines. The hand generator is used only for reverting calls. A pulse-filter coil for suppressing radio interference due to dialing is furnished in all circuits (see page 20). The circuits are anti-sidetone booster arrangements.



The Wall Set

### The Wall Telephone Set

The Wall Telephone set may be finished in either golden oak or ebony black, as specified. A latch is provided on the hookswitch for "listening-in" before dialing. The box is only 15 1/4 inches high, 7 1/4 inches wide and 5 1/4 inches deep.

The particular magneto and ringer to be provided are determined by the length of the line and by whether the line is heavily or lightly loaded with stations.

Code No.

Wall Set—With 3-bar Generator—1000-ohm Ringer.....	7106
Wall Set—With 5-bar Generator—1600-ohm Ringer.....	7107
Wall Set—With 5-bar Generator—2500-ohm Ringer.....	7108

### The Monophone Desk Stand

The Monophone desk stand is similar to the central battery Monophone No. 1-A. As Monophones are not generally used on heavily-loaded lines, no switch-latch is provided.

Code No.

Simplex-Dialing Monophone Desk Stand.....	7109
---	------



The Monophone Desk Stand

### The Conventional Type Desk Stand

This desk stand employs the same major parts as the central-battery Type 21 desk stand. It can be furnished either with or without hookswitch latch.

Code No.

Simplex Dialing Desk Stand, With Latch.....	7110
Simplex Dialing Desk Stand, Without Latch.....	7111

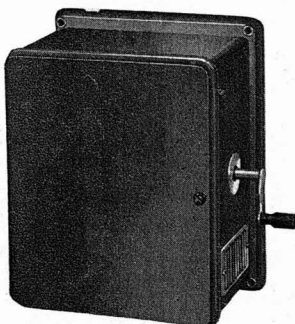
### Local-Battery Simplex-Dialing Ringer Boxes

Local-battery simplex-dialing ringer boxes are furnished in wood, with a hand magneto-generator; and in steel, without a generator, for extension or other service. The wood box is furnished in either golden oak or ebony black, as specified. The ringer box is 9 3/8 inches by 7 3/4 inches, and the maximum projection of the box from the mounting surface is 5 1/2 inches.

The steel extension ringer box is similar to the central-battery type. It may be furnished with either a straight-line or a harmonic ringer, as specified.

Code No.

Ringer Box With 3-Bar Generator—1000-ohm Ringer.....	7012
Ringer Box With 5-Bar Generator—1600-ohm Ringer.....	7013
Extension Ringer Box—No Generator.....	7014



Ringer Box with Generator



# and Telephone Parts

## Central-Battery Ringer Boxes

These ringer boxes are of standard design, and may be used with almost any make of telephone. They can be furnished with "straight-line" ringers, for code-ringing or individual lines, or with harmonic ringers of all standard frequencies. Standard boxes are of steel, but brass boxes can be furnished, if specified.

The working parts of the ringer box are all mounted on the base, which is interchangeable with that of the Type 21 wall set and the No. 3 and 13 wall Monophones. The equipment consists of a ringer, a terminal strip, one or two condensers, and, in the booster types, an induction coil. The simple booster circuit uses a conventional two-winding induction coil, while in the anti-side-tone booster circuit a special three-winding coil is employed. Metallic ringing circuits use one condenser, and ground ringing circuits use two.

The ringer box, complete with cover, is  $7\frac{1}{4}$  inches by  $9\frac{5}{8}$  inches by 4 inches.

When ordering, specify ringer frequency desired.

	<b>Metallic Ringing</b>	<b>Ground Ringing</b>
	Code No.	Code No.
Booster Circuit—For Type 21 Desk Stand.....	7001	7002
Series Circuit—For Monophone No. 11-A.....	7004	7005
Anti-Sidetone Booster Circuit—For Type 21 Desk Stand and Monophone No. 1-A.....	7006	7007
Anti-Sidetone Booster Circuit—Special for Type 750 Paystation .....	7008	



Ringer Box

### Ringer Box Parts

	Code No.
Induction Coil—Two-Winding .....	D-281897-A
Induction Coil—Three-Winding .....	D-281901-A
Condenser .....	D-6897
Bracket for One Condenser.....	D-73684
Bracket for Two Condensers.....	D-730100
Terminal Strip .....	D-15513-A

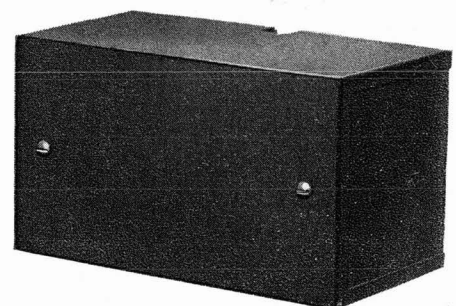
*Long Series for through type of steel shell D-76389*

### Extension Boxes

These boxes are intended for service at desk stand extension stations which do not require ringers. Each box consists of a wooden base on which are mounted a condenser and a terminal strip, and an induction coil, if required. A black-japanned steel cover encloses the unit. The cover is  $5\frac{5}{8}$  inches long,  $3\frac{1}{4}$  inches high and 3 inches deep.

	Code No.
Anti-Sidetone Booster Circuit—For Type 21 Desk Stand and Monophone No. 1-A.....	7009
Booster Circuit—For Type 21 Desk Stand.....	7010
Series Circuit—For Monophone No. 11-A.....	7011

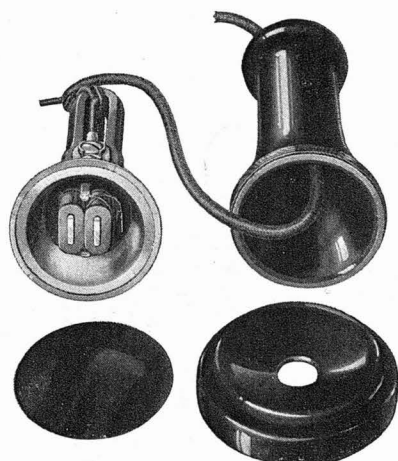
*Condenser Box 2-1924  
Coil 2-1924*



Extension Box

# Strowger Dial Telephones

## Receivers



Polarized Receiver, Disassembled

These receivers are of standard size and shape, with shells, and ear-caps of polished black bakelite, and are fitted with moisture-proof cords, equipped with spade tips. Cords are thirty-three inches long, and are covered with a brown silk braid.

The polarized receiver has two coils, each having a resistance of 37.5 ohms. The coil cores pass through the brass mounting cup and are bolted to the poles of a horseshoe magnet. The direct-current receiver has no permanent magnet. A single coil, of fifty-three ohms, is magnetized by the line current.

	Code No.
Polarized Receiver—With "Sarco"-treated Cord .....	D-5164-A
Polarized Receiver—With Rubber-covered Cord .....	D-5164-E
Direct-Current Receiver—With "Sarco"-treated Cord .....	D-5161-A
Direct-Current Receiver—With Rubber-covered Cord .....	D-5161-C

## Receiver Parts

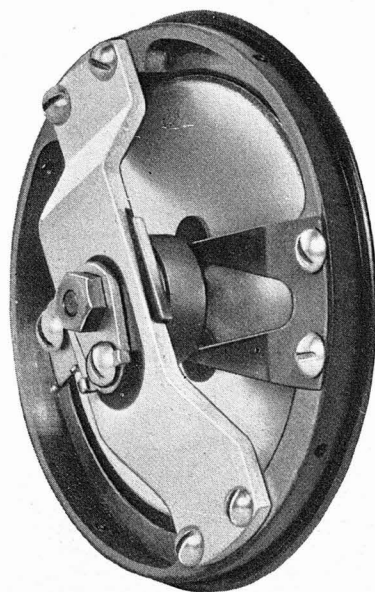
	Code No.		Code No.
Shell for D. C. Type .....	D-52054-A	Diaphragm .....	D-3833
Shell for Polarized Type .....	D-52055-A	Magnet for Polarized Type .....	D-56195
Receiver Cap .....	D-67186		

## Transmitters

The transmitter is of simple construction and of unsurpassed transmission quality. The front plate, or frame, is of brass, heavily black-japanned. The main diaphragm, of aluminum, is perfectly flat, except for an abrupt bend at its very edge. The front carbon electrode is mounted on an auxiliary metal diaphragm which is free to vibrate in unison with the main diaphragm. Current is conveyed, by this arrangement, to the front electrode without the need of flexible conductors.

The transmitter regularly furnished is designed to operate satisfactorily under all ordinary conditions of central-battery service. For use on high-resistance lines, a type of transmitter designed to meet these conditions and capable of operating on weaker currents than the regular transmitter, is recommended and can be supplied.

The framework has four equally-spaced tapped holes for mounting-screws. Transmitters are furnished without mouthpieces, which are listed below separately.



Rear View of Transmitter

	Current Range	Code No.	Piece No.
Regular Type .....	.125 to .250 Amp.	6 C-1	D-38237-A
Weak-Current Type .....	.060 to .125 Amp.	6 C-2	D-38202-A
Weak-Current Type .....	Below .060 Amp.	6 C-3	D-38247-A
Local-Battery Type .....		6 L	D-38248-A
Transmitter Mouthpiece .....			D-38238

## Transmitter Repairs

For best operation, transmitters must be carefully adjusted, and all current-carrying parts must be clean and dry, when assembled. Since it would be difficult to meet these requirements in the field, we recommend that transmitters requiring repairs to be sent to us. Please place a tag bearing your name on all such transmitters and pack them carefully to prevent damage in shipping.

*For Monophone Receivers and Transmitters, see page 13.*



# and Telephone Parts

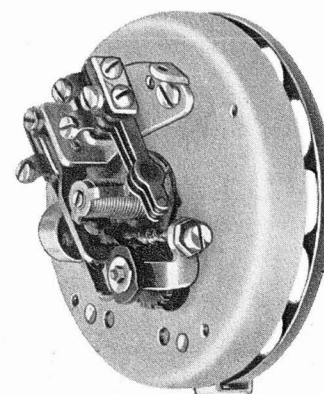
## The Type 24 Dial

The Type 24 Dial is extraordinarily durable and light in weight, and has a minimum number of parts. A phenol-fiber cam interrupts the contact of two springs, to produce the dial impulses. A fly-ball type governor, driven by a worm gear from the shaft of the impulse cam, controls the pulsing speed.

Another group of springs are arranged to be operated by a lever arm on the main shaft of the dial, when the finger-plate is turned. These springs are used to remove the transmitter and receiver from the line circuit during dialing.

The Type 24 Dial is made in three parts—the spring combination, the number plate, and the sub-assembly. These parts can be furnished in any desired combinations, some of which are listed below. The sub-assembly, consisting of all working parts of the dial, is assembled on a nicked brass cup 3 inches in diameter and  $\frac{3}{8}$  inch deep.

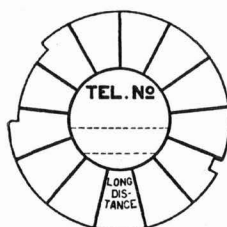
Dials are furnished without dial cards, which should be ordered separately.



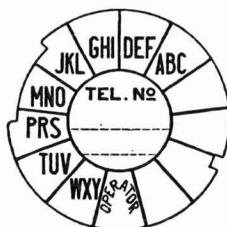
Rear View of the Type 24 Dial

Spring Assembly	Number Plate	Code No. of Complete Dial
D-730479-A	D-53146	D-84729-A
D-730498-A	D-53146	D-84734-A
D-730479-A	D-53196	D-84732-A

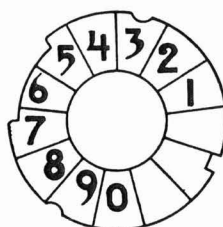
### Dial Cards and Celluloid Covers



D-53180 Card



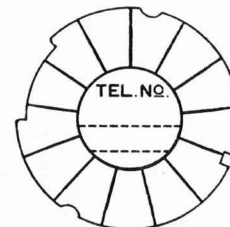
D-53181 Card



D-53309-B Card



D-53351 Cover  
D-53352 Card



D-53353 Cover  
D-53354 Card

Standard dial cards are of white bristol-board, die-cut in a shape such that they cannot be incorrectly placed in the dial escutcheon.

Cards D-53180 and D-53181 are for use under transparent celluloid cover D-53176.

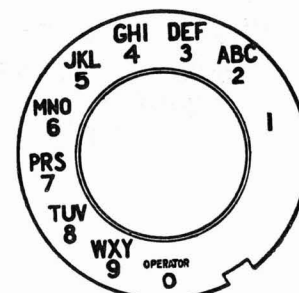
Card D-53309-B is of brass, finished in black with luminous figures and lines, radium-painted.

Cards D-53352 and D-53354 contain merely the words "Tel. No." and space for the insertion of the number. They are used with celluloid covers D-53351 and D-53353, respectively, which are printed in black with the designs shown. These covers are backed in white, except for a transparent space through which the lettering on the card can be seen.

### Dial Number Plates

The number plate is of pressed copper, coated with a vitreous white enamel, suitably lettered. The plate is mounted in a spring clip on the base of the dial.

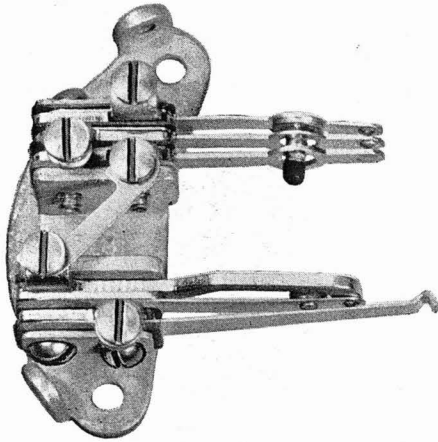
Dial Number Plate—Numbered 1 to 0 in black	Code No. D-53146
Dial Number Plate—Similar to above, but with word "Operator" in the "0" space. Letters and figures in black	D-53211
Dial Number Plate—as shown. Black letters and red figures	D-53196



Dial Number Plate D-53196

# Strowger Dial Telephones

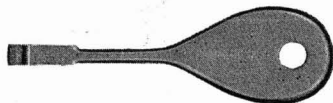
## The Type 24 Dial—Continued



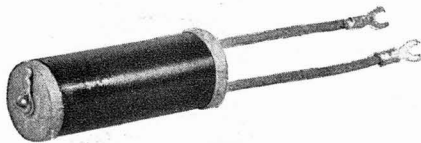
Dial Spring Assembly D-730479-A



Spring Arrangement of D-730479-A



Escutcheon-Lock Tool



The Filter-Coil Unit

### Dial Spring Assemblies

Dial spring assemblies listed in the descriptions of our telephones are detachable units, mounted with two screws on the rear of the dial in such a position that the springs are moved by the proper cams.

The springs are of nickel-silver, with contacts made of a special alloy which is resistant to pitting and corrosion. Phenol-fiber insulation is used. A removable link connects the impulse- and shunt-spring groups.

The standard spring assembly has a three-spring shunt group. As ordinarily used, the shunt springs place separate shunts around the transmitter and the receiver. Used on all regular subscriber telephones listed in this bulletin.

Dial Spring Assembly..... Code No. D-730479-A

An assembly with one pair of shunt springs. Used on Hand Test Telephone and Type 21 desk stand, series circuit.

Dial Spring Assembly..... Code No. D-730498-A

Other Dial Spring Assemblies to fit special circuit conditions can be furnished on request.

### Dial Tools

The escutcheon-lock tool is used for operating the lock which holds the escutcheon ring. The lock is invisible when the dial card is in place.

Escutcheon-Lock Tool ..... Code No. H-26917  
Governor and Cam-Nut Wrench ..... H-25937  
Cam-Nut Socket Wrench ..... H-16480  
Impulse- and Cam-Spring Adjusting Pliers ..... H-16290-7

## The Filter-Coil Unit

### Radio Suppressor for Calling Device

A filter-coil unit is used to prevent the sounding of dial impulses in a radio receiver, which sometimes occurs when a radio aerial is near the telephone lines. The device may be used on both central-battery and local-battery simplex-dialing circuits.

The unit is cylindrical,  $2\frac{1}{16}$  inches long and  $\frac{3}{8}$  inches in diameter, and consists of a small condenser, a non-inductive resistance and an inductance connected in series. It should be located close to the dial of the telephone, and when used on desk sets, both Monophone and Type 21, it is mounted in the base of the desk stand.

Filter-Coil Unit ..... Code No. D-281915



# and Telephone Parts

## Dial Mountings

Manual telephones can be converted to dial operation by connecting a dial into the circuit. The dials are mounted on the telephones by means of dial mounting cups. The cups shown here will meet almost every need for such mountings. They are finished in dull black japan, to match standard telephones. Cups mount with two screws.

For wall telephones, having sufficient space on the face to mount the dial.

Dial Mounting Cup.....*Code No.*  
D-49312

For wall telephones. Holds the dial below the wall box, as shown.

Dial Mounting Cup.....*Code No.*  
D-49313-A

For wall telephones. Similar to the above bracket, but holds the dial slightly lower. It is used on telephones on which only the front of the case opens.

Dial Mounting Cup.....*Code No.*  
D-49314-A

For desk telephones. The cup mounts on the base of the telephone.

Dial Mounting Cup.....*Code No.*  
D-49315

*Real mounting for desk phone H-78879-A*

## Offset Base

When manual desk stands of Western Electric Company manufacture are to be converted to dial operation, we recommend that offset bases be used for this purpose. A telephone so converted is similar in appearance to our Type 21 desk stand.

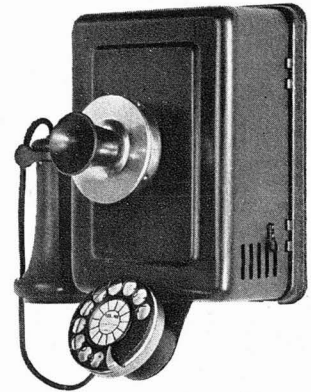
The offset base is of black bakelite, with an eight-point terminal block molded in. The base is clamped to the post of the desk stand by means of a large spanner nut (which is furnished), using the wrench listed below. The unit is supplied without dial. If base is desired with dial, give code number of dial and dial card desired.

Offset Base (Not Illustrated).....*Code No.*  
H-50779  
Spanner Wrench, for Mounting the Above.....H-43614-1

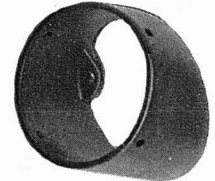
## Extension-Monophone Bracket

This "L"-shaped, black-japanned steel bracket is used for mounting an extension Monophone No. 4, 4-A, 14 or 14-A at right angles to a supporting surface. This makes possible mounting in places where difficulty might otherwise be encountered. The bracket mounts on a space  $2\frac{1}{2}$  inches by  $3\frac{5}{8}$  inches and projects  $6\frac{2}{16}$  inches.

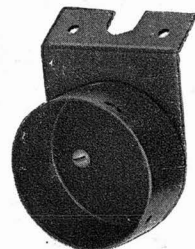
Extension-Monophone Mounting Bracket (Not Illustrated).....*Code No.*  
D-730542



Cup D-49313-A Installed



D-49312



D-49313-A



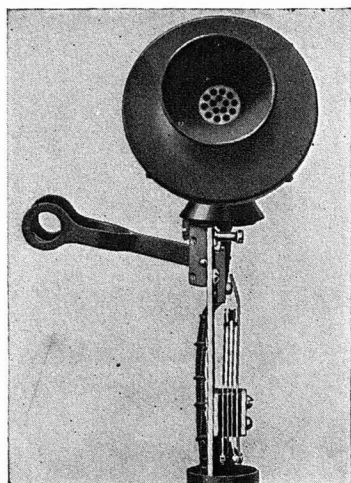
D-49314-A



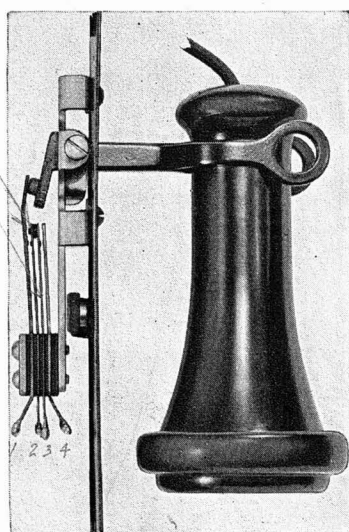
D-49315

# Strowger Dial Telephones

## Hookswitches



Hookswitch in Desk Telephone



Hookswitch in Wall Telephone

### Desk Type Hookswitches

Type 21 desk stands have the hookswitch mounted on a steel plate which is screwed to the transmitter-mounting at the top, and to the baseplate at the bottom.

A five-spring hookswitch used on anti-sidetone booster circuits. Connects two circuits to a third and also closes an independent circuit, when receiver is lifted.

Code No.  
Desk Type Hookswitch..... D-78458-A

A four-spring hookswitch used on booster circuits. Closes two circuits when receiver is lifted.

Code No.  
Desk Type Hookswitch..... D-78456-A

A three-spring hookswitch used on series circuits. Opens one circuit and closes another.

Code No.  
Desk Type Hookswitch..... D-78463

### Wall Type Hookswitches

A five-spring hookswitch used on anti-sidetone booster circuits. Connects two circuits to a third and also closes an independent circuit when receiver is lifted.

Code No.  
Wall Type Hookswitch..... D-730502-A

A four-spring hookswitch used on booster circuits. Closes two circuits when receiver is lifted.

Code No.  
Wall Type Hookswitch..... D-730463-A

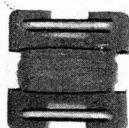
A three-spring hookswitch used on series circuits. Opens one circuit and closes another.

Code No.  
Wall Type Hookswitch..... D-730504-A

## Monophone Resistance Coil

The resistance coil which is used on Monophones Nos. 11-A to 14-A is wound, to a resistance of 205 ohms, on a micarta form  $\frac{5}{8}$  inch square. The winding ends on tinned terminals, to which exterior connections are to be soldered.

Code No.  
Monophone Resistance Coil..... D-281634-A



Monophone Resistance Coil



# and Telephone Parts

## The Monophone Switch

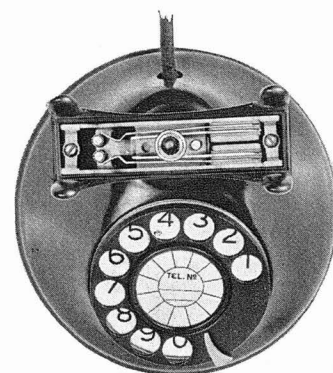
The switch which is mounted in the Monophone serves the same purposes as the hookswitch of a conventional telephone. When the hand unit is placed upon it, the plunger rod moves downward, and through a lever arm moves a pair of bakelite bushings into contact with the springs, thus breaking the circuits through their contacts. In the Monophone extension sets a simple bakelite plunger rod is used, but in the other Monophones a compound-acting plunger rod assures operation of the switch even if the hand unit is incorrectly placed on the cradle.

The contacts are made of a special alloy. The springs are of phosphor bronze, and are stiff enough to create ample contact pressure, thus insuring low contact resistance. Monophone switches are furnished complete with connecting cords to fit the particular Monophone in which they are to be used.

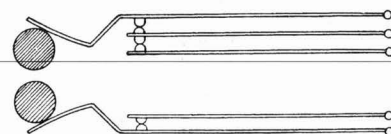
Monophone Type No.	No. of Springs	Switch Code No.
1-A, 3	5	D-730474-A
2	5	D-730481-A
4, 4-A	5	D-730514-A
11-A, 13	4	D-730247-A

Monophone Type No.	No. of Springs	Switch Code No.
12	4	D-730248-A
14, 14-A	4	D-730518-A

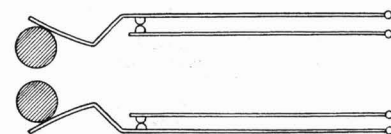
The Monophone switch is covered by a name plate which is held on by a special nut. The tool for removing this nut is listed on page 13.



The Switch in Automatic Monophone Desk Set No. 11-A



The Five-Spring Switch



The Four-Spring Switch

## The Telephone Switching Key

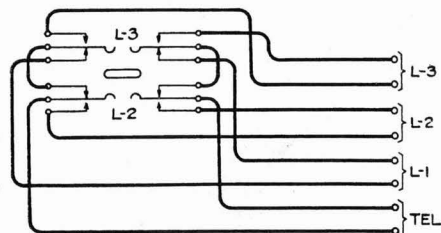
The telephone switching key is intended for use wherever it is desirable that two or three telephones may be answered from one position. It consists of a standard, three-way locking, lever-type key, wired, by means of a formed cable, to the terminals of an eight-point phenol-fiber terminal strip, which provides screws and soldering lugs for exterior connections.

The working parts of the telephone switching key are protected by a pressed steel cover which, like the base, is finished in dull black japan. The complete unit is only 1½ inches high, 3⅜ inches wide and 5¾ inches long, including the handle, and because of this small size, may be mounted in almost any convenient location, such as the side of a desk or table.

As may be seen from the circuit to the left, the telephone with which the key is installed is normally on line L-1. When the key is thrown to the side, the telephone is put in parallel with the telephone on line L-2 or L-3, as the case may be.



The Telephone Switching Key



The Circuit of the Telephone Switching Key

Code No.  
Telephone Switching Key..... MC-8885

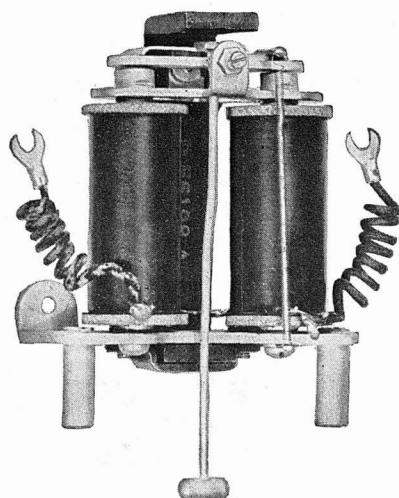
# Strowger Dial Telephones

## Ringers

Straight-line ringers have a moving unit mounted between pivots. These ringers are fitted with a biasing spring permitting the use of pulsating ringing current, and may therefore be used for biased-bell ringing on party lines.

Harmonic ringers have the clapper arm fastened to a steel reed, the assembly being adjusted to operate at one, and only one, of the standard frequencies. The assembly is very simple and requires no adjustments.

Gongs are not furnished with the ringers, and should be ordered separately, when desired.



Straight-Line Ringer

### Ringers

#### For Wall Telephones and Ringer Boxes

The type of ringer used in all the wall telephones and ringer boxes is mounted on two angle brackets.

Frequency	Total Resis.	Code No.
Straight-line .....	1400 Ohms	D-56292-A
16.6 Cycle .....	2760 Ohms	D-56293-A
20 Cycle .....	2110 Ohms	D-56298-A
25 Cycle .....	2080 Ohms	D-56294-A
30 Cycle .....	1224 Ohms	D-56299-A
33.3 Cycle .....	528 Ohms	D-56295-A
42 Cycle .....	528 Ohms	D-56300-A
50 Cycle .....	476 Ohms	D-56296-A
54 Cycle .....	476 Ohms	D-56301-A
66 Cycle .....	476 Ohms	D-56297-A
66.6 Cycle .....	476 Ohms	D-56297-A

#### Gongs for Above Ringers

	Code No.
2 1/2-inch diam. Eccentric Hole, White-Nickel Finish .....	D-56166-A
2 1/2-inch diam. Eccentric Hole, Black Rubber-Japan Finish .....	D-56166-B
2 1/2-inch diam. Eccentric Hole, Wood Gong .....	D-56194

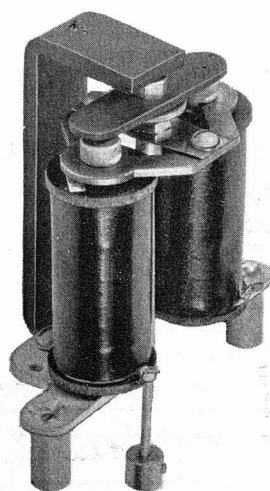
(Used where a different sound is desirable because several ringers are located close together.)

### Ringers

#### For Monophones Nos. 2 and 12

This type of ringer has mounting facilities especially designed for Monophones Type 2 and 12.

Frequency	Total Resis.	Code No.
Straight-line .....	1400 Ohms	D-56282-A
16.6 Cycles .....	2760 Ohms	D-56283-A
20 Cycles .....	2110 Ohms	D-56288-A
25 Cycles .....	2080 Ohms	D-56284-A
30 Cycles .....	1224 Ohms	D-56289-A
33.3 Cycles .....	528 Ohms	D-56285-A
42 Cycles .....	528 Ohms	D-56290-A
50 Cycles .....	476 Ohms	D-56286-A
54 Cycles .....	476 Ohms	D-56291-A
66 Cycles .....	476 Ohms	D-56287-A
66.6 Cycles .....	476 Ohms	D-56287-A



Harmonic Ringer

#### Gong for Above Ringers

	Code No.
2-inch diam., Eccentric Hole, White-Nickel Finish .....	D-56197



## and Telephone Parts

*See also General Nubiler 1MF Condenser Jackson Radio Laboratories Inc.*

### Condensers

These moisture-proof condensers are made of a high grade of tin-foil, insulated with a double layer of special condenser paper. The internal terminals are broad plates of thin sheet brass. The condenser unit is baked, held under vacuum and saturated with a special paraffine. It is placed in a steel can, which is then filled with paraffine. The terminals are soldered to a terminal block, the can sealed with a black waterproofing compound and the cover soldered on.

The completed condenser, which is only 2" x 4 $\frac{3}{4}$ " x  $\frac{11}{16}$ " in size, is given a five-hundred-volt insulation test. The capacitance is stamped into the aluminum-painted can, preventing the annoyance of lost labels. The actual capacitance of the condenser is guaranteed to be not below, nor more than twenty-five per cent above the rated value.

Capacitance	Code No.
.2 M. F. ....	D-68033
.5 M. F. ....	D-6890
.7 M. F. ....	D-6894
1.0 M. F. ....	D-6897

### Condenser Brackets

For mounting the above condensers.

	Code No.
Bracket for One Condenser—Wall Telephones or Ringer Boxes .....	D-73684
Bracket for Two Condensers—Wall Telephones or Ringer Boxes .....	D-730100
Bracket for One Condenser—Mine Telephone or any flat surface .....	D-7338
Bracket for One Condenser—Flush-Type Wall Telephone or any flat surface (Condenser on edge) .....	D-730126



The Condenser

### The Line and Cord Terminal Block

This terminal block is used for connecting the line and cord of Dial Monophone desk sets Nos. 2 and 12. It may also be used wherever else it is necessary to connect from two to four pairs of wires. A typical such use is for connecting the interior substation wiring to the outside drop wires.

A bakelite cover, fastened with one screw, protects the terminals and wiring. The four connecting screws are mounted on a bakelite base, and two removable nickel-silver straps connect these screws in pairs. The base has holes for two mounting screws. The block, complete with its cover, is 2 $\frac{1}{4}$  inches in diameter, and 1 inch high.

	Code No.
Line and Cord Terminal Block .....	D-15430-A



The Line and Cord Terminal Block

# Strowger Dial Telephones

## Telephone Cords

The cords furnished with our telephones are moisture-proofed by having each conductor covered with two wrappings of silk saturated with "Sarco," a moisture-proofing compound of high efficiency. Telephones intended for use in very damp climates are fitted with rubber-covered cords, which will resist actual immersion in water. The rubber-covered cord has a layer of vulcanized rubber between the untreated Tussah wrapping and the brown cotton braid of each conductor. Except for the method of moisture-proofing, both of these types of cords are alike.

An individual conductor is made as follows: Two ribbons of alloy copper are wound, in separate

layers, around a strong cotton thread. Six of these tinsel threads are twisted together around a cotton thread in such a way that a conductor is formed in which all strain is taken up by the cotton. The conductor thus produced is very strong, flexible and of low resistance.

A cord is made by laying together the required number of conductors, and covering them with a brown silk braid. Before the connecting-clips are added, the ends of the conductors are covered with tinned copper wire, to which the clips are then firmly soldered.

### Receiver Cords

Two-conductor cord, thirty-three inches long.

Receiver Cord, "Sarco"-Treated.....	Code No. D-541846-A
Receiver Cord, Rubber-Covered.....	D-542044-A

### Monophone Hand-Unit Cords

Three-conductor cord, fifty-three inches long. Used for connecting the Monophone hand unit to the Monophone base.

	Code No.
Cord for Monophone Unit, "Sarco"-Treated.....	D-542271-A
Cord for Monophone Unit, Rubber-Covered.....	D-542042-A

### Desk Set Cords

Four-conductor cord, six feet long. Used for connecting Monophone desk stand No. 1-A or Type 21 desk stand, anti-sidetone booster circuit, to the ringer box.

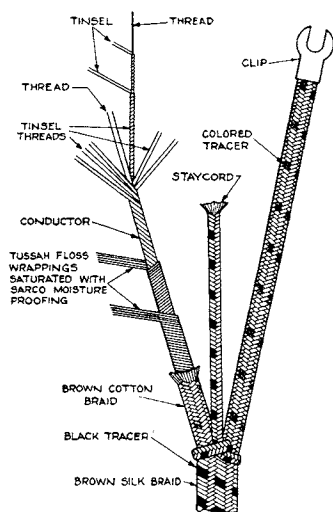
	Code No.
Desk Set Cord, "Sarco"-Treated.....	D-542273-A
Desk Set Cord, Rubber-Covered.....	D-542048-A

Three-conductor cord, six feet long. Used for connecting Monophone desk stand No. 11-A, or the Type 21 desk stand, booster circuit, to the ringer box. Also used for connecting Monophone desk sets Nos. 2 and 12, ground ringing, to the Line and Cord terminal block on which the line ends.

	Code No.
Desk Set Cord, "Sarco"-Treated.....	D-542275-A
Desk Set Cord, Rubber-Covered.....	D-542046-A

Two-conductor cord, six feet long. Used for connecting Monophone desk sets Nos. 2 and 12, metallic ringing, to the Line and Cord terminal block on which the line ends.

	Code No.
Monophone Cord, "Sarco"-Treated.....	D-541871-A
Monophone Cord, Rubber-Covered.....	D-542063-A



The Construction of "Sarco"-Treated Cords



# and Telephone Parts

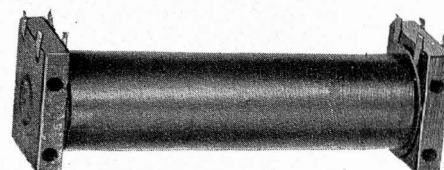
## Induction Coils

The cores of our induction coils are made up of silicon-iron strips, which material is recognized as the best for this purpose. The coils are wound over the insulated cores, and ended on terminal lugs on the wooden spoolheads.

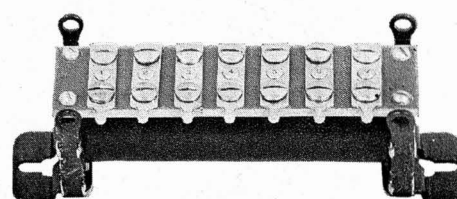
### Regular Booster Induction Coil

For regular central-battery booster circuits. The inner winding, of 1400 turns, has a twenty-seven ohm resistance. The outer winding, of 1700 turns, has a resistance of fourteen ohms. The complete coil is 4 inches by 1 1/8 inches by 1 1/4 inches in size.

Induction Coil .....	Code No. D-281897-A
Induction Coil, Terminal Strip and Mounting .....	D-281899-A
As used on Type 21 booster wall telephones and ringer boxes.	



Induction Coil D-281897-A

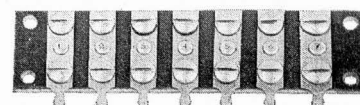


Induction Coil and Terminal Strip D-281899-A

### Anti-Sidetone Booster Induction Coil

This three-winding induction coil was designed especially for the anti-sidetone booster circuits of our Type 21 telephones and Monophones. In size and general appearance it is identical with the two-winding coil.

Anti-Sidetone Induction Coil .....	Code No. D-281901-A
Induction Coil, Terminal Strip and Mounting .....	D-281900-A
As used on Monophone No. 3, ringer boxes, and the Type 21 wall telephone.	



Terminal Strip D-15513-A

## Terminal Strips

The terminal strip used on all of our metal ringer boxes, wall telephones and Monophones, and Monophone Desk Sets Nos. 2 and 12 is of phenol fiber. It has seven terminals, fastened by means of tubular rivets. Each terminal has a tip, tinned for soldering, and two screws under which cord tips or wires may be fastened.

Terminal Strip .....	Code No. D-15513-A
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A terminal strip, similar to D-15513-A, but having eight terminals, is also available.

Terminal Strip .....	Code No. D-15488-A
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For series type ringer boxes, the terminal strip is mounted on two wooden blocks, complete with mounting brackets.

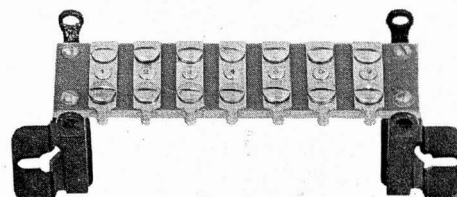
Terminal Strips, with Blocks and Brackets .....	Code No. D-15514-A
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To mount the terminal strip on a flat surface, such as the cover of the wall telephone, it is fitted with a steel bracket which raises it from the mounting surface.

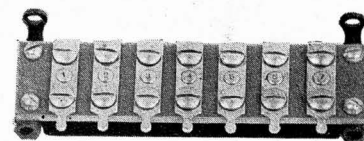
Terminal Strip, with Bracket .....	Code No. D-15515-A
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This terminal strip of phenol-fiber is mounted in Type 21 desk stands which have metal bases. It is furnished with eight brass terminals, each of which has a tinned tip and a screw under which wires may be clamped.

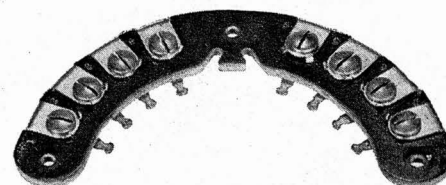
Terminal Strip .....	Code No. D-15381-A
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Terminal Strip D-15514-A



Terminal Strip D-15515-A



Terminal Strip D-15381-A

