

# TELEPHONE APPARATUS and SUPPLIES

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American Automatic Electric Sales Company  
1033 WEST VAN BUREN STREET • CHICAGO, ILLINOIS



CATALOG 4075

# TELEPHONE APPARATUS AND SUPPLIES

For Small and  
Rural Companies

CATALOG 4075



AMERICAN AUTOMATIC ELECTRIC SALES COMPANY  
1033 WEST VAN BUREN STREET - - - - CHICAGO



DISTRIBUTORS FOR PRODUCTS OF  
AUTOMATIC ELECTRIC COMPANY



EXPORT DISTRIBUTORS: AUTOMATIC ELECTRIC SALES COMPANY, LIMITED



# To the Customer

Several order blanks are enclosed. They require no envelope, *and no postage*—simply fill in, fold, seal, and mail. Use these blanks to insure fastest possible handling of your order. If these blanks are mislaid, use ordinary paper, listing each item on a separate line.

Please give the following information when ordering:

Your name and address.

Address to which goods are to be shipped (on freight or express shipments, include station, if different from mailing address).

Quantity of each item desired.

Catalog number of each item desired.

Description of each item. (Please be sure your description includes all points covered in our catalog listing.)

Total cost of each item.

Total cost of goods.

State whether "Remittance is Enclosed" or "Charge to our Account."

## Prices

Prices shown in this catalog are F. O. B. shipping points, effective March 1, 1938, and do not include any Sales, Excise, or other taxes. Prices are necessarily subject to change without notice, but where we cannot fill orders at the prices specified on order, we will fill at lowest possible prices.

## Terms

We are glad to open accounts for companies with approved credit. Such accounts are regularly due and payable net 30 days after date of invoice.

If you wish to establish an account with us, please send references or other credit information with your order, if you are not rated by the commercial agencies. This will facilitate prompt shipment of your order. If you need your material in a hurry, and desire to avoid the delay incidental to our communicating with references, etc., simply instruct us to ship your order C. O. D. by express or Parcel Post, or we will ship by freight, subject to sight draft, through your local bank, against the Bill of Lading.

## Remittances

Remittances may be made most safely by post office or express money order, or by bank draft or check. If you send cash, place your order and remittance in an envelope, and be sure to have it registered.

## Shipment

Whenever possible, standard items are shipped from stock immediately upon receipt of order.

Shipment is made in accordance with instructions received with your order. If you do not specify, shipments are usually made by freight or express, collect (shipping charges to be paid upon receipt of goods). This saves you the annoyance of calculating shipping weights and charges.

If your station has no freight or express agent, it is necessary to send money to prepay the freight or express charges. You need not calculate the charges exactly—we will return any amount not required.

If you desire shipment made by Parcel Post, always include postage charges in your remittance, as these charges must be paid in advance. Be sure to include insurance, if shipment is to be insured.

## Claims

Goods are carefully packed by experienced packers, and a packer's ticket is placed in each case. Every order is double-checked to prevent shortages, but if shortage does occur, please notify us promptly, returning the packer's ticket.

Our receipt from the transportation company certifies that each package was received in good order. Claims for damage or loss in shipping should be made directly to the local agent of the transportation company through whom you received the shipment. We will be glad to co-operate with you in securing a satisfactory adjustment of such claims.

## Returned Goods

Please write to us before returning goods for credit, exchange or repair, and secure our consent and shipping instructions before shipping. When writing, please give complete information, including reason for return. When returning goods, pack tightly, wrap securely, and address plainly, and be sure to put your name and address on the package.

## Apparatus Not Shown

This is only a partial catalog of items available from American Automatic Electric Sales Company. We can supply nearly everything required by telephone companies. If you do not find what you need, please give us complete details of your requirements. We will promptly send you complete information and prices.

## Guarantee

Apparatus manufactured by Automatic Electric Company is guaranteed to be free from mechanical and electrical defects, and any part or unit which proves defective under normal conditions, and when used as intended, will be replaced or repaired without charge, if returned to us within one year. Apparatus of other makes bears the standard guarantees of the various manufacturers.

# A Complete Telephone Equipment and Supply Service

Automatic Electric Company has been designing and manufacturing telephones and telephone equipment for almost fifty years. Their success in this field has been so outstanding that they have long been recognized as the largest single manufacturer to the Independent trade.

It has been a long standing practice for telephone companies to look to us, as general distributors for the Automatic company, not only for equipment and telephones, but also for the hundreds of supplementary items that are needed for the construction, maintenance and operation of telephone properties. As a result we have been able to build up a service second to none in the field. Today we are in a position to supply any telephone company with everything they may need in the way of material or apparatus for central office, sub-station or outside plant.

A constantly increasing number of telephone companies are coming to rely on our organization for their telephone needs because we have made it our business to find out just what things telephone companies like in a supply service.

Here are some of the "extra" features we offer:

*Trained Personnel*—The men who handle our supply orders are all experienced telephone men, and are thoroughly familiar with the latest products and practices.

*Individual Service*—It would be very easy for us to take your supply orders and "throw them in the hopper" of an ordinary order routine; but that is not our way. Every order we receive is intelligently analyzed by people who are trained to the customer's viewpoint. Where we can save the customer money by suggesting more economic quantities or an improved product, even at the sacrifice of some profit on that order, we do so, knowing that if we please our customers, they will continue to come to us for their needs.

*Speed*—Our facilities for handling supply orders are based on the assumption that all material ordered is needed *at once*. Our standard delivery service is as fast as it is possible to make it, consistent with minimum expense to the customer. But very often we get orders where speed must take precedence over every other consideration. And we have never failed to deliver on time.

*Quality*—We offer only products which have been thoroughly tested both in actual use and in our own laboratory. Everything we sell bears a double guarantee of satisfaction—from ourselves and from the manufacturers.

*Prices*—Because of our enormous volume of business we are in a position to give you rock bottom prices. Quality considered, prices for our products are as low as those you can obtain anywhere—and in many cases lower.

Try our unique service on your next order.

## American Automatic Electric Sales Company



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# Automatic Electric Telephones

Hundreds of telephone operating organizations—small rural companies as well as large city systems—have standardized on Automatic Electric telephones. And here's why—

**Automatic Electric Telephones "Talk up"**—Through many years of study in our laboratories, we have developed transmitters which make speech sound natural without sacrificing loudness. And the unique Automatic Electric "anti-sidetone" circuit gets the most out of these transmitters. This circuit uses a special three-winding induction coil which boosts the transmitted current, and at the same time practically cuts out all outside noises.

**Automatic Electric Telephones Ring Through** on any line. In addition to the 3-bar generator (for light-loaded lines) and the standard 5-bar generator (for lines with medium or heavy loading), we have developed a heavy-duty 5-bar type, using a new magnetic material, for use on the longest and most heavily loaded lines. Automatic Electric telephones are available with ringers of 1000, 1600, and 2500 ohms, for use respectively on lines with light, medium, and heavy loading. Telephones intended to replace existing instruments should usually be ordered with ringers of the same resistance as those replaced. Telephones for new stations, which will increase the load on a line, may have to have ringers of higher resistance.

**Automatic Electric Telephones Are Durable**—They are sturdily built, for long life, and require a minimum of maintenance attention.

**Automatic Electric Offers the Monophone**, the first and still the finest handset-type telephone. Ever since its introduction, way back in 1925, the Monophone has set the style for the modern handset-type telephone, which is gradually replacing the older type of instruments nearly everywhere. Today's Monophone contains a new "all-positions" transmitter, which gives practically unvarying transmission volume, no matter in what position it is held. Thus, the user of a Monophone can stand up or sit down, lean back or even lie down, without affecting transmission.

The convenience of the Monophone handset also has been increased by the development of the Extensicord, a new handset cord that actually s-t-r-e-t-c-h-e-s. This cord is normally very short, and keeps out of the way when the telephone is not in use. But when the hand unit is lifted, it stretches to almost twice its normal length, so that the telephone user may stand, sit down, or move about with exceptional freedom. (The Extensicord is illustrated and fully described on page 29. It can be furnished on any Monophone, at a slight increase in cost.)

## Special Equipment

The standard instruments shown in this catalog have been selected because they have been found to meet almost all requirements in the simplest and most inexpensive manner. For special conditions, these telephones can be provided with various special equipments. Among them:

**"Battery Savers"**—to permit telephone users to listen in on a line without unnecessarily running down their transmitter battery. In some cases, the battery saver is a special latch on the hookswitch, which permits the hookswitch to rise far enough to close the receiver circuit when the receiver is lifted, but not to close the transmitter circuit. The latch can be quickly opened if the telephone user wishes to speak. Or, the battery saver may be simply a pushbutton through which the telephone user cuts in the transmitter battery whenever it is desired to speak (or the pushbutton may be arranged to cut out the battery, in which case the button must be pressed whenever it is desired to listen in on the line without speaking. "Cut out" type button is furnished only on special order).

**Code-Ringing Pushbutton**—to enable the telephone user to form ringing codes while continuously operating the magneto generator.

**Semi-Selective Ringing Pushbutton**—used on metallic lines with grounded ringers, to connect the grounded magneto to one or the other side of the line, thus ringing only the bells on that side.

**Secret-Calling Pushbutton**—used on metallic lines with bridged ringers, permits the telephone user to signal the operator without signalling any of the other stations on his line. The switchboard drop is connected to ground and one side of the line, and the magneto, normally bridged across the line, is connected to ground when the pushbutton is pressed.

**Condenser in Receiver Circuit**—makes it possible to operate the ringers on a line, even though a number of receivers may be off their hooks. The condenser in series with the receiver at each telephone prevents the ringing current from passing through the receiver, so it is forced to operate the ringers.

**Condenser in Ringer Circuit**—used to permit testing out on the line from the exchange, using direct current. The condenser in series with each ringer prevents the testing current from passing through the ringer from one side of the line to the other (or to ground).



## Type 1A Monophone Desk Set

(Magneto, Local-Battery)



Type 1A Desk Monophone, Cat. No. AA-19, and Compact Ringer Box, Cat. No. AO-31, AO-32 or AO-33

This one set, in its various combinations, will meet almost every requirement in your system. It is wired in accordance with the famous Automatic Electric anti-sidetone circuit, providing high-grade transmission on the longest line, and can be furnished with any desired ringer and generator.

Complete set consists of your choice of Type 1A Desk Monophones, and any of the anti-sidetone ringer boxes listed below. Type 1A Desk Monophone is molded of lustrous black Bakelite, ringer boxes are of oak, finished in rubbed golden oak.

### Type 1A Desk Monophones

Require anti-sidetone ringer boxes (order separately—see at right)

	Price Each
<b>Cat. AA-19—Type 1A Desk Monophone</b>	<b>\$14.10</b>
With Monotype desk stand cord, and hand unit cord.	
<b>Cat. AA-43—Type 1A Desk Monophone</b>	<b>\$14.20</b>
With rubber-insulated cords and wiring, for use in damp locations.	

NOTE: Monophone AA-43, with ringer box AO-65, meets U. S. Forestry Service Specifications No. 4C, with approved modifications and improvements.



Type 1A Desk Monophone, Cat. No. AA-43, and Exposed Gong Ringer Box, Cat. No. AO-65

### Ringer Boxes for Type 1A Desk Monophones

	Price, Each
<b>Cat. AO-31—Std. 5-bar Gen., 2500-ohm Rgr.</b>	<b>\$14.85</b>
For long lines. Contains anti-sidetone induction coil, generator, enclosed ringer, and terminal strip. Height, 9¼"; width, 7¼"; depth, 5½".	
<b>Cat. AO-32—Std. 5-bar Gen., 1600-ohm Rgr.</b>	<b>\$14.60</b>
As above, but for medium-loaded lines.	
<b>Cat. AO-33—Std. 3-bar Gen., 1000-ohm Rgr.</b>	<b>\$13.80</b>
As above, but for town and lightly loaded lines.	
<b>Cat. AO-65—Spl. 5-bar Gen., 2500-ohm Rgr.</b>	<b>\$15.50</b>
Recommended for long and heavily loaded lines which require especially powerful ringing equipment. Height, 10½"; width, 8½"; depth, 6¾". Contains 3-winding anti-sidetone induction coil, special heavy-duty 5-bar generator, extra-sensitive 2500-ohm ringer with large (3") exposed gongs, and terminal strip. A condenser is also provided, in the ringer and receiver circuits.	
<b>Net Weights</b> —Type 1A Desk Monophone, only—3½ lbs. Ringer Box, only—16 lbs.	
<b>Shipping Weights</b> —Type 1A Desk Monophone, only—5 lbs. Ringer Box, only—22 lbs. Complete Desk Set—27 lbs.	

### Special Features (If desired)

Type 1A Monophone Desk Sets can be supplied with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the above prices:

Extensicord instead of Monotype hand unit cord	\$1.00
Pushbutton	.50
Specify if for Battery-Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling. Specify also if on desk stand or on ringer box—furnished on desk stand unless otherwise ordered.	

Ringer Box AO-65 is regularly furnished with condenser in receiver and ringer circuits. Ringer Boxes AO-31, AO-32, or AO-33 can be furnished with condenser, at the following prices. If desired, please specify on order:

Condenser in receiver circuit	\$0.65
Condenser in ringer circuit	.75

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Type 19 Monophone Desk Set (Magneto, Local-Battery)



Type 19 Desk Monophone, Cat. No. AE-11, and  
Ringer Box, Cat. No. AO-10 or AO-38

By using the Type 19 Desk Monophone you can secure the convenience of the Monophone handset, and the high-grade transmission of the "anti-sidetone" circuit, with your present conventional ringer boxes. The desk stand contains an anti-sidetone induction coil in the base, so no induction coil is required in the ringer box.

	<i>Price Each</i>
<b>Cat. AE-11—Type 19 Desk Monophone</b>	<b>\$16.05</b>
With Monotype desk stand cord for connection to ringer box (use present box, or order desired box— below).	

#### Ringer Boxes for Type 19 Desk Monophone

<b>Cat. AO-10—5-bar Gen., 1600-ohm Rgr.</b>	<b>\$14.60</b>
With enclosed ringer, generator, and terminal strip, but no induction coil. Oak case is hand- specially finished in golden oak, and with exposed metal parts heavily black japanned. Height, 9¼"; width, 7¾"; depth, 5½".	

<b>Cat. AO-38—3-bar Gen., 1000-ohm Rgr.</b>	<b>\$13.80</b>
As above, but for town and lightly loaded lines.	

*Net Weights*—Type 19 Desk Monophone, only—3½ lbs.  
Ringer Box, only—16 lbs.

*Shipping Weights*—Type 19 Desk Monophone, only—7 lbs.  
Ringer Box, only—22 lbs.  
Complete Desk Set—28 lbs.

#### Special Features (If desired)

The Type 19 Desk Monophone can be furnished with Extensicord (see page 29) instead of Monotype hand unit cord. If desired, please specify, and add \$1.00 to the price of the Monophone.

Either of the above ringer boxes can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of each ringer box:

	<i>Price Each</i>
Pushbutton	\$0.50
Specify if for Battery-Saver, Code Ringing, Semi- Selective Ringing, or Secret Calling.	
Condenser in receiver circuit	.65
Condenser in ringer circuit	.75

### Type 8 Desk Monophone (Magneto, Local-Battery)



A compact instrument for locations where it is not desired to have a separate ringer box; ideally adapted, also, for use as a portable telephone, using the Telephone Plug and Wall Jack shown on page 13. This Desk Monophone combines all of the equipment of a magneto telephone station (except batteries) in a compact table set, only 5" wide, 6" long, and 10" high, attractively finished in black japan. "Anti-sidetone" circuit assures high-grade transmission, and the 2-bar generator and 1000-ohm ringer are generally adequate on town lines where there are not more than four parties on the line.

	<i>Price Each</i>
<b>Cat. AE-10—Type 8 Desk Monophone</b>	<b>\$27.75</b>

Contains a 3-winding anti-sidetone induction coil, the ringer and generator, and is equipped with a 6-foot Monotype desk stand cord, fitted with a small terminal block, for connection to the line wires and the battery.

*Net Weight*—11 lbs. *Shipping Weight*—15 lbs.

#### Special Features (If desired)

The Type 8 Desk Monophone can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of the Monophone:

Extensicord instead of Monotype hand unit cord	\$1.00
Condenser in receiver circuit	.65
Condenser in ringer circuit	.75

#### "SAME DAY" SERVICE

Your orders get prompt attention from us. Wherever possible, on standard articles, shipment is made from stock the same day we receive your order.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice



**Type 10 Wall Monophone**

(Magneto, Local-Battery)



The handset-type wall telephone overcomes an important objection to wall telephones of the conventional type. It may be mounted at any height, and still presents the transmitter mouthpiece in the best position for use, whether the user is seated or standing. This, together with the anti-sidetone circuit used, and the "all-positions" transmitter in the Monophone hand unit, helps to assure high transmission efficiency.

**Cat. AE-12—Type 10 Wall Monophone**

Black-japanned steel wall box contains 3-winding anti-sidetone induction coil, 2-bar generator (generally adequate for town lines with not more than four parties on the line), and 1000-ohm ringer. Height, 12"; width, 9"; depth, 4" over all.

*Net Weight*—11 lbs. *Shipping Weight*—15 lbs.

*Price  
Each*  
**\$24.90**

**Special Features (If desired)**

The Type 10 Wall Monophone can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of the Monophone:

Extensicord instead of Monotype hand unit cord	\$1.00
Pushbutton	.50
Specify if for Battery-Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.	

**If You Don't Find** what you want in this catalog, write for information and prices—sent promptly and without obligation.

**Type 18 Wall Monophone**

(Magneto, Local-Battery)



This instrument also combines Monophone convenience with "out-of-the-way" mounting as offered by the Type 10 Monophone, but is intended for use on longer lines, with medium loading.

**Cat. AE-13—3-bar Gen., 1000-ohm Rgr.**

*Price  
Each*  
**\$24.90**

Solid oak cabinet, finished in beautiful rubbed golden oak, contains 3-winding anti-sidetone induction coil, generator, and enclosed ringer. Height, 12¾"; width, 9"; depth, 5½", over all.

**Cat. AE-14—5-bar Gen., 1600-ohm Rgr.****\$25.90**

Same as above, except ringer and generator.

*Net Weight*—15 lbs. *Shipping Weight*—20 lbs.

**Special Features (If desired)**

The Type 18 Wall Monophone can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of the Monophone:

Extensicord instead of Monotype hand unit cord	\$1.00
Pushbutton	.50
Specify if for Battery-Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.	
Condenser in receiver circuit	.65
Condenser in ringer circuit	.75

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Type 371B Wall Monophone (Magneto, Local-Battery)



A Wall Monophone for use on exceptionally long lines. Contains a sensitive 2500-ohm ringer with large (3") gongs mounted on the outside of the case to assure a loud ringing signal, and a special heavy-duty magneto. This magneto is only slightly larger than the standard 5-bar generator, but its output is about 50% greater, due to the use of a recently developed magnetic material.

The set is wired in accordance with a transmission circuit which provides exceptional voice efficiency. A condenser is provided, in the ringer and receiver circuits, to improve ringing, and simplify testing on the line.

This instrument meets U. S. Forestry Service Specification No. 4A, with approved modifications and improvements.

**Cat. AE-16—Type 371B Wall Monophone**  
Price Each **\$26.90**

Contains 3-winding anti-sidetone induction coil, and generator, ringer and condenser as described above. Oak case is finished in rubbed golden oak, exposed metal parts heavily black japanned, and Monophone hand unit is lustrous black Bakelite. Height, 10½"; width, 8½"; depth, 6¾".

Net Weight—6½ lbs. Shipping Weight—8 lbs.

#### Special Features (If desired)

The Type 371B Monophone can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of the Monophone:

Extensicord instead of Monotype hand unit cord	\$1.00
Pushbutton	.50

Specify if for Battery-Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Type 17 Extension Monophone (Magneto, Local-Battery)



Intended for "answering extension" service only, in locations where the ringer of the main station can be heard, the Type 17 Extension Monophone does not contain a ringer or a generator. It is wired in accordance with the Automatic Electric "anti-sidetone" circuit for maximum transmission efficiency, and because of its exceptionally small size it can be mounted nearly anywhere.

Height of wall box, 3¾"; width, 5¼". Overall height of instrument, 9"; width, 5¼"; depth, 4½".

**Cat. AE-17—Type 17 Monophone**  
Price Each **\$14.35**

Bakelite wall box contains 3-winding anti-sidetone induction coil, and terminals, and mounts Monophone cradle. Monophone hand unit and Monotype cord also provided.

Net Weight—3 lbs. Shipping Weight—6 lbs.

#### Special Features (If desired)

The Type 17 Monophone can be furnished with Extensicord (see page 29) instead of Monotype hand unit cord. If desired, please specify and add \$1.00 to the price of the Monophone.

#### Mounting Bracket

An L-shaped mounting bracket, black-japan finished, is available for mounting the Type 17 Monophone at right angles to an existing mounting surface. This bracket requires only 2½" x 3¾" of mounting space.

**Cat. AW-10—Angle Mounting Bracket**  
Price, Each **\$0.75**

#### IT'S EASY TO ORDER

from this catalog, and it takes just a few minutes. For your convenience, order blanks are enclosed requiring no envelope, no addressing, no postage. (If these are mislaid, we will be glad to send an additional supply, on request.) Suggestions for ordering are given on page 2.



### Type 200 Desk Telephone (Magneto, Local-Battery)



Type 200 Desk Stand, Cat. No. AG-10, and  
Ringer Box, Cat. No. AO-34, AO-35 or AO-36

Sturdy and gracefully designed, with the transmitter post set back of the center of the base, and with the transmitter mounted on a streamlined hinge. Wired in accordance with the regular local-battery booster circuit, and may be used with any ringer box which contains the 2-winding induction coil.

	Price Each
<b>Cat. AG-10—Type 200 Desk Stand</b>	<b>\$9.30</b>
With Monotype desk stand cord, for connection to ringer box (use present box, or order desired box—below).	

#### Standard Ringer Boxes

For Type 200 and similar telephones.

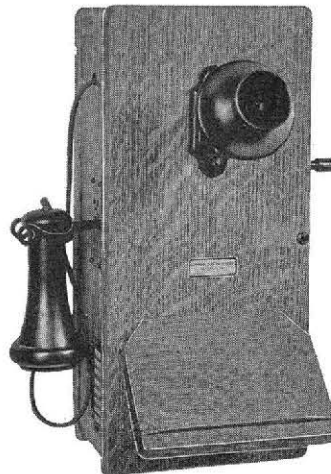
<b>Cat. AO-34—5-bar Gen., 2500-ohm Rgr.</b>	<b>\$14.85</b>
For long lines. Contains 3-terminal induction coil, generator, enclosed ringer, and terminal strip. Height, 9¼"; width, 7¾"; depth, 5½".	
<b>Cat. AO-35—5-bar Gen., 1600-ohm Rgr.</b>	<b>\$14.60</b>
As above, but for medium-loaded lines.	
<b>Cat. AO-36—3-bar Gen., 1000-ohm Rgr.</b>	<b>\$13.80</b>
As above, but for town and lightly loaded lines.	
<i>Net Weights</i> —Type 200 Desk Stand, only—4 lbs.	
Ringer Box, only—16 lbs.	
<i>Shipping Weights</i> —Type 200 Desk Stand, only—6 lbs.	
Ringer Box, only—22 lbs.	
Complete Desk Set—28 lbs.	

#### Special Features (If desired)

Type 200 desk sets can be furnished with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the prices given above:

Battery-Saver hookswitch latch	\$0.50
Pushbutton	.50
Specify if for Battery Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling. Specify also if on desk stand or on ringer box—furnished on desk stand unless otherwise ordered.	
Condenser in receiver circuit (in ringer box)	.65
Condenser in ringer circuit (in ringer box)	.75

### Type 200 Wall Telephones (Magneto, Local-Battery)



These instruments are handsome in appearance, with modern simple lines, and though compact in design, they provide ample space for batteries, so no separate battery box is required. Cabinets are oak, with golden oak finish.

Cat. No. AG-14, with exposed gongs, meets the requirements of the U. S. Forestry Service.

	Price, Each
<b>Cat. AG-13—5-bar Gen., 2500-ohm Rgr.</b>	<b>\$22.45</b>
For long lines. Equipped with 3-terminal induction coil, generator, ringer with concealed gongs, transmitter, receiver and hookswitch, and terminal strip, and provides space for two standard (No. 6) dry cells. <i>Dry cells are not included.</i> Height, 15¼"; width, 7¼"; depth, 10¼", over all.	
<b>Cat. AG-12—5-bar Gen., 1600-ohm Rgr.</b>	<b>\$22.15</b>
As above, but for medium-loaded lines.	
<b>Cat. AG-11—3-bar Gen., 1000-ohm Rgr.</b>	<b>\$21.20</b>
As above, but for town and lightly loaded lines.	
<b>Cat. AG-14—5-bar Gen., 2500-ohm (Spl.) Rgr.</b>	<b>\$22.45</b>
Recommended for long and heavily loaded lines which require especially powerful ringing signals and maximum transmission efficiency. Special 2500-ohm ringer has 3" gongs mounted outside of the cabinet and case provides for three No. 6 dry cells. <i>Dry cells are not included.</i> Height, 20½"; width, 9¼"; depth, 10½", over all.	
<i>Net Weights</i> —Cat. Nos. AG-11, AG-12, AG-13—19 lbs.	
Cat. No. AG-14—24 lbs.	
<i>Shipping Weights</i> —Cat. Nos. AG-11, AG-12, AG-13—22 lbs.	
Cat. No. AG-14—30 lbs.	

#### Special Features (If desired)

Any of the above telephones can be supplied with any of the following features (for complete descriptions see page 5). If desired, please specify, and add as follows to the price of the telephone:

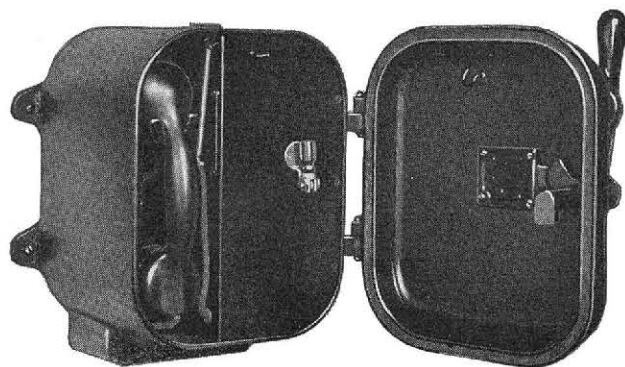
Battery-Saver hookswitch latch	\$0.50
Pushbutton	.50
Specify if for Battery Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.	
Telephone AG-14 is regularly furnished with condenser in receiver circuit. Telephones AG-11, AG-12, or AG-13 can be furnished with condenser, at the following prices. If desired, please specify on order.	
Condenser in receiver circuit	\$0.65
Condenser in ringer circuit	.75

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## Outdoor Monophone Sets

(Magneto, Local-Battery)



These are compact, light-weight, "splashproof" telephones, to provide the convenience of Monophone operation in outdoor locations, and in indoor locations exposed to moisture, dampness, or dust. Enclosed in case of cast aluminum alloy, with cam-locking cover closing tightly against a rubber gasket. All wiring is rubber covered, and ringer and induction coil windings are impregnated with a waterproofing compound. And, because of a unique arrangement of the ringer gongs and the sound hole openings, these telephones can be used even where there is danger of water being splashed up from below, as in boiler and engine rooms, dairies, refrigerating and ice-making plants, etc.

Case is handsomely finished in black "crackle" enamel. Height, 12"; width, 8 $\frac{5}{8}$ "; depth, 8 $\frac{1}{2}$ ". A lock is provided with two keys. "All-positions" transmitter and Automatic Electric anti-sidetone circuit assure maximum transmission efficiency.

Price  
Each

### Cat. AM-14—5-bar Gen., 2500-ohm Rgr.

\$69.15

For long lines. Equipped with 3-winding anti-sidetone induction coil, generator, ringer, terminal strip, and Monophone hand unit, and provides space for a 3-volt dry battery of a new compact type. *Battery should be ordered separately—see below at right.*

### Cat. AM-15—5-bar Gen., 1600-ohm Rgr.

\$68.90

As above, but for medium-loaded lines. *Order battery separately—see below at right.*

### Cat. AM-16—3-bar Gen., 1000-ohm Rgr.

\$68.00

As above, but for town and lightly loaded lines. *Order battery separately—see below at right.*

*Net Weight—33 lbs. Shipping Weight—48 lbs.*

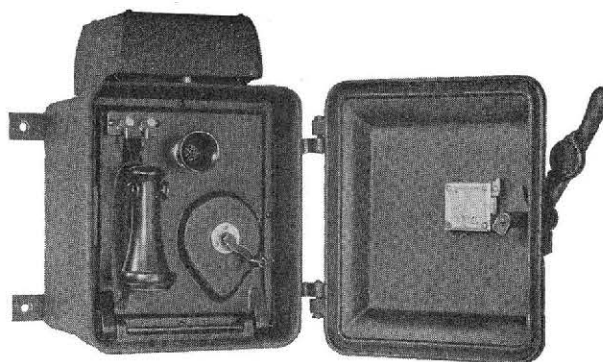
## Special Features (If desired)

Any of the above Monophone Sets can be supplied with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of each Monophone:

Pushbutton	\$0.50
Specify if for Battery Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.	
Condenser in receiver circuit	.65
Condenser in ringing circuit	.75
"Anti-Noise" transmitter (see page 14) can be furnished on special order. If desired, please specify, and add	3.45

## The Mine-Type Telephone

(Magneto, Local-Battery)



The case of this telephone is of cast iron, finished inside and out with black rust-resisting paint, and is provided with double doors. All coils are wound with enameled wire, and other wires are impregnated with moistureproofing compound.

The outer door of the Mine-type telephone is provided with a rubber gasket, and with a cam-type locking handle, for which two keys are supplied. The telephone line wires are brought in through either the top or the bottom of the case, through holes tapped for  $\frac{1}{2}$ " conduit. The case is 15" high, 11 $\frac{1}{2}$ " wide, and 12 $\frac{1}{4}$ " deep.

This telephone has a ringer with 3" loud-ringing gongs, mounted under a cast-iron hood on top of the case, with connections made by brass rods extending through watertight bushings from the inside of the case. Other equipment includes transmitter, receiver, induction coil and generator. The telephone is wired in accordance with the regular local-battery booster circuit.

Price  
Each

AM-32—5-bar Gen., 2500-ohm Rgr.,	1 to 4	\$59.50
	5 or more	54.50

AM-33—5-bar Gen., 1600-ohm Rgr.	1 to 4	\$59.20
	5 or more	54.20

*Net Weight—77 lbs. Shipping Weight—93 lbs.*

## Special Features (If desired)

Either of the above telephones can be supplied with any of the following features (for complete descriptions, see page 5). If desired, please specify, and add as follows to the price of each telephone:

Pushbutton	\$0.50
Specify if for Battery Saver, Code Ringing, Semi-Selective Ringing, or Secret Calling.	
Condenser in receiver circuit	.65
Condenser in ringer circuit	.75

## Battery for Outdoor Monophone Sets

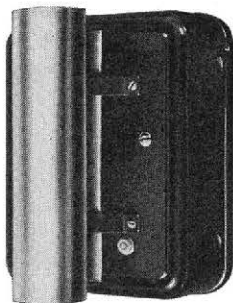
Cat. PA-13—Compact Dry Batt., 3-volt	\$0.50
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### The Monochime

This "single-stroke" telephone gong gives a pleasant-sounding signal which is welcomed in banks, offices, homes, etc. It operates directly from ringing current, requiring no relay or other wiring. To install, simply connect the Monochime directly across the line, and disconnect the ringer in the ringer box. (Any ringer box shown in this catalog can be furnished without ringer, if desired for use with the Monochime.)

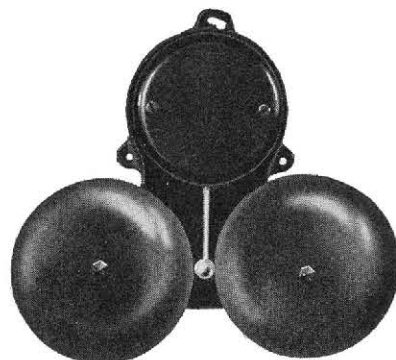


The Monochime is assembled in a case of lustrous black Bakelite, with the tone bar and resonator chamber, mounted on the cover, finished in highly polished chromium plate. It is 7" high, 5½" wide, and 5½" deep, over all. *Not recommended for use on code-ringing lines.*

Cat. No.	Description	Price, Each
AO-63	Magneto Monochime	\$13.50
Net Weight—3½ lbs.		Shipping Weight—6 lbs.

### Splashproof Loud-Ringing Bells

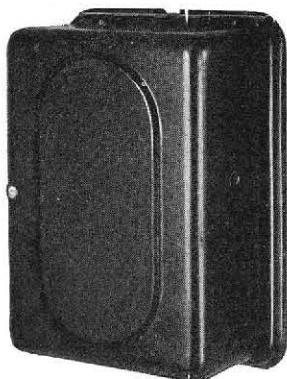
Operate directly from ringing current, and can be used outdoors as well as indoors. (However, in locations directly exposed to the weather, we recommend use of the Waterproof Bell, described below.) Height, 1'0"; width, 1'1".



Cat. No.	Description	Ringer	Condenser	Price, Each
AS-52	Splashproof Bell	1600-ohm.	1 mf.	\$11.45
AS-62	Splashproof Bell	1600-ohm	None	10.55
AS-65	Splashproof Bell	2500-ohm	0.7 mf.	11.40
AS-66	Splashproof Bell	2500-ohm	None	10.70
Net Weight—12½ lbs.		Shipping Weight—21 lbs.		

### Extension Ringer (Steel Box)

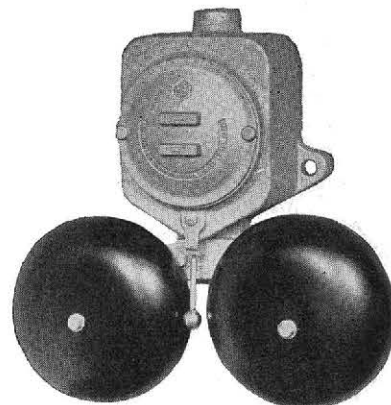
For use at answering extensions. Contains ringer and terminal strip only—no magneto or induction coil. Assembled in metal wall box, heavily black japanned. Height, 9¾"; width, 7¼"; depth, 4".



Cat. No.	Ringer	Price, Each
AO-39	2500-ohm	\$6.60
AO-40	1600-ohm	5.80
AO-41	1000-ohm	5.40
Net Weight—1½ lbs.		Shipping Weight—3 lbs.

### Waterproof Loud-Ringing Bell

May be used in the most exposed locations. Working parts are enclosed in a case of cast aluminum alloy, with a large screw-on cover, and with connections for ¾" conduit top and bottom. Height, 1'1"; width, 1'1". Ringer is 1600 ohms with 2 mf. condenser in series.

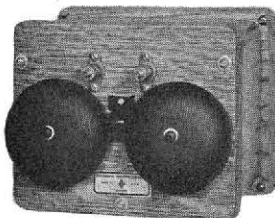


Cat. No.	Description	Price, Each
AS-51	Waterproof Loud-Ringing Bell	\$45.00
Net Weight—17 lbs.		Shipping Weight—24 lbs.

### Extension Ringer (Wood Box)

Consists of 2500-ohm ringer with exposed gongs, and 0.7 mf. condenser in series. Case is quarter-sawn oak, golden oak finished. Height, 5¾"; width, 7¼"; depth, 5¾". Nickel-plated binding posts on front cover.

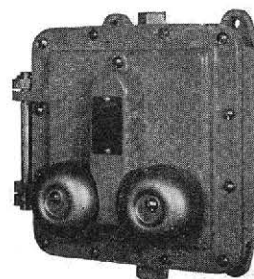
This ringer meets the requirements of the U. S. Forestry Service.



Cat. No.	Description	Price, Each
AO-66	Extension Ringer Box	\$6.60
Shipping Weight—7 lbs.		

### Waterproof Bell

For outdoor use, with any telephone. Cast case, with tightly-gasketed cover, has conduit connections at top and bottom, with pipe plugs. Ringer resistance, 1400 ohms. Height, 7"; width, 6½"; depth, 4½".



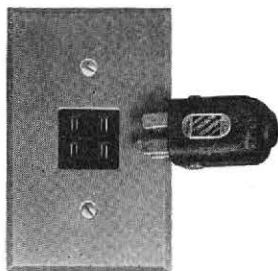
Cat. No.	Description	Price, Each
AS-54	Waterproof Bell	\$35.00
Net Weight—4 lbs.		Shipping Weight—7 lbs.

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### Portable Telephone Plug and Jack

The Type 8 Desk Monophone (see page 7) makes it practical now to offer the convenience of portable telephone service in magneto telephone systems. This instrument contains all of the equipment of a telephone station, except the batteries, and it is necessary merely to provide jacks at the desired points, connected to the lines and battery, and to equip the desk stand cord with a plug to fit. The plug and jack listed below are recommended for this purpose.



The portable telephone jack is designed to mount in a standard (U.S.A.) electric switch box (not furnished) and is provided complete with a flush plate, finished in brushed brass.

Cat. No.	Description	Price, Each
AZ-12	Portable Tel. Plug—4-Cond.	\$0.45
Net Weight—2 oz.		Shipping Weight—6 oz.
AZ-13	Jack and Plate—4-Cond.	\$0.95
Net Weight—4 oz.		Shipping Weight—7 oz.

### Telephone Switching Keys



Used for connecting a telephone to two or more lines, connecting two or three telephones to one line, etc. Locking type lever key is assembled in a black-japanned steel case, 5 $\frac{3}{4}$ " long over all, 3 $\frac{1}{2}$ " wide, 1 $\frac{1}{2}$ " high.

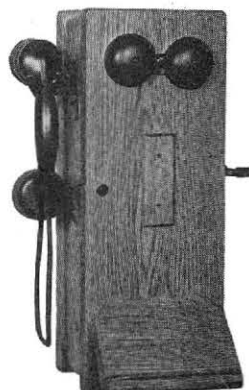
Cat. No.	Description	Price, Each
AY-10	Telephone Key—2-Cond., 2-way	\$5.50
AY-11	Telephone Key—2-Cond., 3-way	6.00
Net Weight—1 lb.		Shipping Weight—1 $\frac{1}{2}$ lbs.

### Monophone Conversion Kit

Wall magneto telephones, if in good condition, may be converted into Monophone sets by simply removing the transmitter and hookswitch, and substituting the parts supplied in this conversion kit. Consists of a Monophone hand unit with special four-conductor cord, a hookswitch and hook, and a small panel of oak, finished in light golden oak, for covering the transmitter mounting holes.

Cat. No.	Price, Each
AW-23	\$8.25

Net Weight—2 lbs.  
Shipping Weight—4 lbs.



Typical Magneto Telephone, After Conversion

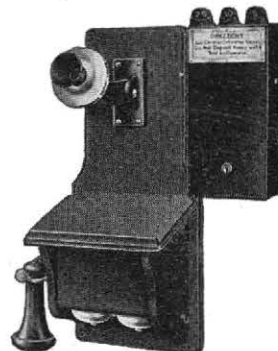
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### Paystations (Coin Collectors)

Paystations installed in prominent locations secure increased toll revenues for telephone companies, and please business subscribers. The paystations listed below have slots for nickels, dimes and quarters. Bells, which can be heard by the telephone operator through the transmitter circuit, indicate the coins deposited (these paystations are not intended for use with handset type telephones). Sturdily built, and with strong locks to prevent tampering.

#### The No. 11 Paystation

A small unit, on a mounting plate for installing beside any wall telephone, as shown in the accompanying illustration. Two sizes: 4 $\frac{1}{2}$ " wide, 3" deep, and either 9" or 11" high (larger size has larger money drawer). Neatly finished in black enamel, with celluloid-covered instruction card in nickel-plated frame. Telephone not included.



Cat. No.	Description	Price, Each
11	Paystation—Small Size	\$12.00
11-A	Paystation—Large Size	12.50
Net Weight—10 lbs.		

#### The No. 14 Paystation

This unit is similar to the No. 11, shown above, but is made to fit a desk stand, as shown. Can be used with any desk stand (of the upright or "candlestick" type) and ringer box. When ordering, state type and make of desk stand you want the unit to fit. Finished in black enamel, with nickeled carrying handle and frame for instruction card. Telephone not included.



Cat. No.	Description	Price, Each
14	Desk-Type Paystation	\$16.50
Net Weight—9 $\frac{1}{2}$ lbs.		

#### The No. 23D Paystation

Complete with receiver hook and transmitter mounting. Transmitter, receiver and cord, and ringer box, if required, should be ordered separately. When ordering paystation, state type and make of transmitter you are going to use. May be mounted on shelf or wall. Black enamel finish, with celluloid-covered instruction card in nickel-plated frame. Width, 6"; height, 10 $\frac{1}{2}$ "; depth, 4 $\frac{1}{4}$ ".



Cat. No.	Description	Price, Each
23-D	Paystation	\$20.50
Net Weight—13 $\frac{3}{4}$ lbs.		



## Monophone Hand Units

Made of molded Bakelite, reinforced with a brass tube through the center of the handle. The transmitter and receiver caps are also molded of Bakelite, and are mounted in metal bands, heavily black-japanned.

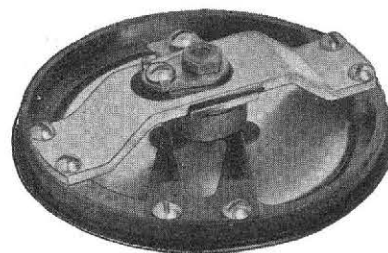
The Monophone hand unit is equipped with the famous Automatic Electric "all-positions" transmitter, which operates efficiently in any position, and with a polarized receiver designed especially for use in the Automatic Electric anti-sidetone circuit. This modern equipment assures high grade transmission and reception.

Hand units are furnished complete with 3-conductor Monotype cord, 53" long, or with Extensicord (see page 29), as ordered. Can also be furnished with special rubber-insulated ("tropical") cord and wiring, for use in Outdoor Monophones or in damp places.

Cat. No.	Description	Price, Each
AF-10	Monophone Hand Unit, with Monotype cord	\$7.75
AF-41	Monophone Hand Unit, with Extensicord	8.75
AF-14	"Tropical" Hand Unit	7.80
Net Weight—1½ lbs.		Shipping Weight—3 lbs.



## Local-Battery Transmitter



This transmitter is used in Type 200 Telephones and the Mine Telephone, and can be used for replacement purposes on conventional telephones of the following makes: Monarch, Kellogg, Western Electric, and Dean.

The framework is heavily black japanned, and has four equally spaced tapped holes for mounting screws. Screws are not furnished unless specified. Transmitter mouthpieces, also, must be ordered separately, if desired.

Cat. No.	Description	Price, Each
AF-21	Local-Battery Transmitter, only	\$2.15
Net Weight—8 oz.		Shipping Weight—1 lb.
AF-22	With arm for Type 200 Wall Tcl.	\$3.15
Net Weight—1 lb.		Shipping Weight—1½ lbs.

## Principal Replacement Parts

AF-16	Monophone Transmitter	\$2.50
AF-17	Monophone Receiver, only	2.20
AF-19	Receiver Diaphragm	Per 100 3.30
AF-40	Monophone Transmitter Mouthpiece	.36
AH-11	Hand Unit Cord—Monotype	.50
AH-20	Extensicord Hand Unit Cord	1.00

## "Anti-Noise" Hand Units

Can be furnished instead of the standard hand unit in any type of Monophone in noisy locations, such as shops, engine rooms, etc. This unit contains a special transmitter with an acoustically shielded diaphragm, and the mouthpiece is formed with only a small tapered hole, so that it excludes all sounds which aren't directed right into it.

Furnished with Monotype hand unit cord, or with Extensicord, as ordered.

The "Anti-Noise" transmitter and mouthpiece can also be supplied separately, for use in any existing Monophone hand unit.

Cat. No.	Description	Price, Each
AF-12	"Anti-Noise" Unit, with Monotype cord	\$11.20
AF-39	"Anti-Noise" Unit, with Extensicord	12.20
Net Weight—1½ lbs.		Shipping Weight—3 lbs.
AF-30	"Anti-Noise" Transmitter, only	\$5.15
AF-37	"Anti-Noise" Mouthpiece, only	.50

## Transmitter Repairs

Since it is almost impossible to make satisfactory repairs on transmitters in the field, we do not list repair parts for transmitters, but recommend that transmitters requiring repairs be sent to us. Please place a tag bearing your name and address on all such transmitters, and pack them carefully to prevent damage in shipping.

## Transmitter Mouthpieces

To beautify the conventional telephone, and to make it easy to distinguish between two adjacent telephones, Automatic Electric Company offers mouthpieces in colors, and in clear plastic or glass, as well as in regular black Bakelite. These mouthpieces fit Automatic Electric and Western Electric telephones. The glass mouthpiece is a "sanitary" type, with metal insert which can be removed and disinfected.

Cat. No.	Description	Price, Each
AF-23	Black Mouthpiece	Quantities 1-99 \$0.15
AF-24	Chinese Red Mouthpiece	.17
AF-25	Royal Blue Mouthpiece	.17
AF-26	Jade Green Mouthpiece	.17
AF-27	Nile Green Mouthpiece	.17
AF-28	Orchid Mouthpiece	.17
AF-29	Clear Plastic Mouthpiece	.17
ZA-10	"Sanitary" Glass Mouthpiece	.25
Net Weight—1 oz.		Shipping Weight—6 oz.

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## Hand Receivers



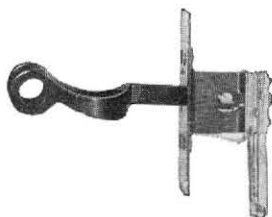
The Automatic Electric receiver is of 75 ohms resistance, and can be used in almost any conventional type of telephone. Receiver shell and cap are molded of black Bakelite. Monotype cord 33" long, covered with brown braid and equipped with spade tips, is provided (or rubber-covered cord can be supplied, if specified).

Cat. No.	Description	Price, Each
AF-31	Receiver, with Monotype Cord	\$2.45
Net Weight—1 lb.		Shipping Weight—2 lbs.

## Principal Replacement Parts

Cat. No.	Description	Price
AF-33	Receiver Diaphragm	Per 100 \$3.30
AF-34	Bakelite Shell	Quantities 1 to 99, ea. .50
AF-36	Bakelite Receiver Cap	Quantities 1 to 99, ea. .28
AR-14	Monotype Receiver Cord	.20

## Hookswitches



Hookswitch AX-17, with Receiver Hook AX-27

Used in conventional type telephones with hand receivers, and also in Outdoor Monophone and Type 371B Monophone, in which the Monophone hand unit hangs from a hook.

The springs of these hookswitches are stiff phosphor bronze, to assure ample contact pressures, and are insulated with phenol fibre. Assemblies are furnished without mounting screws, unless specifically ordered.

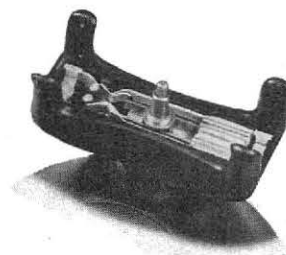
Receiver hooks should be ordered separately, if desired—see at right, above.

Cat. No.	Description	Price, Each
AX-29	Hookswitch for Type 371B Monophone	\$2.00
AX-11	Hookswitch for Type 200 Desk Stand	.78
AX-17	Hookswitch for Type 200 Wall Set	.75
AX-15	Hookswitch for Outdoor Monophone Set	1.50
AX-18	Hookswitch for Mine-Type Telephone	.48
Net Weight—3 oz.		Shipping Weight—9 oz.

## Receiver Hooks

Cat. No.	Description	Price, Each
AX-25	For Type 200 Desk Stands, and Mine-Type Tels.	\$0.35
AX-26	For Outdoor Monophone Sets	1.25
AX-27	For Type 200 Wall Set	.35
AX-28	For Type 371B Monophone Wall Set	1.75
Net Weight—1 oz.		Shipping Weight—6 oz.

## Monophone Switches

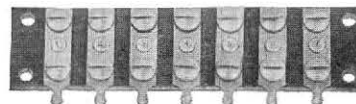


Used in Monophones in which the hand unit is placed in a cradle, these switches serve the same purpose as the hookswitch in conventional telephones. When the hand unit is placed on the cradle it pushes down on a plunger which operates the springs. The springs are of phosphor bronze—stiff enough to create ample contact pressure.

Connecting cords are furnished on each Monophone switch, as required, to fit the instruments in which it is used.

Cat. No.	Description	Price, Each
AX-20	Switch for Types 1A and 19 Monophones	\$3.06
AX-23	Monophone Switch for Type 17 Monophone	2.60
AX-24	Switch for Types 8, 10 and 18 Monophones	2.29
Net Weight—4 oz.		Shipping Weight—10 oz.

## Terminal Strips



Terminal Strip, Cat. No. AV-11

The terminal strips listed below are made of phenol fibre—mechanically strong and a fine insulator—with terminals of brass, finished in white nickel. Each terminal has a tip tinned for soldering, and screws under which cord tips or wires may be fastened.

For terminal strip not shown, give catalog number of telephone or ring box in which it is used.

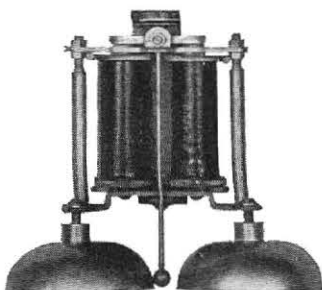
Cat. No.	Description	Price, Each
AV-11	7 terminals—for Outdoor Monophone, Mine Tel., Types 10, 17 and 18 Monophones, and steel-box Extension Ringers.	\$0.38
AV-12	Same as AV-11, but 8 terminals	.95
AV-14	6 terminals—for Type 19 Monophone	.51
AV-15	Same as AV-14, but 8 terminals	.71
AV-16	4 terminals—for Type 8 Monophone	.40
AV-17	8 terminals—for Type 8 Monophone	.96
Net Weight—2 oz.		Shipping Weight—4 oz.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice



## Ringers

The simple, substantial construction of Automatic Electric ringers makes them highly efficient, and almost entirely free from all ordinary forms of ringer trouble. All adjustments are made in the factory, and fixed so that no further adjustments are required during many years of service. A powerful permanent magnet assures dependable operation and long life.



Typical Ringer

The various types of ringers listed below are substantially the same, but have mounting brackets, etc., to fit the different telephones and ringer boxes in which they are used. If mounting parts (screws, washers, etc.) are desired with ringer, please specify, and give catalog number of telephone or ringer box in which it is to be installed.

Ringers are supplied complete with gongs, unless otherwise specified.

Cat. No.	Description	Price, Each
AS-40	1000-ohm—for Type 8 Monophone	\$2.65
AS-41	2500-ohm—for Outdoor Monophone Set	3.30
AS-42	1600-ohm—for Outdoor Monophone Set	3.05
AS-43	1000-ohm—for Outdoor Monophone Set	2.90
AS-44	2500-ohm—for Mine-Type Telephone	3.05
AS-45	1600-ohm—for Mine-Type Telephone	2.80
AS-46	2500-ohm—for Type 200 Wall Set, and Compact Ringer Boxes, Cat. Nos. AO-31 and AO-34	3.05
AS-47	1600-ohm—for Type 18 Monophone, Type 200 Wall Set and Ringer Boxes AO-32 and AO-35	2.80
AS-48	1000-ohm—for Type 18 Monophone, Type 200 Wall Set and Ringer Boxes AO-33 and AO-36	2.65
AS-49	1000-ohm—for Type 10 Monophone	2.65
AS-56	2500-ohm—for Extension Ringer Box	3.05
AS-57	1600-ohm—for Extension Ringer Box	2.80
AS-58	1000-ohm—for Extension Ringer Box	2.65
AS-74	2500-ohm—for Type 371B Monophone, and Exposed-Gong Ringer Box, Cat. No. AO-65	3.05
Net Weight—1½ lbs.		Shipping Weight—2 lbs.

## Ringer Gongs

Cat. No.	Description	Price, Pair
AS-59	2½" gongs—for Ringers AS-40-58, incl.	\$0.25
AS-75	3" gongs—for Ringer AS-74	.30
Net Weight—4 oz.		Shipping Weight—8 oz.

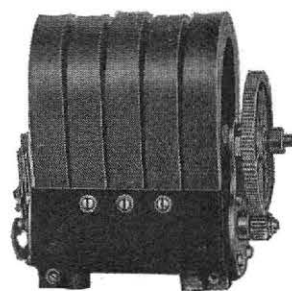
## Tools—Monophone

Cat. No.	Description	Price, Each
AW-18	Spanner Wrench for removing Monophone cradle	\$1.37
AW-22	Tool for removing Monophone switch cover and Monophone receiver cap, and for checking adjustment of Monophone switch springs	.50
AW-24	Tool for removing Monophone transmitter cap retaining ring	On application

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## Magneto Generators

Automatic Electric generators are constructed for high output and long life. A protector cap with cushion springs is placed over the pinion, absorbing the shock of sudden starting, and reducing the strain on the gears. Shunt springs short the armature winding out of the circuit when the generator is idle. Turning the crank breaks this short-circuit, and connects the generator to the ringing circuit.



Generator, Cat. No. AQ-12

In addition to the standard 3- and 5-bar types, Automatic Electric generators are made in a special 2-bar type (Cat. No. AQ-10) for use in compact instruments such as the Type 8 and Type 10 Monophones. There is also a special high-output type (Cat. No. AQ-13) used in the Type 371B Monophone, and in the exposed-gong ringer box. The high-output generator is very little larger, but has an output about 50% greater, than a standard 5-bar generator.

Crank is not furnished with generator, but must be ordered separately, if desired.

Cat. No.	Description	Height	Width	Length	Price, Each
AQ-10	2-bar	4½"	3"	4"	\$10.35
AQ-11	3-bar	5½"	3¼"	5½"	8.00
AQ-12	5-bar	5½"	3¼"	6¼"	9.75
AQ-13	5-bar, Spl.	6"	3½"	6¼"	10.50
Net Weight—9 lbs.					Shipping Weight—10 lbs.
AQ-14	Generator Crank, only				.24
Net Weight—2 oz.					Shipping Weight—5 oz.

For Switchboard Generators, see page 25.

## Line and Cord Terminal Block

This handsome little terminal block is made of Bakelite, with four connecting screws and a stay-cord fastener molded into the base. Two nickel-silver straps (readily removable) connect the screws in pairs. The base is drilled for two mounting screws, and the cover, fastened with one screw, protects the terminals and wiring. The block is 2¼" in diameter and 1" high.



Cat. No.	Description	Price, Each
AV-10	Line and Cord Terminal Block	\$0.40
Net Weight—3 oz.		Shipping Weight—6 oz.

## OUR GUARANTEE

Apparatus manufactured by Automatic Electric Company is guaranteed to be free from mechanical and electrical defects, and any part or unit which proves defective under normal conditions, and when used as intended, will be replaced or repaired without charge, if returned to us within one year. Apparatus of other makes bears the standard guarantees of the various manufacturers.



### Telephone Induction Coils

(For Operator's Induction Coil, see page 25)

From core to terminals, Automatic Electric induction coils are designed to assure maximum transmission volume and fidelity. Cores are silicon-iron strips, coils are well insulated, and are ended on sturdy terminal lugs on the spoolheads.

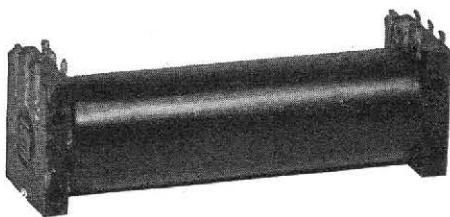
#### For Type 200 Wall Telephone and Ringer Boxes



Primary, 1.8 ohms; secondary, 14 ohms. This coil is a standard short-core induction coil, and may be used in practically any standard magneto telephone or ringer box. Length,  $3\frac{1}{8}$ "; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{8}$ ".

Cat. No.	Description	Price, Each
AU-19	Induction Coil	\$0.95
Net Weight—4 oz.		Shipping Weight—8 oz.

#### Monophone Induction Coils



Three-winding anti-sidetone coils especially designed for use in Monophones, and for ringer boxes used with Monophones. Length, 4"; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{4}$ ".

Cat. No.	Description	Price, Each
AU-18	For Types 8, 10, 17, 18 and 19 Monophones and Ringer Boxes AO-31, -32, -33, and -65	\$1.90
AU-20	For Outdoor Monophone Set	2.65
Net Weight—4 oz.		Shipping Weight—8 oz.

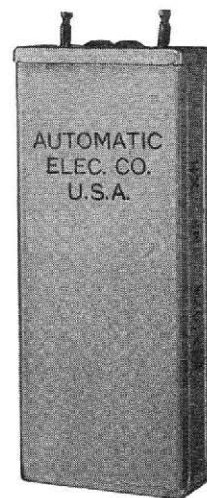
### For Mine-Type Telephone

Primary, 1.3 ohms; secondary, 175 ohms. Length,  $3\frac{3}{8}$ "; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{4}$ ".

Cat. No.	Description	Price, Each
AU-24	Induction Coil for Mine Telephone	\$2.00
Net Weight—4 oz.		Shipping Weight—8 oz.

### Telephone Condensers

The condensers used in receiver and ringer circuits of magneto telephones (when specified) are of the tinfoil-and-paper type. They are individually tested at 500 volts or more, and no condenser is shipped until it has successfully passed this test. Condenser cans are aluminum finished, with capacitance rating stamped or printed on the can. Capacitance is guaranteed to be not below, nor more than 25% above, the rated value. Dimensions:  $3\frac{3}{8}$ " long,  $1\frac{1}{8}$ " wide,  $\frac{3}{8}$ " thick (except AT-14—1" thick).



Cat. No.	Capacitance	Price, Each
AT-11	0.5 mf.	\$0.66
AT-12	1 mf.	.75
AT-14	2 mf.	1.02

Net Weight—3 oz.

Shipping Weight—8 oz.

For Switchboard Condensers, see page 25

### Condenser Clamping Strip

The above condensers mount with a simple clamping strip and two screws. Strip is steel, zinc plated. Screws are not included.

Cat. No.	Description	Price, Each
AT-27	Condenser Clamping Strip	\$0.15
Weight—2 oz.		



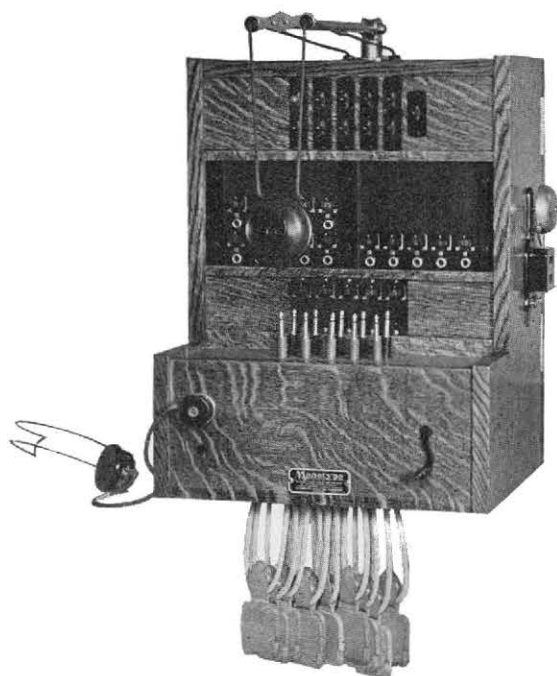
### CENTRAL-BATTERY TELEPHONES

In addition to the magneto telephones shown in this catalog, Automatic Electric Company manufactures a complete line of modern central-battery telephones, for manual as well as for automatic systems. These instruments, including new "streamlined" versions of the Monophone (which are available also in beautiful art shades) are described and illustrated in a separate catalog. If you operate central-battery equipment of any type, be sure to ask for "A copy of Catalog 4055-A." It will be sent promptly, and without obligation.



## Monotype "Wall-Type" Magneto Switchboards

Monotype "Wall-Type" Magneto Switchboards are specifically designed and built for small exchanges (up to 30 lines capacity). This means that they are simple in design, while providing all desirable features. They are ruggedly constructed, to reduce maintenance costs to a minimum, and to insure a long and trouble-free service life. All of the equipment is made by Automatic Electric Company, to the famed Automatic Electric standards, and every part carries our regular guarantee. The organization considering the purchase of a magneto switchboard could have no finer guarantee of satisfaction than that now being given by Monotype magneto switchboards in scores of exchanges throughout the world.



*Monotype Wall-Type Switchboard, with  
15 Line Circuits Equipped*

### For Grounded or Metallic Lines

The Monotype "Wall-Type" magneto switchboard is a small unit which may be hung on a wall or stood upon a desk or table, to provide service for a maximum of 30 lines. It is furnished completely wired for this capacity, but equipped as desired for 10, 20, or 30 lines. It will work with any type of magneto lines, grounded or metallic—including long and heavily loaded rural lines.

Each line ends in a numbered drop and jack in the face of the switchboard. Connections between lines are completed through five cord circuits, each consisting of two cords, a clearing-out drop directly above them on the face of the board (below the line drops), and two lever keys, in line with the clearing-out drop, but above the line drops.

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### Simple Operation

When a subscriber operates the generator of his telephone, the shutter of the drop associated with his line falls. The operator answers the call by inserting the rear plug of one of the cord circuits into the jack (this automatically restores the drop shutter), and operating the listening key, and completes the desired connection by simply inserting the front plug of the same cord circuit into the jack of the desired line, and ringing the proper code with the hand generator while operating the ringing key. A buzzer is provided in the ringing circuit so that the operator can hear the codes she is sending.

Four of the cord circuits provided are of the standard type, with double-wound clearing-out drops, and are used in completing connections between two metallic or two grounded lines. For connections between grounded and metallic lines, the fifth cord circuit is equipped, in addition, with a repeating coil, which can be "cut into" the circuit by operation of the rear key. The double-wound clearing-out drops operate when either party "rings off," as a signal to take down the cords.

### Night Alarm

For use at night, or during light-load periods, a night alarm circuit is provided, consisting of a switching key and a bell. This key (at the top of the switchboard, to the right of the cord-circuit keys) is thrown when the operator leaves the board; then, whenever a drop shutter falls, the bell rings. The key has also a position for switching in a distant signal, if it is desired to have a signal at a point where the bell in the switchboard cannot be heard.

The standard operator's telephone set is a suspended-type transmitter and a headband receiver, but if it is desired to mount the switchboard on a desk, a Type 1A Desk Monophone (see page 6) can be furnished, instead, on special order.

### Cabinet

The switchboard cabinet usually furnished is quarter-sawed oak with golden oak finish, but walnut or mahogany-finished cabinet can be furnished, if specified. Overall dimensions are: height, 21"; width, 16"; depth, 13½". The cord shelf is 4⅝" wide, and is 6½" from the base of the cabinet.

The cabinet is constructed so that the board can be easily installed and maintained. The front is hinged to permit swinging it out from the wall, exposing all terminals and interior parts. Connecting racks are provided within the cabinet for making all connections, and it is necessary only to connect the incoming lines from the distributing frame to these racks.

On special order, the board can be furnished complete with line cable of any specified length connected at the switchboard, and ready for connection to the distributing frame. Distributing frame is not included—if desired, see page 35.

### Prices

Prices of Monotype "wall-type" magneto switchboards will be gladly supplied on request. If any special features, including the following, are desired, please specify:

Type 1A Desk Monophone instead of suspended type transmitter and headband receiver.

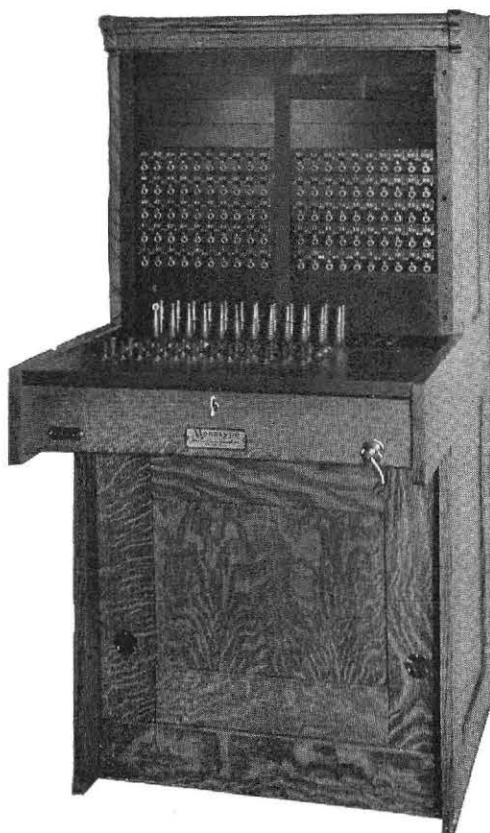
Walnut or mahogany woodwork instead of golden oak.

Line cable.



## Monotype "Floor-Type" Magneto Switchboards

These standardized switchboards can be furnished in any desired capacity from 30 to 300 lines. For less than 30 lines, the Monotype wall-type switchboard (see page 18) is generally more suitable; and for more than 300 lines, special engineering schedules are furnished.



*Single Position Monotype Floor-Type Switchboard with 12 Cord Circuits and 100 Line Circuits Equipped*

Monotype floor-type switchboards are simplified, dependable units, arranged for operation with all types of magneto lines, either grounded or metallic, including long and heavily loaded rural lines. They have double key-shelf cord-circuit supervision, with the keys, clearing-out signals, and cords in direct alignment in front of the operator, providing an operating efficiency nearly equal to that of central-battery switchboards.

The clearing-out signals are the famous Automatic Electric visual signals, with hemispherical shutters, which are noted for easy visibility from any angle in front of the keyshelf. They are out in plain view of the operator and cannot be hidden by the cords, as is so often the case when drops are used as clearing-out signals; and, unlike lamp supervisory signals, they operate directly from the generators of subscribers' telephones and do not involve relays or the use of auxiliary power supply.

### Universal Cord Circuits

The equipment of each cord circuit consists of a pair of cords, two clearing-out signals (one for each cord), a ringing-and-listening key, and a ring-back key. The clearing-out signals are

equipped with hemispherical shutters, half black and half white, under dust covers having two celluloid windows. Normally, the black portion of the signal is seen through these windows, but in response to ringing-off current from the telephone circuits, the signal operates, displaying the white surface which stands out in bold contrast to the solid black of the keyshelf, from any angle in front of the switchboard. The signal mechanism is simple and dependable in operation, and each coil is shielded, by an iron cover, against the influence of the other. Both signals are mechanically linked to the ringing-listening key, so that when this key is operated to the listening position the signals automatically restore.

All cord circuits are equipped with repeating coils, so that the operator can connect a grounded line and a metallic line without selecting special cords. The repeating coils are of the "non-ring-through" type, and, together with two condensers in each cord circuit, prevent a subscriber's ring-off from passing through the cord circuit to the other line.

For toll connections, each switchboard section is equipped with two "zero-loss" cord circuits, which have a "zero-loss" position on their rear keys. When this key is operated to this position, one clearing-out signal, one-half of the repeating coil, and both condensers are removed from the cord circuit, thus reducing transmission loss to a minimum. Ring-off of either party is then indicated on the one clearing-out signal.

### Line Circuits

The line circuits feature a drop-and-jack combination which is generally recognized as the finest drop and jack ever designed. Drops are positive in operation, because the catch is so designed that when the drop is operated it not only releases the shutter but actually forces it down. The drop is mechanically restored when the operator inserts the plug. Drops may be either of the regular "series" or bridging types (with continuous night alarm), or of the code-signaling type, as preferred. Bridging drops are supplied unless otherwise specified.

### Ringing

Ringing current is usually provided by a manually-controlled ringing machine, but an emergency hand generator is furnished in each position, together with a key for switching from the ringing machine to the generator. A buzzer (with a cut-off key) is provided in the generator circuit to indicate to the operator that the ringing machine is operating, and to permit her to check the codes being sent. Keyshelf space is provided for mounting a master ringing key in each position, so that the board may be readily converted for divided, pulsating, or harmonic ringing.

Switchboards with series or bridging type drops are provided with a night alarm switching key and bell. The key is thrown when the operator leaves the switchboard, and when a drop shutter or clearing-out signal operates, the bell gives a continuous ring until the signal is restored.

The standard operator's telephone equipment is a suspended type transmitter and a headband receiver, but a breastplate set can be furnished, instead, if desired.

### Cabinet

The switchboard cabinet regularly furnished is quarter-sawed oak with golden oak finish, but walnut or mahogany cabinetwork can be supplied on special order, and mahogany cabinets, especially finished inside and out, are always provided for tropical service. The single-position unit (capacity, 150 lines) is 26" wide, 51" high, and 30½" deep, the keyshelf 30" from the floor. The two-position unit (capacity, 150-300 lines) is 52" wide, 60" high, and 30½" deep, the keyshelf 36" from the floor. (The 6" greater height of the two-position unit is due to the addition of a platform, which is provided to permit the use of the longer cords needed to reach across the two positions.)

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## Floor-Type Switchboards—Cont.

The cabinets are built for durability and ease of operation and maintenance. The keyshelf is covered with black phenol fibre, and is attached with a full-length piano hinge, so it is easily raised for inspection of the equipment and cabling. The cabling is arranged so that each visual signal and key assembly can be lifted from the keyshelf without interrupting service or disturbing the other cord circuits, and the drop coils can be removed without breaking any soldered connections.

Each switchboard is provided with line cable (made up of 50-pair cables) extending twelve feet from the top of the switchboard. To complete the installation, it is only necessary to connect this cable to the main distributing frame. Current supply for the operator's transmitter and the night alarm is obtained by installing dry cells or other power unit in the switchboard.

### Equipment Summary

The cabinet capacities of Monotype floor-type switchboards are as follows:

	<i>Single Position</i>			<i>Two Positions</i>		
Line Circuits	50	100	150	200	250	300
Cord Circuits	15	15	15	30	30	30
Operator's Tel. Ckt.	1	1	1	2	2	2
Ringing Circuit	1	1	1	2	2	2
Night Alarm Circuit	1	1	1	1	1	1
Transfer Key Circuit	*1	*1	*1	1	1	1
Net Weight, lbs.	231	261	291	497	527	557
Ship. Weight, lbs.	401	431	461	747	777	807

\*Wired, but not equipped.

### Prices

Prices of Monotype "floor-type" switchboards will be gladly supplied on request. When ordering, please specify number of drops and jacks (furnished in strips of 10), and number of cord circuits, per position. Unless otherwise ordered, two circuits in each position are of the "zero-loss" type.

If any of the following special features are desired, please specify:

Breastplate set instead of suspended type transmitter and headband receiver.

Walnut or mahogany woodwork instead of golden oak.

A small angle-iron rack for supporting the cable can be furnished on special order.

Repeating coils, dials and dial keys, and other special equipment as required can be provided for toll trunks.

## CENTRAL-BATTERY SWITCHBOARDS

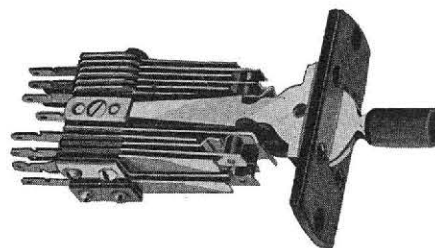
If your system is outgrowing magneto operation, call upon us for complete information on central-battery switchboards. Automatic Electric Company manufactures all types—automatic switchboards of both "relay" and "switch" types, and the famous Monotype Community (manual) switchboard—and we are therefore in a position to give you unbiased advice on the replacement of your present switchboard.

## Magneto Switchboard Parts

The long life and dependable service of Monotype switchboards is largely due to the quality of the equipment which we build into them. Every unit of this equipment is made by Automatic Electric Company, using designs and materials which have been developed through years of experience; and all bear the standard Automatic Electric guarantee.

These switchboard parts are shown on the following pages. To maintain the high grade of service provided by Monotype switchboards, we recommend that only these standard parts be used in making any replacements or additions. And their high-grade construction suggests their use also for replacement purposes in switchboards of other makes in which they may be applicable. Complete dimensions and necessary mechanical details are given in the descriptions herein, so it is easy to determine whether an Automatic Electric apparatus unit is adaptable to any desired purpose. However, beyond this we cannot undertake to supply replacement parts for use in switchboards of other manufacture.

### Keys



The cord-circuit keys are some of the hardest-worked apparatus on a switchboard. Automatic Electric lever keys are therefore built with ample strength at every point to stand up under continual use and abuse.

The key framework is a die-casting of aluminium alloy, which is absolutely rigid, and will withstand the banging of thousands of operations without becoming distorted and losing the alignment of working parts. The lever has a long brass bushing which pivots on a pin of stainless steel (this combination of metals was selected because it assures long life). The contact springs are moved by hard-rubber rollers on the lever, making for easy operation.

The springs are nickel-silver, and make "clean" contacts which will not produce noise in telephone circuits. Insulation is phenol fibre, a dependable insulation under all operating conditions. We know, because we test every key with 500 volts, D. C., after it is assembled.

Automatic Electric lever keys are furnished in one- or two-position types, with any desired number of contact springs, and either locking or non-locking (or locking in one position and non-locking in the other). One-way keys have spring stops instead of springs on the unused side, and can readily be converted to two-way operation by merely adding a spring assembly. And the entire spring assembly in either key position can be

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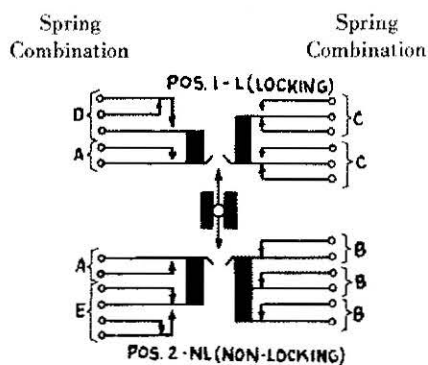
### Keys—Cont.

removed by withdrawing one screw, without disassembling the pile-up, and without disturbing the opposite spring assembly.

Lever keys are supplied with black handles, unless red or white handles are specified, and are normally supplied mounted on an individual escutcheon (Cat. No. DD-17,† page 22) and with two black-oxidized finished No. 4 x ½" wood screws.

### Contact Assemblies

Contact assemblies are made up from the five basic forms, designated "A" to "E" respectively, shown below (assemblies are always shown as they appear in their unoperated (normal) position, and their titles describe the action which takes place upon operation). These forms can be combined into "pile-ups" as desired, and each pile-up is then designated by the letters representing the basic forms of which it is made, the required number of forms of each type being also specified.

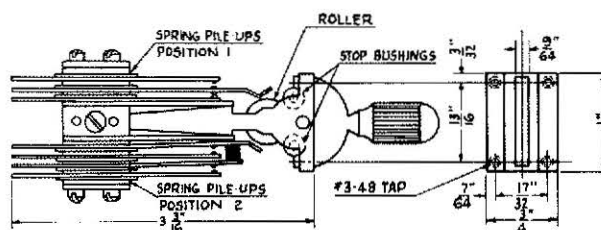


When ordering standard keys, listed below, give catalog numbers. For contact assemblies not listed, list the number of sets of each form required for each position of the key, first designating whether the position is locking or non-locking. For example, the key for which the spring combination is illustrated above would be ordered as follows:

Two-Way Lever Key  
Pos. 1 (L.)—1A2C1D  
Pos. 2. (N. L.)—1A3B1E

Springs are arranged in our standard order unless a particular arrangement is specified.

### For Replacement Purposes

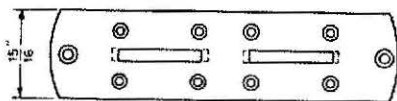




### Key Escutcheons

Escutcheons for lever keys are  $\frac{1}{8}$ " thick and are finished in durable black japan.

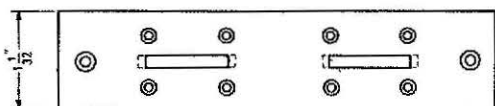
Mounting screws for wood are black-oxidized finish No. 4 O.H. wood screws, Cat. No. DD-16, and should be separately specified when desired.



Lever Key Escutcheon, Cat. No. DD-18

Cat. No.	No. Keys	Length	Mtg. Ctrs.	Price, Each
DD-17	1	2 $\frac{1}{4}$ "	1 $\frac{1}{8}$ "	\$0.30
DD-18	2	3 $\frac{5}{8}$ "	3 $\frac{5}{8}$ "	.40

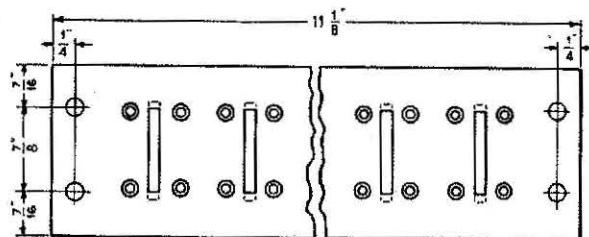
Net Weight—1 oz. Shipping Weight—4 oz.



Lever Key Escutcheon, Cat. No. DD-21

Cat. No.	No. Keys	Length	Mtg. Ctrs.	Price, Each
DD-19	1	2 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "	\$0.65
DD-20	As above	but no cutout		.30
DD-21	2	4 $\frac{1}{8}$ "	4 $\frac{3}{8}$ "	.85
DD-22	As above	but no cutouts		.30
DD-23	3	6 $\frac{1}{8}$ "	5 $\frac{3}{8}$ "	1.10
DD-24	As above	but no cutouts		.50

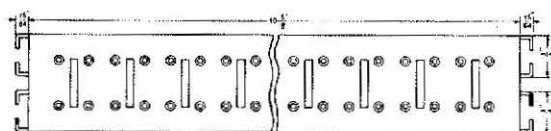
Net Weight—3 oz. Shipping Weight—8 oz.



Lever Key Escutcheon, Cat. No. DD-25

Cat. No.	Description	Price, Each
DD-25	Escutcheon for 10 Lever Keys	\$4.50

Net Weight—10 oz. Shipping Weight—1 lb.



Lever Key Escutcheon, Cat. No. DG-43

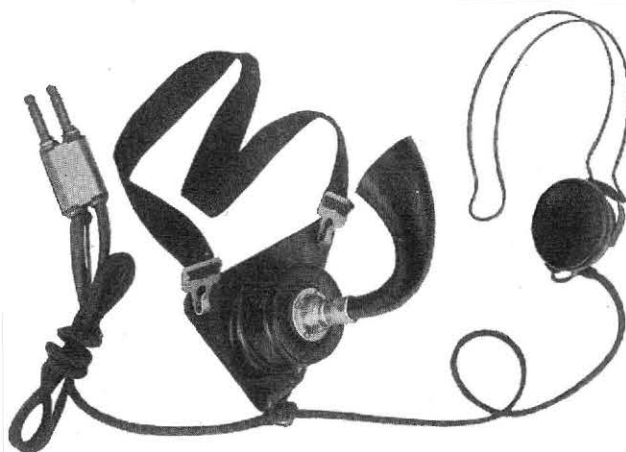
Escutcheon for mounting on the front equipment or panels of Monotype boards made since 1924. Width, 1 $\frac{3}{4}$ "—occupies space of a drop-and-jack strip. Capacity, 10 lever keys.

Cat. No.	Description	Price, Each
DG-43	Jack Panel Escutcheon for 10 Lever Keys	\$9.00

Net Weight—1 $\frac{1}{2}$  lbs. Shipping Weight—2 lbs.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

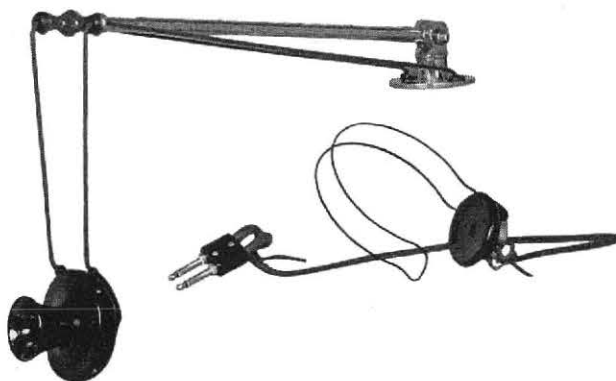
### Operators' Sets



The breastplate-transmitter type operator's set consists of the transmitter with web strap, a receiver and headband, and a connecting cord with twin plug DB-99 (which fits Monotype or Western Electric switchboards). The transmitter is a special compact type, designed to operate efficiently in the many positions in which it will be placed when in service. The receiver headset was designed for the comfort of the operator, permitting use for long periods without fatigue.

Cat. No.	Description	Price, Each
DA-17	Operator's Breastplate Set	\$10.55

Net Weight—1 $\frac{1}{2}$  lbs. Shipping Weight—3 lbs.

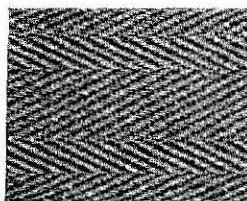


The suspended-transmitter type operator's set consists of the suspended transmitter with long cords (67" long) and adjustable transmitter arm finished in highly polished nickel plate, as shown above, and an operator's headset with cord and plug as furnished with the breastplate-type set.

Cat. No.	Description	Price, Each
DA-19	Suspended-Transmitter Set	\$15.75

Net Weight—3 lbs. Shipping Weight—5 lbs.

### Operators' Neckband Webbing

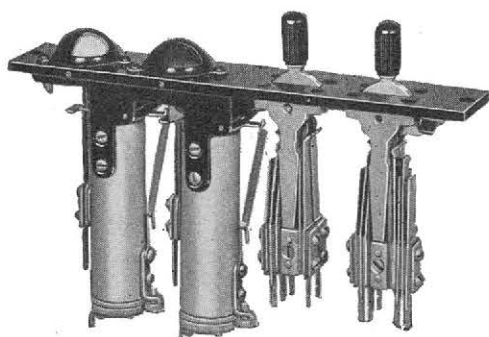


A grey cotton tape  $\frac{7}{8}$ " wide, for replacing worn or soiled webbing on breastplate transmitters.

Cat. No.	Description	Price
1495	12 yd. Roll	\$0.60

Net Weight—3 oz.

## Visual Signal and Key Assemblies



*Visual Signal and Key Assembly, with One Signal Operated*

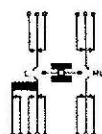
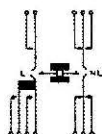
Consist of a Talking and Ringing Key, a Ring-Back Key, a Calling Supervisory Signal and an Answering Supervisory Signal, all assembled on an escutcheon  $\frac{3}{8}$ " thick,  $1\frac{1}{8}$ " wide, and  $7\frac{1}{4}$ " long, finished in black rubber japan. The escutcheon is drilled and countersunk on the center line,  $\frac{3}{8}$ " from each end, for mounting with No. 4 flat head screws, and will mount on any Monotype floor-type magneto switchboard.

Automatic Electric visual signals respond to the slightest impulses from the telephone circuits, displaying a signal which is plainly visible from any angle in front of the switchboard. The signal mechanism is simple and dependable in operation. Operating coils are of 1000 ohms resistance, and each coil is shielded, by an iron cover, against the influence of the other. A pair of contact springs for night alarm are provided on each signal.

The two lever keys have spring combinations and locking arrangements as shown below. The Ring-Back Key is a standard lever key assembly, as described on page 20; the Talk-Ring key is a special assembly, mechanically interlocked with the visual signals, so that the operation of the key restores either signal which may be operated.

Assembly No. DD-46 has black key handles; Nos. DD-45 and -47 have a red handle on the Ring-Back key.

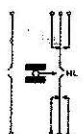
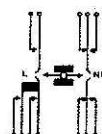
Cat. No.	Description	Price, Each
	Talking and Ringing Key Talk Ring	
	Ring-Back Key & Zero-Loss Key Cat. No. DG-29	



DD-45 For "Zero-Loss" Cord Circuits (Ring-back key has contacts for repeating coil arranged for "zero-loss" transmission on toll connections) \$12.10

Net Weight—2 lbs.

Shipping Weight—3 lbs.



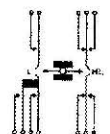
DD-46 For Local Cord Circuits (No repeating coil, or coil in circuit permanently) \$12.50

Net Weight—2 lbs.

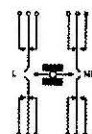
Shipping Weight—3 lbs.

Talking and Ringing Key

Talk Ring



Ring-Back Key and Rept. Coil Cut-In Key  
Cat. No. DG-30



Cat. No.	Description	Price, Each
DD-47	For rehabilitating older boards which use Repeating Coil Cut-in Keys	\$12.00

Net Weight—2 lbs.

Shipping Weight—3 lbs.

## Switchboard Plugs



*Two-Conductor Plug, Cat. No. DB-94*



*Three-Conductor Plug, Cat. No. DB-96*

Automatic Electric plugs are made in two- and three-conductor types, to fit Automatic Electric jacks. Plug bodies are of brass, and all insulation is hard rubber. The handle is threaded for fastening the cord and terminating the sleeve connection by doubling it back and screwing the cord into the plug, in the usual manner. Shells can be furnished in black, red, or gray, but black is supplied unless red or gray is specified.

Two-conductor plug Cat. No. DB-94 has a sleeve length of 1.200", and sleeve diameter of .249". Three-conductor plug Cat. No. DB-96 has a sleeve diameter of .250" and length of 1.168". As may be seen from the above view, it has, in addition to the tip, ring, and sleeve contacts, a dead collar of metal between the tip and ring contacts. This collar protects the tip-to-ring insulation from wear.

Cat. No.	Description	Price, Each
DB-94	Two-Conductor Plug	\$0.75
DB-96	Three-Conductor Plug	1.25

Net Weight—1 oz.

Shipping Weight—6 oz.

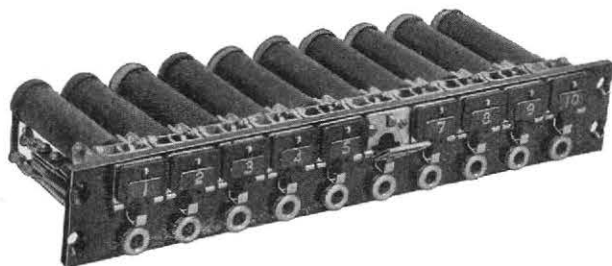
## Tools—Switchboard

Cat. No.	Description	Price, Each
TA-42	Tool for adjusting key springs	\$1.85
TA-45	Jack Thimble Wrench	.35

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice



## Combined Drops and Jacks



Strip of 10 Combined Drops and Jacks

Automatic Electric drops are of the self-restoring type, and are normally equipped with springs for "tip-cut-off" (or, springs to disconnect both ends of the coil may be provided, if desired). They are available in three types—series, bridging, and code-signaling—which provide audible signals, as follows:

**Series**—is provided with a pair of springs which close a circuit when the shutter drops, to operate a continuous bell or buzzer signal.

**Bridging**—is arranged so that the armature vibrates when the coil is actuated by alternating or pulsating current, making a buzzing sound which can usually be heard for several feet. A tension spring adjustment for the armature controls the volume of this signal. The contact springs for continuous alarm are also provided.

**Code-signaling**—provided with a pair of springs which close a circuit, each time the armature is seized, to operate a bell or buzzer. In this way, code signals consisting of a number of "rings" may be received.

Drop coils can be furnished in various values of resistance, to meet operating requirements, and are connected to the jacks (and the jack wiring) by means of two removable links, so that they can be removed and inspected without disturbing any soldered connections. Jacks provided can be of either the two- or the three-conductor type, to fit plugs DB-94 or DB-96, respectively.

Jacks listed below are arranged for "tip cut-off."

Cat. No.	Type	Resis.	Fit Plug	Price, Each
DD-37	Series	100 ohms	DB-94 (2-cond.)	\$3.20
DD-34	Bridging	500 ohms	DB-94 (2-cond.)	3.30
DD-36	Bridging	500 ohms	DB-96 (3-cond.)	3.30
DD-35	Code-sig.	500 ohms	DB-94 (2-cond.)	3.60
Net Weight—8 oz.			Shipping Weight—1 lb.	

Double-wound clearing-out drops for wall-type Monotype switchboards, and other drops without jacks can also be supplied. If desired, give details on order.

## Drop Coils

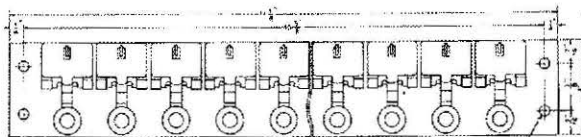
Replacement coils for above drops.

Coil Resis.	Cat. No. For Drops	Cat. No. For Drops	Price, Each
100 ohms	DD-34 and -36	DG-21	\$1.10
500 ohms		DG-22	1.25
1000 ohms		DG-23	1.30
1600 ohms		DG-24	1.50
Net Weight—1 oz.		Shipping Weight—4 oz.	

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

## Drop and Jack Strips

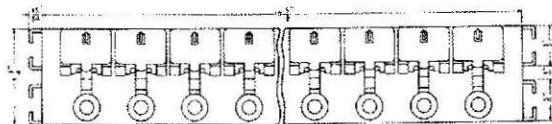
Consist of the above drops and jacks assembled on mounting strips, and provided with number plates if desired. Mounting strips are made of steel, durably finished in black rubber japan. Mounted by means of four screws, except Cat. No. DD-40, which employs jack-fastener mounting. When ordering, specify number desired.



Drop and Jack Strip DD-38 or -39

With 10 drops and (2-conductor) jacks. Fit Monotype boards, built since 1927.

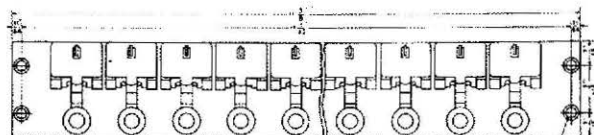
Cat. No.	Description	Price, Each
DD-38	With 500-ohm bridging drops (DD-34)	\$33.00
DD-39	With 500-ohm code-signaling drops (DD-35)	36.00
Net Weight—5 lbs.		Shipping Weight—7 lbs.



Drop and Jack Strip DD-40

With 10 drops and (3-conductor) jacks. Fits Monotype boards, built since 1927 (jack-fastener mounting).

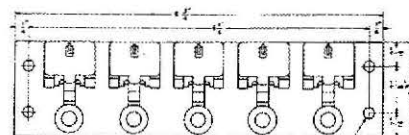
Cat. No.	Description	Price, Each
DD-40	With 500-ohm bridging drops (DD-36)	\$33.00
Net Weight—5 lbs.		Shipping Weight—7 lbs.



Drop and Jack Strip DD-41, -42, or -43

With 10 drops and (2-conductor) jacks. Fit Monarch boards, built before 1927.

Cat. No.	Description	Price, Each
DD-41	With 100-ohm series drops (DD-37)	\$32.00
DD-42	With 500-ohm bridging drops (DD-34)	33.00
DD-43	With 500-ohm code-signaling drops (DD-35)	36.00
Net Weight—5 lbs.		Shipping Weight—7 lbs.



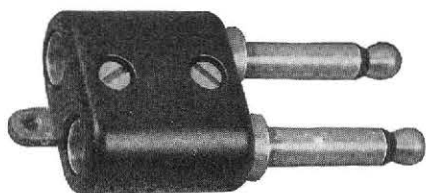
Drop and Jack Strip DD-44, DG-44, or DG-45

With 5 drops and (2-conductor) jacks. Fit Monarch boards, built before 1927.

Cat. No.	Description	Price, Each
DD-44	With 100-ohm series drops (DD-37)	\$16.00
DG-44	With 500-ohm bridging drops (DD-34)	16.50
DG-45	With 500-ohm code-signaling drops (DD-35)	18.00
Net Weight—3 lbs.		Shipping Weight—4 lbs.



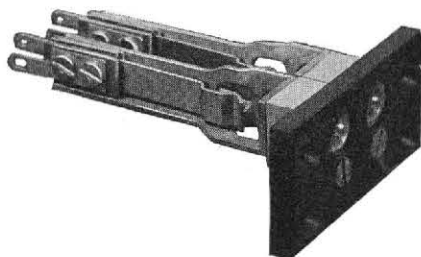
## Operator's Plug



This twin plug, for use with twin jacks listed below, consists of two two-conductor plugs, flexibly mounted, on  $\frac{5}{8}$ " centers, in a shell of black molded plastic. The plugs can be removed and replaced in four different positions, to equalize wear from the jack springs. The assembly is  $2\frac{7}{8}$ " long,  $1\frac{1}{4}$ " wide, and  $\frac{5}{8}$ " thick. This is the plug supplied with our breastplate and suspended-transmitter sets.

Cat. No.	Description	Price, Each
DB-99	Operator's Plug	\$2.10
Net Weight—2 oz.		Shipping Weight—6 oz.

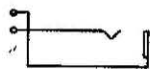
## Operator's Jacks



Operator's Jack, Cat. No. DC-11

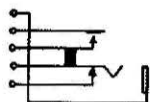
Fit Operator's Plug, Cat. No. DB-99. Consist of four 2-conductor jacks mounted on a bevel-edged plate of phenol fibre, with dull finish. The plate is  $2\frac{3}{8}$ " x  $1\frac{1}{4}$ ",  $\frac{1}{4}$ " thick, and is drilled for mounting with four No. 8 flathead screws,  $3\frac{1}{8}$ " x  $\frac{5}{8}$ " on centers. Jacks extend  $3\frac{1}{4}$ " back of the plate. Mounting screws are not furnished.

Spring Comb.	Cat. No.	Price, Each
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DC-12

\$3.50



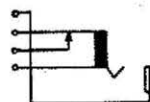
DC-13

4.00

Net Weight—4 oz.

Shipping Weight—8 oz.

Similar assemblies with two jacks are also available. Plate is  $2\frac{3}{8}$ " x  $1\frac{1}{4}$ ", and mounting holes are  $1\frac{1}{4}$ " x  $\frac{5}{8}$ " on centers.



DC-10

\$2.75



DC-11

2.50

## Operator's Induction Coil



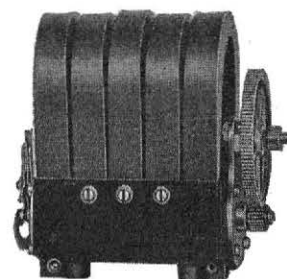
A two-winding coil, with primary of 1.8 ohms; secondary, 18.5 ohms. Core is made of silicon-iron strips, and windings are well insulated, and ended on sturdy terminal lugs on the spoolheads. This coil is used in Monotype switchboards. Dimensions: length,  $3\frac{3}{4}$ "; width,  $1\frac{1}{8}$ "; height,  $1\frac{1}{8}$ ".

Cat. No.	Description	Price, Each
AU-21	Operator's Induction Coil	\$1.40
Net Weight—4 oz.		Shipping Weight—8 oz.
For Telephone Induction Coils, see page 17		

## Magneto Generators

Constructed for high output and long life. Cat. No. AQ-12 is the standard generator, used in Monotype switchboards. Cat. No. AQ-13 is a special design which is only slightly larger, but has an output about 50% greater than the standard generator.

Extension shaft, and crank, are not furnished, and should be ordered separately, if desired.



Cat. No.	Description	Height	Width	Length	Price, Each
AQ-11	3-Bar Gen.	$5\frac{1}{2}$ "	$3\frac{1}{4}$ "	$5\frac{1}{2}$ "	\$8.00
AQ-12	5-Bar Gen.	$5\frac{1}{2}$ "	$3\frac{1}{4}$ "	$6\frac{1}{4}$ "	9.75
AQ-13	5-Bar (Spl.)	6"	$3\frac{1}{2}$ "	$6\frac{1}{4}$ "	10.50
Net Weight—9 lbs.		Shipping Weight—10 lbs.			

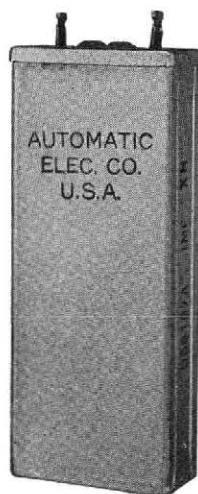
AQ-14	Generator Crank, only	.24
AQ-16	Extension Shaft, only—15" long	.50

For Telephone Generators, see page 16

## Switchboard Condensers

Designed and made to keep constant capacitance and high insulation resistance, even under extreme conditions. Aluminum-finished, with the rating stamped into the can, or printed directly on it, preventing the annoyance of lost labels.

Condensers are tested at 500 volts, D.C., or more. Insulation resistance is not less than 500 megohms (measured at 68 degrees F.) and the capacitance is guaranteed to be not below, nor more than 25% above, the rated value. Dimensions:  $3\frac{3}{8}$ " long,  $1\frac{1}{8}$ " wide,  $\frac{5}{8}$ " thick (except AT-14—1" thick).



Cat. No.	Capacitance	Price, Each
AT-10	0.2 mf.	\$0.61
AT-11	0.5 mf.	.66
AT-12	1.0 mf.	.75
AT-14	2.0 mf.	1.02

Net Wt.—3 oz. Ship. Wt.—8 oz.

For Telephone Condensers, see page 17

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice



## Monotype Cords

Monotype Cords are cords you can buy for economy and depend upon for service. They are built to reduce cord failures, by overcoming the faults which cause failure.

These cords are protected with an insulation which is relatively unaffected by moisture in the air, or on the hands of the telephone user or operator. In fact, even when they are soaked in water, they lose less of their insulating power, and when dried out they recover more. They resist fraying and kinking, which quickly makes ordinary cords unsightly and noisy, and which usually ends by causing them to go "open."

Monotype Cords can be supplied for use in any type of switchboard or telephone instrument. The most widely used types are shown on the following pages, but if the cord you require is not shown, merely send an old cord as a sample (or a sketch showing trim, tracer colors and length) and tell us where it is to be used, giving other manufacturer's number, if known.

### Colors and Lengths

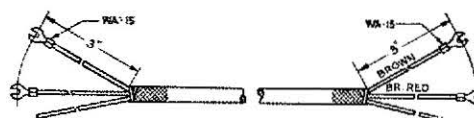
Monotype switchboard cords are offered in white, red, or green. White is furnished unless otherwise specified. For red or green, add "R" or "G," respectively, after the catalog number. Telephone instrument cords, and operators' transmitter and receiver cords, are regularly furnished with brown outer braid.

In accordance with the practice of most cord manufacturers, the length of Monotype cords is measured overall, except that plug-ending cords are measured only from the butt at the plug end.

### Rubber-Insulated Cords

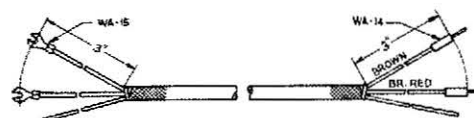
The insulation of standard Monotype Cords, as described above, is better than the insulation generally known as "moistureproof" and will be found to meet all but the most severe climatic conditions. However, for replacing rubber-covered cords on telephone instruments which are to be used out-of-doors, cords with rubber insulation may be required, and can be furnished on special order.

## Monotype Receiver Cords



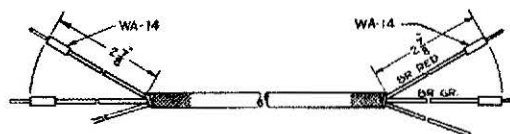
Used on Type 200 desk and wall telephones. Replaces Nos. D-541846-A and D-542498-A.

Cat. No.	Description	Price, Each
AR-14	2-Cond. Receiver Cord—33" lg.	\$0.20
Net Weight—1 oz.		Shipping Weight—5 oz.



Replaces Auto. Elec. Co.'s Nos. D-541842-A and D-542497-A.

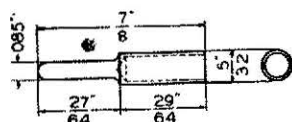
Cat. No.	Description	Price, Each
AR-13	2-Cond. Receiver Cord—33" lg.	\$0.21
Net Weight—1 oz.		Shipping Weight—5 oz.



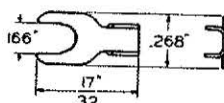
Used on Amer. Elec., also on Monarch equipment. Replaces Amer. Elec. Co.'s Nos. MC-5429 and MC-54201.

Cat. No.	Description	Price, Each
AR-31	2-Cond. Receiver Cord—36" lg.	\$0.21
Net Weight—1 oz.		Shipping Weight—5 oz.

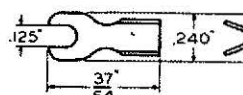
### Fittings Used on the Following Monotype Cords (Shown Approximately Actual Size)



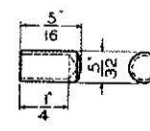
WA-14



WA-15



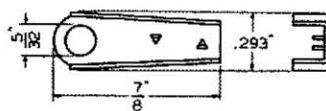
WA-22



WA-23



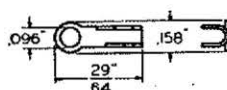
WA-24



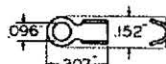
WA-27



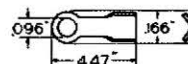
WA-28



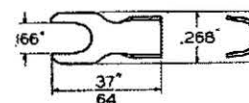
WA-29



WA-30



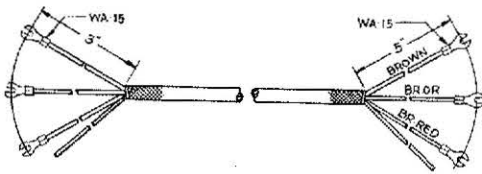
WA-33



WA-60

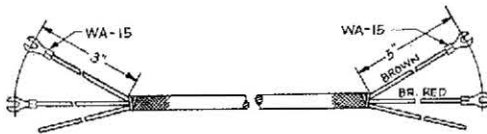
All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Monotype Desk Stand Cords



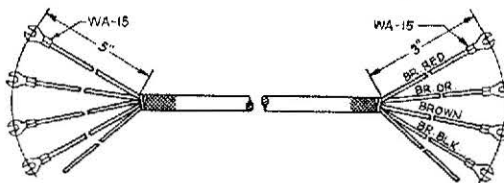
Used for connecting Type 200 desk stand to ringer box. Replaces Nos. D-541844 and D-542275.

Cat. No.	Description	Price, Each
AD-10	3-Cond. Desk Stand Cord—72" lg.	\$0.48
	Net Weight—2 oz.	Shipping Weight—6 oz.



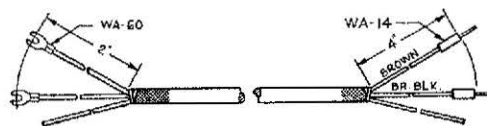
Used for connecting Type 34A3 (central-battery) Monophone to Line and Cord terminal block. Replaces Nos. D-541871 and D-542500-A.

Cat. No.	Description	Price, Each
AD-12	2-Cond. Desk Stand Cord—72" lg.	\$0.31½
	Net Weight—2 oz.	Shipping Weight—6 oz.



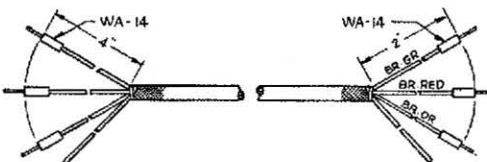
Used for connecting Type 1A, 5A, and 19 Monophones to ringer boxes. Replaces Nos. D-542273 and D-542510-A.

Cat. No.	Description	Price, Each
AD-13	4-Cond. Desk Stand Cord—72" lg.	\$0.60
	Net Weight—2 oz.	Shipping Weight—6 oz.



Replaces Kellogg's Nos. 186-D and 667-D.

Cat. No.	Description	Price, Each
AD-32	2-Cond. Desk Stand Cord—72" lg.	\$0.31½
	Net Weight—2 oz.	Shipping Weight—6 oz.



Replaces Kellogg's No. 641-D.

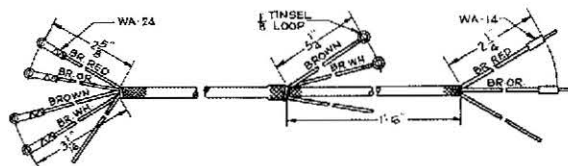
Cat. No.	Description	Price, Each
AD-36	3-Cond. Desk Stand Cord—72" lg.	\$0.48
	Net Weight—2 oz.	Shipping Weight—6 oz.



Replaces Kellogg's No. 665-D.

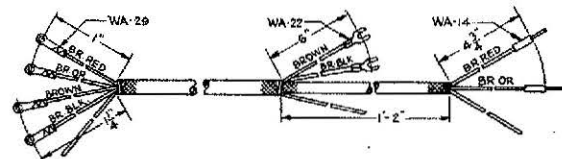
Cat. No.	Description	Price, Each
AD-38	2-Cond. Desk Stand Cord—72" lg.	\$0.31½
	Net Weight—2 oz.	Shipping Weight—6 oz.

### Monotype Breastplate Set Cords



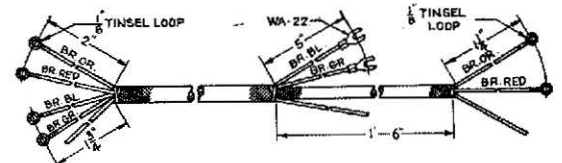
For use with plug DB-99 on breastplate sets DA-16 and -17. Replaces No. MC-54245, and fits MC-5742 plug, used on breastplate sets MC-3838 and -39. Used also with Monarch equipment. Brown braid covering.

Cat. No.	Description	Price, Each
DB-13	4-Cond. Breast Set Cord—64" lg.	\$0.85
	Net Weight—3 oz.	Shipping Weight—7 oz.



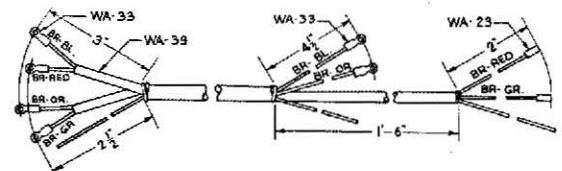
For use on Kellogg breastplate sets, with No. 25 plug. Replaces Kellogg's No. 67-0.

Cat. No.	Description	Price, Each
DB-14	4-Cond. Breast Set Cord—68" lg.	\$0.95
	Net Weight—3 oz.	Shipping Weight—7 oz.



For use on S-C breastplate set, with No. 20 receiver, No. 18 transmitter, and No. 23 plug; also Garford type operator's plug.

Cat. No.	Description	Price, Each
DB-16	4-Cond. Breast Set Cord—80" lg.	\$1.00
	Net Weight—3 oz.	Shipping Weight—7 oz.



For use on W. E. breastplate set, with No. 528 receiver, No. 234 or 396-A transmitter, and No. 137 or similar type plug. Replaces W. E. Co.'s Nos. L4E and 848.

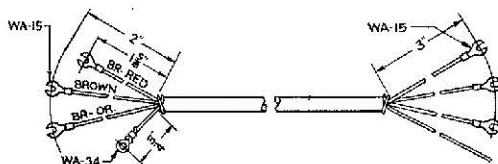
Cat. No.	Description	Price, Each
DB-17	4-Cond. Breast Set Cord—95" lg.	\$1.12
	Net Weight—3 oz.	Shipping Weight—7 oz.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice



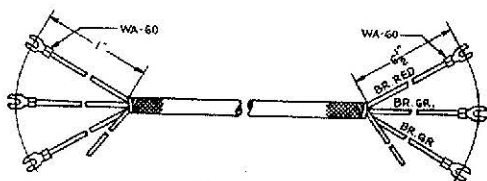
## Monotype Hand Unit Cords

(Also see the Extensicord, page 29)



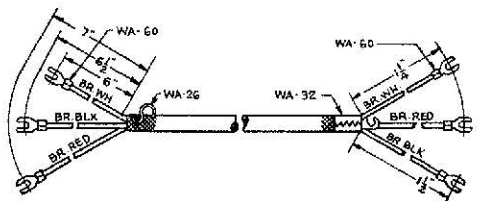
Used on Monophone hand units, replacing Nos. D-542271 and D-542509-A. Can also be used on S-C Nos. 10 and 12 handsets, replacing S-C Co.'s Nos. C-3-B and MC-3-B.

Cat. No.	Description	Price, Each
AH-11	2-Cond. Hand Unit Cord—53" lg.	\$0.50
Net Weight—2 oz.		Shipping Weight—6 oz.



For use on Kellogg No. F27 handset. Replaces Kellogg's No. F673-G.

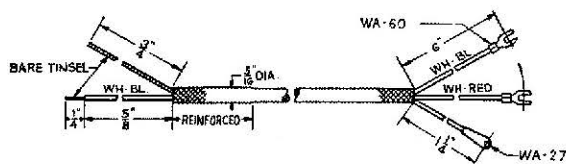
Cat. No.	Description	Price, Each
AH-13	3-Cond. Hand Unit Cord—48" lg.	\$0.50
Net Weight—2 oz.		Shipping Weight—6 oz.



For use on W. E. No. E1B handsets. Replaces W. E. Co.'s No. H3B.

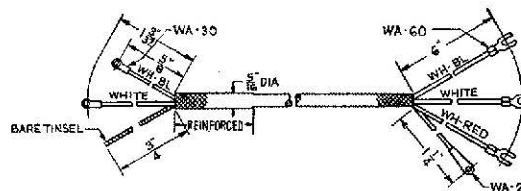
Cat. No.	Description	Price, Each
AH-16	3-Cond. Hand Unit Cord—57" lg.	\$0.52
Net Weight—2 oz.		Shipping Weight—6 oz.

## Monotype Switchboard Cords



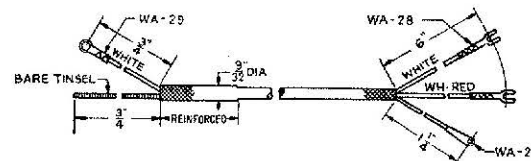
For use with plug DB-94. Replace Nos. MC-5442, -3, and -4, MC-54103 and MC-54111, used on MC-5702 and MC-5743 plugs. White furnished unless otherwise specified.

Cat. No.	Description	Price, Each
DS-10	2-Cond. Switchboard Cord—48" lg.	\$0.51
DS-12	2-Cond. Switchboard Cord—60" lg.	.55
DS-13	2-Cond. Switchboard Cord—72" lg.	.59
Net Weight—2 oz.		Shipping Weight—6 oz.



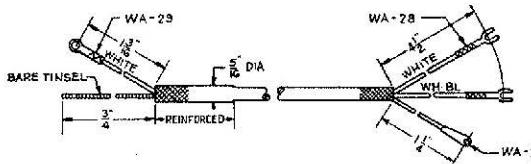
For use with plug DB-96. Replace Nos. MC-54222, -30, -31, and -32, used on MC-5735 plug. White furnished unless otherwise specified.

Cat. No.	Description	Price, Each
DS-16	3-Cond. Switchboard Cord—48" lg.	\$0.70
DS-17	3-Cond. Switchboard Cord—60" lg.	.76
DS-18	3-Cond. Switchboard Cord—72" lg.	.82
DS-19	3-Cond. Switchboard Cord—84" lg.	.88
Net Weight—3 oz.		Shipping Weight—7 oz.



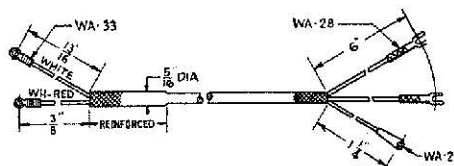
For use with Kellogg Nos. 3, 15, 17, 35, 42, 70, 109, 112, 130, 168 and 187 plugs. Replace Kellogg's Nos. 301-TO. White furnished unless otherwise specified.

Cat. No.	Description	Price, Each
DS-30	2-Cond. Switchboard Cord—18" lg.	\$0.41
DS-31	2-Cond. Switchboard Cord—24" lg.	.43
DS-32	2-Cond. Switchboard Cord—36" lg.	.47
DS-33	2-Cond. Switchboard Cord—48" lg.	.51
DS-34	2-Cond. Switchboard Cord—60" lg.	.55
DS-35	2-Cond. Switchboard Cord—72" lg.	.59
DS-36	2-Cond. Switchboard Cord—84" lg.	.63
Net Weight—3 oz.		Shipping Weight—7 oz.



For use with S-C Nos. 10 and 42 plugs. Replace S-C Co.'s No. S-23-G. White furnished unless otherwise specified.

Cat. No.	Description	Price, Each
DS-46	2-Cond. Switchboard Cord—24" lg.	\$0.43
DS-47	2-Cond. Switchboard Cord—36" lg.	.47
DS-48	2-Cond. Switchboard Cord—60" lg.	.55
DS-49	2-Cond. Switchboard Cord—72" lg.	.59
Net Weight—2 oz.		Shipping Weight—6 oz.

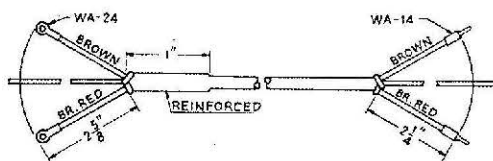


For use with W. E. No. 47 plug. Replace W. E. Co.'s Nos. S2A and 493. White furnished unless otherwise specified.

Cat. No.	Description	Price, Each
DS-58	2-Cond. Switchboard Cord—36" lg.	\$0.47
DS-59	2-Cond. Switchboard Cord—48" lg.	.51
DS-57	2-Cond. Switchboard Cord—75" lg.	.60
DS-60	2-Cond. Switchboard Cord—96" lg.	.67
Net Weight—3 oz.		Shipping Weight—7 oz.

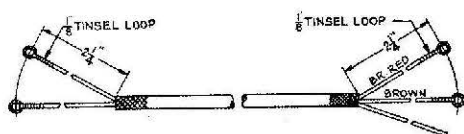
All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

## Monotype Operators' Receiver Cords



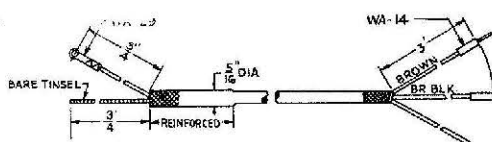
Used with plug DB-99 on operator's receiver (supplied with suspended transmitter set DA-19). Replaces No. MC-54246. Brown braid covering.

Cat. No.	Description	Price, Each
DA-20	2-Cond. Oper.'s Rec. Cord—72" lg.	\$0.50
	Net Weight—2 oz.	Shipping Weight—6 oz.



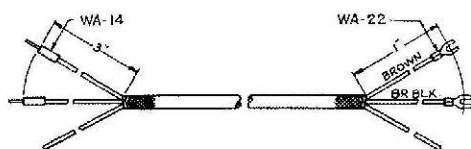
For use with Amer. Elec. No. MC-5108 receiver and No. MC-5717 plug; also with Monarch equipment. Replaces Amer. Elec. Co.'s No. MC-54100.

Cat. No.	Description	Price, Each
DA-11	2-Cond. Oper.'s Rec. Cord—72" lg.	\$0.50
	Net Weight—2 oz.	Shipping Weight—6 oz.



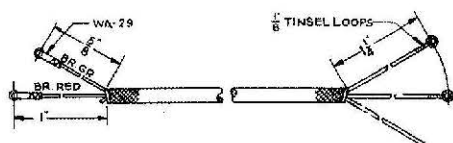
For use on Kellogg operator's receivers with No. 107 plug. Replaces Kellogg's No. 26-OR.

Cat. No.	Description	Price, Each
DA-12	2-Cond. Oper.'s Rec. Cord—73" lg.	\$0.66
	Net Weight—2 oz.	Shipping Weight—6 oz.



For use on Kellogg operator's receivers with No. 146 plug. Replaces Kellogg's No. 110-OR.

Cat. No.	Description	Price, Each
DA-13	2-Cond. Oper.'s Rec. Cord—72" lg.	\$0.50
	Net Weight—2 oz.	Shipping Weight—6 oz.

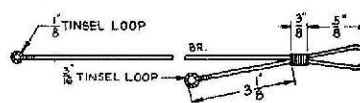


For use on S-C operator's sets with No. 20 receiver and No. 40 plug. Replaces S-C Co.'s No. MO-2F.

Cat. No.	Description	Price, Each
DA-14	2-Cond. Oper.'s Rec. Cord—72" lg.	\$0.50
	Net Weight—2 oz.	Shipping Weight—6 oz.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

## Suspended Transmitter Cords



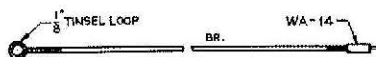
Used on transmitter in operator's set DA-19. Replaces Amer. Elec. Co.'s No. MC-54176 (Order two). Brown braid covering.

Cat. No.	Description	Price, Each
DT-10	One-Cond. Suspended Trans. Cord—67" lg.	\$0.20
	Net Weight—1 oz.	Shipping Weight—5 oz.



Replaces Kellogg's No. 465-ST and W. E. Co.'s Nos. 25, 27, and 437 (Order two). Brown braid covering.

Cat. No.	Description	Price, Each
DT-11	One-Cond. Suspended Trans. Cord—72" lg.	\$0.20
	Net Weight—1 oz.	Shipping Weight—5 oz.



Used with S-C suspended type transmitters. Replaces S-C Co.'s No. MO-1 (Order two). Brown braid covering.

Cat. No.	Description	Price, Each
DT-13	One-Cond. Suspended Trans. Cord—60" lg.	\$0.20
	Net Weight—1 oz.	Shipping Weight—5 oz.

## EX-T-E-N-S-I-C-O-R-D



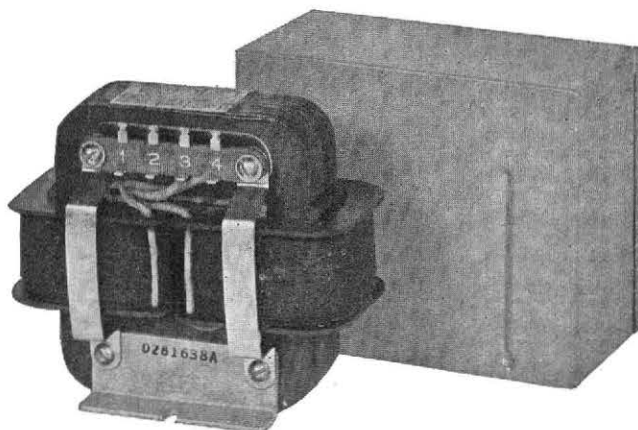
Extensicord is a new handset cord that actually stretches! It is normally only 32" long, and settles down close to the telephone when not in use. But when the handset is lifted, Extensicord stretches easily in a straight line, to almost twice this length. Thus, it permits the handset user to stand, sit down, or move about with exceptional freedom. When the handset is replaced, the cord returns to its normal shortened form.

Extensicord has three conductors, provided with terminals to fit handsets as listed below. Each conductor is covered with brown braid.

Cat. No.	Description	Price, Each
AH-20	Extensicord for Monophone Hand Unit	\$1.00
AH-22	Extensicord for W. E. No. E1B handset Replaces W. E. Co.'s No. H3B	1.00
AH-23	Extensicord for Kellogg No. F27 handset Replaces Kellogg's No. F673-G	1.00
	Net Weight—3 oz.	Shipping Weight—7 oz.



### Repeating Coils



Automatic Electric repeating coils give maximum transmission efficiency to cord and trunk circuits, phantom circuits, and grounded circuits in which they may be used to reduce inductive interference. This high efficiency is obtained by a unique design. The four windings, each composed of two duplex wires, are wound on two spools, the inner windings of each spool being connected in series with the outer windings of the other. Each of the four windings therefore consists of an inner and an outer winding, and this permits a balance of distributed capacitance, inductance, and effective resistance which is exact to within 1/100th of 1 per cent. Automatic Electric coils may be safely used on any balanced line, without danger of introducing disturbing noises.

Windings are placed on cores of thin silicon-iron strips, thoroughly impregnated with an insulating compound to make them moistureproof, and tested to withstand an insulation breakdown test of 500 volts, D.C. A metal slip-on cover is provided with each coil, preventing "cross-talk" when a number of coils are mounted close together.

#### "Non-Ring-Through" Repeating Coils

Used in cord circuits, to make it possible to interconnect metallic and grounded lines, and also to prevent ring-off signals from passing from one line to the other and thus causing false call signals. In the Automatic Electric repeating coil, this "non-ring-through" feature is secured with the smallest possible sacrifice of transmission efficiency. Dimensions (with cover)—length, 3 3/8"; width, 1 1/8"; height, 2 5/8".

Cat. No.	Description	Price, Each
DD-86	"Non-Ring-Through" Repeating Coil	\$6.45
Net Weight—2 lbs.		Shipping Weight—3 lbs.

#### "Ring-and-Talk-Through" Repeating Coil

This type of coil has many uses—in phantom circuits; for metallicizing grounded lines to reduce inductive interference; for use as a drainage coil or insulating transformer in reducing inductive interference on metallic lines (note that in applications where repeating coils are placed out on the line, suitable protection against lightning and other high potentials must be provided); and in terminating grounded lines when there are only a few such lines in a switchboard and it is not desired to put repeating coils in the cord circuits. Give high efficiency for ringing as well as speech currents (transmission loss at 1000 cycles is only 0.6 db.). Dimensions (with cover)—length, 4 1/2"; width, 1 7/8"; height, 2 5/8".

Cat. No.	Description	Price, Each
DD-83	"Ring-and-Talk-Through" Repeating Coil	\$7.75
Net Weight—4 lbs.		Shipping Weight—5 lbs.

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Cord Hooks



Cord Hook, Cat. No. DF-63      Cord Fastener, Cat. No. DF-64  
(Shown approximately actual size)

For fastening strain cords to switchboard. Individual hooks, and strips of various sizes, are available. Hook strips are stamped of brass, 3/4" wide, and are punched for mounting.

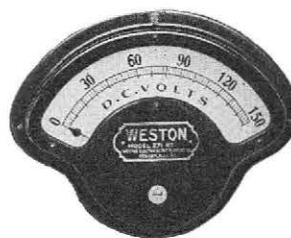
Cat. No.	Description	Price, Each
DF-63	Individual Hook	\$0.05
DF-65	Hook strip—10 pr., 1 1/8" ctrs.	.15
DF-66	Hook strip—8 pr., 1 1/8" ctrs.	.12
DF-67	Hook strip—7 pr., 1 1/8" ctrs.	.10
DF-68	Hook strip—3 pr., 1 1/8" ctrs.	.05
DF-69	Hook strip—10 pr., 1 3/8" ctrs.	.15
DF-70	Hook strip—8 pr., 1 3/8" ctrs.	.12
DF-71	Hook strip—7 pr., 1 3/8" ctrs.	.10
DF-72	Hook strip—3 pr., 1 3/8" ctrs.	.05

### Cord Fastener

Made of brass, and mounts with a single screw, providing a soldering terminal for connecting the switchboard wiring, and a screw connection for the cord terminal (see illustration above). Mounting screw is not included.

Cat. No.	Description	Price, Each
DF-64	Cord Fastener	\$0.05

### Voltmeters and Ammeters



Three of the most popular types of voltmeters and ammeters for telephone work are listed below, and we can furnish any other type required. If possible, give model number, range or ranges, dimensions and resistance, when ordering.

Model 269 meters are fan-shaped, as illustrated, and are of the surface type,

with back connections. Dimensions: width, 5 5/8"; depth, 1 3/8"; height, 4 1/8"; scale length, 4". The voltmeter has a resistance of approximately 100 ohms per volt.

Cat. No.	Description	Price, Each
269-V	Model 269 Voltmeter—Scale 0-75 volts	\$22.40
269-A	Model 269 Ammeter—Scale 50-0-50 amps.	21.60
Net Weight—1 1/2 lbs.		

Model 271 meters are the same type and shape as Model 269, but are larger. Dimensions: width, 7 7/8"; depth, 1 3/4"; height, 6 1/4"; scale length, 6". The voltmeter has a resistance of approximately 100 ohms per volt.

Cat. No.	Description	Price, Each
271-V	Model 271 Voltmeter—Scale 0-75 volts	\$26.40
271-A	Model 271 Ammeter—Scale 200-0-200 amps.	30.60
Net Weight—4 lbs.		

Model 301 meters are the small, round, flush-mounting type, with a diameter of 3 1/4" and a scale length of 2 1/3". The voltmeter has a resistance of approximately 1000 ohms per volt.

Cat. No.	Description	Price, Each
301-V	Model 301 Voltmeter—Scale 0-75 volts	\$9.60
301-A	Model 301 Ammeter—Scale 10-0-10 amps.	7.20
Net Weight—8 oz.		

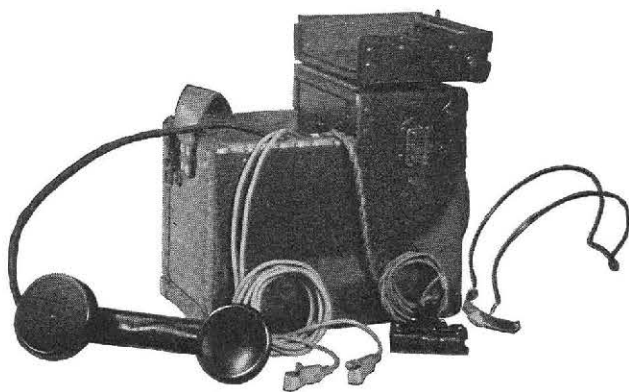


## Testing Equipment

Testing equipment is not a luxury, and the benefits derived from adequate testing are not limited to large telephone companies. Even in the smallest telephone system, use of the proper testing equipment will be rewarded by reducing the number of failures, and by making it possible quickly to locate those faults which do occur.

The modern testing equipment shown in this catalog is simple, inexpensive, and easy to use. It does not require extensive training or complicated calculations—any telephone maintenance man can quickly learn to perform the simple operations required. And, in spite of its simplicity, it provides test results of astonishing accuracy. To telephone companies of all sizes, operating magneto telephone systems, we recommend the testing equipment shown on the following pages.

### The West Test Set



This is probably one of the most useful testing units for the average exchange, for locating troubles in lines and associated apparatus. It is a handy, portable unit which the lineman can take out on the job, to quickly find any of the following faults, without opening lines or interfering with busy circuits, and without any help from the operator:

Grounds	Poor ground rod connections
Short-circuits	Intermittent contacts caused by the swinging of lines, etc.
Open circuits	Short-circuits in ringer windings, etc.
Crosses between lines	Tree grounds
High-resistance joints	Faults in twisted pairs
Faulty arresters	
Leaky house wiring	

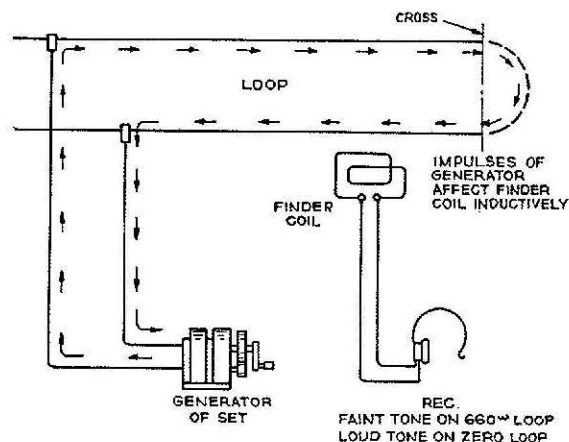
The set is equally useful on iron or copper wire, bare or insulated, and on grounded or metallic circuits.

### Easy to Use

The accompanying drawing shows how the West Test Set operates. A magneto generator is connected to the line by means of a pair of cords with test clips (which have needle points, to permit testing on insulated wire). A finder coil on another spring clip is clamped over one wire of the line, but does not make electrical contact with it. This finder coil is connected to a receiver.

When the magneto is operated, the tone it produces passes over the line. Since the circuit is completed only at the fault, it flows only in that direction. Thus, if the tone is heard in the

receiver, the fault is known to be in the direction of the finder coil from the test clips; and the approximate distance to the fault can be judged from the loudness of the tone heard. With practice, this distance can be very accurately estimated. If no tone is heard in the receiver, the fault is known to be in the other direction, and the finder coil is merely moved to the other side of the clips.



*Theoretical Operating Principle*

### Lamp Test

When the tester is close enough to the trouble so that the loop through the fault has a resistance of not more than 600 ohms, the tone test may be supplemented by a lamp test. For this test, a lever key is operated, closing the circuit to a test lamp, and the lamp will glow when the generator is operated, its brightness indicating the distance to the fault. This test may be used to locate even momentary shorts, such as swinging lines.

### A Convenient Portable Telephone

Finally, the West Test Set is a convenient portable telephone. A transmitter, and three flashlight batteries mounted in the case, are provided for this purpose, and the telephone equipment is connected to the line by operating the lever key. The telephone circuit is a high-efficiency circuit, the same as in standard magneto telephones; transmission is excellent, and ringing signals carry distinctly over long and heavily-loaded lines. The transmitter and receiver are combined in a flexible handset, providing greatest convenience for telephone communication, and a headband is provided for use when testing.

### Handy Carrying Case

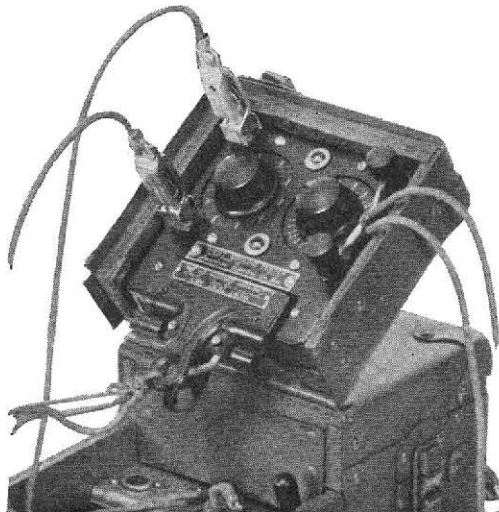
The West Test Set is contained in a carrying case of leather, or of laminated wood with an outer covering of aluminum alloy sheet, finished in olive drab enamel. It is weatherproof, and cannot accidentally become grounded. An adjustable carrying strap is provided, and the set may be conveniently carried in the hand or slung over the shoulder. Length, 10"; width, 6"; height, 9". A clear, concise instruction folder shows how to make the various tests, and any lineman can quickly learn how to secure very accurate results.

		Price, Each
Cat. TA-20	West Test Set—aluminum case	\$40.00
Cat. TA-21	West Test Set—leather case	42.50
Net Weight—Approximately 11½ lbs.		
Shipping Weight—15 lbs.		

Above prices F. O. B. Shipping Point, effective September 15, 1939, and subject to change without notice



### The West Ground Tester

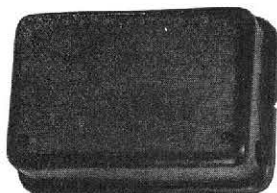


While the West Test Set indicates the presence of any ground, it gives no measurement of its resistance. When this information is desired, the West Ground Tester may be used with it.

The Ground Tester is a small unit, designed to mount in the cover of Test Set TA-20 (in aluminum case), with connections between the two units made by means of cords. It is molded of black plastic, and equipped with binding posts, test cords and clips, and contains two rheostats. The test clips are connected to the ground under test, and while the generator crank is turned the rheostats are adjusted until no tone, or a minimum of tone, is heard in the receiver. The resistance of the ground is then found by merely adding up the readings of the two dials. The Tester has a measuring capacity of 1000 ohms, which is more than enough for ground testing.

Cat. No.	Description	Price, Each
TA-22	West Ground Tester, only	\$25.00
TA-23	West Test Set with Ground Tester	65.00

### Transmission Test Unit



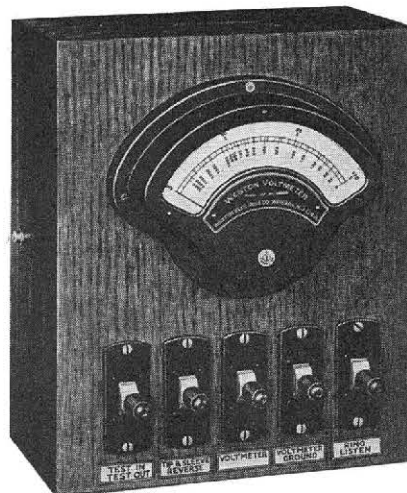
Used to disclose faults in subscribers' lines or station apparatus, before they are able to affect service. Unit consists of a "network" of resistances and inductances, equivalent to a 64-mile line of No. 12 iron wire (approximately 20 decibels loss). It is usually installed permanently, within or near the switchboard, and is either wired into a cord circuit which is used for testing, or connected between two switchboard jacks so that tests can be conducted between the operator and any subscriber, when necessary. In use, it is simply placed in series with the subscriber's line; conversation, although reduced in volume, should still be understandable and natural, if the line and its equipment are in good condition.

The Transmission Test Unit is contained in a small steel box, only 5¼" long, 3¾" wide, and 1½" high, neatly finished in black japan.

Cat. No.	Description	Price, Each
TE-77	Transmission Test Unit	\$3.75
Net Weight—12 oz.		Shipping Weight—1 lb.

Above prices F. O. B. Shipping Point, effective September 15, 1939, and subject to change without notice

### Wire Chief's Test Unit



This compact unit was especially designed to meet the requirements of small exchanges, which desire to make tests for grounds, crosses, short-circuits, opens, bad joints, and other similar troubles, but do not require a more expensive and comprehensive test desk. In addition to its uses in line testing, the unit may be used for testing telephones, ringers, generators, and other similar parts which are repaired in the telephone company's shop. An instruction book outlining the various possible tests is supplied.

The Wire Chief's Test Unit consists of a cabinet containing 5 lever keys and an especially designed Weston voltmeter which has two voltmeter scales (0-6 and 0-150 volts) and a special scale showing resistances in ohms. The unit is usually mounted at the main distributing frame, so that it can easily be connected to any line, at the frame, by means of a cord with a "test shoe." Or, in exchanges where the wire chief is also the trouble man, the unit is mounted at one end of the switchboard and arranged so that the operator can make the necessary tests, reporting the results to the trouble man while he is out on the line; in this case, the test circuit is ended in a switchboard plug. Terminals are provided for the test cord, but cord and connecting plug (or shoe) must be specified separately, if desired. Terminals are provided also for a telephone set (which should be of the bridging type, with 1000-ohm ringer), and for 6-volt battery (4 standard dry cells).

The cabinet is 9" high, 7½" wide, and 4½" deep, and is made of quarter-sawn oak with golden oak finish.

Cat. TA-52	Wire Chief's Test Unit	Price, Each
		<b>\$46.75</b>
Net Weight—8 lbs.		Shipping Weight—11½ lbs.

Price of test cord and connecting plug or shoe on application. When ordering, or requesting quotation, please specify length of cord, and type of jack or protector to which it is to connect.

### IT'S EASY TO ORDER

from this catalog, and it takes just a few minutes. For your convenience, order blanks are enclosed requiring no envelope, no addressing, no postage. (If these are mislaid, simply use any sheet of paper.) Suggestions for ordering are given on page 2.



### Magneto Test Bell



For testing for opens, shorts, or "high" joints in dynamos, motors, or any other electrical circuits where a "ring-through" test through a known high resistance may be desirable. Consists of a 3-bar generator in series with a 2500-ohm ringer, and wired to a pair of binding posts at the top of the case, for connection to the circuit under test. Bell will ring through a resistance of 100,000 ohms, with no shunt resistance in circuit; however, terminals are provided within the set for connect-

ing a resistor across the ringer, so that the set may be readily adapted for testing circuits with lower permissible resistance limits. Resistors are available for limiting operation to resistance loops of 50,000 ohms, 25,000 ohms, and 10,000 ohms, respectively.

The Type 28 Magneto Test Bell is enclosed in an oak case, neatly finished in golden oak, and fitted with a leather strap handle. Binding posts on top of case are nickel-plated, other exposed metal parts (sound grilles, generator crank, etc.) black japanned. Height, 9"; width, 7½"; depth, 5½".

Cat. No.	Description	Price, Each
TA-48	Magneto Test Bell, without shunt resistor (tests through 100,000 ohms)	\$14.00
TA-49	Shunt Resistor, 10,000 ohms (For testing through 50,000 ohms)	.50
TA-50	Shunt Resistor, 4,000 ohms (For testing through 25,000 ohms)	.50
TA-51	Shunt Resistor, 1500 ohms (For testing through 10,000 ohms)	.50
Net Weight—11½ lbs.		Shipping Weight—14 lbs.

### Universal Test Clips



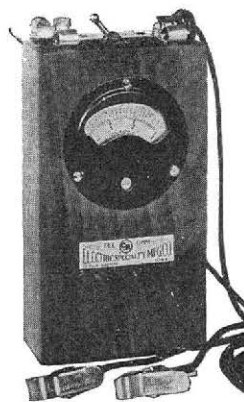
Large jaws, with strong spring, take good firm hold, yet the thin nose permits use in close, confined working space. Polarity indicated—+ for positive, blank for negative. Cadmium-plated, except No.

24-A, which is lead-coated, for use as a battery clip. An insulator (Cat. No. 29) is available for the No. 27 clip, and must be ordered separately when wanted.

Cat. No.	Length	Jaws Open	Price per 100		
			1-9	10-99	100 & over
24-A	2⅞"	1"	\$10.00	\$7.00	\$6.00
27	2¼"	⅝"	12.50	8.75	7.50
29	Insulator only—for No. 27 clip		11.00	7.75	6.50
45	1½"	½"	5.00	3.00	2.75
48-B	2"	½"	5.00	3.50	3.00

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### The Telohm



A pocket-size test unit for many purposes about the exchange and subscribers' stations—locating telephone and switchboard trouble, shorts, grounds, high resistance and open circuits in coils of all kinds, also high-resistance transmitters, cut-outs in receiver, desk stand and switchboard cords, hookswitch contacts, etc.

Solid black-walnut case contains a Weston 0-3 volt Direct-Reading Ohmmeter (0-10,000-ohm scale) with glass protector; also two standard flashlight cells, and "on-and-off" battery switch.

Provided with test cords and clips and binding posts arranged for loop, spade, or straight (pin) tips. Height, 6"; width, 3½"; depth, 1⅞".

Cat. No.	Description	Price, Each
4300	Telohm Test Unit	\$11.50
Net Weight—1¼ lbs.		

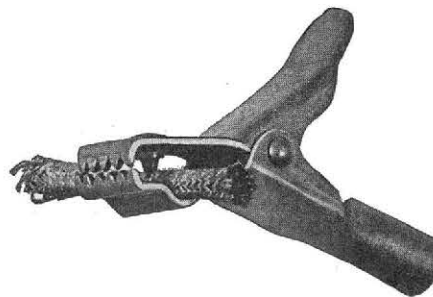
### Weston Circuit Tester



A small portable ohmmeter with two scales (0-5,000 and 0-50,000 ohms) especially designed for the "resistance and continuity" method of testing telephone circuits. A 1.5 volt No. 2 unit-cell battery is mounted inside the case, and adjustment for variation in battery voltage is made through a magnetic shunt available for adjustment outside the case—a method which insures high accuracy at all times as it in no way alters the internal resistance of the instrument. Unit is furnished with test leads (not shown). Height, 5"; width, 2⅞"; depth, 1⅞".

Cat. No.	Description	Price, Each
689-1E	Weston Circuit Tester	\$14.63
Net Weight—1 lb.		

### Frankel Test Clips



The special feature of these clips is the pin which pierces insulation, eliminating the necessity for skinning and scraping insulated wire. Made of brass, nickel plated. Length, 1½"; width, ⅞"; jaws open, ⅝".

Cat. No.	Connection Made By	Prices per 100	
		1-11	12 & over
2421	Soldering	\$24.00	\$14.40
2433	Set Screw	33.00	21.60
2434	Thumbscrew	33.00	21.60
2435	Nut and Bolt	36.00	27.00
2442	Nut, Bolt and Washer	39.00	30.00



### The Vincent Rare-Gas Relay



The Vincent Rare-Gas Relay will effectively reduce noise, and hence improve transmission, on a telephone line when the noise is introduced through a grounded ringing circuit. The principle of operation is simple and easily understood. The Vincent Rare-Gas Relay, an electronic device, is connected in series with the grounded ringer. It is normally non-conducting, and effectively frees the metallic line circuit from the ground and grounded interference. At the first alternation of ringing current, the Rare-Gas Relay becomes conductive and remains so for the major portion of the ringing cycle. At the end of the ringing interval the Rare-Gas Relay again becomes non-conductive, and again isolates the telephone from grounded interference.

A relatively simple test will indicate whether the Rare-Gas Relay will reduce noise in the telephone line. If opening the

grounded ringing circuit at the telephone station in question results in reduction of noise, use of the relay is indicated.

The voltage drop across the Rare-Gas Relay when operating as a conductor is approximately 40 volts. Before adding the relay to a telephone it must be determined that the ringer will operate satisfactorily with this added voltage drop in the circuit. If not, it will be necessary to reduce the number of parties on the line or to effect a more sensitive adjustment of the ringer (reduced armature air gap and readjustment of the gongs) or to increase the voltage of the ringing current by providing larger generators at the other stations on the line, and at the switchboard.

The Vincent Rare-Gas Relay is enclosed in a Bakelite tube, with connections brought out to screw terminals at opposite ends. A mounting clip is also provided, so that the Relay may be mounted with just a single screw, within the telephone or anywhere along the ground connection. The Relay is approximately 1" in diameter and 2½" long, and, complete with mounting, projects about 1½" from the mounting surface.

Cat. No.	Description	Price, Each
RCT-2	Vincent Rare-Gas Relay	\$2.50
Weight—2 oz.		

## Provide Central-Battery Service with Your Magneto Switchboard!

In almost every community served by a magneto telephone system, there are sure to be a number of telephone users who would like central-battery service, and who would be glad to pay a reasonable additional charge for it. The telephone company which will provide this service will find in it a ready source of increased revenue.

The Automatic Electric Central-Battery Line Adapter enables you to earn this new revenue *with your present magneto switchboard*. You can provide central-battery service for one or any number of lines—and it does not affect service on other lines. Nor does it affect switchboard operation. Drops and visual signals operate in the same way as on the magneto lines, and the operator does not even need to know that a line is equipped for central-battery service.

The Central-Battery Line Adapter is a coil having four windings which are simply connected into a telephone line at the exchange. Then the telephones on the line are replaced with central-battery instruments, and the central-battery power equipment provided, as required. That's all there is to it.

Investigate the possibilities for profit in providing central-battery service in your community. In offices, factories, and shops—by invalids and older people—in the finer homes, clubs, theatres, banks, etc.—in these and other places central-battery service will prove a ready means of earning new revenue.

An illustrated circular has been prepared describing the Central-Battery Line Adapter, and the telephone instruments and other accessories used with it. Write for your copy.



*With Central-Battery Service You Can Offer Modern Telephones Like the One Shown Here.*



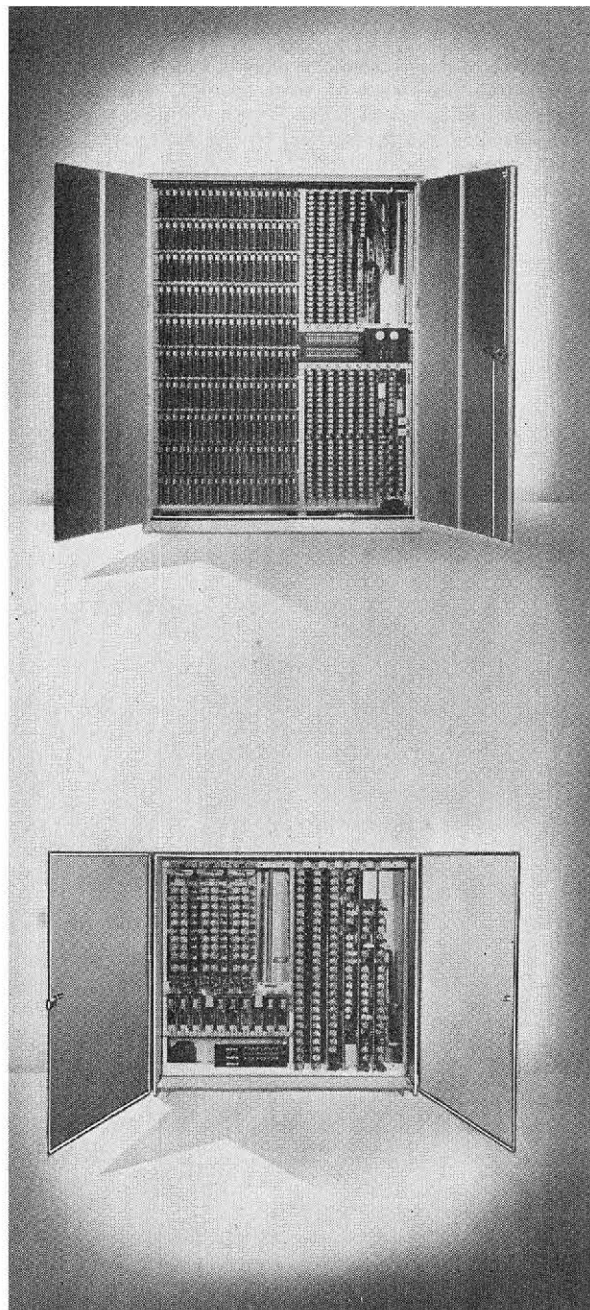
**For the Finest in Telephone Service —  
For Greatest Economy —  
Investigate the  
Community Automatic Exchange**

Telephone companies the country over are turning to C-A-X (Community Automatic Exchange) operation to give to their communities the very finest in modern telephone service, and at the same time to secure the economies of automatic operation. These companies have found that automatic service is heartily welcomed by subscribers, and that the operating economies of C-A-X make automatic operation doubly worth while.

Automatic Electric C-A-X consists of automatic equipment, similar to that used in large city systems, but especially adapted to meet the requirements of small exchanges. It requires no attendant—local calls are handled entirely by the automatic equipment, and toll calls are automatically transferred to an operator at another, attended, exchange. Thus, the telephone company which operates several exchanges may concentrate all toll traffic at one exchange, and operate the other exchanges without attendants. The company operating only one exchange can secure the advantages of C-A-X operation by arranging for toll calls to be handled at the exchange of a connecting company.

Automatic Electric C-A-X's are available in both "switch" and "relay" types, and in sizes to meet any requirement. They can be used with either local-battery or central-battery telephones, and on either metallic or grounded lines. They require no maintenance attention, except for an occasional visit for inspection. They are supplied in neat steel cabinets, and require only the most modest housing space—no light, no heat.

*Investigate C-A-X.* Descriptive literature will be gladly sent on request.



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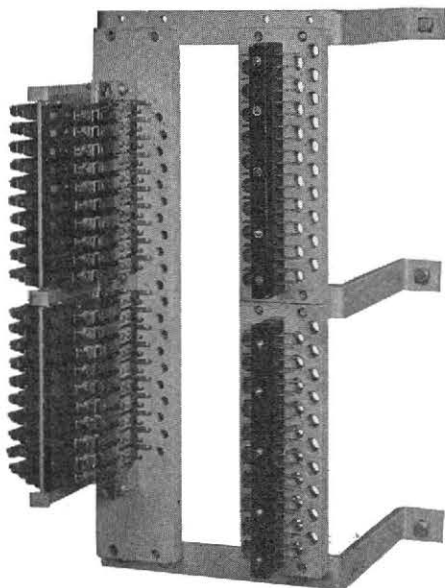
## Protective Equipment

### Distributing Frames

Automatic Electric distributing frames are available in types for either wall or floor mounting. The wall-mounting types (generally used in small exchanges) have protectors and terminal blocks in two parallel rows with enough space between for connecting jumpers. The floor-type frames have protectors and terminal blocks mounted on opposite sides, and give greater flexibility for jumpering, as required in larger exchanges. They must be set out from the wall, to permit access to both sides.

A typical wall-type frame is shown below. Estimates on larger distributing frames to meet specific requirements will be furnished without obligation. When writing, give the type of frame wanted, the number and type of protectors, the number and type of terminal blocks, and a rough drawing of the room in which the frame is to be installed.

#### Wall-Type



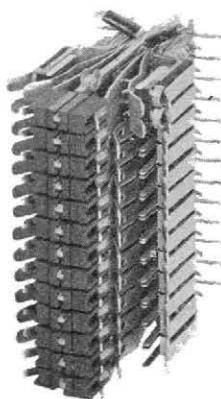
This frame will accommodate Automatic Electric Type B 2 x 20 terminal blocks and Type 675 protectors (shown on this page) or you can use almost any other standard units you may have. Frame is made of steel, aluminum finished, and fanning strip is of maple. Furnished complete with mounting parts for protectors and terminal blocks as ordered, and with lag screws for fastening frame to wall. Dimensions: width, 10½"; height, 2'9"; depth, 12¾".

Cat. No.	Description	Price, Each
SA-63	With 20 prs. prots., and 2 term. blocks	\$39.58
SA-64	With 10 prs. prots., and 1 term. block	25.50
SA-67	Frame, with protector fanning strip (no prots. or terms.)	9.42

Net Weight—13 lbs.

Shipping Weight—15 lbs.

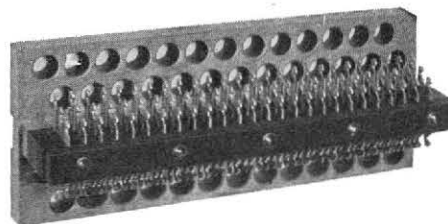
### Type 675 Central-Office Protectors



Provide heat coils and carbon blocks, for protection against lightning, "sneak" currents, and crosses with light and power circuits. When subjected to excessive currents, the heat coil opens the circuit, grounds the line, and operates an alarm signal. It is easily reset—requires no soldering. A test "shoe" can be provided, for testing circuits through or around the heat coils without unsoldering jumpers or disturbing the protectors.

Cat. No.	Description	Price, Each
SB-67	20-pr., with 4½ ohm heat coils	\$26.00
SB-68	20-pr., with 7½ ohm heat coils	26.00
SB-69	10-pr., with 4½ ohm heat coils	14.00
SB-70	10-pr., with 7½ ohm heat coils	14.00
SA-59	Test Shoe for Type 675 Protectors	3.50

### Terminal Blocks



Terminal blocks are classified by number of rows and number of terminals per row. Thus, a 2 x 20 block contains 40 terminals. Furnished in two types—Type A, which has holes in the strip tapped for No. 10-32 screws for mounting; and Type B (used in the distributing frames shown on this page), which has four mounting holes drilled through the fanning strip, on 7½"x1⅜" centers.

#### Type A

Cat. No.	No. Terms.	Mtg. Ctrs.	Length	Height	Price, Ea.
SB-40	3x10	1¼"	3¼"	2½"	\$1.70
SB-41	4x10	1¼"	3¼"	3⅜"	2.20
SB-42	2x20	3½"	6⅛"	2¼"	2.80
SB-43	3x20	3½"	6⅛"	2⅝"	3.40
SB-44	4x20	3½"	6⅛"	3"	4.40
SB-45	2x26	4½"	7⅜"	2⅞"	3.64
SB-46	3x26	4½"	7⅜"	2½"	4.42
SB-47	4x26	4½"	7⅜"	2⅞"	5.72

#### Type B

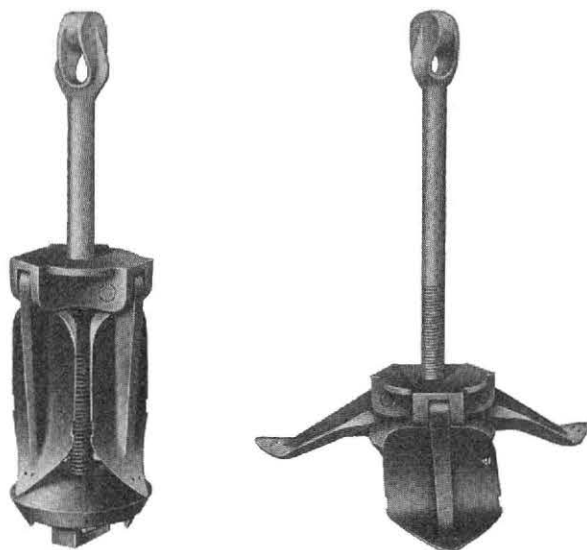
Cat. No.	No. Terms.	Mtg. Ctrs.	Length	Height	Price, Ea.
SB-50	2x20	8"	2⅝"	2⅝"	2.80
SB-51	3x20	8"	2⅝"	3⅜"	3.40
SB-52	4x20	8"	3⅜"	4.40	
SB-53	2x25	8"	2⅞"	3.50	
SB-54	3x25	8"	2⅞"	4.25	
SB-55	4x25	8"	3⅜"	5.50	
SB-56	2x26	8"	2⅝"	3.64	
SB-57	3x26	8"	2⅝"	4.42	
SB-58	4x26	8"	3⅜"	5.72	

Net Weight—1 lb.

Shipping Weight—2 lbs.

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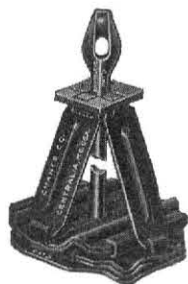
## Dillon Expanding Anchors



Newly-designed, easily-installed anchors that have exceptional holding power. Consist of three malleable iron expanding blades on malleable iron body. "Streamlined" design permits use of 3 or 4 inch hole for installation. More than 75% of total area expands into undisturbed earth. Furnished less rods.

Cat. No.	Size of Hole	Size of Rods Used	Total Area Expanded	Weight Each	Price Each
363	3"	1/2" or 5/8"	63 sq. in.	4 lbs.	\$1.15
378	3"	1/2" or 5/8"	78 sq. in.	4 1/2 lbs.	1.43
4113	4"	5/8" or 3/4"	113 sq. in.	9 lbs.	1.65
4154	4"	5/8" or 3/4"	154 sq. in.	10 lbs.	2.31
300	3" Pilot Auger				1.58
400	4" Pilot Auger				1.75

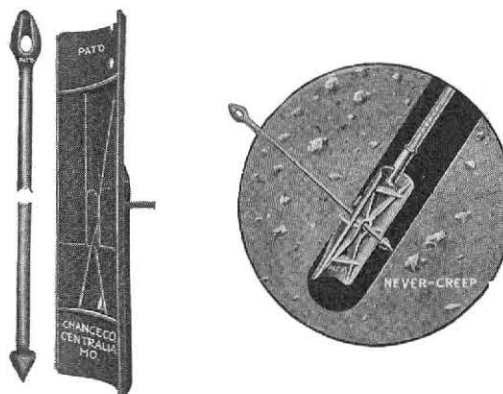
## Standard Expansion Anchors



A popular type of anchor that is easy to install. A hole is dug about the size of the anchor when closed and the anchor dropped to the bottom. The anchor is expanded by striking it with a tamping bar. Made in three types—three-way, two-way and four-way. Standard galvanized rods are used with these anchors.

Cat. No.	Description	Takes Rod Size	Area Expanded	Price Each
834	Three-Way 8"	5/8"	90 sq. in.	\$1.65
836	Three-Way 8"	3/4"	110 sq. in.	1.87
8310	Three-Way 8"	3/4"	125 sq. in.	2.31
84	Four-Way 8"	3/4"	125 sq. in.	2.31
52	Two-Way 5"	1/2"	40 sq. in.	.88
62	Two-Way 6"	5/8"	55 sq. in.	1.15
82	Two-Way 8"	3/4"	100 sq. in.	1.87

## Never-Creep Plate Anchors



To install this anchor, a hole is bored for the plate as nearly at right angles to the line of pull as the conditions will permit. The rod is then driven through the solid earth into the hole and the plate is passed down the hole and hung on the rod. The plate then rests in an inclined position at right angles to the direction of pull.

As indicated below, rods and plates are furnished separately. Rods are hot galvanized and are regularly furnished with thimble as illustrated for single guy. Can be supplied with twin eye for double guy on special order.

## Plates Only

Cat. No.	Plate Size	Takes Rod Size	Price Each
510	5"x10"	1/2"	\$1.15
615	6"x15"	5/8"	1.65
620	6"x20"	3/4" and 5/8"	2.31
820	8"x20"	3/4" and 5/8"	3.46
825	8"x25"	3/4"	4.40
830	8"x30"	3/4"	4.95
835	8"x35"	1"	5.50

## Rods Only

Cat. No.	Diameter	Length	Price per 100
4305	1/2"	5'	\$64.30
4306	1/2"	6'	71.40
4307	1/2"	7'	78.80
4316	5/8"	6'	100.40
4317	5/8"	7'	113.20

## Installing Tools

Cat. No.	Description	Price Each
15	10 Ft. Installing Bar	\$2.50
16	Maul	2.00

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## Steelwing Anchors

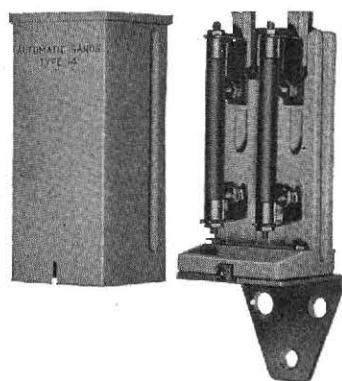
Hot Galvanized



A labor-saving anchor that provides a large holding surface. Requires no special tools to install. Drive a crow-bar in the earth about 18 inches and work it in a circular motion until a hole is formed with a top slightly larger than the wing of the anchor. Place the anchor in the hole and with the crow-bar in the eye of the rod, screw to the desired depth. Furnished hot galvanized with thimble-eye. Oval eye anchors can be furnished upon special order.

Cat. No.	Diam. of Wing	Diam. of Rod	Length	Weight per 100	Price Each
7524	4"	3/4"	5 1/2'	800 lbs.	\$1.48
7526	6"	3/4"	5 1/2'	1040 lbs.	2.09

## Automatic-Sands Type 14 Protector



The enclosed, weatherproof type of protector is becoming increasingly popular for sub-station protection. Since it costs but little more than the indoor type and may be installed indoors or out, many telephone companies are standardizing on it exclusively. When mounted outdoors, it effects considerable savings in maintenance expense by eliminating "no one at home" calls.

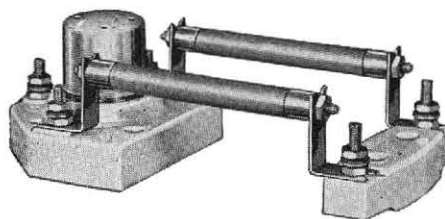
It has a hood of pure zinc and a galvanized iron mounting bracket. The base is a single piece of white glazed porcelain formed to provide easy access to all terminals. The line wires are drawn through holes in the base and terminated at the bottom fuse clips. The instrument and ground wires are brought in through the base, up the back of the face plate and through holes to terminals beneath the top fuse clips—thus providing wide separation between terminals with resulting increased protection.

Regularly equipped with two Type 21 5-ampere fuses (which are interchangeable with Reliable No. 55 and Cook No. A-52 fuses) and two Type 2105 discharge blocks. Type 21 fuses and carbons with mica dielectrics can be furnished on special order.

Cat. No.	Dimensions	Weight Each	Price Each
SA-56	8 1/2" x 2 1/4" x 2 7/8"	2 1/2 lbs.	\$1.35

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## Automatic-Sands Type 12 Protector

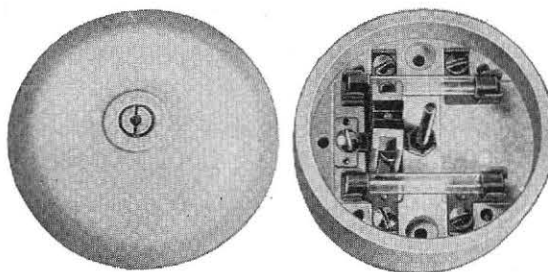


This popular type of indoor protector is a fuse and carbon block air-gap unit arranged to be used for sub-station protection against lightning and crosses with electric circuits. The base consists of two pieces of porcelain—the line end being equipped with fuse clips only while the other end has fuse clips, ground connection and a well for the discharge blocks. The protectors consist of two Type 21 fuses and two Type 2105 discharge blocks encased in a brass screw cover. Furnished with five or seven ampere fuses. Type 21 fuses are interchangeable with Reliable No. 55 and Cook No. 0-52 fuses.

Asbestos mounting mats (with holes corresponding to mounting holes in arrester) supplied on order.

Cat. No.	Fuses	Weight, Each	Price Each
SA-74	5 amp.	1 1/2 lbs.	\$1.20
SA-75	7 amp.	1 1/2 lbs.	1.20
SA-29	Asbestos Mat		.05

## Automatic-Sands Type 11 Protector

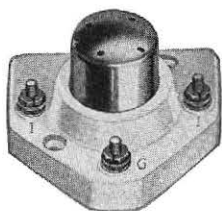


A new "rosette type" protector for use in protecting sub-stations against lightning and crosses with electric circuits. It is a small, round all-porcelain unit which, when closed, presents an especially neat appearance with no projections or exposed terminals. It is only 3 3/8 inches in diameter and projects but 2 1/8 inches from its mounting surface.

Five or seven ampere glass fuses are employed. Maintenance man can tell at a glance, without testing, whether or not fuse is blown. Fuses are mounted on each side of a well which contains two Type 2105 discharge blocks with carbons. Carbon blocks with dielectrics, instead of discharge blocks, can be furnished on special order.

Cat. No.	Fuses	Weight Each	Price Each
SA-20	5 amp.	1 lb.	\$0.95
SA-21	7 amp.	1 lb.	.95

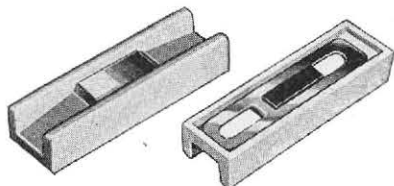
### Automatic-Sands Type 16 Arrester



This compact, inexpensive arrester provides adequate sub-station protection against lightning where crosses with electric circuits are not likely to occur. It consists of two No. 2105 Discharge Blocks mounted in a recess in a porcelain base and covered with a brass cap. On special order, carbon blocks with mica dielectrics can be furnished in place of the Type 2105 Discharge Blocks.

Cat. No.	Description	Dimensions	Wt. Each	Price Each
SA-57	Sub-station Arrester	$3\frac{1}{8}" \times 3\frac{1}{2}" \times 2\frac{3}{8}"$	$\frac{3}{4}$ lb.	\$0.70

### Automatic-Sands 2105 Discharge Block



This discharge block is used with a carbon block and is so designed that the discharge gap is fixed and made uniform in manufacture. It is made in two types—an automatic grounding type and a non-grounding type. The automatic grounding type is a new design that is used in Automatic Sands protectors and should be employed whenever the best possible protection is desired.

The automatic-grounding feature consists of a porcelain frame that holds a carbon block and metal thermal unit in a recess to provide the proper air-gap. A sudden high potential will cause the discharger to operate in the usual manner, but if the high voltage continues, the resulting heat causes the metal piece to make direct contact with the carbon, thus draining the excessive current from the line. When the voltage is removed, the metal thermal unit cools, separates from the carbon block and is again ready for operation.

The advantages of this feature are self-evident. It eliminates burning effects that occur when blocks are subjected to sustained high potentials and which often widen the air-gap. It also prevents excessive dusting which often causes the ordinary block to become inoperative. It enables the protective device to function and give good protection after operation without the expense of personal attention.

The non-grounding type is an inexpensive discharger that provides adequate protection against ordinary lightning discharges. It is made of porcelain with a carbon unit recessed to provide the proper air gap.

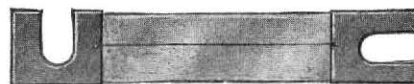
Carbon blocks of various shapes and thicknesses adapt these discharge blocks to fit any lightning arrester or cable terminal which uses 25/64 by  $1\frac{1}{4}"$  carbon blocks. Carbons must be ordered separately.

Cat. No.	Description	Price Each
SA-24	Automatic Grounding Type	\$0.10
SA-25	Non-Grounding Type	.075

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### Mica Telephone Fuses

The fuses listed below are employed in the older type of telephone protectors. When ordering, it is advisable to give the type number of the protector as well as the number of the fuse, to insure the selection of the correct type. Illustrations are the ACTUAL SIZES OF THE FUSES. If the fuse you want is not listed, send us a sample and give the name of the protector in which it is to be used.



Cat. No.	Description	Size	Price Each
11	Mica Fuse	$2\frac{1}{8}" \times \frac{3}{8}"$	\$0.026



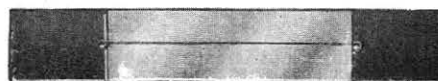
Cat. No.	Description	Size	Price Each
21	Mica Fuse	$2" \times \frac{3}{8}"$	\$0.026



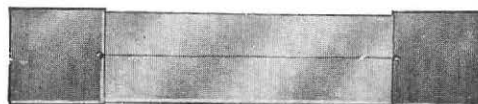
Cat. No.	Description	Size	Price Each
137-17	Mica Fuse	$1\frac{7}{8}" \times \frac{1}{4}"$	\$0.026
137-2	Mica Fuse	$2" \times \frac{1}{4}"$	.026



Cat. No.	Description	Size	Price Each
19	Mica Fuse	$2" \times \frac{3}{8}"$	\$0.024



Cat. No.	Description	Size	Price Each
8	Mica Fuse	$2\frac{1}{8}" \times \frac{3}{8}"$	\$0.024



Cat. No.	Description	Size	Price Each
22	Mica Fuse	$2\frac{1}{2}" \times \frac{1}{2}"$	\$0.028

### Arrester Carbons

Carbon blocks can be supplied to fit any type of arrester. When ordering, please specify make and number of arrester and, if possible, give dimensions of carbon.

Cat. No.	Description	Dimensions	Price Each
SA-22	Plain	$1\frac{1}{4}"$ long, $\frac{3}{8}"$ wide, $\frac{5}{8}"$ high	\$0.02
SA-23	Grooved	$1\frac{1}{4}"$ long, $\frac{3}{8}"$ wide, $\frac{7}{8}"$ high	.02



## Telephone Fuses

Listed below are the fuses commonly employed in telephone protectors. When ordering, it is advisable to give the type number of the protector as well as the number of the fuse, if possible, to insure the selection of the correct type. Illustrations

are the ACTUAL SIZES OF THE FUSES. We can supply fuses to fit all types of telephone protectors. If the fuse you want is not listed, send us a sample and give the name and number of the protector in which it is to be used.

### Type 17 Fuses



The Type 17 Wood Fuse is interchangeable with Reliable Electric Company's No. 27 and Cook Electric Company's No. A-7. The Type 17 Fibre Fuse is interchangeable with Reliable Electric Company's No. 77 and Cook Electric Company's No.

A-57. The Type 17 Porcelain Fuse is interchangeable with Reliable Electric Co.'s No. 28 and Cook Electric Co.'s A-19. Furnished in 5 amp. capacity unless otherwise specified.

<i>Cat. No.</i>	<i>Type</i>	<i>Length, Shoulder to Shoulder</i>	<i>Tip Diameter</i>	<i>Rated Capacity</i>	<i>Weight per 1000</i>	<i>Price, Each</i>
SA-60	Wood	4 $\frac{3}{4}$ "	$\frac{11}{16}$ "	5 amp.	70 lbs.	\$0.09
SA-61	Fibre	4 $\frac{3}{4}$ "	$\frac{11}{16}$ "	5 amp.	80 lbs.	.14
SA-62	Porcelain	4 $\frac{3}{4}$ "	$\frac{11}{16}$ "	5 amp.	100 lbs.	.11

### Type 21 Fuses

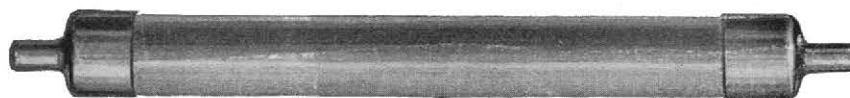


The Type 21 Fibre Fuse is interchangeable with Western Electric Company's No. 11C, Reliable Electric Company's No. 55 and Cook Electric Company's No. 52. When ordering, specify

whether 5 amp. or 7 amp. fuse is preferred. Where no preference is expressed, 5 ampere fuses will be furnished.

<i>Cat. No.</i>	<i>Type</i>	<i>Length, Shoulder to Shoulder</i>	<i>Tips Diameter</i>	<i>Rated Capacity</i>	<i>Weight per 1000</i>	<i>Price, Each</i>
SA-65	Fibre	4 $\frac{3}{8}$ "	Nutted Both Ends	5 amp.	80 lbs.	\$0.15
SA-66	Fibre	4 $\frac{3}{8}$ "	Nutted Both Ends	7 amp.	80 lbs.	.15

### Types 6 and 35 Fuses



<i>Cat. No.</i>	<i>Description</i>	<i>Length, Shoulder to Shoulder</i>	<i>Tip Diameter</i>	<i>Weight per 1000</i>	<i>Price, Each</i>
6	Wood	3 $\frac{7}{8}$ "	$\frac{11}{16}$ "	60 lbs.	\$0.09
35	Porcelain	3 $\frac{7}{8}$ "	$\frac{11}{16}$ "	90 lbs.	.11

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Ray-O-Vac Dry Cells



A very popular dry cell manufactured by Ray-O-Vac Company especially for telephone and light drain service. Made with an internal protective coating which prolongs the life of the cell and reduces shelf deterioration to a minimum. Furnished with either screw binding posts or spring clips. Shipped from the following points: Chicago, Cleveland, Dallas, Kansas City, Madison, Minneapolis, Omaha and St. Louis.

Standard package is 25 dry cells. On domestic orders for 50 or more dry cells, transportation charges are prepaid. Domestic orders of less than 50 are shipped F.O.B. nearest shipping point.

Cat. No.	Size	Weight Box of 25	Price Each
6	2½"x6"	57 lbs.	\$0.25

### Columbia Gray Label Dry Cells



An excellent dry cell manufactured by National Carbon Company, Inc., especially for long life in telephone service. Regularly furnished with Fahnestock clips. Shipment can be made from any of the following points: Chicago, Ill.; Jersey City, N. J.; Atlanta, Ga.; Fremont, O.; Minneapolis, Minn.; Kansas City, Mo.; Houston, Tex.; and San Francisco, Calif. If screw binding posts are wanted shipment must be made from Fremont, Ohio.

Standard package is 25 dry cells. On domestic orders for 50 or more dry cells, transportation charges are prepaid. Domestic orders of less than 50 are shipped F.O.B. nearest shipping point.

Cat No.	Description	Dimensions	Wt. of Std. Package	Price Each
6	Gray Label Dry Cells	2½"x6"	57 lbs.	\$0.25

### Ray-O-Vac Plug-In Cells



A new type of battery designed to be installed by the subscriber. Each battery is packed in mailing carton ready to be sent to the subscriber who withdraws the plug from the old battery and inserts it in the new—thus saving a trip for the service man.

Supplied in two sizes as shown below. The No. 86T is used in place of two No. 6 cells.

The No. 89T is used in place of three No. 6 cells. 25 to the standard package.

Cat. No.	Voltage	Dimensions	Wt. per Std. Pkg. of 25	Price Each
86T	3	3⅞"x2⅞"x5⅞"	69 lbs.	\$0.50
89T	4½	3⅞"x3⅞"x5⅞"	102 lbs.	.75

### Ray-O-Vac Operator's Transmitter Battery



A battery composed of a number of small, high efficiency dry cells connected in series parallel to furnish 4½ volts for operator's transmitter.

Compact design permits installation within the board. Dimensions are 11⅞ in. long, 4⅞ in. wide, 6½ in. high.

Cat. No.	Description	Wt. Each	Price Each
9451	Transmitter Battery	16½ lbs	\$2.50

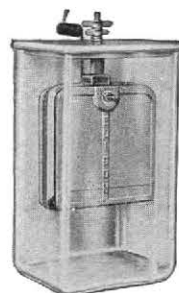
### Battery Boxes



These battery boxes provide a neat and convenient means of mounting dry cells and protecting them from injury. May be hung on the wall or alongside of desk, placed on the floor or wherever needed. Made of sheet metal black japanned and lined with insulating material.

Number	Capacity	Wt. Each	Price Each
2	2 No. 6 Dry Cells	1¼ lbs.	\$1.05
3	3 No. 6 Dry Cells	1½ lbs.	1.15

### Type 502 Edison Primary Battery



Capacity 500 ampere hours. Complete cell consists of all parts listed below. Complete renewal consists of element, can of caustic soda and bottle of oil.

Maximum recommended continuous current, 2 amperes—intermittent current, 3 amperes. Initial open circuit voltage, 0.90. Average closed circuit voltage, 0.6 to 0.65 per cell.

Cat. No.	Description	Price Each
S502	Complete Cell—5½"x6½"x12¼"	\$4.32
S500R	Complete Renewal	1.93

#### SEPARATE PARTS

Cat. No.	Description	Price Each
S502J	Glass Jar	1.98
S502C	Cover	.40
S502T	Complete Set of Wing Nuts and Washers	.18
S500E	Element	1.71
S500C	Can of Caustic Soda	.38
S500-O	Bottle of Oil	.08

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## CAB Operator's Power Unit

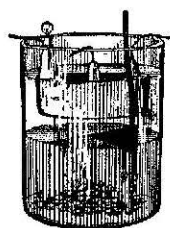


For operator's transmitter battery supply. Ample capacity for 2 or 3 operator's transmitters. Has sufficient reserve for approximately four days in case of commercial current failure.

Consists of a small charger and a 2-cell, 4-volt storage battery operating from 110-volt, 60-cycle A.C. current. Charger has a current output from 20 to 250 milliamperes. Continuous D.C. power is supplied by the battery whether the A.C. is on or off. The only maintenance required is to add a small amount of water every two or three months.

Furnished in steel case complete with cord and plug. Charging indicators and electrolyte levels are visible without removing the cover.

Cat. No.	Capacity Amp. Hrs.	Dimensions	Weight	Price Each
4	4 volt, 14.4	7 $\frac{3}{4}$ "x9 $\frac{1}{4}$ "x8 $\frac{3}{4}$ "	56 lbs.	\$28.60



## Gravity Batteries

These batteries are designed for operator's transmitter power supply only. Made in two sizes, 5x7 and 6x8 inches. Complete cells consist of one crowfoot zinc, one battery copper, one glass jar, and one pound Blue Vitriol.

Cat. No.	Description	Size	Price Each
57	Gravity Battery	5"x7"	\$1.72
68	Gravity Battery	6"x8"	1.87

## Storage Batteries and Accessories

We can supply storage batteries to meet all requirements. For details as to types, capacities, etc., send for Catalog 5000. We can also furnish battery charging equipment, automatic charge control apparatus, battery eliminators and battery cabinets to meet every need. Full information covering the units available will be furnished upon request. Ask for catalog on "Power Equipment for Small Telephone Exchanges."

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## Wood Brackets



Made of oak, thoroughly seasoned and dried, which eliminates shrinkage after the brackets are installed. The top of threaded portion is accurately turned to size and the threads are cleanly cut.

All brackets are threaded four threads to the inch. The length of the thread on all sizes is 2 $\frac{1}{4}$  inches. Spikes are used for mounting the bracket and  $\frac{5}{16}$  inch diameter holes are provided to accommodate the spikes.

All sizes are furnished painted or unpainted except the Western Union sizes, which are furnished unpainted only. Creosoted and paraffined brackets can also be supplied.

Cat. No.	Size, Inches	Standard Bundle	Weight per 1000	Price per 100
1	1 $\frac{1}{2}$ "x2" x12"	25	650 lbs.	\$2.70
2	2" x2 $\frac{1}{4}$ "x12"	20	850 lbs.	3.96
W.U.	2" x2 $\frac{3}{8}$ "x12"	20	850 lbs.	3.96

## Wood Pins



Made of locust according to the strictest specifications. They are free from knots, checks, sapwood, brashwood or cracks or any other defect that would impair the strength of the pin. Grain is straight and runs parallel to the axis of pin. Four threads per inch, with 1.111 inch taper per linear foot. The dimensions are as shown, after seasoning, and are subject only to commercial variation. Shipped in heavy burlap bags.

Cat. No.	Size Inches	Std. Bag	Wght. per 1000	Price per 100
2900	1 $\frac{1}{4}$ "x8"	300	325 lbs.	\$2.50
2901	1 $\frac{1}{2}$ "x9"	250	450 lbs.	3.87

## W. U. Wood Top Steel Pins

For use with steel transposition brackets. Furnished with cobs for transposition insulators.

### Short Shank Type



Cat. No.	Diam.	Length Above Shoulder	Length Below Shoulder	Price per 100
5010	1 $\frac{1}{2}$ "	5"	1"	\$18.20
5012	1 $\frac{3}{8}$ "	5"	1"	22.30

## Wood Pole Steps

Oak, thoroughly seasoned and dried. Two holes,  $\frac{5}{16}$  inch in diameter, are provided for mounting. Furnished painted, unpainted, or creosoted.



Cat. No.	Size	Price per 100
3000	1 $\frac{1}{2}$ "x2" x7"	\$1.92
3001	1 $\frac{3}{4}$ "x2 $\frac{3}{8}$ "x7"	2.76
Standard Bundle—25		

## Telephone Poles — Pine and Cedar

Three species of wood are generally used throughout the country for telephone poles: Southern Yellow Pine (Creosoted), Western Red Cedar, and Northern White Cedar. We are equipped to furnish all sizes and types of poles to meet the needs of our customers and to conform with all recognized specifications covering dimensions and treatment. Because of the fact that freight charges represent such a large part of the total cost of poles, it is imperative that complete information be given when requesting quotations to avoid errors. As a precaution, use the following points as a check whenever requesting a pole quotation.

1. **QUANTITIES:** Be sure to specify at least a minimum carload. Because of seasonal shrinkage, it is advisable to specify at least 25% more than the minimum when purchasing cedar poles and 15% when ordering pine poles.

2. **SIZES:** Give either Top Size Dimensions (length of poles and diameter of tops) or A.S.A. classifications, as you prefer.

3. **SPECIES:** Specify Creosoted Pine, Northern White Cedar or Western Red Cedar. When top-size dimensions are given, poles conforming to the Cedarmen's Association or Southern Creosoter's specification will be furnished. When A.S.A. classifications are given, poles conforming to A.S.A. specifications will be supplied.

4. **TREATMENT:** For cedar poles, state choice of "Untreated," "AA," "B," or "1/2 inch." For pine poles, indicate whether 8-lb., 10-lb., or 12-lb. treatment is wanted. 8-lb. treatment is standard for pine poles. Cedar poles cannot be shipped unless the order clearly specifies the treatment. When order for pine poles does not specify treatment, poles with 8-lb. treatment are shipped.

5. **FRAMING INSTRUCTIONS:** When order does not give framing instructions, cedar poles are shipped without framing and pine poles are given standard framing.

6. **DESTINATION:** Give freight address and name of delivering railroad. Also, if possible, specify railroad routing.

## Douglas Fir Cross Arms



The strength, durability and light weight of Douglas Fir makes it an ideal wood for cross arms. Cut from the giant trees of the northwest, this close grained wood is of uniform quality and has more than double the strength necessary for cross arms.

Our cross arms are thoroughly air or kiln dried for proper seasoning and are machine bored and finished. The standard and pony arms listed cover the majority of requirements of the telephone field but, on special order, N.E.L.A., R.S.A., Western Union or Pacific arms can be supplied.

Size and Length	Center	Pin Hole Spacings Sides	Ends	Pin Hole Size	Center Bolt Hole	Brace Bolt Spacing	Use Length Brace	Weight Per Arm Fir, Lbs.	Price per 100
<b>3 1/4 x 4 1/4 Standard Telephone Arms</b>									
3 ft. 2 pin	28	.....	4	1 3/8	5/8	25	20	10.62	\$ 44.62
4 ft. 4 pin	16	12	4	1 3/8	5/8	28	22	14.16	59.50
5 ft. 4 pin	18	17	4	1 3/8	5/8	28	22	17.7	74.37
6 ft. 4 pin	22	21	4	1 3/8	5/8	32	24, 26	21.24	89.25
6 ft. 6 pin	16	12	4	1 3/8	5/8	32	24, 26	21.24	89.25
8 ft. 6 pin	18	17 1/2	4	1 3/8	5/8	32	24, 26	28.32	119.00
8 ft. 8 pin	16	12	4	1 3/8	5/8	32	24, 26	28.32	119.00
8 1/2 ft. 10 pin	16	9 3/4	4	1 3/8	5/8	32	24, 26	30.09	133.87
10 ft. 8 pin	17 1/2	15 3/4	4	1 3/8	5/8	42	30, 32	35.4	148.75
10 ft. 10 pin	16	12	4	1 3/8	5/8	42	30, 32	35.4	148.75
10 ft. 12 pin	16	9 5/8	3 3/4	1 3/8	5/8	42	30, 32	35.4	148.75
<b>2 3/4 x 3 3/4 Pony Telephone Arms</b>									
24 in. 2 pin	17	.....	3 1/2	1 3/8	5/8	.....	.....	5.4	22.67
30 in. 2 pin	23	.....	3 1/2	1 3/8	5/8	.....	.....	6.75	28.33
36 in. 2 pin	29	.....	3 1/2	1 3/8	5/8	25	20	8.1	34.00
42 in. 4 pin	16	9 1/2	3 1/2	1 3/8	5/8	28	22	9.45	45.33
62 in. 6 pin	16	9 3/4	3 1/2	1 3/8	5/8	28	22	13.95	68.00
82 in. 8 pin	16	9 3/4	3 3/4	1 3/8	5/8	28	22	18.45	79.33
102 in. 10 pin	16	9 3/4	4	1 3/8	5/8	28	22	22.95	102.00
120 in. 12 pin	16	9 5/8	3 3/8	1 3/8	5/8	28	22	27	113.33

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## Flat Cross Arm Braces



## Hot Galvanized

Made of open hearth steel. Unless otherwise specified, they are punched at one end with  $\frac{1}{8}$  inch hole, at the other end with a  $\frac{1}{2}$  inch hole. Both holes are 1 inch from end of brace to center of hole.

Cat. No.	Length	Width	Thickness	Weight per 100	Price per 100
5120	20"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	142 lbs.	\$14.40
5122	22"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	156 lbs.	15.60
5124	24"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	170 lbs.	17.00
5126	26"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	184 lbs.	18.20
5128	28"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	198 lbs.	19.80
5130	30"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	212 lbs.	20.90
5132	32"	1 $\frac{1}{2}$ "	$\frac{7}{32}$ "	226 lbs.	22.20

## Carriage or Brace Bolts



## Hot Galvanized

Standard heads, square nuts, finished points and rolled threads. Furnished without washers. For washers, see listing at right.

Cat. No.	Size	Length of Thread	Weight per 100	Price per 100
9633	$\frac{3}{8}$ " x 3"	1 $\frac{3}{4}$ "	12.9 lbs.	\$3.10
9633 $\frac{1}{2}$	$\frac{3}{8}$ " x 3 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	14.3 lbs.	3.20
9634	$\frac{3}{8}$ " x 4"	1 $\frac{3}{4}$ "	15.8 lbs.	3.70
9634 $\frac{1}{2}$	$\frac{3}{8}$ " x 4 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	17.2 lbs.	3.80
9635	$\frac{3}{8}$ " x 5"	1 $\frac{3}{4}$ "	18.7 lbs.	4.30

## Lag Screws



## Gimlet



## Fetter

## Hot Galvanized

Unless otherwise specified, Fetter Drive Threads will be furnished on all orders.

Cat. No.	Size	Weight per 100	Price per 100
9742 $\frac{1}{2}$	$\frac{3}{8}$ " x 2 $\frac{1}{2}$ "	8.3 lbs.	\$2.50
9743	$\frac{3}{8}$ " x 3"	9.6 lbs.	2.90
9743 $\frac{1}{2}$	$\frac{3}{8}$ " x 3 $\frac{1}{2}$ "	10.9 lbs.	3.10
9744	$\frac{3}{8}$ " x 4"	12.2 lbs.	3.50
9744 $\frac{1}{2}$	$\frac{3}{8}$ " x 4 $\frac{1}{2}$ "	13.5 lbs.	3.70
9752 $\frac{1}{2}$	$\frac{1}{2}$ " x 2 $\frac{1}{2}$ "	16.7 lbs.	4.00
9753	$\frac{1}{2}$ " x 3"	19.0 lbs.	4.60
9753 $\frac{1}{2}$	$\frac{1}{2}$ " x 3 $\frac{1}{2}$ "	21.3 lbs.	4.90
9754	$\frac{1}{2}$ " x 4"	23.6 lbs.	5.20
9754 $\frac{1}{2}$	$\frac{1}{2}$ " x 4 $\frac{1}{2}$ "	25.9 lbs.	5.60
9755	$\frac{1}{2}$ " x 5"	28.2 lbs.	6.00

## Machine or Through Bolts

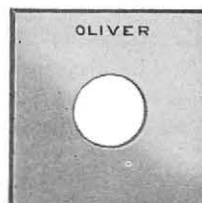


## Hot Galvanized

Also known as crossarm and pole bolts.

Cat. No.	Size	Weight per 100	Price per 100
9603	$\frac{3}{8}$ " x 3"	13.1 lbs.	\$ 3.10
9603 $\frac{1}{2}$	$\frac{3}{8}$ " x 3 $\frac{1}{2}$ "	14.6 lbs.	3.50
9604	$\frac{3}{8}$ " x 4"	16.0 lbs.	3.80
9604 $\frac{1}{2}$	$\frac{3}{8}$ " x 4 $\frac{1}{2}$ "	17.5 lbs.	3.90
9605	$\frac{3}{8}$ " x 5"	18.9 lbs.	4.50
9605 $\frac{1}{2}$	$\frac{3}{8}$ " x 5 $\frac{1}{2}$ "	20.4 lbs.	4.70
9704 $\frac{1}{2}$	$\frac{1}{2}$ " x 4 $\frac{1}{2}$ "	33.8 lbs.	6.70
9704 $\frac{3}{4}$	$\frac{1}{2}$ " x 4 $\frac{3}{4}$ "	35.0 lbs.	6.90
9710	$\frac{1}{2}$ " x 10"	61.8 lbs.	10.80
9712	$\frac{1}{2}$ " x 12"	72.0 lbs.	12.70
9714	$\frac{1}{2}$ " x 14"	82.2 lbs.	13.90
9808	$\frac{5}{8}$ " x 8"	82 lbs.	13.10
9810	$\frac{5}{8}$ " x 10"	98 lbs.	14.70
9812	$\frac{5}{8}$ " x 12"	114 lbs.	16.40
9814	$\frac{5}{8}$ " x 14"	130 lbs.	18.30
9816	$\frac{5}{8}$ " x 16"	146 lbs.	19.90

## Galvanized Washers



Washers are galvanized in such a manner as to insure a heavy, even coat of pure zinc with no large drops to interfere with the fit of the bolt or nut.



## Round Washers

No.	Outside Diam.	Diam. Hole	For Size Bolt Mach.	For Size Bolt Carriage	Weight per 100	Price per 100
7801	1"	$\frac{1}{16}$ "	$\frac{3}{8}$ "	...	1.6 lbs.	\$0.30
7802	1 $\frac{1}{4}$ "	$\frac{1}{2}$ "	...	$\frac{3}{8}$ "	2.6 lbs.	.70
7803	1 $\frac{3}{8}$ "	$\frac{7}{16}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "	4.2 lbs.	.90
7805	1 $\frac{3}{4}$ "	1"	$\frac{5}{8}$ "	$\frac{1}{2}$ "	8.4 lbs.	1.80

## Square Washers

No.	Size	For Size Bolt or Rods	Weight per 100	Price per 100
7812	2" x 2" x $\frac{1}{8}$ "	$\frac{1}{2}$ " or $\frac{5}{8}$ "	14.6 lbs.	\$ 2.20
7814	2 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ " x $\frac{1}{8}$ "	$\frac{5}{8}$ " or $\frac{3}{4}$ "	22.8 lbs.	3.00
7816	3" x 3" x $\frac{1}{8}$ "	$\frac{5}{8}$ " or $\frac{3}{4}$ "	47.8 lbs.	6.70
7818	4" x 4" x $\frac{1}{8}$ "	$\frac{5}{8}$ " or $\frac{3}{4}$ "	87.5 lbs.	10.80
7819	4" x 4" x $\frac{1}{4}$ "	$\frac{5}{8}$ " or $\frac{3}{4}$ "	115.0 lbs.	14.00

## Curved Washers

In guy construction, curved washers are used to distribute the strain over a large pole area. For dead-ending a messenger, curved washers are used on the nut end of a Thimbleye Bolt.

Cat. No.	Dimensions	For Bolt Size	Weight per 100	Price per 100
7822	2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{3}{16}$ "	$\frac{5}{8}$ "	31 lbs.	\$ 5.40
7823	3" x 3" x $\frac{1}{4}$ "	$\frac{3}{4}$ "	60 lbs.	10.90
7824	3" x 3" x $\frac{5}{16}$ "	1"	85 lbs.	13.70

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### Double Arming Bolts

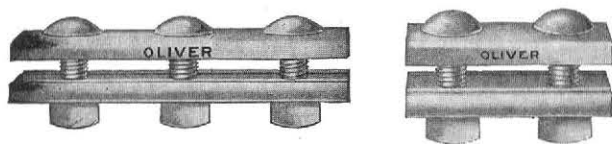


#### Hot Galvanized

Used with four square washers in the approved method of tying two cross arms together. For correct length allow 1 1/4 inches for washers and nuts, add twice the thickness of the cross arm plus the diameter of pole less depth of gain. All bolts are furnished with four square nuts but no washers.

Cat. No.	Size	Length of Thread	Weight per 100	Price per 100
9842	1/2" x 12"	5"	76 lbs.	\$14.80
9844	1/2" x 14"	6"	85 lbs.	16.00
9846	1/2" x 16"	6"	93 lbs.	16.80
9848	1/2" x 18"	8"	102 lbs.	17.90
9864	5/8" x 14"	6"	158 lbs.	25.60
9866	5/8" x 16"	7"	172 lbs.	27.00
9868	5/8" x 18"	8"	186 lbs.	28.50
9870	5/8" x 20"	8"	200 lbs.	29.90

### Guy Clamps



#### Hot Galvanized

Made from hot rolled open hearth steel sections and furnished in two types—light or heavy. The light types are 1 1/8 inch wide, 3/8 inch thick and furnished with 1/2 inch diameter bolts. The heavy type is 1 3/4 inch wide, 3/8 inch thick and furnished with 5/8 inch bolts of special steel. Both types have a long smooth clamping surface with great holding power.

The clamp sides are punched with elliptical holes into which elliptical shouldered bolts fit. This arrangement prevents the bolts from turning and also permits assembly from either side. Greater wrench clearance can be obtained by alternating the direction of every other bolt head.

Cat. No.	Style	Type	Length	Weight per 100	Price per 100
9000	2 Bolt	Light	3"	122 lbs.	\$22.40
9001	3 Bolt	Light	4"	155 lbs.	31.60
9002	3 Bolt	Light	6"	226 lbs.	38.50
9003	2 Bolt	Heavy	4"	174 lbs.	31.30
9004	3 Bolt	Heavy	6"	274 lbs.	47.00

### Crossover Clamps

#### Hot Galvanized



Used for joining two cable messengers when they cross each other at right angles. For telephone work where cables turn corners, or where branch cables leave line at points distant from poles.

Cat. No.	Size	Weight per 100	Price per 100
8930	1 1/2" x 1/2" x 3 1/4"	160 lbs.	\$61.60

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### Thimbleye Angle Bolts



#### Hot Galvanized

Thimbleye Angle Bolts are used in place of guy hooks and strain plates. They have much lower installation cost as the drilling of a hole through the pole is all that is required.

When there are heavy strains, the Guy Plates listed below are used in conjunction with the bolts.

Cat. No.	Diameter	For Strand Size	Weight per 100	Price per 100
7650	5/8" x 8"	6,000 lb.	120 lbs.	\$41.50
7651	5/8" x 10"	6,000 lb.	140 lbs.	43.40
7652	5/8" x 12"	6,000 lb.	160 lbs.	45.40

### Guy Plates

#### Hot Galvanized

Designed to reinforce Thimbleye Angle Bolts under heavy loads. Mounted to pole with 1/2 inch lags. Furnished in three sizes as follows:

Cat. No.	For Bolt Size	Size	Weight per 100	Price per 100
C-358	5/8"	2 1/2" x 7" x 1 3/8"	86 lbs.	\$15.10
C-334	3/4"	2 1/2" x 7" x 1 1/4"	115 lbs.	20.40
C-31	1"	2 1/2" x 7" x 1 5/8"	139 lbs.	24.60

### Thimbleye Eye Bolts



#### Hot Galvanized

Drop forged from mild open hearth steel and are designed to eliminate the use of guy thimbles. The eye will accommodate strands from 5/8 inch to 1 inch without causing sharp kinks in the strand.

Cat. No.	Diameter	Length	Weight per 100	Price per 100
6750	5/8"	10"	140 lbs.	\$40.90
6752	5/8"	12"	160 lbs.	42.80
6754	5/8"	14"	180 lbs.	44.50

### Angle Bolt Thimbleyes

#### Hot Galvanized

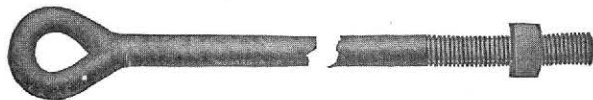


Angle Bolt Thimbleyes do away with strain plates, guy hooks, lags and nails in guying and save from three to five feet of strand. They are easy to install and are often used under the nut of a deadend thimbleye bolt. Hole is not threaded.

Cat. No.	Bolt Size	Strand Size	Weight per 100	Price per 100
1100	5/8"	1/2" and under	70 lbs.	\$37.40
1101	3/4"	1/2" and under	105 lbs.	44.20



### Oval Eye Anchor Rods



#### Hot Galvanized

Made from one piece of open hearth steel. Eye is drop forged. Rods of  $\frac{3}{4}$  inch diameter and under have  $3\frac{1}{2}$  inches of rolled threads. Those of 1 and  $1\frac{1}{4}$  inch diameter have  $3\frac{1}{2}$  inches of cut threads. Furnished with one square nut but no washer.

Cat. No.	Diameter	Length	Weight per 100	Price per 100
8005	$\frac{1}{2}$ "	5'	335 lbs.	\$54.90
8006	$\frac{1}{2}$ "	6'	402 lbs.	61.60
8007	$\frac{1}{2}$ "	7'	469 lbs.	68.70
8106	$\frac{5}{8}$ "	6'	640 lbs.	87.50
8107	$\frac{5}{8}$ "	7'	740 lbs.	98.60
8108	$\frac{5}{8}$ "	8'	840 lbs.	108.90

### Thimbleye Anchor Rods



#### Hot Galvanized

As their name implies, "Thimbleye" anchor rods eliminate the need for guy thimbles. Made of full sized stock with rolled threads. The eye has a deep groove for seating the strand and will accommodate strands of  $\frac{3}{8}$  to  $\frac{5}{8}$  inch diameter. Each rod furnished with square nut but no washer.

Cat. No.	Diameter	Length	Weight per 100	Price per 100
8506	$\frac{1}{2}$ "	6'	450 lbs.	\$71.40
8605	$\frac{5}{8}$ "	5'	605 lbs.	89.20
8606	$\frac{5}{8}$ "	6'	680 lbs.	100.40
8607	$\frac{5}{8}$ "	7'	755 lbs.	113.20
8608	$\frac{5}{8}$ "	8'	830 lbs.	122.80
8706	$\frac{3}{4}$ "	6'	960 lbs.	130.50
8707	$\frac{3}{4}$ "	7'	1120 lbs.	145.80
8708	$\frac{3}{4}$ "	8'	1245 lbs.	163.40

### Galvanized Ground Rods

#### Hot Galvanized

Made of stiff, high carbon open hearth steel, with long, sharp points, so they can be driven into any kind of soil with a minimum of trouble. The wired rods have soldered firmly to their upper ends, No. 12 copper wires, with free ends 5 inches long for attaching to the grounding wires running down the poles. Unwired rods are provided with holes through their upper ends for attaching grounding wires. These holes are  $\frac{1}{8}$  inch in diameter for  $\frac{3}{8}$  inch rods,  $\frac{3}{16}$  inch for  $\frac{1}{2}$  rods, and  $\frac{3}{8}$  inch for  $\frac{5}{8}$  and 1 inch rods, and are located 1 inch from the ends of the rods.

#### With Copper Wire

Cat. No.	Diameter	Length	Weight per 100	Price per 100
9505	$\frac{1}{2}$ "	5'	320 lbs.	\$54.60
9506	$\frac{1}{2}$ "	6'	395 lbs.	61.80
9516	$\frac{5}{8}$ "	6'	595 lbs.	86.70
9538	1"	8'	2167 lbs.	273.60

#### Without Copper Wire

Cat. No.	Diameter	Length	Weight per 100	Price per 100
9555	$\frac{3}{8}$ "	5'	185 lbs.	\$26.50
9556	$\frac{3}{8}$ "	6'	223 lbs.	30.70
9565	$\frac{1}{2}$ "	5'	300 lbs.	41.60
9566	$\frac{1}{2}$ "	6'	360 lbs.	49.10
9567	$\frac{1}{2}$ "	7'	420 lbs.	56.10

### Copperweld Ground Rods and Clamps



The copper exterior of Copperweld Ground Rods is molten-welded to the steel core—assuring long life. Whenever Copperweld ground rods are used to replace galvanized rods, a smaller diameter may safely be employed. Connecting Copperweld ground rods to copper ground wires provides protection against corrosion and galvanic action.

The clamps, both the safety screw type and square head bolt type listed below, give a secure mechanical bond between the rod and the wire. Great pressure may be exerted on the wire or strand by means of the safety screw.

#### Ground Rods

Cat. No.	Size	Standard Package	Weight per 100	Price per 100
9415	$\frac{3}{8}$ "x5"	10	200 lbs.	\$30.60
9416	$\frac{3}{8}$ "x6"	10	240 lbs.	37.10
9425	$\frac{1}{2}$ "x5"	10	350 lbs.	67.00
9426	$\frac{1}{2}$ "x6"	10	420 lbs.	78.80

#### Clamps

Cat. No.	Cat. No.	with Safety Set	with Square Head Bolt	Size of Rod	Size of Wire	Weight per 100	Price per 100
9490	9590			$\frac{3}{8}$ "	6—12 B. & S. solid	25 lbs.	\$19.60
9491	9591			$\frac{1}{2}$ "	4—10 B. & S. solid	30 lbs.	24.40

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### Guy Hooks

#### Hot Galvanized

For light work the No. 7583½ or 7585 give very satisfactory results. All hooks except No. 7583½, which is flat, are made of half oval steel bent with the flat side to the pole so as not to injure the guy strand. ⅝ inch diameter holes.



Cat. No.	Size Steel	Length	Weight per 100	Price per 100
7583½	1¼" x ¼"	3¼"	40 lbs	\$ 6.90
7584	1½" x ⅝"	4"	89 lbs	15.10
7585	1½" x ⅝"	3½"	60 lbs	10.70

### Guy Thimbles

#### Hot Galvanized



Made of half oval steel, grooved to fit the size of guy strand used, and bent to a generous radius so that the strand will not be sharply kinked. The ends are left open far enough to allow the thimble to be slipped over the size of guy rod noted.

Cat. No.	Strand Size	Guy Rod Size	Weight per 100	Price per 100
7593	⅝"	½" and ⅝"	9½ lbs.	\$6.30

### Strain Plate

#### Hot Galvanized



The Strain Plate is used for the same purpose as Guy Shims but gives better protection to the pole, costs less and is cheaper to install than shims. From two to four plates are required per pole, depending on its diameter.

Cat. No.	Dimensions	Weight per 100	Price per 100
7575	4"x8"x14 Ga., 5" Radius	94 lbs.	\$14.70

### Thimbleye Nuts

#### Hot Galvanized



Designed exclusively for use with guy strand and eliminates the guy thimble. Well rounded with a generous radius so that the strand will not be sharply kinked.

Cat. No.	For Bolt Size	Weight per 100	Price per 100
C-120	½"	90 lbs.	\$32.60
C-580	⅝"	86 lbs.	38.40
C-340	¾"	82 lbs.	44.60
C-1111	1"	170 lbs.	53.30

### Non-Breakable Messenger Hangers

#### Hot Galvanized



The Non-Breakable Hanger is one of the most economical to install. It is placed on a standard ⅝ inch through bolt, requiring no extra nuts, and the vertical finger keeps the messenger in place while it is being pulled taut, after which the strand is dropped into the groove and the nut set up. It is made of malleable iron, with back curved to fit the pole, has a long clamping surface, and supports the cable well away from the pole.

Cat. No.	Size of Strand	Weight per 100	Price per 100
8914	⅝" and ¾"	150 lbs.	\$55.40
8915	⅝" and ½"	150 lbs.	55.40

### Universal Messenger Hangers

#### Hot Galvanized

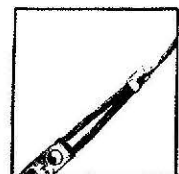
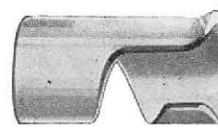


Universal Hangers are forged from open hearth steel with a specially curved groove, which allows them to be used at corners as well as on straight runs. Two ⅝ inch high carbon steel track bolts securely clamp the messenger. Mounted to the pole by a ⅝ inch through bolt and a ½ inch lag screw.

Cat. No.	Size of Strand	Weight per 100	Price per 100
8911	⅝" and ½"	300 lbs.	\$62.20
8912	⅝" and ¾"	230 lbs.	56.70

### Servisleeves

#### Hot Galvanized



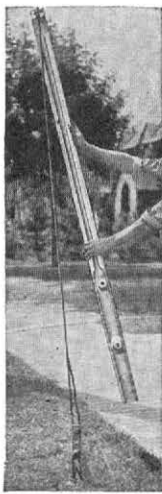
Used to serve up strand ends. They overcome objectionable cutting, clipping and crimping and prevent finger pinching. Easily and quickly installed without special tools. Retains original shape and maintains a firm grip at all times.

Cat. No.	Strand Size	Length	Weight per 100	Price per 100
7452	¼"	1¼"	3 lbs.	\$4.70
7453	⅝"	1½"	5 lbs.	4.70
7454	¾"	2"	7 lbs.	5.80

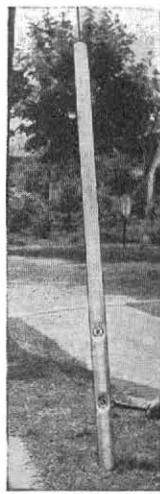
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### Staz-Rite Guy Guards



Patented one-piece guy guards that are easy to put on without special tools. One guy-clamp bolt (either head or nut) fastens guard at anchor end. Retainer at upper end locks strand securely. Guard cannot twist about or be improperly installed. Provides for complete ventilation and cannot accumulate wet leaves, snow or ice. Adjustable retainer will accommodate any size strand up to, and including  $\frac{5}{8}$ " size. Furnished in Full Round Type (18 gauge thickness material with oval depression) or Half



Round Type (14 gauge thickness material with flat depression).

Cat. No.	Description	Lgth.	Diam.	Wght. per C	Price per 100
7118	Full Round	7'	3"	1060 lbs.	\$172.10
8118	Full Round	8'	3"	1159 lbs.	185.80
7514	Half Round	7'	3"	930 lbs.	158.40
8514	Half Round	8'	3"	1030 lbs.	172.50

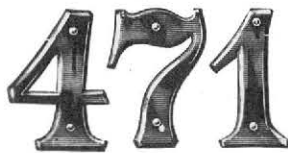
### Clips for Wood Brackets



Placed over wood brackets to prevent them from splitting when the nail is driven. Order by size to fit brackets.

Cat. No.	Size	Description	Weight per 100	Price per 100
1½	1½"	Bracket Clip	36 lbs.	\$0.80
2	2"	Bracket Clip	40 lbs.	.87

### Aluminum Letters and Numbers

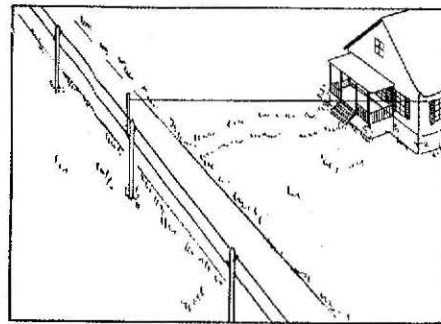


Embossed letters and numbers made of 99% pure aluminum. Have a wide variety of uses including pole numbering, transposition marking and cable terminal designation.

Available in 8 sizes as follows:  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1", 1½", 2", 3", 4" and 6". 2" and 3" are the sizes most generally used by telephone companies, particularly the 3" size. Eyelets are used between creosoted poles and markers so that they will not be affected by the creosote.

Cat. No.	Description	Price per 100
3N	3" Numbers	\$1.21
3L	3" Letters	1.76

### Pole Extension Fixtures



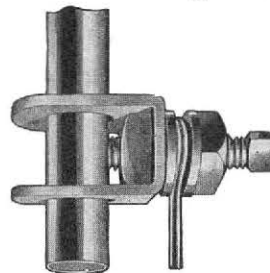
These new fixtures are being widely used by telephone companies to obtain clearance for line and drop wires and also for mounting additional brackets where there is not enough room on a pole and replacement with a longer pole is too costly.

The fixture consists of a steel channel, as illustrated, six and one-half feet long with holes top and bottom for fastening. It is light in weight (10 lbs.) and easy to install. The two holes at the bottom are for fastening to the pole—the lower hole is for  $\frac{5}{8}$ " through bolt and the upper for a  $\frac{1}{2}$ " lag screw.

The four holes at the top of the fixture provide for a variety of attachments. For general use in obtaining additional line circuits, two W. U. brackets are bolted to the fixture. For drop wires, standard two groove or four groove telephone knobs are employed and are attached directly to the fixture with  $\frac{5}{8}$ " x 3" machine bolts. Shipped in bundles of 5.

Cat. No.	Length	Bundle	Weight per Bundle	Price per 100
999	78"	5	43 lbs.	\$45.00

### Kling Ground Clamps



Galvanized steel clamps for connecting ground wires to  $\frac{1}{2}$  inch and  $\frac{5}{8}$  inch ground rods. Cup pointed set screw bites a circle into rod insuring good contact. Clamps usually attached before rod is driven. Used with copper or iron ground wires.

Cat. No.	Size	Description	Price per 100
1901	$\frac{1}{2}$ "	Kling Ground Clamp	\$10.00
1902	$\frac{5}{8}$ "	Kling Ground Clamp	12.00

### Adjustable Ground Clamps



Tinned copper strips with adjustable screw attachment. Close fitting threads.

Cat. No.	Description	Price per 100
51	Adjustable Ground Clamp	\$5.00

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**Transposition Brackets****Hot Galvanized****Single Point**

No. 110

Brackets shown with "U" bolts are furnished with bolts bent for  $3\frac{1}{4} \times 4\frac{1}{4}$  inch arms unless otherwise specified, but can be equipped with bolts for any size of arm up to 4x5 inches at the same prices.

No. 110 is the most popular type of Transposition Bracket for single wires. It is furnished with a  $\frac{3}{8}$  inch "U" bolt. No. 111 is for long spans and heavy work and is also furnished with a  $\frac{3}{8}$  inch "U" bolt. The No. 114 is made for use with two-wire transposition insulators, and is furnished with a  $\frac{3}{8}$  inch "U" bolt.



No. 114

All brackets are threaded for insulators having a standard 1 inch pin hole. When ordering be sure to specify the size of the arms on which brackets are to be used.

Cat. No.	Size of Channel	U-Bolts	Weight per 100	Price per 100
110	$\frac{3}{4}$ "	$\frac{3}{8}$ "	88 lbs.	\$47.80
111	1"	$\frac{3}{8}$ "	156 lbs.	61.40
114	1"	$\frac{3}{8}$ "	160 lbs.	70.80



No. 237

**Multipoint**

Brackets are made with an angle steel back to which presteel points are riveted. These brackets are equipped with spiral spring threads for insulators having a standard 1 inch pin hole.

The No. 237 bracket is for two-wire transposition.

The No. 437 is used for transposing the four wires of two toll circuits on which a phantom circuit is connected.

Both brackets are furnished with  $\frac{3}{8}$  inch "U" bolts for  $3\frac{1}{4} \times 4\frac{1}{4}$  inch cross arms, unless otherwise specified.

"U" bolts for any size of arms up to 4x5 inches can be furnished at the same price.

When ordering, be sure to specify the size of the arms on which brackets are to be used.



No. 437

Cat. No.	Size of Steel	Weight per 100	Price per 100
237	1" x 1" x $\frac{1}{8}$ "	215 lbs.	\$ 74.20
437	$1\frac{1}{4}$ " x $1\frac{1}{4}$ " x $\frac{1}{8}$ "	450 lbs.	137.80

**Two-Piece Transposition Brackets for Phantom Circuits****Hot Galvanized**

Standard Transposition Bracket for 4 wire transpositions. It is fastened to the cross arm by two  $\frac{1}{2} \times 4\frac{3}{8}$  inch machine bolts, spaced  $2\frac{3}{8}$  inches apart, and has holes for  $\frac{1}{2}$  inch pins. The price includes the two parts shown, the smaller of which projects above the arm, but no bolts or pins.

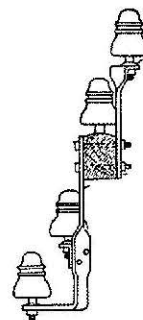


Cat. No. 9275

Cross Arm  
 $3\frac{1}{4} \times 4\frac{1}{4}$ "

Weight  
per 100  
725 lbs.

Price  
per 100  
\$160.50

**Distributing Brackets****Hot Galvanized****Pole**

The standard bracket used for running drop wires to poles. One No. 6062 knob with a No. 9603 machine bolt or two No. 6062 knobs with a No. 9605  $\frac{1}{2}$  machine bolt, listed below, are used with this bracket. Not furnished unless specified.



Cat. No. 9202

Length  
of Legs  
3" x 4"

Weight  
per 100  
87 lbs.

Price  
per 100  
\$14.70

**House**

The No. 9200 is the standard bracket for attaching drops to buildings.

The No. 6061 knob and No. 9232 bolt are used with this bracket, but are not furnished unless specified.



Cat. No. 9200

Length  
of Legs  
 $2\frac{7}{8}$ " x  $3\frac{3}{8}$ "

Weight  
per 100  
51 lbs.

Price  
per 100  
\$10.00

**Corner Brackets****Hot Galvanized**

The Corner Bracket is used where the lead from the pole comes to the building at an angle.

Cat. No. 9204  
9205

Length  
of Legs  
 $3\frac{3}{8}$ " x 5"  
 $3\frac{3}{8}$ " x 10"

Weight  
per 100  
60 lbs.  
87 lbs.

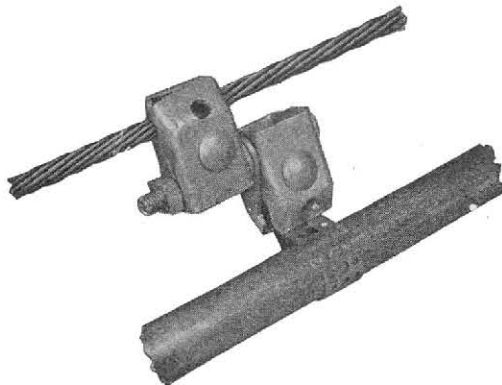
Price  
per 100  
\$20.60  
26.00

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## Adjustable Grade Clamps

Hot Galvanized



A simple and effective type of clamp that grips the strand and cable firmly and prevents creeping. Consists of two identical clamping units bolted together and equipped with metal strapping that holds the cable firmly without damage to the sheath. The strapping is held in place by a pin and is adjustable to fit various sizes of cable. One size clamp fits all sizes of strand and all sizes of cable. Furnished complete with strapping as illustrated.

Cat. No.	Description	Price per 100
1098	New Style Grade Clamp	\$65.00

## Cable Suspension Clamps



Hot Galvanized

The One-Bolt type is used for light cables and on cable arms, and the Three-Bolt types for heavy cables and long spans. The One-Bolt Clamp is furnished without a bolt, as a  $\frac{5}{8}$  inch through bolt is used both for attaching the clamp to the pole and tightening the clamp on the strand.

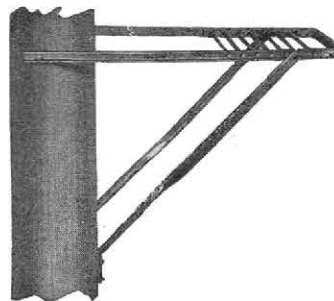
The Three-Bolt Clamps are furnished with two  $\frac{1}{2}$  inch high carbon steel track bolts, the center hole being left blank for the  $\frac{5}{8}$  or  $\frac{3}{4}$  inch through bolt.

In attaching to the pole, a nut and square washer are placed between the clamp and pole to provide clearance for the cable. Where cables are to be mounted on both sides of the poles, double arming bolts are used instead of the through bolts.

Cat. No.	Type	Center Hole	Length	Price per 100
8901	One-Bolt		2 $\frac{1}{2}$ "	\$14.00
8903	Three-Bolt	$\frac{11}{16}$ " for $\frac{5}{8}$ " bolt	5 $\frac{3}{4}$ "	36.80
8904	Three-Bolt	$\frac{11}{16}$ " for $\frac{3}{4}$ " bolt	5 $\frac{3}{4}$ "	36.80

## Pole Seats

Hot Galvanized



In spite of its light weight, this type of seat is very rigid and strong. The bars are  $\frac{3}{8}$  inch square steel, secured to the frame in such a way as to leave no projecting ends. There is no strain on the riveted joints. The bars are placed with corners up to prevent slipping. Shipped complete in bundles of five.

Cat. No.	Size of Seat	Weight Each	Price Each
755	12"x13 $\frac{7}{8}$ "	14 lbs.	\$3.54
757	12"x11"	12.6 lbs.	3.38

## Transposition Brackets

Hot Galvanized



No. 9251

The four kinds of Transportation Brackets listed are similar to No. 9251. They are provided with a  $\frac{3}{8}$  inch round hole for a 2 inch No. 14 galvanized wood screw used to prevent the bracket from pulling to one side on the arm. The No. 9250 is made for a 3x4 cross arm. This bracket is clamped on the arm by a  $\frac{3}{8}$ x4 inch carriage bolt. Bracket No. 9251 is for one wire, and No. 9252 for two wires on a transposition insulator. These brackets use  $\frac{3}{8}$ x4 $\frac{1}{2}$  inch carriage bolts.

All brackets have holes for  $\frac{1}{2}$  inch insulator pins.

When ordering, be sure to specify the size of the arms on which brackets are to be used.

Cat. No.	Cross Arm	Weight per 100	Price per 100
9249	2 $\frac{3}{4}$ "x3 $\frac{3}{4}$ "	252 lbs.	\$49.60
9250	3" x4"	260 lbs.	49.60
9251	3 $\frac{1}{4}$ "x4 $\frac{1}{4}$ "	268 lbs.	49.60
9252	3 $\frac{1}{4}$ "x4 $\frac{1}{4}$ "	378 lbs.	68.10

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**Pole Steps****Hot Galvanized**

No. 7125

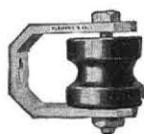


No. 7126

Furnished in two styles as illustrated. Have a fetter drive thread which makes them easy to install and which does not tear the wood of the pole when the steps are driven.

The No. 7126 Long Hook Step is used at points on the pole where the lineman stands to work. The 3 inch hook prevents the foot from slipping off the end of the step.

Cat. No.	Type	Diameter	Length	Price per 100
7123	Std. Hook Head	$\frac{3}{8}$ "	9"	\$11.70
7124	Std. Hook Head	$\frac{5}{8}$ "	9"	13.30
7125	Std. Hook Head	$\frac{5}{8}$ "	10"	14.10
7126	Long Hook Head	$\frac{3}{4}$ "	10"	20.50

**Insulated Forks****Hot Galvanized**

By the addition of a standard machine bolt, the insulator fork illustrated may be converted into a fork bolt. Is made of  $1\frac{1}{2} \times \frac{1}{4}$  inch flat steel formed so that the head of the machine bolt keeps it from turning. Furnished complete with insulator.

Cat. No.	Size of Machine Bolt	Weight per 100	Price per 100
8820	$\frac{5}{8}$ "	118 lbs.	835.30

**Fork Bolts****Hot Galvanized**

Used as span wire supports. Forged from open hearth steel. Equipped with insulator and  $\frac{3}{8}$  inch insulator bolt. Each fork bolt has 6 inches of thread. The length is measured from the end to the center of insulator bolt.

Cat. No.	Diameter	Length	Weight per 100	Price per 100
8810	$\frac{1}{2}$ "	10"	104 lbs.	\$46.10
8811	$\frac{1}{2}$ "	12"	114 lbs.	48.00
8812	$\frac{1}{2}$ "	14"	124 lbs.	49.70
8813	$\frac{5}{8}$ "	12"	156 lbs.	50.80
8814	$\frac{5}{8}$ "	14"	171 lbs.	52.80
8815	$\frac{5}{8}$ "	16"	247 lbs.	55.10

**Glass Insulators**

Supplied in clear glass only and packed in cartons with each insulator in separate compartment.

**No. 9 Pony**

Diameter of Groove	$\frac{3}{8}$ "
Weight Each	9 oz.
Quantity per Box	50
Weight per Box	30 lbs.
Approx. Weight per M	600 lbs.
Price per 100	\$4.63

**No. 12 Double Groove Pony**

Diameter of Groove	$\frac{3}{8}$ "
Weight Each	10 oz.
Quantity per Box	50
Weight per Box	35 lbs.
Approx. Weight per M	700 lbs.
Price per 100	\$4.75

**No. 16 Long Distance**

Diameter of Groove	$\frac{3}{8}$ "
Weight Each	15½ oz.
Quantity per Box	50
Weight per Box	53 lbs.
Approx. Weight per M	1050 lbs.
Price per 100	\$5.70

**No. 42 Double Petticoat**

Diameter of Groove	$\frac{5}{8}$ "
Weight Each	24 oz.
Quantity per Box	40
Weight per Box	67 lbs.
Approx. Weight per M	1675 lbs.
Price per 100	\$7.36

**No. 53 One-Piece Transposition**

Diameter of Groove	$\frac{3}{8}$ "
Weight Each	28½ oz.
Quantity per Box	50
Weight per Box	110 lbs.
Approx. Weight per M	2200 lbs.
Price per 100	\$15.80

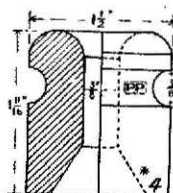
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### Standard Telephone Knobs

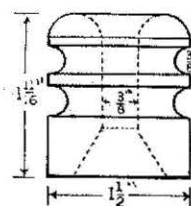
#### Single Groove

Cat. No.	Dimensions
4-SG	As Shown
No. per Bbl.	Weight per 1000
2000	230 lbs.
Price per 100, \$2.51	



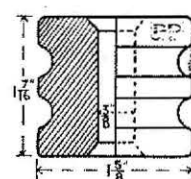
#### Double Groove

Cat. No.	Dimensions
4-2G	As Shown
No. per Bbl.	Weight per 1000
2000	225 lbs.
Price per 100, \$2.74	



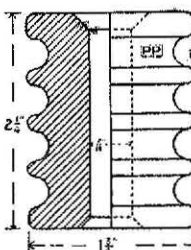
#### 2 Groove Telephone

Cat. No.	Dimensions
6061	As Shown
No. per Bbl.	Weight per 1000
1900	210 lbs.
Price per 100, \$4.00	

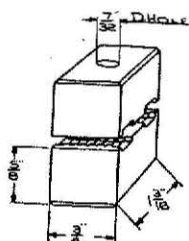


#### 4 Groove Telephone

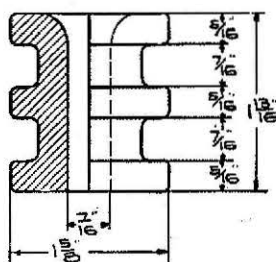
Cat. No.	Dimensions
6062	As Shown
No. per Bbl.	Weight per 1000
1200	395 lbs.
Price per 100, \$5.00	



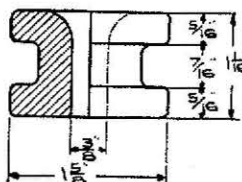
### Types "C," "S" and "T" Knobs



Type C



Type T



Type S

Cat. No.	No. per Bbl.	Weight per 1000	Price per 100
Type T	1500	345 lbs.	\$4.14
Type C	5000	92 lbs.	3.12
Type S	2500	110 lbs.	2.76

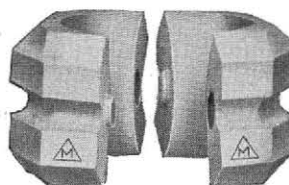
### Porcelain Tubes



#### Unglazed

Length Under Head	1 1/8" Hole Outside Dia.	Price per 100	3/8" Hole Outside Dia.	Price per 100
3"	4,500	285	3,100	280
4"	3,600	290	2,300	270
6"	2,000	235	1,400	280

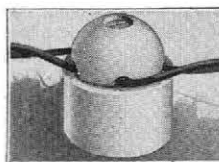
### Victor Split Knobs



Furnished as illustrated.  
Weight per 1000, 332 lbs.  
Packed 1100 to the barrel.

Diameter	Height	Hole	Groove	Price per 100
2 1/8"	1 3/4"	1 1/4"	3/8"	\$5.52

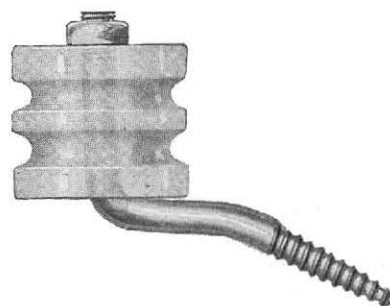
### Paragon Self-Tying Knobs



These knobs require only one bolt or screw for installation. A 4 inch No. 18 flat head wood screw is used for fastening on buildings, 4 1/2 inch lag screws on poles, and 1/4 x 3/4 inch expansion bolts on brick walls.

Price per 100 \$6.25

### Angle Screws

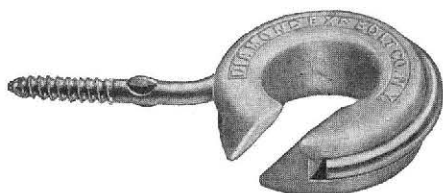


By inclining the angle of the screw the knob may be set at any desired angle to receive the wire from the pole. FURNISHED WITHOUT KNOBS. Supplied in the two sizes shown but if order does not specify, 5/16" (No. 1980) will be shipped.

Cat. No.	Type	Length of Screw End	Length of Shank	Weight per M	Price per 100
1980	5/16"	2 1/4"	2 1/4"	12 lbs.	\$3.50
1981	3/8"	2"	3 1/2"	20 lbs.	5.85

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## Insulated Screw Eyes



Furnished in four sizes as follows.  $\frac{5}{8}$  inch long (No. 1777) will be shipped when order does not specify.

Cat. No.	Type	Eye	Weight per M	Price per 100
1776	$\frac{5}{8}$ " Short	$\frac{5}{8}$ "	85 lbs.	\$5.37
1777	$\frac{5}{8}$ " Long	$\frac{5}{8}$ "	95 lbs.	5.83
1778	1" Short	1"	175 lbs.	7.00
1779	1" Long	1"	200 lbs.	7.23



## Nail Knobs

Often called Nail-It Knobs. Furnished split as shown with 3 inch nails and washers. Packed 2700 to the barrel. Weight per 1000, 165 lbs.

Diameter	Height	Hole	Groove	Price per 100
1 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{1}{4}$ "	\$1.74

## Bridle Rings



Bridle rings are easily installed, and afford an inexpensive method of distributing wires. Furnished either hot galvanized or enameled. When order does not specify, galvanized will be shipped.

### Galvanized

Cat. No.	Style	Eye	Opening	Weight per 1000	Price per 100
2500	A	1 $\frac{5}{8}$ "	$\frac{1}{4}$ "	115 lbs.	\$2.60
2502	C	1 $\frac{1}{4}$ "	$\frac{1}{4}$ "	95 lbs.	2.17
2504	E	$\frac{5}{8}$ "	$\frac{1}{4}$ "	35 lbs.	.93
2505	F	3"	$\frac{1}{4}$ "	300 lbs.	9.55

## Span Clamp



Service connections at points between poles may be made by fastening the service lead to a span clamp fastened to the cable messenger and thence to the subscriber location. Each clamp is furnished complete as shown.

Cat. No.	Insulator Spacing	Weight per 100	Price per 100
5064	5 $\frac{3}{4}$ "	138 lbs.	\$63.40

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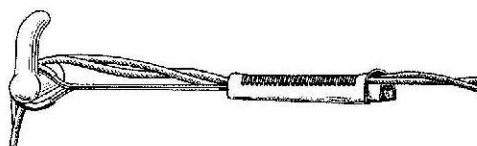
## House Hooks



Galvanized hook as illustrated widely used by telephone companies for attaching drop wires to buildings in conjunction with Type P clamps, drop wire clips or other drop wire fixtures.

Cat. No.	Description	Price per 100
1907	4" Wood Screw House Hook	\$3.00

## Type P Drop Wire Clamps



Used for attaching No. 17 B. & S. twisted pair or parallel drop wire to poles or buildings. They permit free swinging at the tie, place all wear on the hardware and eliminate all sharp bends. Two of them can be used in making angular turns.

Wedge shaped, as illustrated, with a copper wire hook at one end for hooking over a drive hook, masonry hook, or porcelain knob. When using twisted pair, the wires must be paralleled through the clamp. Packed 25 to the carton, 500 to the standard package.

Cat. No.	Description	Weight per 1000	Price per 100
Type P	Drop Wire Clamp	154 lbs.	\$7.00

## Drive Hooks

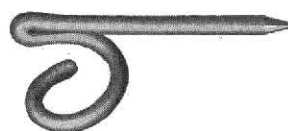


A galvanized hook for use in attaching drop wire to poles.

Cat. No.	Description	Length	Diameter	Price per 100
6099	Drive Hook	5"	$\frac{7}{8}$ "	\$10.90

## Drive Rings

### Hot Galvanized

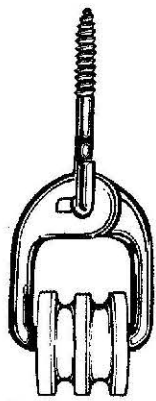


These drive rings are designed for the same purpose as the standard bridle rings. They are quick to attach, being driven in with ordinary nail hammer.

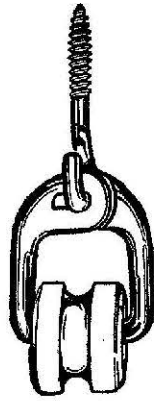
Cat. No.	Diam. of Eye	Length	Price per 100
11	$\frac{1}{2}$ "	2"	\$0.55
9	1 $\frac{1}{4}$ "	3"	1.25



### Pearl Drop Wire Brackets



The Pearl drop wire bracket is a time and labor saving bracket. The screw hook and malleable castings are galvanized. The bracket is packed with porcelain knob in individual boxes. Can be furnished without porcelain if desired.



Cat. No.	Knob	Weight per 100	Price per 100
100	1 groove	60 lbs.	\$16.80
200	2 groove	60 lbs.	16.80



### Pierce Wire Holders

No. 1621 has single groove. No. 1622 has double groove. Furnished as illustrated complete with galvanized screw. Can be supplied with brass screw on special order.

Cat. No.	Size of Wire Hole	Weight per 100	Price per 100
1621	5/8" dia.	65 lbs.	\$16.40
1622	1 1/8" x 3/4"	65 lbs.	16.40

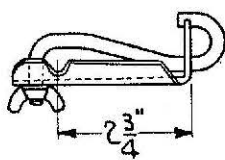
### Dryvin Masonry Hooks



Galvanized hooks with hammer drive expansion shields. Requires hole 3/8" in diameter and 1 1/4" deep. Standard packages of 50—with nails.

Cat. No.	Description	Weight per 100	Price per 100
5825	Masonry Hooks	12 1/2 lbs.	\$8.00

### New Style Span Fixture

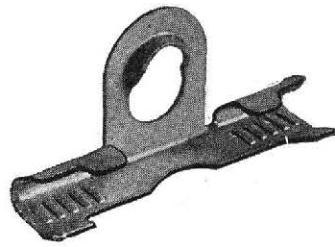


Serves the same purpose as the span clamp to make service connections between poles but is lighter and easier to install and does not require the use of knobs. The large hook fits around the strand and tightening the wing nut fastens the fixture firmly to the strand and also locks

the drop wire clamp in place. Fits all sizes of strand from 1/4" to 1 1/8".

Cat. No.	Description	Weight per 100	Price per 100
8917	New Style Span Fixture	131 lbs.	\$16.10

### Drop Wire Clips



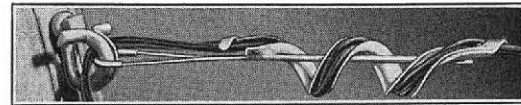
New small style clip with supporting lip and specially formed hole to fit drive hooks, masonry hooks and knob adapters.

Easy to install. The wire is placed in supporting groove and the small tongues of the clip are crimped down.

The pressure grips the wire firmly but does not injure the insulation.

Cat. No.	Description	Price per 100
6296	Drop Wire Clip	\$6.00

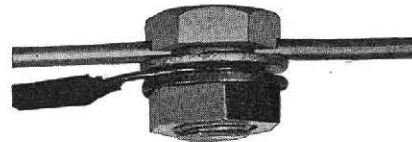
### Kearney Snub-R-Grip



Consists of a metal spiral fastened to a metal bail, as illustrated. The snubbing principle holds the wire and not the insulation. Spot-loading is prevented by the long bearing surface of the spiral. Grip is easily installed or removed and is 100% salvageable. Can be used with twisted pair or parallel drop wire. Is flexible for letting out or pulling up sag.

Cat. No.	Description	Weight per 100	Price per 100
6715	Kearney Snub-R-Grip	12 lbs.	\$7.00

### C-R Service Connectors



Made in three types: nickel plated brass or plain brass, for use on copper to copper wire connections only; and tinned, for use on galvanized iron to copper wire connections. When ordering specify the sizes and kinds of wire on which connectors are to be used.

Cat. No.	Description	Price per 100
1.	Nickel Finish brass only. 1/4" brass bolt with 3/8" hexagon head and nut, slotted to receive No. 14 B. & S. Ga. and No. 17 B. & S. Ga.	\$ 4.50
2.	5/8" brass bolt with 1 1/8" hexagon head and nut slotted to receive No. 12 B. & S. Ga., No. 14 N. B. S. Ca. and No. 14 B. W. G. wires.	Brass \$ 6.00 Tinned \$ 8.00
3.	7/8" brass bolt with 5/8" hexagon head and nut slotted to receive No. 10 B. & S. Ga., No. 12 N. B. S. Ga. and No. 12 B. W. G. wires.	Brass \$ 9.00 Tinned \$12.00
3A.	3/8" brass bolt with 1/2" hexagon head and nut—with same capacity as No. 3 but lighter construction.	Brass \$ 7.50 Tinned \$10.00

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### Double Tube Splicing Sleeves



Use B&S gauge for specifying size of copper sleeves and BWG gauge for tinned steel or tinned copper sleeves.

#### Copper Sleeves

B&S Gauge	BWG Gauge	Length inches	Weight per 1000	Price per 100
10	12	4 $\frac{3}{4}$	35 lbs.	\$3.33
12	14	4 $\frac{1}{2}$	29 lbs.	2.85
14	16	4	20 lbs.	2.73
16	18	4	20 lbs.	2.64
17		Half Length, 2"	10 lbs.	1.95

#### Tinned Copper Sleeves

BWG Gauge	Full Length inches	Half Length inches	Weight per 1000	Price per 100
10	5 $\frac{1}{2}$	2 $\frac{3}{4}$	53 lbs.	\$6.98
12	4 $\frac{3}{4}$	2 $\frac{3}{8}$	38 lbs.	3.63
14	4 $\frac{1}{2}$	2 $\frac{1}{4}$	30 lbs.	3.15
16	4	2	17 lbs.	3.03

#### Tinned Steel Sleeves

BWG Gauge	Full Length inches	Half Length inches	Weight per 1000	Price per 100
10	5 $\frac{1}{2}$	2 $\frac{3}{4}$	53 lbs.	\$4.37
12	4 $\frac{3}{4}$	2 $\frac{3}{8}$	38 lbs.	3.60
14	4 $\frac{1}{2}$	2 $\frac{1}{4}$	30 lbs.	3.36
16	4	2	17 lbs.	3.22

Note: Combination sleeves can be furnished in standard sizes.

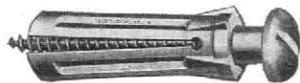
### Galvanized Nails and Spikes



Can be supplied in all sizes from 2d to 60d but the following sizes are those most generally employed in telephone work. All sizes furnished in 100 lb. kegs.

Cat. No.	Size	Length and Gauge	Approx. No. per Keg	Price per 100 Lbs.
6	6d	2" x 11.5	17400	\$7.45
8	8d	2 $\frac{1}{2}$ " x 10.25	10600	7.35
10	10d	3" x 9	6900	7.25
20	20d	4" x 6	3100	6.70
30	30d	4 $\frac{1}{2}$ " x 5	2400	6.70
40	40d	5" x 4	1800	6.70
50	50d	5 $\frac{1}{2}$ " x 3	1400	6.70
60	60d	6" x 2	1100	6.70

### Multi-Size Screw Anchors

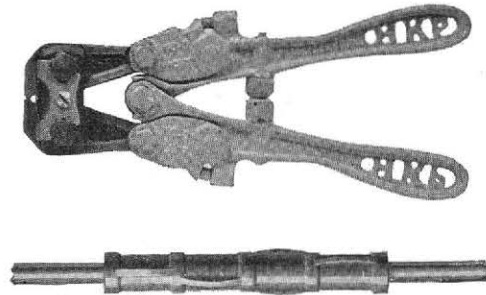


Covers practically the whole range of expansion shields used in cable and wire construction.

Size	For Wood Screws	Weight per 100	Price per 100
No. 6 to No. 8 x $\frac{3}{4}$ "	Nos. 6 to 8	1 lb.	\$1.50
No. 6 to No. 8 x 1 $\frac{1}{2}$ "	Nos. 6 to 8	1 $\frac{1}{4}$ lbs.	1.68
No. 10 to No. 14 x 1"	Nos. 10 to 14	2 lbs.	1.68
No. 10 to No. 14 x 1 $\frac{1}{2}$ "	Nos. 10 to 14	2 $\frac{3}{4}$ lbs.	2.40
No. 16 to No. 18 x 1"	Nos. 16 to 18	3 lbs.	1.88
No. 16 to No. 18 x 1 $\frac{1}{2}$ "	Nos. 16 to 18	4 $\frac{1}{4}$ lbs.	2.70

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### Ni-Co-Press Tool and Sleeves



A new patented tool that enables any lineman to make 100% line joints on the ground or in the air. It is claimed that line joints made with Ni-Co-Press tool and sleeves are stronger than the wire itself and that they are air, gas and moisture proof which eliminates any possibility of high resistance joints. As illustrated, the finished Ni-Co-Press joint is small, neat and can be pulled over crossarms.

The Ni-Co-Press tool can be furnished with various size die grooves but the standard telephone tool has an orange handle and an orange head with .104 die groove which will accommodate .104 No. 12 NBS, .102 No. 10 B&S, .080 No. 14 B&S copper sleeves; .109 No. 12 BWG and .083 No. 14 BWG galvanized steel sleeves; .083 No. 14 BWG copper sleeves; and .109 No. 12 tinned bronze sleeves.

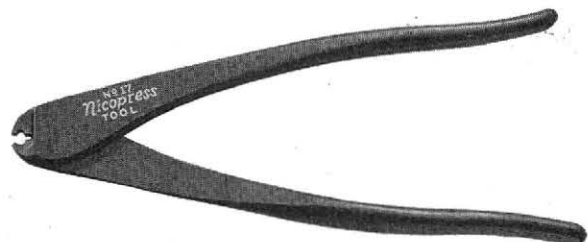
#### Ni-Co-Press Telephone Tool

Cat. No.	Description	Length	Price Each
0	Orange Head, Orange Handle	9 $\frac{3}{4}$ "	\$6.00

#### Ni-Co-Press Sleeves for Telephone Tool

Description	Length	Size B&S	Size BWG	Size NBS	Price per 100
.104 Copper	1 $\frac{3}{4}$ "	....	....	12	\$3.33
.102 Copper	1 $\frac{3}{4}$ "	10	....	....	3.33
.080 Copper	1 $\frac{3}{4}$ "	14	....	....	2.85
.109 Galv. Steel	1 $\frac{3}{4}$ "	....	12	....	4.45
.083 Galv. Steel	1 $\frac{3}{4}$ "	....	14	....	4.17
.083 Tinned Copper	1 $\frac{3}{4}$ "	....	14	....	3.15
.109 Tinned Bronze	1 $\frac{3}{4}$ "	....	12	....	3.63

### Ni-Co-Press Drop Wire Tool

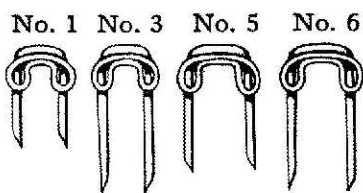


Identical in principle with the Ni-Co-Press tool above but designed for drop wire splicing only. The No. 17 sleeves fit 17 B&S gauge Copperweld or bronze drop wire.

Cat. No.	Description	Length	Price Each
17	Ni-Co-Press Drop Wire Tool	8"	\$2.00
17SL	Ni-Co-Press Bronze Sleeves for 17 B&S Bronze or Copperweld Drop Wire		per 100 1.50



## Blake Insulated Staples



Nos. 1 and 5 are for use in hard wood. Nos. 3 and 6 are for general use. Nos. 1 and 3 are for single wire and twisted pair. Nos. 5 and 6 are for heavier wires. Packed 100 to the small container—10 small containers to the carton.

Cat. No.	Size	Carton Quantity	Case Quantity	Case Weight	Price per 100
1	$\frac{1}{8} \times \frac{1}{2}$	1000	25,000	41 lbs.	\$1.50
3	$\frac{1}{8} \times \frac{3}{4}$	1000	25,000	51 lbs.	1.50
5	$\frac{1}{4} \times \frac{3}{8}$	1000	25,000	55 lbs.	1.60
6	$\frac{1}{4} \times \frac{1}{2}$	1000	25,000	60 lbs.	1.60

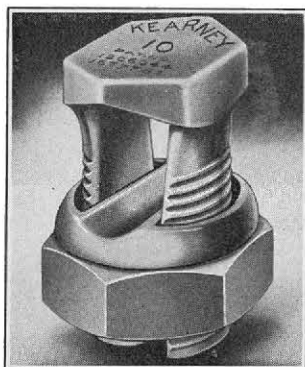
## Milonite or Perfection Nails



Used for installing twisted pair. Head is insulated and shank covered with waterproof, dielectric finish. Furnished in olive green, dark green, grey, brown and black and in four sizes:  $\frac{1}{2}$ ,  $\frac{3}{8}$ ,  $\frac{5}{8}$  and  $\frac{7}{8}$  inch. Packed 1000 to the carton.

Price per 1000, \$1.35

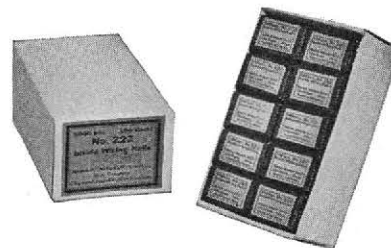
## Kearney Con-nec-tites



Provide a simple, inexpensive and reliable means of making bridge or test connections. Galvanic action between iron and copper is eliminated by the use of a plated separating washer which places like metals together. Packed 100 to the standard package.

Cat. No.	Type of Connection	No. of Washers	Maximum Wire Size	Price per 100
86-2	Cop. to Cop.	One	12 N.B.S.—10 B.&S.	\$11.05
986-2	Cop. to Cop.	Two	12 N.B.S.—10 B.&S.	11.70
89-2	Cop. to Cop.	One	10 N.B.S.—8 B.&S.	13.00
989-2	Cop. to Cop.	Two	10 N.B.S.—8 B.&S.	13.65
2451-2	Iron to Iron	One	12 B.W.G.	12.35
2449-2	Iron to Iron	Two	12 B.W.G.	13.00
5695-2	Iron to Iron	One	10 B.W.G.	14.30
5696-2	Iron to Iron	Two	10 B.W.G.	14.95
5694-2	Iron to Cop.	Two	12 B.W.G.—12 N.B.S.	13.00
5697-2	Iron to Cop.	Two	10 B.W.G.—10 N.B.S.	14.95

## Steel Inside Wiring Nails



Furnished in Brown or Ivory in  $\frac{1}{2}$  inch length for D-22-B (or other wires for hardwood) and in  $\frac{3}{8}$  inch length for D-22-C. Also supplied in olive green in  $\frac{5}{8}$  inch and  $\frac{7}{8}$  inch lengths for D-19-B and D-19-C.

Packed 100 to the package; 10 packages to the carton.

Cat. No.	Length	Color	Description	Price per 1000
222-BR $\frac{1}{2}$	$\frac{1}{2}$ "	Brown	Steel Wiring Nail	\$1.50
222-BR $\frac{3}{8}$	$\frac{3}{8}$ "	Brown	Steel Wiring Nail	1.50
222-IV $\frac{1}{2}$	$\frac{1}{2}$ "	Ivory	Steel Wiring Nail	1.50
222-IV $\frac{3}{8}$	$\frac{3}{8}$ "	Ivory	Steel Wiring Nail	1.50
222-OG $\frac{5}{8}$	$\frac{5}{8}$ "	Olive Green	Steel Wiring Nail	1.50
222-OG $\frac{7}{8}$	$\frac{7}{8}$ "	Olive Green	Steel Wiring Nail	1.50

## Wood Screws

Wood screws—either round head or flat—are furnished in sizes shown and are available galvanized or blued, as specified. Lowest market prices.

$\frac{1}{4}$ In. No.	$\frac{3}{8}$ In. No.	$\frac{1}{2}$ In. No.	$\frac{5}{8}$ In. No.	$\frac{3}{4}$ In. No.	$\frac{7}{8}$ In. No.	1 In. No.
0	0	1	2	2	3	3
1	1	2	3	3	4	4
2	2	3	4	4	5	5
3	3	4	5	5	6	6
4	4	5	6	6	7	7
	5	6	7	7	8	8
	6	7	8	8	9	9
	7	8	9	9	10	10
	8	9	10	10	11	11
$1\frac{1}{4}$ In. No.	$1\frac{1}{2}$ In. No.	10	11	11	12	12
4	4		12	12	14	14
5	5			14		16
6	6					
7	7	$1\frac{3}{4}$ In. No.				
8	8	6	2 In. No.	$2\frac{1}{4}$ In. No.	$2\frac{1}{2}$ In. No.	$2\frac{3}{4}$ In. No.
9	9	7	6	6	6	
10	10	8	7	7	7	
11	11	9	8	8	8	8
12	12	10	9	9	9	9
14	14	11	10	10	10	10
16	16	12	11	11	11	11
18	18	14	12	12	12	12
	20	16	14	14	14	14
3 In. No.		18	16	16	16	16
8		20	18	18	18	18
9	$3\frac{1}{2}$ In. No.		20	20	20	20
10	10					
11	11	4 In. No.				
12	12	4 $\frac{1}{2}$ In. No.	5 In. No.			
14	14	14	14			
16	16	16	16			
18	18	18	18			
20	20	20	20			
24	24	24	24			

All Prices F. O. B. Shipping Point, Effective Mar. 1, 1938, and Subject to Change Without Notice

### Standard Pyrene Fire Extinguishers



Effective fire extinguishers for telephone offices. The liquid is non-conductive and will not injure equipment. Easy to operate—women can handle them easily. Double-acting pump with patented rotating pick-up, discharges a steady continuous stream 25 to 30 feet. Smothers all classes of fire in incipient stages. Approved by Underwriters' Laboratories. For fighting fires in oils, paints, gasoline, shellac or any other highly inflammable substance.

Furnished complete with wall bracket. Ordinarily supplied in polished brass finish.

Cat. No.	Size	Price, Each
C11	1 Pint	\$7.00
C21	1 Quart	9.80
C31	1½ Quarts	11.90

### Monotape Friction Tape



Made of the highest grade of woven cotton fabric impregnated with rubber stock and evenly coated with an adhesive rubber compound. This compound contains no free sulphur, will not corrode copper wire and has maximum insulating qualities.

Cat. No.	Width	Wght. of Roll	Price per Lb.
8	¾"	½ lb.	\$0.36
16	2"	1 lb.	.36

### Monotape Rubber Tape

An excellent rubber tape made to the same high standards as Monotape Friction Tape. Consists of a high grade cotton fabric lined with a ribbon of rubber compound. Used to insulate splices in insulated wire. ¾" wide and approximately ½ pound to the roll.

Cat. No.	Width	Weight of Roll	Price per Lb.
R8	¾"	Approx. ½ lb.	\$0.41

### Ruberoid Insulating Tape



A saturated, durable insulating tape adapted for wire connections, conduit joints, overhead and underground cables and telephone lines. Greatly exceeds A.S.T.M. Specifications for adhesiveness and strength. Two sizes.

Cat. No.	Size	Description	Price per Lb.
5533	¾" wide	½ lb. Roll	\$0.61
5534	2" wide	1 lb. Roll	.61

### Dead Oil of Coal Tar



Can be applied in the pole yard or the point of construction. The preservative is heated to about 150 to 200 degrees F. (never to boiling point) and all wood parts thoroughly trimmed before treatment. For full butt treatment, two coats of preservative are applied to the entire pole butt to a point 1 foot above the ground line. Many companies also apply it to all gains and roofs.

To treat standing poles, the ground is removed about one or two feet from around the pole and all dirt and decayed portions are scraped away from the pole. Two coats of preservative are applied to exposed portions up to a point about one foot above the ground line. The second coat should not be applied until the first has been absorbed.

Cat. No.	Quantity	Container	Price per Gal.
89933	5 Gal.	Can	\$0.60
89934	30 Gal.	Drum	.50
89935	50 Gal.	Drum	.40

### Rapid Asphalt Paint



Used for painting cable to fill in pores on crystallized portions, for fibre conduit joints and taped joints, for underground work and other preservative purposes. Consists of a liquid asphalt-base paint that is resistant to acid, acid fumes and alkali. Supplied as follows:

Cat. No.	Quantity	Weight	Price per Gal.
184AP-1	1 gal. can	8 lbs.	\$1.60
184AP-5	5 gal. can	48-lbs.	1.45

### Doe's Burnishing Pastes



Doe's Plug Polishing Paste and Commutator Burnishing Paste have been widely used in the telephone field for many years.

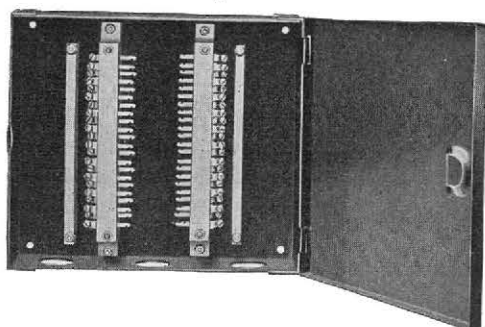
As illustrated, both are put up in gold lacquered tin boxes containing approximately four ounces.

Cat. No.	Description	Price Each
184-D	Box of Doe's Plug Polishing Paste	\$0.35
184-T	Box of Doe's Commutator Paste	.35

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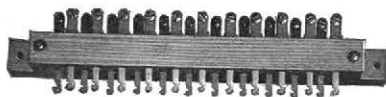
### Automatic-Sands Type 75 Building Terminals



Standard boxes with numerous knockouts provided at top and bottom. Terminal strips have screw binding posts for distributing wires and soldering terminals for cable wires. Strips also furnished separately.

Cat. No.	Description	Dimensions	Price Each
SB-10	11 Pair	5½" x 10" x 4"	\$ 3.75
SB-11	13 Pair	5½" x 12" x 4"	4.25
SB-12	16 Pair	5½" x 12" x 4"	4.85
SB-13	22 Pair	11" x 9¾" x 4"	6.15
SB-14	26 Pair	11" x 13¾" x 4"	7.15
SB-16	52 Pair	11" x 19¾" x 4"	12.55
SB-17	104 Pair	11" x 40" x 4"	24.75

#### Type 75 Terminal Strips Only

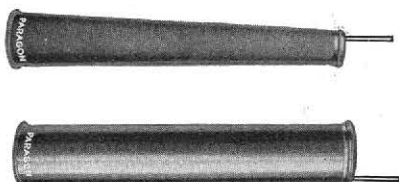


Cat. No.	Description	Dimensions	Price per 100 Pair
SB-20	11 Pair	9¼" x 1¾" x 1½"	\$15.00
SB-21	13 Pair	10½" x 1¾" x 1½"	15.00
SB-22	16 Pair	12¾" x 1¾" x 1½"	15.00
SB-23	26 Pair	19½" x 1¾" x 1½"	15.00
SB-24	52 Pair	37½" x 1¾" x 1½"	15.00

#### Type 75 Fanning Strips Only

Cat. No.	Description	Dimensions	Price per 100 Pair
SB-26	For 11 pr. Terminal	7¾" x 1½" x 1½"	\$5.00
SB-27	For 13 pr. Terminal	9" x 1½" x 1½"	5.00
SB-28	For 16 pr. Terminal	10¾" x 1½" x 1½"	5.00
SB-29	For 26 pr. Terminal	18" x 1½" x 1½"	5.00

### Paragon Ground Cones and Cylinders

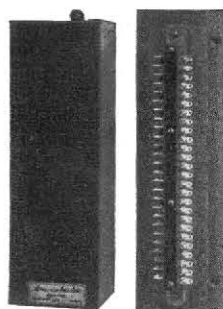


Made of sheet copper and filled with charcoal.

Cat. No.	Description	Length	Price Each
1	Cylinder (solid)	1 ft.	\$3.00
2	Cylinder (solid)	2 ft.	3.75
3	Cone (perforated)	1 ft.	3.00
4	Cone (perforated)	2 ft.	3.75

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### Type 125 Junction Boxes

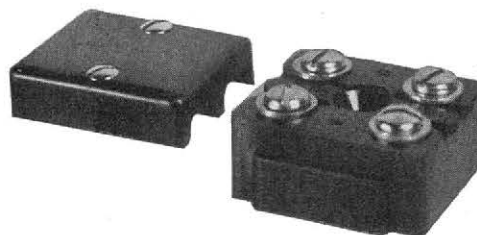


Small, inexpensive units for floor distribution or other distributing needs where ultimate requirements will not exceed 21 pair.

Consists of a terminal strip and fanning strip mounted on a wood base with metal cover. Terminals have tinned soldering lugs on the cable side and screw terminals on the line side.

Cat. No.	Capacity	Dimensions	Price Each
SB-30	13 pair	9" x 27½" x 3"	\$4.60
SB-31	21 pair	.....	5.50

### Bakelite Connecting Blocks



Interlocking blocks with single screw mounting. Interlocking feature permits increase or decrease in the number of pair connectors as required.

The binding screws are connected the long way by metal inserts molded in the bakelite. Arranged for all types of connections—regular wire or flat tip connections are made under the binding screws and pin tip connections are made by inserting the tips into small recesses under the washers. Furnished complete with cover as illustrated.

Cat. No.	Dimensions	Price Each
982	1½" x 1½" x 7/8"	\$0.18

### Bells and Buzzers



6-volt, 2-magnet adjustable type bells and buzzers.

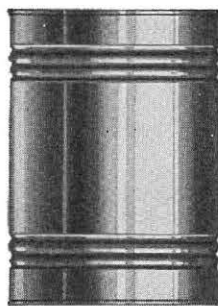
Cat. No.	Description	Price Each
710	2½" Bell	\$0.83
712	3" Bell	.94
714	4" Bell	1.22
715	Buzzer	.81



## Lead Covered Telephone Cable

We can supply all types of lead covered telephone cable—13, 16, 19, 22 and 24 gauge—single or double paper wrapped—jute covered or tape armored. For complete descriptions, sizes, etc., write for Catalog 5000.

### RSA Parolite



A non-corrosive, acid resisting, non-conducting material used to protect underground cable without the use of conduit. Melting point is approximately 175° F.

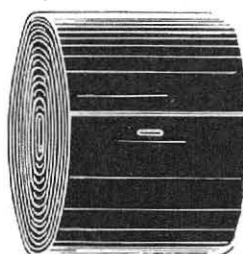
Parolite is easy to apply. A trench is dug and a wooden or metal trough is placed beside it. A trip of tarred felt paper is then laid in the trough and coating of Parolite applied. After the material has cooled slightly, the cable is laid on it and more Parolite is poured over it. The paper is then wrapped about the cable and as soon as the Parolite cools, the cable is laid in the trench and the earth filled in.

100 lbs. of Parolite will coat about 325 feet of 25 pairs, 300 feet of 50 pairs, 200 feet of 75 pairs, 165 feet of 100 pairs, 150 of 125 pairs, 125 feet of 150 pairs, and 100 feet of 200 pairs.

Furnished in open-top light metal drums containing approximately 400 lbs. each.

<i>Cat. No.</i>	<i>Description</i>	<i>Price per 100 Lbs.</i>
910	Drum of Parolite	\$3.00

### Tar Paper



Tarred felt paper that is used with cable compounds for burying lead-covered cable in the ground. Supplied in long strips as illustrated. The paper is laid in the trench under and around the cable and the melted compound is poured into the trough thus formed. The paper is then folded over to complete the installation.

<i>Cat. No.</i>	<i>Size</i>	<i>Weight per Roll</i>	<i>Price per Roll</i>
184TP	6" wide x 144' long	12 lbs.	\$0.80

### Pothhead Compound

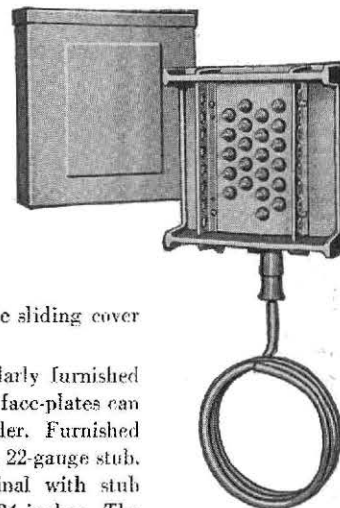
A pothead or filling compound of high insulating quality which is non-corrosive and will not melt at temperatures lower than 190° F.

<i>Cat. No.</i>	<i>Description</i>	<i>Weight</i>	<i>Price per Gal.</i>
11	1 Gallon Can	11 lbs.	\$1.70

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## Automatic-Sands Type 60 Unprotected Cable Terminals

The frame and core-box are made of cast iron, heavily-galvanized, and will outlast the pressed steel type of frame. The mounting bracket is detachable and is installed first and the terminal then hung on it. The entire terminal is reversible. The cable can be run from the top or the bottom—the sliding cover fitting either end.



The face plate is regularly furnished in porcelain but bakelite face-plates can be supplied on special order. Furnished with or without a six-foot, 22-gauge stub. The length of the terminal with stub varies from 15 inches to 24 inches. The width is 7¼ inches.

<i>Cat. No.</i>	<i>Capacity</i>	<i>Description</i>	<i>Price, Each</i>
SA-50	11 pair	Less Stub	\$ 6.65
SA-51	11 pair	With Stub	9.40
SA-52	16 pair	Less Stub	7.85
SA-53	16 pair	With Stub	11.20
SA-54	26 pair	Less Stub	11.20
SA-55	26 pair	With Stub	15.45

## Lead Covered Twisted Pairs



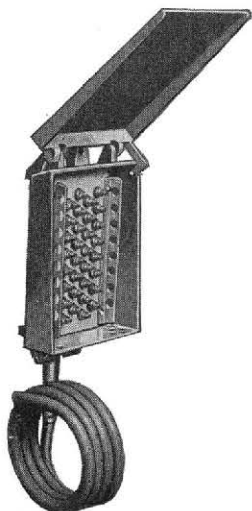
These lead-covered, rubber-covered wires are used for underground distribution, for railroad crossings, for mines or other installations where severe moisture conditions are encountered. When a subscriber objects to an overhead drop, many telephone companies are making it a practice to install this wire upon payment of the extra cost and extra installation charges.

Consists of No. 19 AWG copper conductors insulated with rubber compound and covered with lead antimony sheath. Furnished in one, two, or six pairs on reels of 1000 or 2000 feet as required.

<i>Cat. No.</i>	<i>No. of Pairs</i>	<i>Sheath</i>	<i>Outside Diam.</i>	<i>Price per 100 Ft.</i>
LCRC-1	One	3/64"	.311 in.	\$ 6.55
LCRC-2	Two	3/64"	.353 in.	8.00
LCRC-6	Six	4/64"	.688 in.	18.20



### Automatic-Sands Type 50 Unprotected Cable Terminals



This hot-galvanized malleable iron cable terminal has a hinged cover and is exceptionally durable even under conditions of extreme humidity.

Regularly furnished with porcelain face plate but bakelite plate can be supplied on special order. The cable may be carried out of the terminal at either the top or the bottom. Unless otherwise specified, all terminals shipped with stub have the cable entering at top.

As shown, Type 50 terminals are furnished with or without 6 foot No. 22 gauge stub.

Cat. No.	Capacity	Description	Price Each
SA-44	11 pair	Less Stub	\$ 6.65
SA-45	11 pair	With Stub	9.40
SA-46	16 pair	Less Stub	7.85
SA-47	16 pair	With Stub	11.20
SA-48	26 pair	Less Stub	11.20
SA-49	26 pair	With Stub	15.45

### Linemen's Flexible Safety Chair



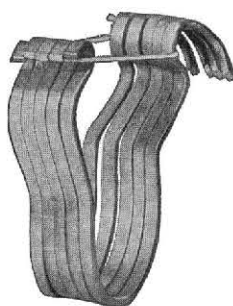
Furnished with two types of seat—the No. 7 or No. 8. The No. 7 seat is made of high grade fir reinforced with strap steel imbedded in wood. The No. 8 seat is made with belting of the best canvas, riveted at ends with copper rivets around electric welded iron hangers. Holes are provided in frame for safety belt attachment.

Rubber tired wheels that can easily be re-tired. Furnished without wheel guards unless otherwise specified.

Cat. No.	Seat Number	Height	Width	Weight Crated	Price Each
27	7	Adjustable	21"	26 lbs.	\$17.00
28	8	Adjustable	21"	26 lbs.	19.25

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### National Cable Rings

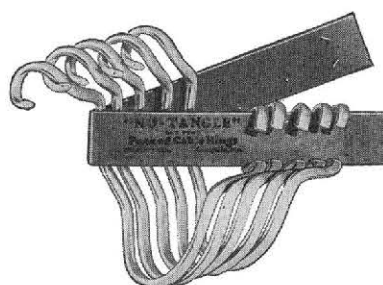


Easy to install by hand and may be removed without damage to the strand or ring. Cable can be pulled in from either direction, and neither the strain of this operation nor the swaying of the cable by the wind, can move the ring from its original position, for the greater the strain, the tighter the grip. Packed in Handy-Five clusters to prevent tangling.

It is very IMPORTANT to specify the size of strand on which rings are to be used when ordering.

Size	Strand Size	Std. Pkg. Quantity	Weight Per M	Price per 1000
1½"	Specify	1000	55 lbs.	\$17.65
2" Light	Specify	500	62 lbs.	20.15
2" Heavy	Specify	500	80 lbs.	23.85
2½"	Specify	500	98 lbs.	29.70
3"	Specify	400	120 lbs.	33.65

### Duplex Cable Rings



As illustrated, Duplex Cable Rings have a large bearing surface to support the cable. Both suspension hooks grip the messenger. Rings are easily clipped around the existing cables. Cable can be pulled from any direction. Special "No-Tangle" packing, as illustrated, permits easy handling. When ordering, specify size of strand on which rings are to be used.

#### Galvanized

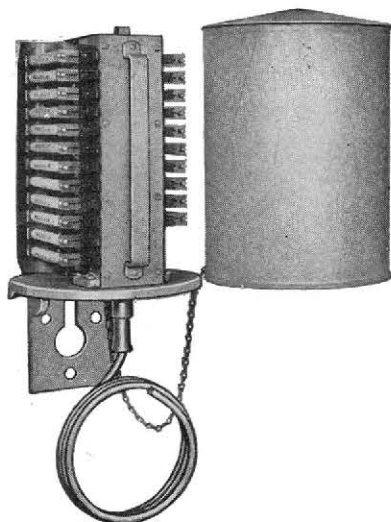
Cat. No.	Size	Box Quan.	Wt. per M	Price per 1000
150R	1½"	500	60 lbs.	\$17.65
200R	2"	500	93 lbs.	23.85
250R	2½"	250	136 lbs.	29.70
300R	3"	250	158 lbs.	33.65

### Bonding Ribbon

Consists of spools of ⅜ inch No. 14 copper strips used for bonding cable. Approximately 18½ feet to the pound. Furnished in 5 lb. spools.

Cat. No.	Description	Price per Lb.
5	5 lb. Spool of Bonding Ribbon	\$0.38

### Automatic-Sands Type 35 Protected Cable Terminals



With the exception of the fuses and the jumper wire protective strip, the entire terminal is metal. The hood is galvanized iron with zinc cap and rolled bottom edge so that no rust can form at top and bottom.

Each pair of protectors consists of two 5-ampere No. 17 wood fuses and two No. 2105 discharge blocks. When desired carbon blocks with mica dielectrics can be furnished instead of Type 2105 discharge blocks.

Furnished with or without a six-foot 22 gauge cable stub. Bell-shaped guard protects sheath at entrance to terminal. Diameter of cover is 9 inches. Height of terminal, including stub, varies from 22 inches to 34 inches.

Cat. No.	Capacity	Description	Price Each
SA-38	11 pair	Less Stub	\$16.25
SA-39	11 pair	With Stub	19.00
SA-40	16 pair	Less Stub	22.00
SA-41	16 pair	With Stub	25.30
SA-42	26 pair	Less Stub	30.65
SA-43	26 pair	With Stub	34.95

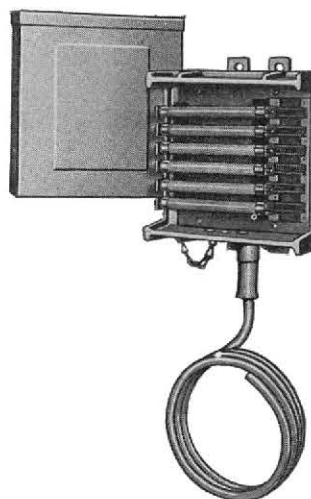


### Standard Canvas Bucket

For use in raising and lowering tools and materials when working aloft and for holding aerial cable rings while ringing strand. Made of No. 6 unbleached cotton duck with an oak tanned waterproofed leather bottom. It has a 12 inch welded steel ring in top. The leather bottom is 8 inches in diameter and the height of the bucket is 12 inches. It is equipped with  $\frac{3}{8}$  inch rope handle spliced through brass grommets and galvanized swivel boat sail snap.

Cat. No.	Dimensions	Price Each
1081	12" top, 8" bottom, 12" high	\$2.05

### Automatic-Sands Type 40 Protected Cable Terminals



This compact, small capacity cable terminal meets the wide need for a dependable, yet inexpensive, means of distributing a small number of cable pairs.

It is equipped with a detachable mounting bracket and a reversible cover so that the cable may be led from top to bottom. Installation is a simple, one-man job—the bracket being installed first and the terminal then hung on it.

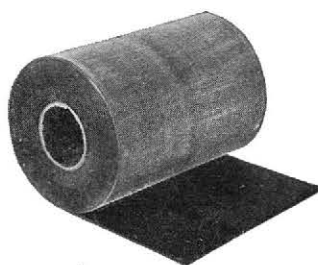
Each pair of protectors consists of two 5-ampere Type 17 fuses and two Type 2105 discharge blocks.

Fuses and discharge blocks are held firmly in place by separate spring tension; either can be quickly removed without disturbing the other. When desired, carbon blocks with mica dielectrics can be furnished instead of Type 2105 Discharge Blocks.

Furnished with or without six-foot 22-gauge cable stud. A bell shaped guard is provided to prevent sheath-cutting at the entrance to the terminal. Width is  $7\frac{3}{4}$  inches, length varies from 14 to 17 inches, including stub.

Cat. No.	Capacity	Description	Price Each
SA-30	3 pair	Less Stub	\$ 7.75
SA-31	3 pair	With Stub	9.45
SA-32	5 pair	Less Stub	10.40
SA-33	5 pair	With Stub	12.20
SA-34	7 pair	Less Stub	12.60
SA-35	7 pair	With Stub	15.80

### Rubber Insulating Bandage



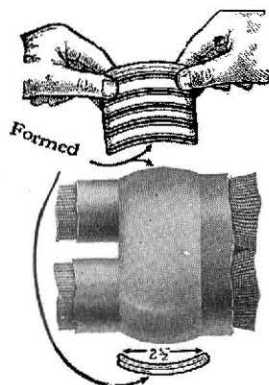
A strip of rubber 4 inches wide and 14 feet long, as illustrated, for use as a temporary wrapping to protect cable splices from moisture. Also used as a temporary insulating barrier for protection from high tension wires.

Cat. No.	Description	Size	Price Each
3040	Roll of Rubber Bandage	4"x14'	\$1.00

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### Formed Wiping Cloths

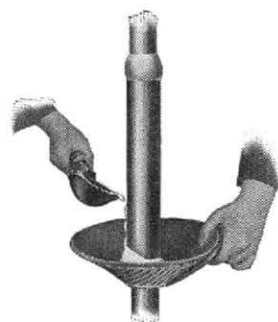


Cloth ticking with a curved shape to give a symmetrical wiping surface. Herringbone design. Require no breaking in as the firm press takes the clumsiness out of the cloth. Can be worked up to any desired flexibility by bending in the fingers. Has a slick, smooth surface to which solder cannot stick.

The catch cloths are straight edged, not formed, and are also made of ticking.

Cat. No.	Description	Size	Price Each
202	Formed Wiping Cloth	2½" x 2½"	\$0.30
303	Formed Wiping Cloth	3½" x 3½"	.38
404	Formed Wiping Cloth	4" x 4"	.45
505	Straight Catch Cloth	5" x 5"	.60
606	Straight Catch Cloth	6" x 6"	.68
607	Straight Catch Cloth	6" x 7"	.75
708	Straight Catch Cloth	7" x 8"	.90
808	Straight Catch Cloth	8" x 8"	.98

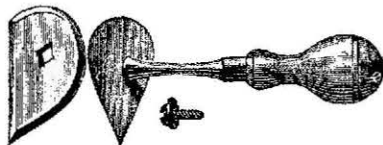
### Vertical Wiping Cloths



Circular pieces of cloth with ticking or moleskin facing and with hole in center to fit around cable as illustrated when making vertical splices. Makes joint wiping on vertical splices as easy as on horizontal splices. The wiping side which comes in contact with hot solder is smooth and free from stitches, laps, seams or edges. The surface is treated with a special dressing that protects the cloth from heat and prevents the solder from sticking to the surface.

Cat. No.	Facing	Outside Diameter	Center Opening	Price Each
109	Ticking	9"	1"	\$1.15
111	Ticking	11"	1¾"	1.60
212	Moleskin	12"	2¾"	2.00
314	Moleskin	14"	3¾"	2.20
617	Moleskin	17"	6"	3.25

### Shave Hooks

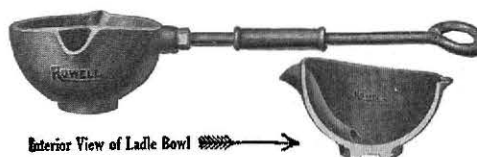


These are made so that the blade may be taken off or put on by means of the set screw, as illustrated. Furnished either with triangle or oval blades.

Cat. No.	Type of Blade	Length	Weight	Price Each
10	Triangle	5½"	2¾ lbs.	\$0.40
20	Oval	5½"	2¾ lbs.	.40

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### Bottom Pour Ladles



Interior View of Ladle Bowl

Self-skimming ladles that pour from the bottom. Metal flows out through the spout which runs from bottom of the bowl to the lip. Bowl made of iron with steel handle. Iron sleeve-handle is provided on 4-inch size ONLY to protect the user from burns by sliding to the outer end of handle when ladle is placed in fire. Approved by Underwriters' Laboratories.

Cat. No.	Bowl Dia.	Lead Capacity	Water Capacity	Length Overall	Price Each
3	3"	4 lbs.	¾ pt.	15½"	\$1.90
4	4"	4½ lbs.	½ pt.	20"	2.10

### Lead Sleeve



Lead sleeving can be furnished in any diameter or length to meet specific requirements. Listed below are some of the more commonly used sizes and lengths for 22 gauge cable, ½ inch wall. These sizes can also be furnished in 10 foot mill lengths for economy. Specify when ordering. All sleeving sold at lowest market prices.

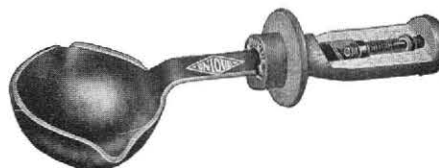
Cat. No.	Size of Cable	Inside Diameter	Length
1907	10- 15 pair	1¼"	16"
1908	25- 30 pair	1½"	16"
1909	50-100 pair	2"	20"
1910	150 pair	2½"	22"

### Hardwood Dressers



Cat. No.	Wt. per Doz.	Price Each
30	10 lbs.	\$1.10

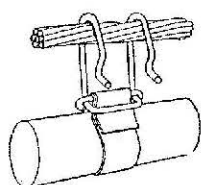
### Unique Pouring Ladles



A short ladle with wood handle. Air space around the shank keeps handle cool. Designed with lips lower than bowl and rounded to enable user to pour solder drop by drop or in a large stream without spilling over the edge.

Cat. No.	Diameter of Bowl	Depth of Bowl	Capacity	Price Each
221	2½"	1⅞"	⅓ pint	\$1.24
222	3"	1½"	¼ pint	1.24
223	3½"	1¾"	⅓ pint	1.35
224	4"	2"	½ pint	1.35

### Zinc Cable Clips

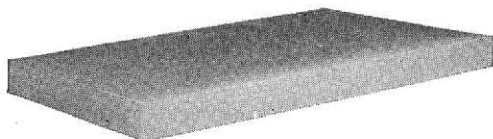


A special clip designed to eliminate ring cutting. Furnished in lengths to fit all sizes of cable. The usual method when installing new cable is to use rings so that the cable can be pulled-in in the regular manner—after which the four rings nearest the pole are replaced with cable clips.

When ordering, give the length of the strap, the size of the strand on which the clips are to be hung and, if the replacement of rings is planned, give the size of the rings. Furnished complete—strap and hook.

Cat. No.	Strap Length	Weight per M	Price per 100
7041	4"-5"	70 lbs.	\$2.40
7042	6"-7"-8"	85 lbs.	2.58
7043	9"-10"-11"	100 lbs.	2.80
7044	12"-14"	110 lbs.	3.05
7045	14" to 20"	140 lbs.	3.40

### Paraffin



Used for boiling out paper insulated cable. Can be supplied in any quantity desired but is usually furnished in 11 lb. cakes as illustrated or in full bags.

Cat. No.	Description	Weight	Price per Lb.
11	Cake of Paraffin	11 lbs.	\$0.095
250	Bag of Paraffin	250 lbs.	.095

### Beeswax



Finest quality beeswax for impregnating or boiling out cable forms, cores of silk and cotton cables to render them moisture-resisting and prevent the insulation from fraying. Furnished in one-pound cakes.

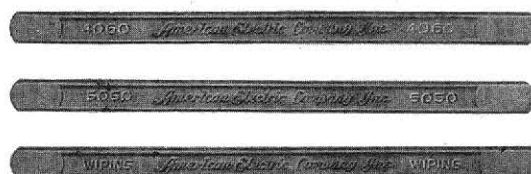
Cat. No.	Description	Price per lb.
962	1 lb. Cake of Beeswax	\$0.45

### Melting Pots



Cat. No.	Diam.	Weight Each	Price Each
398-5	5"	2 3/4 lbs.	\$0.75
398-6	6"	3 1/2 lbs.	1.00
398-8	8"	8 lbs.	1.65

### Bar Solder



Furnished in 1 1/2 lb. bars packed 100 lbs. to a box.

No. 4060 contains 40% tin, 60% lead  
No. 5050 contains 50% tin, 50% lead  
Wiping contains 37% tin and 63% lead

Price  
per Lb.  
\$0.32  
.35  
.31

### Wire Solder

Supplied in either 40/60 or 50/50 grades in 5 lb. spools.  
40/60, per Lb., \$0.34 50/50, per Lb., \$0.37

### Allen Soldering Stick



A convenient cylindrical form of flux. Easy to carry—easy to apply. No waste in using—just apply to the heated joint. Non-corrosive.

Cat. No.	Description	Price Each
44	Allen Soldering Stick	\$0.26

### Candles



Both wickless stearine (stearic acid) or plumber's (tallow) candles. For application to lead sheath prior to pouring on hot lead in making splices. The stearine candles are sold by the pound—approximately five to the pound. Plumber's candles are sold by the dozen.

Cat. No.	Description	Length	Price
21	Stearine	4 1/2"	\$0.40 per lb.
35	Plumber's	4"	.60 per doz.

### Nokorode Soldering Paste



Will solder all metals with the exception of aluminum.

Cat. No.	Quantity	Wght.	Price Ea.
2-P	2 oz. can	2 oz.	\$0.15
3-P	1 lb. can	1 lb.	.90
4-P	10 lb. can	10 lbs.	4.00

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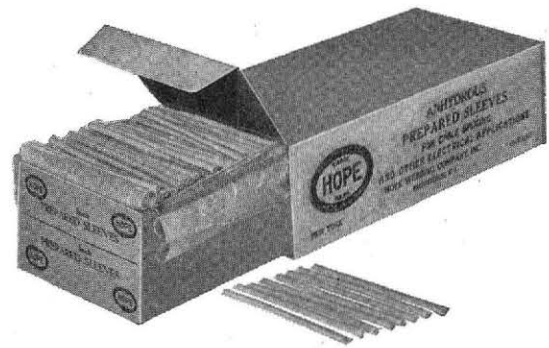
### Acid and Rosin Core Solder



This solder is a hollow lead wire filled with a chemical flux. By applying the soldering iron heated it is self-fluxing. Rosin core supplied unless otherwise specified. Furnished in 1, 5, 10 and 20 lb. spools.

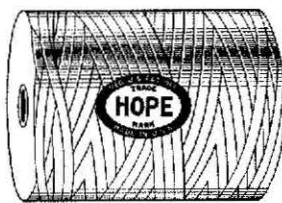
Price per lb., \$0.58

### Prepared Sleeves



Prepared waxed cotton sleeves all ready for use. Packed in moisture-proof boxes as follows:

Cat. No.	Length	Size	Approx. No. of Sleeves in Box	Price per Box
1	3 1/4"	1/8"	700	\$0.72
2	3 1/4"	3/16"	400	.58
3	3 1/4"	1/4"	200	.58
4	3 1/4"	3/8"	100	.58



### Cotton Sleeving

A tubular white cotton fabric used to insulate bare wires for ties, relays, keys or jacks. Regularly supplied in 1 lb. spools in the following sizes:

Cat. No.	Diameter	Yards per Pound	Price per Lb.
345	3/8"	270	\$2.15
1030	5/8"	200	1.65
61	1 1/8"	85	1.55

### Wiping Cloths



No. 371 Ticking

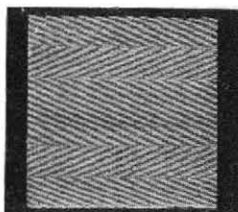


No. 471 Moleskin

Made in the following sizes:

Cat. No.	Size	Material	Price Each
371	2 1/2" x 2 1/2"	Ticking	\$0.20
372	3 1/2" x 3 1/2"	Ticking	.20
373	4" x 4"	Ticking	.40
471	2 1/2" x 2 1/2"	Moleskin	.40
472	3 1/2" x 3 1/2"	Moleskin	.40
473	4" x 4"	Moleskin	.60

### Cable Splicer's Cotton Tape

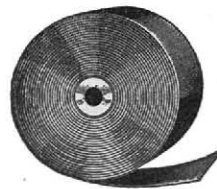


1 inch cotton tape used to protect insulation of cable conductors from the cut edges of lead sheath. Should not be confused with cable splicer's muslin which is 4" wide.

Cat. No.	Dimensions	Price per Roll
1493	1" wide x 18 yds. long	\$0.20

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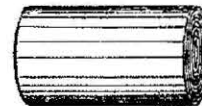
### Cable Pasters



2-inch white paper gummed on one side for use in limiting the length of a wiped joint and giving it a neat and finished appearance. Furnished in rolls of 100 feet.

Price per roll, \$0.15

### Cable Splicer's Muslin



Also called Muslin Tape. Used for wrapping cable splices. Put up in rolls 4" wide and 10 yards long (approximate) as illustrated.

Cat. No.	Size	Price per Roll
184-M	4" x 10 yds.	\$0.22

### Lock-Nut Sectional Ladders



Made of spruce with ash or oak bars. Each section is 6 feet in length and is protected with iron plates and equipped with large bolts and thumb nuts. Can be furnished with one, two, three, four or five sections.

Cat. No.	Description	No. of Sections	Length	Price Each
6	Sectional Ladder	1	6'	\$3.00
12	Sectional Ladder	2	10'	6.00
18	Sectional Ladder	3	15'	9.00

## American Beauty Electric Soldering Irons



Finished in chrome plate with Ebonoid finish wood handle. These irons have specially heat-treated non-oxidizing removable tips.

Cat. No.	Tip Dia.	Watts	Length	Weight Each	Price Each
3138	$\frac{3}{8}$ "	100	12 $\frac{1}{8}$ "	14 oz.	\$4.79

## Vulcan Electric Soldering Irons



Equipped with 6 foot flexible cords and separable attachment plugs. Will operate on either A. C. or D. C. current and are wound for all standard voltages. Unless otherwise specified, irons wound for 110-120 volts will be furnished. Lengths are adjustable.

The No. 30 is suitable for the tool kit and is equivalent to 1 $\frac{1}{2}$  lb. per pair coppers. The No. 50 is for general switchboard work and is equivalent to 3 $\frac{1}{2}$  lb. per pair coppers.

Cat. No.	Watts	Tip	Net Weight	Price Each
30	60	$\frac{1}{2}$ "	12 oz.	\$6.25
40	90	$\frac{1}{2}$ "	14 oz.	7.00
50	130	$\frac{7}{8}$ "	18 oz.	8.00

## Unique No. 3 Blowtorch



A sturdy, well-balanced, non-tilting gasoline torch for heavy duty work. Generating veins are directly under the flame—insuring complete vaporizing and producing a flame of intense heat which can be throttled down fine. The orifice is kept clear of foreign particles by means of a steel needle.

Fitted with a dependable pump of short stroke. Angular restful handle for easy gripping. Regularly furnished for gasoline but can be supplied for kerosene on special order.

Cat. No.	Capacity	Dimensions	Weight Each	Price Each
3	1 qt.	5 $\frac{5}{8}$ " x 5 $\frac{1}{2}$ "	4 $\frac{3}{8}$ lbs.	\$6.80

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## Soldering Coppers



Soldering coppers are always marked with the weight of a pair. To order one only, ask for a copper double its actual weight. For example, to obtain a copper of 1 lb. actual weight, ask for 1 only 2 lb. copper.

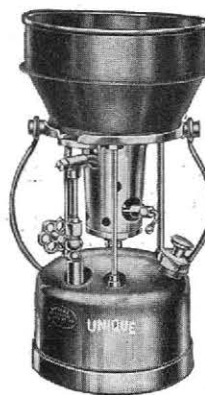
No.	Soldering Coppers	Weight	Price per Lb.
No. 1	Soldering Coppers	3 lbs. to pair	\$0.37
No. 2	Soldering Coppers	2 $\frac{1}{2}$ lbs. to pair	.40
No. 3	Soldering Coppers	2 lbs. to pair	.41
No. 4	Soldering Coppers	1 $\frac{1}{2}$ lbs. to pair	.43
No. 5	Soldering Coppers	1 lb. to pair	.46

## Soldering Copper Handle



Cat. No.	For Soldering Coppers	For Shank Sizes	Weight Each	Price Each
1	Nos. 4 and 5	$\frac{3}{32}$ " to $\frac{3}{8}$ "	4 oz.	\$0.49
2	Nos. 1, 2, 3	$\frac{3}{8}$ " to $\frac{1}{2}$ "	6 oz.	.56

## Unique Furnaces

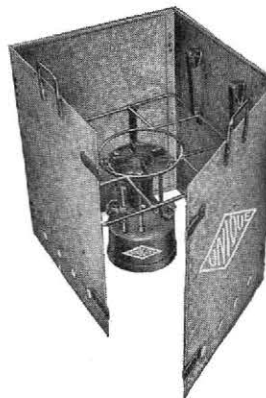


Patented generator gives intense heat that melts 50 lbs. of solder in ten minutes. Operates satisfactorily in the strongest wind and in sub-zero weather. Equipped with heavy duty pump.

The orifice is cleared of foreign particles by merely turning the cleaner handle. Furnished for gasoline or kerosene.

Cat. No.	Description	Cap.	Wt. Each	Price Each
53	Gasoline	1 Gal.	13 lbs.	\$13.60
55	Kerosene	1 Gal.	13 lbs.	14.96

## Safety Folding Wind-Shield

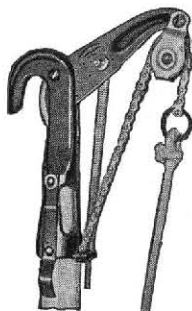


The No. 50 is a sturdy outfit with a welded grate of  $\frac{5}{8}$  diameter which is used for supporting paraffin pots, kettles, etc. The No. 50A is the same as the No. 50 but without grate. The No. 50C is a similar shield of three sides only—without the grate.

Cat. No.	Dimensions	Price Each
50	23" x 19" x 19"	\$11.48
50-A	23" x 19" x 19"	7.50
50-C	23" x 17 $\frac{1}{2}$ " x 17 $\frac{1}{2}$ "	5.25



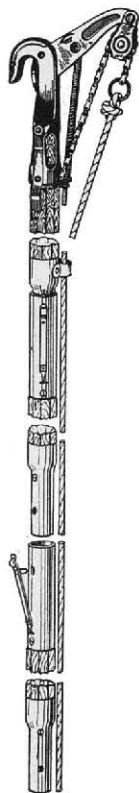
### Seymour Smith Tree Pruners



These Nos. 11-18 and 12-18 Pruners have won wide popularity among telephone companies. Simple cutting head has only two moving parts. Blade is highest quality tool steel and spring is special vanadium steel. The sectional poles are Sitka spruce with simple locking joints made of brass.

The 11-18 Trimmer is used for all but the heaviest work. It will cut limbs up to 1 inch diameter and can be carried up trees easily. For heavier work the 12-18 Trimmer should be used.

Complete Trimmer consists of pruner, 6-foot head section and two 6-foot extension sections. Other outfits can be made up to meet special requirements.



#### Light Trimmer

Cat. No.	Description	Price Each
11-18	Complete Trimmer—18' in length	\$ 7.50
11-A	Telephone pruner head only	1.65
11-B	6-foot head section pole—1 1/4" dia.	1.50
11-C	6-foot extension section pole—1 1/4" dia.	2.25
11-D	8-foot head section pole—1 1/4" dia.	1.91
11-E	8-foot extension section pole—1 1/4" dia.	2.81

#### Heavy Trimmer

Cat. No.	Description	Price Each
12-18	Complete Trimmer—18' in length—1 3/4" dia.	\$11.25
12-A	Telephone pruner head only—1 3/4" dia.	3.30
12-B	6-foot head section pole—1 3/4" dia.	2.00
12-C	6-foot extension section pole—1 3/4" dia.	3.19
12-D	8-foot extension section pole—1 3/4" dia.	2.81
12-E	8-foot extension section pole—1 3/4" dia.	4.12

### Seymour Smith Pruning Saw

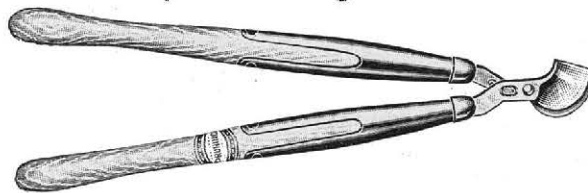


Used in line clearing work to cut limbs too large for tree pruners. Saves tree climbing. High quality 16 inch replaceable blade with fast cutting teeth—easily adaptable to six different angles. Head also has paint brush holder to hold brush for painting over cuts.

Uses same poles as No. 11-18 Tree Pruner. For poles, see above.

Cat. No.	Description	Price Each
10	Tree Pruning Saw (complete except for pole)	\$1.87
10G	Guard for Saw Blade	1.31
10B	Extra Saw Blade only	1.35

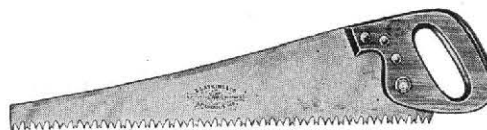
### Clyde Pruning Shears



Forged, solid tool steel blade and hook, held together with round head iron rivet. Northern second growth ash handle with natural finish and polished pressed steel strap ferrule and cap. Furnished as follows:

Cat. No.	Description	Length of Handles	Price Each
5406-20	Clyde Pruning Shears	20"	\$1.50
5406-24	Clyde Pruning Shears	24"	2.00

### Tuttle Tooth Pruning Saw



A high grade saw steel blade with tuttle-tooth pattern. Handle of air dried beech, Davey pattern. Extra large, roomy grip reinforced with dowel pin.

Cat. No.	Description	Length	Price Each
40-A	Tuttle Tooth Pruning Saw	20"	\$2.20
40-B	Tuttle Tooth Pruning Saw	24"	2.61

### Curved Pruning Saw



A fast working saw with curved blade which gives correct stroke for full, easy cut. Large grip beech handle. Furnished complete with belt snap. Easy to remove saw from belt with one hand.

Cat. No.	Description	Length	Price Each
14	Curved Pruning Saw	26"	\$4.30

### Hand Saws



Made of special hand-saw steel—hand smithed—oil tempered. Designed for hard and constant service. Crosscut or rip as follows:

Cat. No.	Description	Length	Price Each
4	Hand Saw—Crosscut	24"	\$2.67
5	Hand Saw—Crosscut	26"	2.67
13	Hand Saw—Rip	26"	2.67
15	Hand Saw—Rip	24"	2.67

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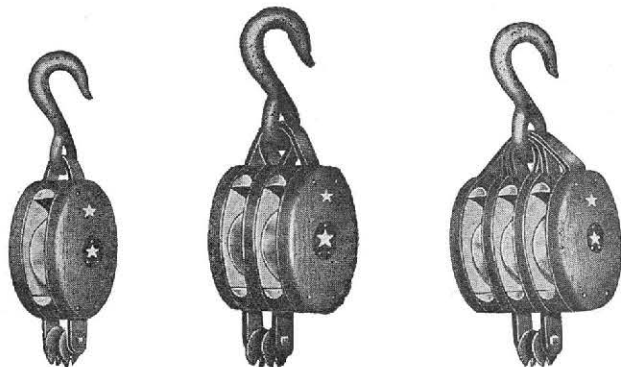
### Coffing Hoists

Used for pulling guys or other work around the plant where a lift or pull is needed.

The Model F-S is the same as the Model F except that an iron block and 5 feet of chain are added to give it additional capacity. Similarly the Type A-S is the same as the Type A except for these additional items and capacity.

Cat. No.	Description	Rated Capacity	Weight Each	Price Each
101	Model A	¾ ton	14 lbs.	\$33.00
102	Model F	1½ tons	25 lbs.	47.50
103	Model F-S	3 tons	36 lbs.	59.50
104	Model A-S	1½ tons	19 lbs.	41.00
105	Model F-T	3 tons	34 lbs.	59.50
105-A	Model AT	1½ tons	17 lbs.	41.00

### Wood Pulley Blocks



Can be supplied with common or roller bushings. Roller bushings supplied unless otherwise specified.

Cat. No.	No. of Sheaves	Size Sheaves	Size Shell	Dia. of Rope	Price Each
25	Single	1¼" x ½"	3"	⅝"	\$0.77
27	Single	2¼" x ⅝"	4"	½"	.84
32	Double	1¼" x ½"	3"	⅝"	1.40
34	Double	2¼" x ⅝"	4"	½"	1.58
39	Triple	1¼" x ½"	3"	⅝"	2.03
41	Triple	2¼" x ⅝"	4"	½"	2.28

### Malleable Iron Pulleys

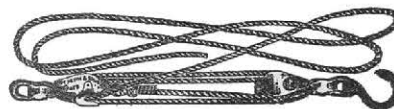
Lightweight, inexpensive pulleys with 2¼" shells for ⅝" rope. The sizes and styles shown are the ones most generally used but other sizes and types can be furnished on special order.



Cat. No.	Type	No. of Sheaves	Price Each
1	Eye Only	Single	\$0.35
2	Eye Only	Double	.45
13	Eye and Eye	Single	.35
14	Eye and Eye	Double	.45
16	Hook and Eye	Single	.85
17	Hook and Eye	Double	.95

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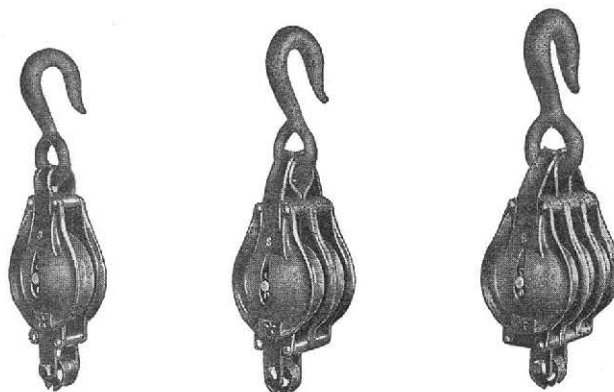
### Self-Locking Block Tackle



Designed for use with Klein's wire grips. To lock load, pull huff rope under hook. To release simply pull rope. When pulling up wire to make a splice, it may be used with two grips attached to snaps or with the drop forged hook (shown in illustration) to anchor to an insulator-pin or other convenient anchorage.

Cat. No.	Description	Weight Each	Price Each
1802-30	With 25 ft. Manila Rope	2½ lbs.	\$3.60

### Malleable Iron Pulley Blocks



Can be furnished with either common iron or roller bushings. Roller bushings will be supplied unless otherwise specified.

Cat. No.	No. of Sheaves	Size Sheaves	Size Shell	Dia. of Rope	Price Each
100	Single	1¼" x ½"	3"	⅝"	\$1.19
101	Single	2¼" x ⅝"	4"	½"	1.40
200	Double	1¼" x ½"	3"	⅝"	1.91
201	Double	2¼" x ⅝"	4"	½"	2.30
300	Triple	1¼" x ½"	3"	⅝"	2.38
301	Triple	2¼" x ⅝"	4"	½"	3.15

### Wrought Iron Snatch Block



For manila rope. Wrought iron straps, safety-locking link; smooth, rounded edges to prevent chafing rope. Malleable iron hollow shell. Extra heavy drop forged flattened stiff swivel hooks. Roller bushed unless otherwise specified.

Cat. No.	For Rope	Length of Shell	Price Each
500	⅝" dia.	6"	\$5.15
501	⅝" dia.	7"	6.25
502	1" dia.	8"	7.35



**Oblique Cutting Pliers**

A close cutting plier with narrow head that permits working in confined places. Perfect fitting knives that meet accurately at all points. Has lap joint.

**Standard Type**

Cat. No.	Size	Weight per Doz.	Price Each
202-5	5"	4 lbs.	\$1.80
202-6	6"	4 1/4 lbs.	2.00

**With Wire Stripping Notch**

Cat. No.	Size	Weight per Doz.	Price Each
240-5	5"	4 lbs.	\$2.00
240-6	6"	4 1/2 lbs.	2.30

**Diagonal Pliers with "W" Notches**

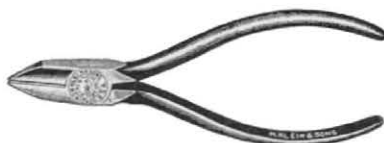
A new type of plier with two "W" shaped stripping notches at back of head. These notches are specially designed to strip the new cellulose acetate jumper wire. Also effective for stripping other wires with outside diameters ranging from .050" to .058".

Cat. No.	Size	Weight per Doz.	Price Each
245-5-W	5"	2 3/4 lbs.	\$2.10

**Cord Crimping Pliers**

A long nose plier with an oval groove for crimping telephone cords. Point is 3/8" round.

Cat. No.	Size	Weight per Doz.	Price Each
301-C	6"	3 lbs.	\$2.00

**Narrow Nosed Oblique Pliers**

A new and popular plier with a narrow hinge and pointed nose enabling convenient use in confined space. Knives are perfectly matched for clean cutting.

Cat. No.	Size	Weight per Doz.	Price Each
202-5-A	5"	4 lbs.	\$1.80

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**Side Cutting Pliers**

Cat. No.	Size	Weight per Doz.	Price Each
201-6	6"	5 lbs.	\$2.25
201-7	7"	7 1/2 lbs.	2.65
201-8	8"	12 lbs.	2.90

**Long Nose Pliers—Without Cutters**

Features are its adaptability to stripping the ends of insulated wire and the extra long reach of the jaws which permits getting into difficult places.

Cat. No.	Size	Weight per Doz.	Price Each
301-5	5"	2 3/4 lbs.	\$1.60
301-6	6"	3 lbs.	1.75

**Long Nose Side Cutting Pliers**

Has the same features as the No. 301, shown above, with the addition of cutting knives.

Cat. No.	Size	Weight per Doz.	Price Each
203-5	5"	2 3/4 lbs.	\$1.90
203-6	6"	3 lbs.	2.10

**Long Needle Nose Pliers**

This tool has all the features of the No. 301 shown above, with the exception of the points of the nose. The needle-like points make these pliers more useful for general work done in central offices.

Cat. No.	Size	Weight per Doz.	Price Each
303-6	6"	3 lbs.	\$1.75

**Spring Adjusting Pliers**

A specially designed flat nose plier formed to reach between and grasp springs easily. Makes rapid, accurate adjustments possible.

Cat. No.	Size	Weight per Doz.	Price Each
311	5 1/2"	3 1/4 lbs.	\$1.90

## Klein Clamps



## Pocket Size

Five round holes for bare wire. For copper wire Nos. 8, 10, 12, 14, 16, B & S Gauge. For iron wire Nos. 10, 12, 14, 16, 18, B. W. G.

Cat. No.	Length	Weight per Doz.	Price Each
102-1	8"	6 lbs.	\$2.60



For twisting double tube sleeves. Convenient pocket size. For copper sleeves Nos. 8, 10, 12, 14, 17, B & S Gauge. For iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

Cat. No.	Length	Weight per Doz.	Price Each
105-15	8"	5 lbs.	\$2.75



## Standard Size

Five round holes and one large oval hole for bare wire. Large hole can be used in severing guy wire or messenger strand. For copper wire Nos. 2, 4, 6, 8, 10, 12, B & S Gauge. For iron wire Nos. 4, 6, 8, 10, 12, 14, B. W. G.

Cat. No.	Length	Weight per Doz.	Price Each
102-3	10 3/4"	15 lbs.	\$3.35

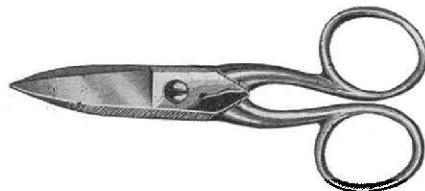


## Combination

Combination wire and sleeve clamp. Has five round holes for twisting bare wire—copper Nos. 4, 6, 8, 10, 12, B & S Gauge or iron Nos. 6, 8, 10, 12, 14, B. W. G. One oval hole for guy strand. Reverse side has five double chambers for twisting sleeves. Copper sleeves Nos. 6, 8, 10, 12, 17, B & S Gauge. Iron sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G. Oval hole .437x.624 inches.

Cat. No.	Length	Weight per Doz.	Price Each
132-15	11 1/4"	15 1/2 lbs.	\$4.75

## Electrician's Scissors



These are high grade, well constructed scissors. Especially adapted for telephone work.

Cat No.	Length	Price Each
2100-5	5"	\$0.85

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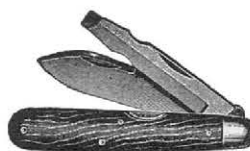
## Lineman's Wrench



Openings at larger end are 1 1/8 inch and 1 3/8 inch, the smaller end 1 1/8 inch and 5/8 inch. There is a hole provided at the larger end so that the wrench may be used for turning in standard pole steps.

Cat. No.	Length	Weight per Doz.	Price Each
3146	13"	21 lbs.	\$2.50

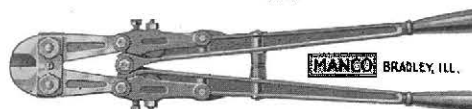
## Electrician's Knife



A handy combination for all electrical work consisting of a screw driver and knife blade. Screw driver blade has cutting edge for stripping or cutting wire. It locks when opened and is released by pressing down on the knife blade.

Cat. No.	Length of Blade	Weight per Doz.	Price Each
1550-2	2 1/2"	2 1/4 lbs.	\$1.35

## Bolt Clippers



Blades of highest quality steel with strong cutting edges. Will cut nuts, bolts or wires with slight pressure.

Number	Length	Will Cut bolt—size	Price Each
0	18"	1/8"	\$4.15
1	24 1/2"	3/8"	5.25
2	30"	1/2"	6.60
3	36"	5/8"	8.45

## Klein's Canvas Tool Bags



Made of one-piece white duck reinforced around the bottom with heavy leather. Mouth formed by 12 inch steel frame.

Cat. No.	Size	Weight Each	Price Each
5102-14	14"	3 lbs.	\$4.50
5102-18	18"	3 3/4 lbs.	5.25
5102-20	20"	3 3/8 lbs.	5.75



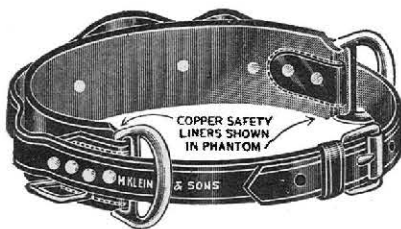
### Klein Safety Strap



Standard type for general use. Made of first quality leather with solid copper rivets set with burrs. Securely sewed with harness thread, hot waxed, lock stitched. Galvanized roller snaps and buckles are drop forged and individually tested to 1500 pounds. An easy adjustment of the buckle shortens or lengthens the belt. Reinforced at both ends with safety clips of stainless steel riveted through double thickness of leather.

Cat. No.	Description*	Width	Snaps	Price Each
5250	Safety Strap	1 3/4"	Standard	\$4.85
KL-5250	Safety Strap	1 3/4"	"Klein-Lok"	5.35

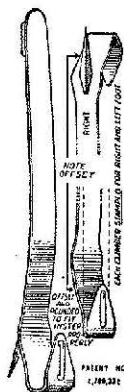
### Klein Safety Belt



The cushion is 3 1/2 in. wide, making it comfortable to recline in when using safety strap. Made in lengths 34, 36, 38, 40, 42, 44, 46, and 48 inches. Specify length required, measuring from end of buckle to middle hole at the other end of belt.

Cat. No.	Width	Weight per Doz.	Price Each
5204	3 1/2"	32 lbs.	\$5.10

### Offset-Gaff Climbers



These Stephens climbers are made with the gaff offset to relieve leg pressure, to give the wearer greater comfort and to lessen the tendency to "ring around" and "cut out" on poles.

Each climber is stamped "right" and "left" designating the foot for which each is intended.

The climbers listed below are of the popular "Light Weight" type and will be furnished unless otherwise specified. "Medium Weight" (heavier) or "Feather Weight" (lighter) types can be supplied on special order.

Cat. No.	Description	Length	Price Per Pair
27A-L-15	Offset-Gaff Climbers	15"	\$3.90
27A-L-15 1/2	Offset-Gaff Climbers	15 1/2"	3.90
27A-L-16	Offset-Gaff Climbers	16"	3.90
27A-L-16 1/2	Offset-Gaff Climbers	16 1/2"	3.90
27A-L-17	Offset-Gaff Climbers	17"	3.90

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### Klein's Standard Climbers



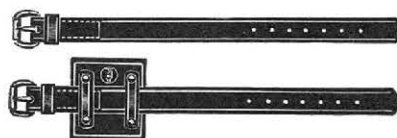
Safe, dependable and comfortable. The gaff or spur is of tool steel, individually tested and tempered and set at the correct angle. The shank or leg iron is forged from spring steel insuring the greatest strength and allowing it to yield to the pressure of the leg. The gaff and shank are securely hand riveted and tested.

Furnished in three types as shown. The lightweight type is popular with many linemen who find the reduction in weight desirable.

Furnished less strap unless otherwise specified. In ordering mention the length of shank wanted. Measure from the instep to the end of shank. Stock sizes: 15, 15 1/2, 16, 16 1/2, 17, 17 1/2 and 18 in.

Cat. No.	Description	Weight per Pair	Price per Pair
1901	(Standard) Punched Strap Loops	3 3/4 lbs.	\$3.50
1900	Riveted Strap Loops	3 3/4 lbs.	3.50
1903	(Lightweight) Riveted Strap Loops	2 3/4 lbs.	3.50

### Straps for Eastern Climbers



This set consists of two upper straps with 4x4 inch plain leather pads and two lower straps made of select oak tanned harness leather, extra heavy drop forged roller buckles. Heel straps 22 inches long by 1 1/4 inches wide.

Cat. No.	Description	Weight per Doz.	Price per Set
5301-1	Plain	15 lbs.	\$3.45
5301-2	Same with Sheep Lined Pads	16 lbs.	3.70

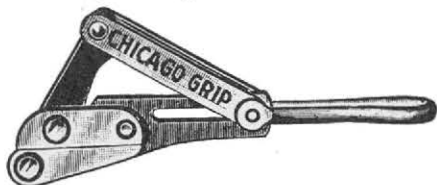
### Pads for Eastern Climbers



These pads are made of select plain leather lined with sheepskin or felt, arranged with loops through which to slip climber straps.

Cat. No.	Description	Weight per Doz.	Price per Set
8200	Sheep Lined 4"x4"	3 lbs.	\$0.85
8201	Felt Lined 4"x4"	3 lbs.	.85
8202	Plain Leather 4"x4"	3 lbs.	.65

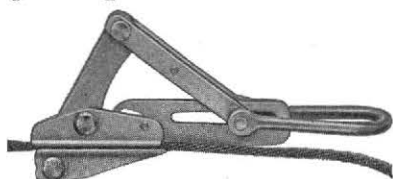
## Chicago Grips for Bare Wire



The harder the pull, the tighter the hold. It pulls straight without leaving kinks in the wire. Handy to put on and holds itself in place by means of a spring acting on the compressing lever. The draw link is so arranged that it does not hang down at right angles and is not in the way of line when grip is put on.

Cat. No.	Description	Max. Opening	Price Each
1613-30	For No. 6 Wire and smaller	$\frac{3}{8}$ "	\$2.00
1613-40	For No. 0 Wire and smaller	$\frac{5}{8}$ "	4.00
1613-50	For No. 0000 Wire and smaller	$\frac{1}{2}$ "	6.75

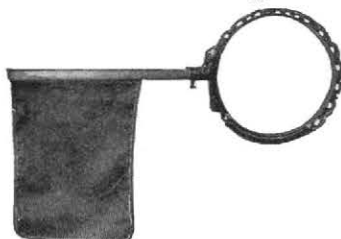
## Chicago Grips for Cable and Strand



A larger grip for use on heavy loads in connection with messenger stand and cable. Jaws must be kept free of grease or spelter from strand.

Cat. No.	Description	Max. Opening	Price Each
1628-5	For 6,000 lb. Load	$\frac{7}{8}$ "	\$ 7.00
1628-6	For 8,000 lb. Load	$\frac{1}{2}$ "	11.20
1628-16	For 15,000 lb. Load	$\frac{1}{2}$ "	22.35

## Danger Flags



Furnished without holder unless the latter is specifically ordered. The holder is designed to fit all poles and is fitted with lock and chain to keep flag in upright position at all times.

Cat. No.	Description	Size	Price Each
1110	Danger Flag Only	12"x16"	\$0.35
1111	Complete with holder		2.00

## Pole End Sign



Bright red fabrikoid material with white lettering mounted on steel frame. Multi-angle glass reflector flashes warning at night to approaching drivers. Sign is attached to pole with 3 inch screw eye through opening in the steel.

Cat. No.	Description	Size	Price Each
DRS	Pole End Sign	16" Overall	\$2.00

## Socket Framing Chisels



The blades are 8 inches in length made of extra heavy cross section solid steel.

Cat. No.	Description	Length	Width	Price Each
261-2	Socket Framing Chisel	17 $\frac{1}{2}$ "	2"	\$1.54

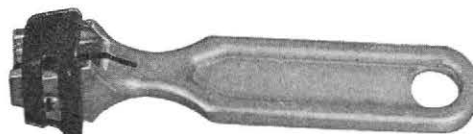
## Spintite Socket Wrenches



Hollow shank so that the socket will reach down over the bolt and grip the nut.

Cat. No.	Size	Description	Length	Price Each
3410	$\frac{1}{8}$ "	Spintite Wrench	6"	\$0.50
3412	$\frac{3}{8}$ "	Spintite Wrench	6"	.50
3414	$\frac{1}{2}$ "	Spintite Wrench	7 $\frac{1}{8}$ "	.50

## Braid Stripper



For use in removing the braid covering from parallel drop wire. Consists of a tool steel disc blade mounted in an aluminum alloy handle. The blade is contained in a groove in which the wire is placed. A movable steel guard is used to hold the wire in the groove in the correct position for cutting.

Cat. No.	Description	Price Each
6288	Braid Stripper for Parallel Drop Wire	\$1.25

## Pocket First Aid Kits



An inexpensive packet for linemen consisting of a small metal box 4x2 $\frac{1}{2}$ x $\frac{7}{8}$  inches complete with first aid material. The standard fill consists of one 3" compress bandage, three 1" adhesive compresses, one 3" x 2 yards gauze roller bandage, one 1" x 2 yards gauze roller bandage, one 12" square picric acid gauze, one Iodine swab, one Ammonia inhalant and one accident report card. Other fills can be obtained on special order.

Cat. No.	Description	Price Each
FA-2001	No. 2 Pocket First Aid Kit	\$0.48

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### Hack Saw Frames



A substantial cast steel hack saw frame with "pistol grip" handle. Will take 8, 10 or 12-inch blades.

Cat. No.	Description	Weight	Price Each
10	Hack Saw Frame	1 3/4 lbs.	\$2.00

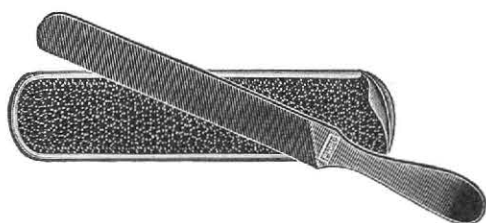
### Hack Saw Blades



Made of highest quality tungsten steel—1/2 inch wide and .025 inch thick—18 teeth to the inch. Furnished in packages of 1 dozen. Box contains six dozen.

Cat. No.	Description	Length	Price per Gross
11	Hack Saw Blades	8"	\$5.00
12	Hack Saw Blades	10"	6.00
15	Hack Saw Blades	12"	8.10

### Plumb All-Work Files



Double cut on one side and single cut on the other. Furnished as shown with sheath.

Cat. No.	Description	Length with Handle	Weight per Doz.	Price Each
AW1	All-Work File	10"	4 1/2 lbs.	\$0.35

### Plumb Broad Hatchets



Weights shown do not include handles.

Cat. No.	Size	Bit	Weight	Price Each
2991	1	4"	1 lb. 8 oz.	\$1.85
2993	3	5"	2 lb. 2 oz.	2.15
2994	4	5 1/2"	2 lb. 8 oz.	2.45

### Plumb Single Bit Axes



High quality axes of special analysis steel.

Cat. No.	Handle Length	Weight of Head	Price Each
3 1/2	26"	3 1/2 lbs.	\$2.05
4	26"	4 lbs.	2.11

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### Plumb Nail Hammers



Adze eye, bell face. High grade tools with patented take-up wedge that keeps the handles on tight. Red handles and black heads. Weights given do not include handles.

Cat. No.	Description	Size	Weight	Price Each
HF80	Nail Hammer	11	1 lb. 4 oz.	\$1.20
HF81	Nail Hammer	11 1/2	1 lb.	1.00
HF82	Nail Hammer	12	13 oz.	.95
HF83	Nail Hammer	13	7 oz.	.90
HF84	Nail Hammer	14	5 oz.	.90

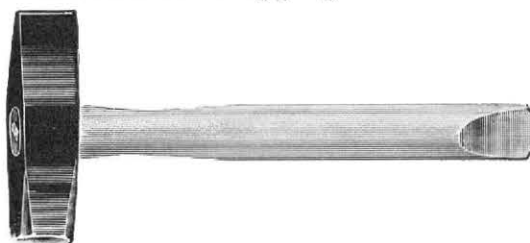
### Plumb Ball Pein Hammers



Red handles, black heads and patented take-up wedge. Weights shown do not include handles.

Cat. No.	Description	Size	Weight	Price Each
HF372	Ball Pein Hammer	2/0	12 oz.	\$0.90
HF373	Ball Pein Hammer	0	1 lb.	.95
HF374	Ball Pein Hammer	1	1 lb. 4 oz.	1.00
HF375	Ball Pein Hammer	2	1 lb. 8 oz.	1.05
HF376	Ball Pein Hammer	3	1 lb. 12 oz.	1.15

### Linemen's Chipping Hammers



Especially made for line construction work. Face is suitable for general use and the pein is suitable for chipping brick work, concrete or stone. Weight of head, 3 1/2 lbs.

Cat. No.	Description	Length	Weight per Doz.	Price Each
1938	Chipping Hammer	16"	48 lbs.	\$1.95

### Linemen's Double-Faced Hammers



Lighter and easier to handle than the Engineer's Hammer particularly in confined space. Weight of head, 36 oz.

Cat. No.	Description	Length	Weight per Doz.	Price Each
1936	Double-Faced Hammer	15"	35 lbs.	\$1.95

## Ratchet Braces



Equipped with quick centering ball bearing chuck, holds any bit with shank up to  $\frac{1}{2}$  inch in diameter.

Cat. No.	Sweep	Weight Each	Price Each
2101-8	8"	3 lbs.	\$6.52
2101-10	10"	3 $\frac{1}{8}$ lbs.	6.67
2101-12	12"	3 $\frac{1}{4}$ lbs.	6.82

## Bell Hanger Drills



An all-purpose drill for installers and wiremen for inside or outside drilling. Made with twist  $3\frac{3}{4}$ " long. 18" lengths shown are standard for telephone work but other length drills can be supplied on special order.

Cat. No.	Diameter	Length	Price Each
48-6	6/32"	18"	\$0.75
48-8	8/32"	18"	.80
48-10	10/32"	18"	.83
48-12	12/32"	18"	.90
48-14	14/32"	18"	.97
48-16	16/32"	18"	1.09
48-18	18/32"	18"	1.20

## Combination Step-Extension Ladder



A handy, light-weight unit that can serve as an all-purpose ladder around the telephone exchange. It can be used either as an extension ladder as illustrated or as a regular step ladder. Made of clear spruce heavily reinforced throughout. Rungs in the back legs are spaced alternately with the steps.

Cat. No.	Length	Price Each
5-CSE	5"	\$ 5.50
6-CSE	6"	6.60
7-CSE	7"	7.70
8-CSE	8"	8.80
10-CSE	10"	11.00
12-CSE	12"	13.20

## Auger Bits—No. 162-T



General purpose bits. Bluwini quality with special finish. Tapered square shank to fit standard brace chuck. Type No. 162-T.

Cat. No.	Length Overall	Size in Sixteenths of an Inch	Size in Fractions of an Inch	Length of Twist	Price Each
5	7 $\frac{5}{8}$ "	5	$\frac{1}{8}$ "	4"	\$0.33
6	7 $\frac{3}{4}$ "	6	$\frac{3}{8}$ "	4 $\frac{1}{8}$ "	.33
7	7 $\frac{7}{8}$ "	7	$\frac{1}{2}$ "	4 $\frac{1}{8}$ "	.37
8	8 $\frac{1}{8}$ "	8	$\frac{5}{8}$ "	4 $\frac{1}{8}$ "	.40
9	8 $\frac{1}{4}$ "	9	$\frac{3}{4}$ "	4 $\frac{1}{4}$ "	.43
10	8 $\frac{3}{4}$ "	10	$\frac{7}{8}$ "	4 $\frac{3}{8}$ "	.47
11	8 $\frac{7}{8}$ "	11	1"	4 $\frac{1}{2}$ "	.53

## Car Bits—No. 165-T



Type 165-T for pole work. Longer than Type 162-T auger bits. Bluwini quality. Tapered square shank to fit standard brace chuck.

Cat. No.	Length Overall	Size in Sixteenths of an Inch	Size in Fractions of an Inch	Length of Twist	Price Each
5	18"	5	$\frac{1}{8}$ "	12"	\$0.73
6	18"	6	$\frac{3}{8}$ "	12"	.73
7	18"	7	$\frac{1}{2}$ "	12"	.83
8	18"	8	$\frac{5}{8}$ "	12"	.93
9	18"	9	$\frac{3}{4}$ "	12"	1.03
10	18"	10	$\frac{7}{8}$ "	12"	1.13
11	18"	11	1"	12"	1.23

## Plain Screwdrivers



The blades and ferrules are highly polished, the handle is of hard wood, finished in dull dead black.

## No. 90—Standard Type

Cat. No.	Blade Length	Price Each	Cat. No.	Blade Length	Price Each
90-1 $\frac{1}{2}$	1 $\frac{1}{2}$ "	\$0.27	90-7	7"	\$0.47
90-2	2"	.29	90-8	8"	.53
90-3	3"	.31	90-9	9"	.59
90-4	4"	.33	90-10	10"	.67
90-5	5"	.37	90-12	12"	.75
90-6	6"	.40	90-15	15"	1.03



## No. 95—Cabinet Style

Cat. No.	Blade Length	Price Each	Cat. No.	Blade Length	Price Each
95-2 $\frac{1}{2}$	2 $\frac{1}{2}$ "	\$0.27	95-8 $\frac{1}{2}$	8 $\frac{1}{2}$ "	\$0.47
95-3 $\frac{1}{2}$	3 $\frac{1}{2}$ "	.28	95-9 $\frac{1}{2}$	9 $\frac{1}{2}$ "	.53
95-4 $\frac{1}{2}$	4 $\frac{1}{2}$ "	.31	95-10 $\frac{1}{2}$	10 $\frac{1}{2}$ "	.59
95-5 $\frac{1}{2}$	5 $\frac{1}{2}$ "	.33	95-12 $\frac{1}{2}$	12 $\frac{1}{2}$ "	.67
95-6 $\frac{1}{2}$	6 $\frac{1}{2}$ "	.37	95-15 $\frac{1}{2}$	15 $\frac{1}{2}$ "	.75
95-7 $\frac{1}{2}$	7 $\frac{1}{2}$ "	.40			

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### Long Handle Telegraph Shovels

Plain back, strap pattern with 22 inch polished straps. Selected second-growth hickory, ash or maple handles—sanded and waxed. Black finished blades only. Blades are 9x12 inches in size.



With Hickory or Ash Handles

Cat. No.	Handle	Strap	Weight Each	Price Each
10-015	6'	22"	7 lbs.	\$3.22
10-016	7'	22"	8 lbs.	3.57
10-017	8'	22"	9 lbs.	4.02
10-018	9'	22"	10 lbs.	4.51
10-019	10'	22"	11 lbs.	5.03

### Long Handle Standard Shovels

Plain back, strap pattern. Light in weight but built to withstand rough handling. AA grade handles, sanded and waxed. Blade is 9x11 $\frac{3}{4}$  inches.



Cat. No.	Length of Handle	Standard Package	Weight Each	Price Each
81 (843)	4 $\frac{1}{2}$ '	6	4 $\frac{1}{2}$ lbs.	\$1.94

### Pike Poles



#### Standard Type

Pikes are  $\frac{3}{8}$  inch round crucible steel of the new collar pike design with sharp points. They are set in creosote. Ferrules are made of steel tubing, securely riveted. The rivets go through the ferrule and pike, holding the pike firmly in the pole. Poles are smooth sand finished and metal parts painted blue. On special order and at extra cost, clear lacquer finished poles can be furnished.

Cat. No.	Diameter	Length	Weight Each	Price Each
10-205	2"	12'	9 lbs.	\$3.37
10-206	2"	14'	11 lbs.	3.78



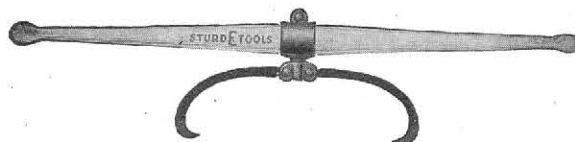
#### Heavy Duty Type

Same general construction as the standard pattern above but with 2 $\frac{1}{2}$  inch diameter at center tapering to 2 inches at ends. This gives extra strength at center, where needed, with very little increase in weight. Smooth sand finished poles with metal parts painted blue.

Cat. No.	Diameter	Length	Weight Each	Price Each
10-219	2 $\frac{1}{2}$ "	12'	12 lbs.	\$4.17
10-220	2 $\frac{1}{2}$ "	14'	14 lbs.	5.21
10-221	2 $\frac{1}{2}$ "	16'	16 lbs.	6.02

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### Carrying or Lug Hooks Standard Type



For handling poles, ties and heavy timbers. Hooks are crucible steel with duck bill points, hung in heavy malleable iron clasp and swivel. Metal parts painted delft blue.

Cat. No.	Size	Wood	Weight Each	Price Each
10-103	2 $\frac{1}{2}$ "x4'	Hickory	7 lbs.	\$4.37
10-104	2 $\frac{1}{2}$ "x4 $\frac{1}{2}$ '	Hickory	8 lbs.	4.54
10-105	2 $\frac{1}{2}$ "x5'	Hickory	9 lbs.	4.70

### Plain Digging Bars



Double beveled cutting blade at one end.

Cat. No.	Size	Length	Weight Each	Price Each
10-414	1 $\frac{1}{8}$ " Octagon	8'	30 lbs.	\$6.35

Packed two in a bundle.

### Octagon Crow and Digging Bars



Double beveled cutting blade at one end; pointed at the other end.

Cat. No.	Size	Length	Weight Each	Price Each
10-404	1 $\frac{1}{8}$ "	7'	25 lbs.	\$5.69
10-405	1 $\frac{1}{8}$ "	8'	28 lbs.	6.48
10-406	1 $\frac{1}{4}$ "	8'	33 lbs.	9.43

Packed two in a bundle.

### Octagon Tamping and Digging Bars



Double beveled cutting blade at one end; fitted with heavy iron tamping shoe at other end.

Cat. No.	Size	Length	Weight Each	Price Each
10-411	1 $\frac{1}{8}$ "	7'	25 lbs.	\$6.05
10-412	1 $\frac{1}{8}$ "	8'	30 lbs.	6.99

Packed two in a bundle.

### A. T. & T. Pattern Tamping Bars



Fitted with extra heavy one-piece shoe, made of 1 $\frac{1}{4}$  inch square steel. Rivets passing through the handle and shoe with heads countersunk, hold the shoe firmly in place. Tamping end dipped in creosote to prevent decay, then painted delft blue. Handles smoothly sand finished.

Cat. No.	Handle	Weight Each	Price Each
10-421	7'	12 lbs.	\$6.25
10-422	8'	13 lbs.	6.78

Packed two in a bundle.

### Electric Digging Spud with Tamper



Steel tubing with iron tamping shoe and forged crucible steel blade.

Cat. No.	Handle	Weight Each	Price Each
10-415	9'	21 lbs.	\$6.12

Packed two in a bundle.

### Slick or Loy Digging Tools

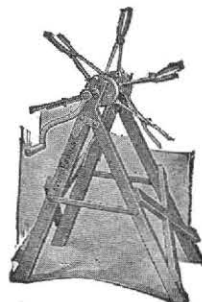


Select maple handles, 2 inches in diameter, tapered at lower end; fitted with extra heavy tool steel blades 4 inches by  $\frac{1}{2}$  inch with sharp cutting edge. Handles smoothly sand finished.

Cat. No.	Length	Weight Each	Price Each
10-423	7'	16 lbs.	\$7.27
10-424	8'	17 lbs.	8.27

Packed two in a bundle.

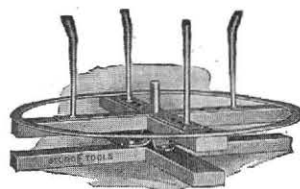
### Folding Take-up Reel



This reel is the collapsible type, composed of two parts—the wooden stand and the metal reel. The stand is of hardwood mortised and tenoned and reinforced with steel. Reel is malleable iron and steel.

Cat. No.	Size of Coil	Weight Each	Price Each
10-501	21"	42 lbs.	\$24.11

### Pay-out Reel



This reel is of hardwood. The pins are adjustable for 12, 18, 21 and 24 inch coils. Wood painted blue, metal parts black.

Cat. No.	Weight Each	Price Each
10-510	40 lbs.	\$15.23

### Highway Flare Torches



Made of steel, as illustrated, with weighted bottom. Has a capacity of 3 quarts of kerosene or other light fuel oil and will burn for more than 36 hours. Equipped with rain shield for stormy weather. Height 7 $\frac{1}{2}$  inches; diameter, 7 $\frac{3}{4}$  inches.

Cat. No.	Description	Weight	Price Each
96	All Weather Flare Torch	21 lbs.	\$1.54

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### Iwan Augers



As indicated, the length of Iwan augers with regular handles is 4 feet for the 10 inch and smaller sizes and 5 $\frac{1}{2}$  feet for the 12 inch and larger sizes. 1 inch standard pipe is used for the 12 inch and larger sizes and  $\frac{3}{4}$  inch pipe for the 10 inch and smaller sizes.

All Iwan augers can be fitted with Blackburn extension handles on order. These handles are adjustable. The hole can be started with a short handle and the handle lengthened as the depth increases. The No. 8 Blackburn handle is 4 feet in length and extends to 8 feet. The No. 10 Blackburn handle is 5 feet in length and extends to 10 feet.

When ordering, give diameter of auger and state whether regular handle or Blackburn No. 8 or No. 10 extension handle is wanted. Unless otherwise specified, augers will be shipped with regular handles.

Size	Description	Length	Weight	Price Each
3"	Iwan Auger	4'	6 $\frac{1}{2}$ lbs.	\$1.58
4"	Iwan Auger	4'	7 lbs.	1.75
5"	Iwan Auger	4'	7 $\frac{1}{2}$ lbs.	1.75
6"	Iwan Auger	4'	8 lbs.	1.75
7"	Iwan Auger	4'	8 $\frac{1}{2}$ lbs.	1.87
8"	Iwan Auger	4'	9 lbs.	1.87
9"	Iwan Auger	4'	9 $\frac{1}{2}$ lbs.	1.99
10"	Iwan Auger	4'	10 lbs.	2.25
12"	Iwan Auger	5 $\frac{1}{2}$ '	22 lbs.	6.00
No. 8	Blackburn Handle Only	4' to 8'	17 lbs.	5.00
No. 10	Blackburn Handle Only	5' to 10'	20 lbs.	5.00

### Hercules Digger



Blades 5x9 inches. Castings are bolted together from the outside, with bolt passing through the center.

Cat. No.	Handle	Weight Each	Price Each
1924	4'	9 lbs.	\$1.50
1927	7'	11 lbs.	3.00

### Pyrene Fire Extinguisher Liquid



The refill or charge for "Pyrene" extinguishers. Anti-freezing and non-corroding. Safe on electrical fires and will not injure telephone equipment. Furnished as follows:

Cat. No.	Quantity	Price Each
CR1	1 Pint	\$0.45
CR2	1 Quart	.90
CR3	1 $\frac{1}{2}$ Quarts	1.35
CR4	1 Gal.	3.24



## Automatic Electric Rectifiers

### Tube Type

Noiseless type full-wave rectifiers that use rectifying tubes. Rough regulation of the charging current strength is obtained by taps on the secondary of the transformer, and fine regulation is secured by means of an adjustable resistance in the output leads. The taps on the transformer are also arranged to furnish either 25 or 50 volts, and are readily convertible to charge batteries of either voltage.



When more current than the rated capacity of one rectifier is required, a second may be installed in parallel. Each rectifier is equipped with an alarm circuit, which operates if the commercial current should fail.

Small size—7 $\frac{7}{8}$ " high, 8 $\frac{1}{4}$ " wide, 14" long.

Cat. No.	A.C. Supply Volts	Cycles	Max. Output in Amps. 50 V.	Max. Output in Amps. 25 V.	Price Each
PA-40	105-125	60	0.75	.75	\$55.00
PA-41	105-125	25-40	1.00	1.50	92.00
PA-42	105-125	40-60	3.00	3.00	84.00
PA-43	150-230	25-40	1.00	1.50	92.00
PA-44	150-230	40-60	1.00	1.50	84.00
PA-45	150-230	40-60	3.00	3.00	84.00

Medium size—9 $\frac{1}{8}$ " high, 8 $\frac{1}{4}$ " wide, 18" long.

PA-46	105-125	25-40	3.00	3.00	92.00
PA-47	110-150	40-60	5.00	5.00	110.00
PA-48	150-230	40-60	5.00	5.00	120.00

Large size—9 $\frac{1}{8}$ " high, 8 $\frac{1}{4}$ " wide, 24" long.

PA-49	110-150	25-40	5.00	5.00	120.00
PA-50	150-230	25-40	5.00	5.00	84.00

### Dry Plate Type

This small rectifier is designed to operate on 115-150 volt 60-cycle A.C. circuits, and furnishes direct current at 12 volts potential. The charging rate is adjustable from 0 to 1.5 amperes. Is not arranged for noiseless operation. Whenever it is used for charging batteries serving telephone systems, the filter unit listed below should also be used. The rectifier and the filter unit are each contained in a steel outlet box 10 inches wide, 10 inches high, and 4 inches deep.

Cat. No.	Description	Price Each
PA-51	Dry Plate Rectifier	\$23.50
PA-52	Filter Unit	17.25

## Do-More Operator's Chairs

These chairs have been especially designed to give operators the proper sitting posture without conscious effort. They have form-fitting seats and backs that are adjustable both vertically and laterally to fit the small of the back snugly. Arranged so that occupant can maintain the correct posture comfortably and restfully without fatigue.



Type APL

Type APC

Furnished in two types as illustrated, with screw spindle height adjustment. Model APL has 5-ply veneer seat covered with genuine leather overpadding and back upholstered in genuine leather over curled hair. Model APC has seat of 5-ply wood veneer—perforated and with varnish finish—and back upholstered in high grade leather cloth over curled hair and cotton padding. Upholstery coverings on all models are available in blue, green or brown with metal parts finished in black, olive green, maroon or walnut. When colors are not specified, brown upholstery and green metal parts are furnished.

Cat. No.	Top of Foot Ring from Floor	Seat Height Adjustment	Shipping Weight	Price Each
APL-1822	7 $\frac{1}{4}$ "	18" to 22"	28 lbs.	\$16.00
APL-2428	9 $\frac{1}{2}$ "	24" to 28"	31 lbs.	16.80
APL-2832	13 $\frac{1}{2}$ "	28" to 32"	33 lbs.	17.60
APC-1822	7 $\frac{1}{4}$ "	18" to 22"	28 lbs.	14.40
APC-2428	9 $\frac{1}{2}$ "	24" to 28"	31 lbs.	15.20
APC-2832	13 $\frac{1}{2}$ "	28" to 32"	33 lbs.	16.00

## Pay Station Sign



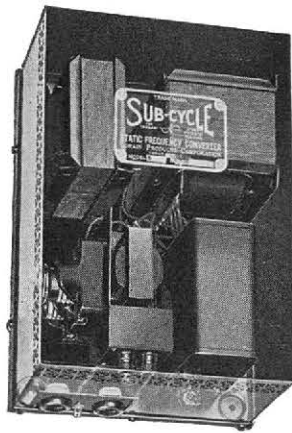
An excellent sign for use wherever a paystation is installed. Made of porcelain enamel on 18 gauge steel plate. Will not fade or tarnish from exposure. Colors, blue and white. Double faced.

Furnished in two types—the No. 4 or flange type as illustrated or the No. 4A suspension type with four holes in top for mounting.

Cat. No.	Description	Dimensions	Price Each
4	Flange Type Sign	18"x8"	\$2.25
4A	Suspension Type Sign	18"x8"	2.25

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### Sub-Cycle Ringing Converter



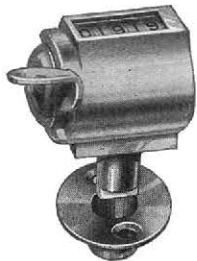
An excellent ringing machine that has proved its superior qualities in the field. It is a static frequency converter which produces reliable and continuous telephone ringing current without moving parts. The maximum power output is 20 watts, which is equivalent to the power required to ring 25 1400-ohm bells simultaneously, each having a 1 mf. in series. The output voltage variation between full load and no load is less than 10% and taps are provided for both 75 and 90 volt output, whichever voltage is required by local conditions.

Regularly furnished with a "Tone Coil" for the production of reverting tone. No additional equipment is necessary when this feature is required in offices equipped with condensers for returning tone to the calling subscriber. Guaranteed not to interfere with radio reception. The characteristics of the current are continuously uniform and contain no high peaks. The output is always one-third that of the input frequency regardless of normal variations in the input voltage or frequency.

As listed below, the "Sub-Cycle" machine is regularly furnished complete with cord and plug for 105-125 volts either 50 or 60 cycle. It can also be supplied for other voltages on special order. When ordering, give input voltage and frequency.

Cat. No.	Input Voltage	Frequency	Dimensions	Price Each
16	105-125	60 cycle	8"x11½"x5"	\$45.00
17	105-125	50 cycle	8"x11½"x5"	45.00

### Telephone Counter



No. 8

Designed for use on telephone switchboards, this counter sets into a permanent socket that sets flush into the keyshelf. Five figures on the dial give a record up to 100,000 and then repeat. Furnished complete with socket plate. Extra sockets can be supplied.

Price, Complete \$2.50

### Hand Counter



No. AB-2

A hand tally, indispensable for inventory, count of calls, traffic work, etc. Quick set-back feature makes the change from one item to another simple. Rounded corners prevent irritation to the hands. Can be operated with either hand. Counts up to 10,000.

Price, \$5.00

### Galvanized Steel Messenger Strand



Put up in coils of 250, 500, 1000 ft. or reels of any length. When ordering, give grade and size, and specify length of coils or reels.

#### Standard—Double Galvanized

Diam.	Weight per 1000 ft. lbs.	Strength in pounds	Price per 1000 Ft.
⅜"	273	4,250	\$27.95
⅞"	205	3,200	19.96
1¼"	121	1,900	13.96

#### Siemens-Martin

Diam.	Weight per 1000 ft. lbs.	Strength in pounds	Price per 1000 Ft.
⅜"	273	6,950	\$30.06
⅞"	205	5,350	23.12
1¼"	121	3,150	15.72

#### A. T. & T. Specification

Diam.	Weight per 1000 ft. lbs.	Strength in pounds	Price per 1000 Ft.
⅜"	273	10,000	\$39.53
⅞"	205	6,000	24.32

### Copperweld Messenger Strand



An increasing number of telephone companies are using Copperweld strand both for guying and also for messenger work in conjunction with Copperweld Cable Rings. When designing overhead lines, no allowance need be made for loss of strength because Copperweld does not rust.

The 7 wire "High Strength" strand is ordinarily used for guying and messenger installations. "Extra High Strength" is available for work requiring unusually high strength material with a minimum size. Furnished at lowest market prices.

#### 7 Wire "High Strength"

Size	Size of Wires	Weight per M Ft.	Breaking Strength
⅝"	No. 10	204 lbs.	7,750 lbs.

#### 7 Wire "Extra High Strength"

Size	Size of Wires	Weight per M Ft.	Breaking Strength
⅝"	No. 10	204 lbs.	9,200 lbs.

### Ground Wire

A rubber covered 14 B. & S. gauge copper wire with a wax braid. Single conductor only. Choice of white, black or brown braid. If order does not specify color of braid, white braid wire will be supplied. Furnished in coils of 500 feet.

Cat. No.	Color of Braid	Description	Price per 1000 Ft.
14-A-W	White	14 B.&S. Ga. Ground Wire	\$7.20
14-A-B	Black	14 B.&S. Ga. Ground Wire	7.20
14-A-BR	Brown	14 B.&S. Ga. Ground Wire	7.20

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### Ironite Drop Wire



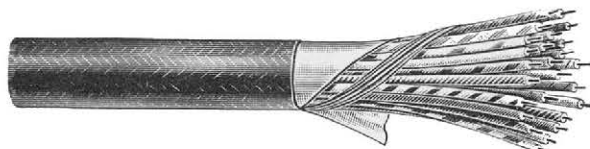
Conductor of pure BB grade iron accurately annealed to provide great tensile strength, high conductivity and great flexibility. Has heavy uniform coating of pure zinc applied by the Cropo process of galvanizing.

Insulated with a 30% pure Para compound to provide extra long life and toughness. Braided with two-ply long-fibre cotton and given the new mica finish. A small cord tracer is woven into one of the conductors for tracing.

Shipped in standard 1,000 ft. coils with large 15-inch eye for standard reels. Use B. W. G. gauge when ordering.

Cat. No.	Size B.W.G.	Type	Dia. Over Rubber	Price per 1000 Ft.
3018-B-TW	18	Twisted Pair	4/32"	\$10.98
3018-B-PA	18	Parallel	4/32"	10.47
3019-B-TW	19	Twisted Pair	7/64"	9.76
3019-B-PA	19	Parallel	7/64"	8.84

### Inter-Com Telephone Cable



#### Braided and Leaded Types

The conductors are tinned copper with single silk and single cotton insulation, with color code so each pair and each single wire can be identified. Core of cable is saturated with wax compound.

The braided type is finished with a substantial cotton braid saturated with a lead colored fire-proof paint to be used only in dry places. The leaded type is to be used where there is a possibility of moisture.

When ordering, state catalog number, whether braided or leaded, and the number of feet wanted.

No. Braided Type	No. Leaded Type	Conductors B & S Gauge	Appro. Dia. Ins.	Price Per 100 Ft.	
B-8	L-8	5 single No. 22, 3 single No. 18	11/16"	\$ 4.27	\$ 7.99
B-10	L-10	6 single No. 22, 2 pair No. 18	3/4"	5.22	9.37
B-12	L-12	8 single No. 22, 2 pair No. 18	3/4"	6.18	10.34
B-15	L-15	11 single No. 22, 2 pair No. 18	7/8"	6.80	11.40
B-16	L-16	6 pair No. 22, 2 pair No. 18	7/8"	7.23	11.83
B-21	L-21	17 single No. 22, 2 pair No. 18	1"	9.37	14.40
B-25-A	L-25-A	10 pair No. 22, 1 single No. 22, 2 pair No. 18	1 1/8"	10.23	15.36
B-31-A	L-31-A	13 pair No. 22, 1 single No. 22, 2 pair No. 18	1 1/8"	12.36	18.26
B-36-A	L-36-A	16 pair No. 22, 2 pair No. 18	1 1/8"	13.30	19.43
B-48	L-48	22 pair No. 22, 2 pair No. 18	1 1/8"	16.95	23.61
B-68	L-68	32 pair No. 22, 2 pair No. 18	1 3/8"	22.90	29.92

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### Weatherproof Iron Wire



Often called "tree wire." The conductor is BB double galvanized iron wire. Braid has the new pitch and mica finish. Put up in half mile burlap coils. Furnished with either double or triple braid—the 14 gauge triple braid being standard with most telephone companies. Use B.W.G. gauge when ordering.

Cat. No.	B. W. G.	Braid	Weight per Mile	Price per 100 Lbs.
ITR-14-D	14	Double	145 lbs.	On Application
ITR-14-T	14	Triple	175 lbs.	\$21.30
ITR-16-T	16	Triple	125 lbs.	On Application

### Switchboard Cables

Switchboard cables—22 gauge with standard color coding—are furnished in a wide variety of types. They are available with tinned or tinned enamel conductors; with one silk and one cotton or two silk and one cotton insulation; with saturated wax core or dry core; and with either painted braid finish or with lead over the braid. 19 Ga. and 20 Ga. cables can also be supplied on order.

The following listing includes the types and sizes most commonly used. If similar cables are wanted with enamel conductors instead of tinned conductors or with two silk and one cotton insulation instead of one silk and one cotton, give the number and add "with enameled conductors" or "with 2 silk and 1 cotton insulation."

#### Braided Type—Saturated Wax Core

No. 22 AWG tinned copper conductors with one silk and one cotton insulation. Slate colored braid saturated with wax and finished with lead colored fireproof paint. Standard color coding.

No.	Size	Description	Price per 100 Ft.
21	5 Pair	Round	\$ 5.13
22	11 Pair	Round	9.39
23	16 Pair	Round	13.67
24	21 Pair	Round	16.28
25	26 Pair	Round	20.14
26	63 Wire (21 Triples)	Round	24.39
26-F	63 Wire (21 Triples)	Flat	24.39
27	42 Pair	Round	29.82
27-A	84 Wire (21 Quadruples)	Round	29.82
27-F	84 Wire (21 Quadruples)	Flat	29.82
28	51 Pair	Round	37.10
29	102 Pair	Round	77.41

#### Lead Covered Type

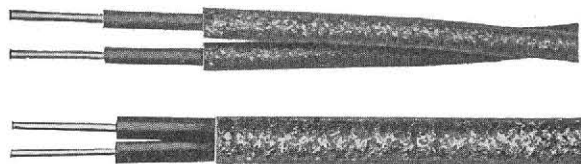
Same general specifications as the cable above but with the addition of lead sheath.

No.	No. of Pairs	Thickness of Sheath	Approx. Diam.	Price per 100 Ft.
72	11	3/4"	1 1/8"	\$15.23
73	16	3/4"	1 1/2"	19.70
74	21	3/4"	1 3/8"	23.00
75	26	3/4"	1 1/2"	27.61
78	51	1"	1 3/4"	50.46
79	102	1 1/8"	1 7/8"	82.50



### Monotype Drop Wire

Generally recognized as the standard of drop wire quality. Conductors of great strength—improved rubber insulation—superior cotton braid—and the new pitch and mica finish make Monotype the outstanding drop wire. Furnished with No. 1 Copperweld or Bronze conductors.



*Monotype Twisted Pair and Parallel Drop Wire  
With the New Pitch and Mica Finish*

Each conductor is insulated in accordance with Monotype Drop Wire insulation specifications. One conductor of pairs has raised tracer in braid for tracer. Furnished in coils of approximately 1000 feet. Diameter of eye of coil is 15 inches. Wrapped in burlap or paper to prevent injury in transit. Marked with two tags giving length of coil.

#### No. 17 Copperweld

The nominal diameter of each conductor is .045" (minimum .044" and maximum .047"). The breaking strength is not less than 200 lbs. and the electrical conductivity averages 30% with a minimum of 27%, of hard drawn copper as the standard of 100%.

Cat. No.	Type	Dia. Over Ins.	Weight per M Ft.	Price per 1000 Ft.
109-S	Single	.185	18 lbs.	\$ 6.73
109-T	Twisted Pair	.185	35 lbs.	13.46
109-P	Parallel	.185	35 lbs.	13.12

#### No. 17 Bronze

The nominal diameter of each conductor is .045" (minimum .044" and maximum .047"). The breaking strength is not less than 175 lbs. and the electrical conductivity averages 35%, with a minimum of 32%, of hard drawn copper as a standard of 100%.

Cat. No.	Type	Dia. Over Ins.	Weight per M Ft.	Price per 1000 Ft.
1090-S	Single	.185	18 lbs.	\$ 6.73
1090-T	Twisted Pair	.185	35 lbs.	13.46
1090-P	Parallel	.185	35 lbs.	13.12

### Bridle or Spider Wire

The duplex and triplex wires are furnished with tracers for identification of the conductors. Put up in coils of approximately 500 feet. Use B. & S. gauge when ordering.

Cat. No.	Size B. & S. Gauge	No. of Cond.	Weight per 1000 ft., lbs.	Price per 1000 Ft.
S-22-B	22	2	12	\$ 7.81
S-22-C	22	3	18	11.71
S-20-B	20	2	20	9.02
S-19-A	19	1	12	5.10
S-19-B	19	2	24	10.20
S-19-C	19	3	33	15.30
S-18-A	18	1	15	6.05
S-18-B	18	2	30	12.09
S-18-C	18	3	47	18.16
S-16-A	16	1	24	7.12
S-16-B	16	2	41	14.25
S-14-A	14	1	36	9.60
S-14-B	14	2	60	19.20

### Monotype Interior Wire



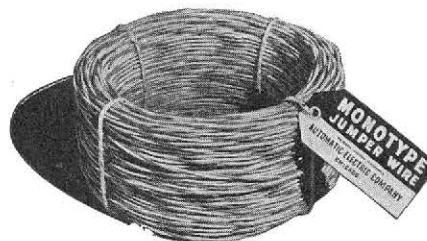
Manufactured to our own specifications and furnished in single, double and triple conductors with 19 and 22 B. & S. gauge tinned soft copper wire.

The 22 gauge wire is regularly supplied with brown or ivory braid but olive green can be furnished on special order. Unless otherwise specified, when 22 gauge wire is ordered, brown braided wire will be shipped. The 19 gauge is regularly supplied with olive green finish.

When furnished in duplex or triplex, each conductor has a colored thread in the braid for tracing. The 19 gauge wire is supplied in coils of approximately 500 feet. Each coil is inspected and marked at the factory. The 22 gauge wire is packed in an unbroken 1,000 ft. length arranged in 200 foot coils, packed in one box. Use B. & S. gauge when ordering.

Cat. No.	Size B. & S. Ga.	No. of Cond.	Braid	Price per 1000 Ft.
D-22-A	22	Single	Brown	\$ 3.90
D-22-B	22	Double	Brown	7.81
D-22-C	22	Triplex	Brown	11.71
D-19-A	19	Single	Olive Green	4.96
D-19-B	19	Double	Olive Green	9.93
D-19-C	19	Triplex	Olive Green	14.89

### Monotype Flame Proof Jumper Wire



Monotype Jumper Wire is insulated by a new and exclusive process developed by Automatic Electric engineers. It has a very small diameter and exceptional flame proof and insulating qualities. Regularly supplied with No. 22 AWG enameled or tinned copper conductors. It can be supplied with No. 19 or 20 gauge conductors on special order. Furnished in convenient coils of 500 feet or in one piece lengths as specified.

#### No. 22 Tinned Enameled

Cat. No.	No. of Conductors	Colors	Price per 1000 Ft.
WA-50	Single	White	\$ 5.00
WA-51	Duplex	White and Red	10.00
WA-52	Duplex	White and Black	10.00
WA-53	Triplex	White, Red and Blue	15.00
WA-54	Quadruplex	White, Red, Blue and Black	20.00

#### No. 22 Tinned Only

Cat. No.	No. of Conductors	Colors	Price per 1000 Ft.
WA-55	Single	White	\$ 4.75
WA-56	Duplex	White and Red	9.50
WA-57	Duplex	White and Black	9.50
WA-58	Triplex	White, Red and Blue	14.25
WA-59	Quadruplex	White, Red, Blue and Black	19.00

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### Copperweld Line Wire

It is not necessary to make allowances for loss of strength or conductivity when ordering Copperweld wire as it does not rust or deteriorate. Use B. & S. gauge when ordering. Furnished at lowest market prices.

Size B. & S. Gauge	Dia., In.	Breaking Load in Pounds	Resistance in Ohms per Mile at 68° F.	Weight per Mile
12	.081	710	21.29	96

### Copperweld Weatherproof Wire

Furnished with double or triple braid. Lowest market prices.

Cat. No.	B. & S. Ga.	No. of Braids	Minimum Quantity per Coil
CPT-14-2	14	Double	½ mile
CPT-14-3	14	Triple	½ mile
CPT-16-2	16	Double	½ mile
CPT-16-3	16	Triple	½ mile

### Bare Copper Line Wire

Supplied in soft, medium hard or hard drawn grades. Standard for toll line construction is hard drawn grade and unless otherwise specified, this will be shipped on all orders. When ordering use B. & S. or N. B. S. gauge for specifying size. Furnished at lowest market prices.

Size	Diam. in Mills	Capacity Circular Mills	Pounds per Mile
8 B. & S.	128.	16510	264
10 B. & S.	102.	10380	166
12 B. & S.	81.	6530	104
14 B. & S.	64.	4107	66
8 N. B. S.	160.	25600	409
10 N. B. S.	128.	16384	262
12 N. B. S.	104.	10816	173
14 N. B. S.	80.	6400	102

### Copper Drop Wire



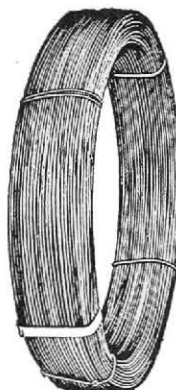
Twisted pair drop wire used in toll work. Hard drawn copper conductors special rubber insulation and saturated weather-proof braid with the new pitch and mica finish. A small raised marker is woven into the braid of one of the conductors for tracing.

Furnished in coils of approximately 1000 feet.

Cat. No.	Size B. & S. Gauge	Weight per 1000 ft., lbs.	Price per 1000 Feet
S-16-B	16	42	\$14.25
S-14-B	14	65	19.20

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### Galvanized Iron Line Wire



Our iron wire is drawn from the highest grade material of special analysis and is covered with a coating of pure zinc spelter by a process that insures maximum adhesion and full protection against corrosion. This process permits wrapping the wire around its own diameter without cracking or peeling of the galvanized coat, a feature that eliminates rust and corrosion at splices and ties. Furnished as follows:

#### B. B. Grade

Size B. W. G.	Coil Length	Weight per Mile	Breaking Strength	Price per 100 Lbs.
4	¼ mile	811	2,271 lbs.	\$6.07
6	⅓ mile	590	1,652 lbs.	6.07
8	½ mile	390	1,092 lbs.	6.07
9	½ mile	314	879 lbs.	6.07
10	½ mile	258	722 lbs.	6.25
11	½ mile	206	577 lbs.	6.25
12	½ mile	170	476 lbs.	6.34
14	½ mile	99	277 lbs.	6.80

### Pot Head Wire

Used to terminate paper insulated cable for distribution in cable terminals or cable boxes. Consists of soft tinned copper conductors rubber covered but with no braid. The rubber is so constructed that the heat of the sealing compound in the cable terminal will not mar its insulating qualities.

As shown below, pot head wire can be furnished in either 18, 19, 20 or 22 B. & S. gauge copper single or twisted pair. Specify size and whether single or twisted pair are required, when ordering.

Cat. No.	Size B. & S. Ga.	No. of Conductors	Price per 1000 Feet
P-22-S	22	Single	\$ 4.18
P-22-D	22	Duplex	8.35
P-20-S	20	Single	4.40
P-20-D	20	Duplex	8.91
P-19-S	19	Single	4.85
P-19-D	19	Duplex	9.70
P-18-S	18	Single	5.90
P-18-D	18	Duplex	11.80

### Lashing Wire

For use in lashing lead sleeves and for attaching aerial cable to supporting strand. Consists of No. 16 B. & S. Ga. annealed tinned copper wire. Supplied in 1 lb. spool.

50 lbs. to the standard carton.

Cat. No.	Description	Price per Lb.
65	1 lb. Spool of Lashing Wire	\$0.35

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