

Western Electric

INTER-PHONES

"Inter-phones" is a trade name adopted by the Western Electric Company for what are generally known as intercommunicating telephones. They are special telephones designed to meet the requirements of service from room to room in a building or possibly from house to barn or garage. They have been designed by skilled telephone engineers especially for such use and are not adapted for outside telephone service.

For the Information of Customers

Operating telephone companies, as a rule, do not permit connections with their wires, switchboards or telephones, of any apparatus or attachments not owned or maintained by them.

Application

Inter-phones are intended to provide telephonic communication between various points in the home, factory or plant, as for example:

In the home—between

Living-room
Bedroom
Library
Nursery
Servants' quarters
Kitchen
Stable or garage
Etc.

In a business organization—between

President's office
General manager
Superintendent
Bookkeeper
Shipping clerk
Foreman
Cashier
Etc.

Operation

A combination formed by connecting together a number of Inter-phones is called an Inter-phone system.

Each system may be considered as a small private telephone exchange requiring neither switchboard nor operator. Communication—that is, ringing the station desired and conversing with the person answering—can be established by merely depressing a push button for a few seconds, holding the receiver to the ear and talking into the transmitter.

Inter-phone Systems

To meet the different conditions in home and business, various Inter-phone systems have been designed, which differ in the number of instruments that can be connected, the kind of service they will give, the appearance of the sets—and the price. The quality of the apparatus for each system is of the highest and the difference in price is due to the fact that the service rendered by the various systems necessitates Inter-phones that differ in structure.

Apparatus Required

All Western Electric Inter-phone systems are simple and consist primarily of the following apparatus:

1. Inter-phones.
2. Batteries to furnish current for ringing and talking.
3. Wire or cable to connect Inter-phones and batteries.
4. Installing material (usually furnished by the installer) for connecting and fastening Inter-phones, cable (or wire) and batteries.

Types of Inter-phones

Three different types of Inter-phones to suit different conditions and tastes can be furnished: Wall Inter-phones, desk Inter-phones and hand set Inter-phones, which can be used interchangeably in the same system except when otherwise stated.

INTER-PHONE SYSTEMS

In order to assist our customers in selecting a system best adapted to their requirements the following list has been compiled:

Inter-phone System Adapted to Business Organizations, Factories, Stores, Institutions, Large Residences, etc. The Following Requirements Will Be Met.

1. More than one conversation can take place simultaneously.
2. Any station can ring selectively any other station in the system instantaneously.
3. Quality of apparatus, operation, and appearance, the highest grade obtainable.

System No. 1. 3 up to 24 stations.....	Page 31
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From any station it is possible to select, ring, and talk individually to any other station. As many separate conversations can be carried on simultaneously as there are pairs of Inter-phones connected.

Inter-phone Systems for Residences, Banks, Institutions, Warehouses, Stores, or Other Mercantile Establishments Where Conversations Are Less Frequent. The Systems Are Reliable in Operation, the Apparatus Pleasing in Appearance and Moderate in Cost. Each System is Limited to One Conversation at a Time.

System No. 11. 3 up to 12 stations.....	32
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From any station it is possible to select and ring any one of the other stations. One conversation can be carried on at a time.

System No. 12. 3 up to 12 stations.....	33
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System No. 16. 3 up to 24 stations.....	34
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Systems No. 12 and No. 16 consist of one centrally located Inter-phone called the "Master Station" to which are connected a number of other Inter-phones called "Outlying Stations."

It is possible to ring from the master station any one of the outlying stations selectively, or the master station from each of the outlying stations. One conversation can be carried on at a time.

System No. 15. 2 up to 6 stations.....	39
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A simple system. The bells of all stations will ring simultaneously whenever a call is made from any one of the stations. The various stations are called by signaling each one with a different code.

System No. 14. 2 stations only.....	38
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Primarily recommended for connecting two points separated by a mile or less. Only two wires are required for connecting the two stations, either of which can ring and converse with the other.

Inter-phone Systems for Apartment Houses

System No. 7. 7 up to 25 stations.....	39
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System No. 8. 8 up to 26 stations.....	39
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System No. 9. 9 up to 27 stations.....	39
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System No. 10. 9 up to 70 stations.....	39
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These systems provide service for any combination of suite, vestibule, janitor's and tradesmen's Inter-phones. They differ from each other in their capacities and combinations.

From the vestibule, janitor and tradesmen stations it is possible to select, ring and talk individually to any of the other stations in the system (except between vestibule and tradesmen and vice versa).

System No. 20. 4 or more stations.....	40
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This system provides service for any combination of a number of suite Inter-phones, a vestibule Inter-phone, a janitor Inter-phone and a laundry Inter-phone. From the vestibule, janitor, and laundry stations any one of the suite stations can be select, ring and rung individually, and vice versa. One conversation can be carried on at a time in the system.

INTER-PHONE SYSTEMS

Inter-phone Annunciator System

Consists of one centrally located annunciator with Inter-phone, called the "Master Station," connected to which are a number of other Inter-phones called "Outlying Stations."

System No. 18. 10 up to 70 stations or more. Page 42

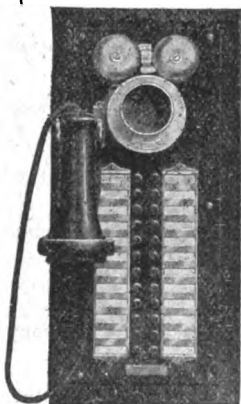
From the master station any one of the outlying stations can be rung selectively or the master station from any one of the outlying stations. Communication can be established between any two outlying stations through the medium of one or two connecting cords which can be used with the switchboard annunciator. Where many interconnections are required a private exchange switchboard of the No. 1801 type should be installed.

Inter-phone Outfits

Complete Inter-phone systems of small capacities (2 or more) put up in standard packages containing Inter-phones, all necessary installing material, and complete instructions for mounting and wiring. Page 43

Mechanical Code Signaling Systems

A call bell system making use of a number of mechanically revolving keys which, when turned, ring a number of bells simultaneously in accordance with a prearranged code. This calls to the telephone or central point persons to whom the code has been assigned. Fully described hereinafter.

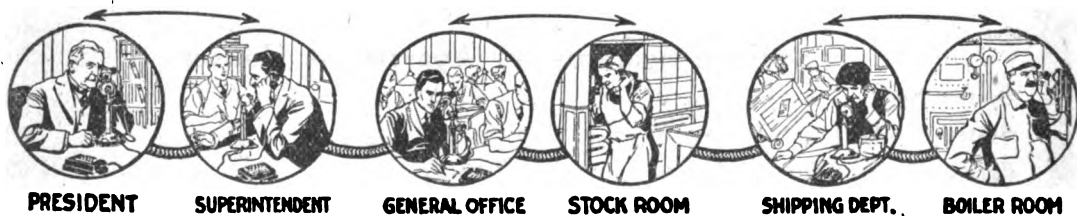


No. 1355 Type Wall Inter-phone

Inter-phone System No. 1

The No. 1 Inter-phone System is recommended for use in business organizations, factories, stores, institutions, large residences, etc., where frequently more than one conversation will take place at the same time; where prompt connections without loss of time are necessary and the highest grade of transmission is required.

Operation. From any station one can select and ring any other station without disturbing the rest of the stations in the system. That is only the station wanted will be signaled and no other. This is done by means of push button keys which are mounted in the face plates of the wall Inter-phones or in the key boxes used with desk stands or hand sets. For each station in the system, one push button key is required in each Inter-phone. Associated with the buttons are card holder frames to hold the cards which designate the names or station numbers of the buttons.



To make a call the button marked with the name or number of the station wanted is pressed (thereby ringing the bell of that station.)

Neither switchboard nor operator is required. The user makes his own connections, and is certain to get them right and without delay.

As many separate conversations can be carried on simultaneously as there are pairs of Inter-phones in the system. For example, in a system consisting of six Inter-phones, three separate conversations, as shown above, can be carried on at the same time without interfering with each other.

The class of service as described above is known as "Selective Ringing and Selective Talking" or "Non-interfering Service."

INTER-PHONES

System No. 11

The No. 11 Inter-phone system is recommended for use in residences, banks, institutions, warehouses, stores, or other mercantile establishments where conversations can be limited to one at a time.

The system is reliable in operation and the apparatus is pleasing in appearance and moderate in cost.

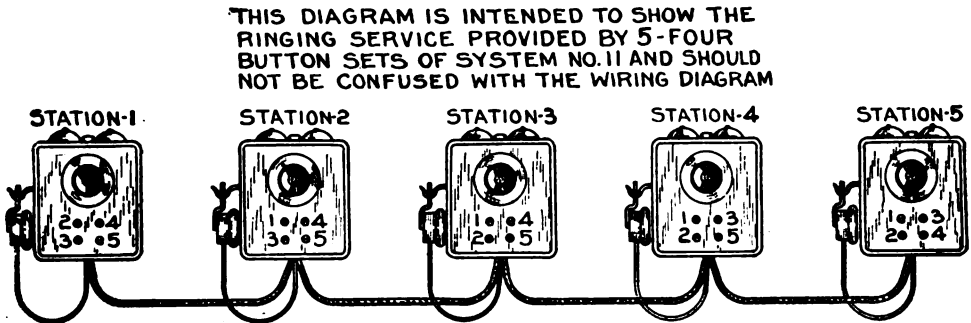
Operation. Each Inter-phone in the system is equipped with a number of push buttons for signaling the other stations. Associated with the buttons are card holder frames to hold cards designating the name or station number of the buttons. By depressing the button marked with the name or number of the station wanted, the bell of that station will be rung. No other station in the system will be signaled but the one desired.

Summarizing the service:

From any one station in the system any other station in the system can be selected and rung without disturbing those stations that are not wanted, and

Only one conversation can be carried on at a time.

Each No. 11 system requires one battery station, which should be located near the battery. The other stations in the system should be of the non-battery station type. For example, in a system consisting of five stations, there should be one battery station and four non-battery stations.



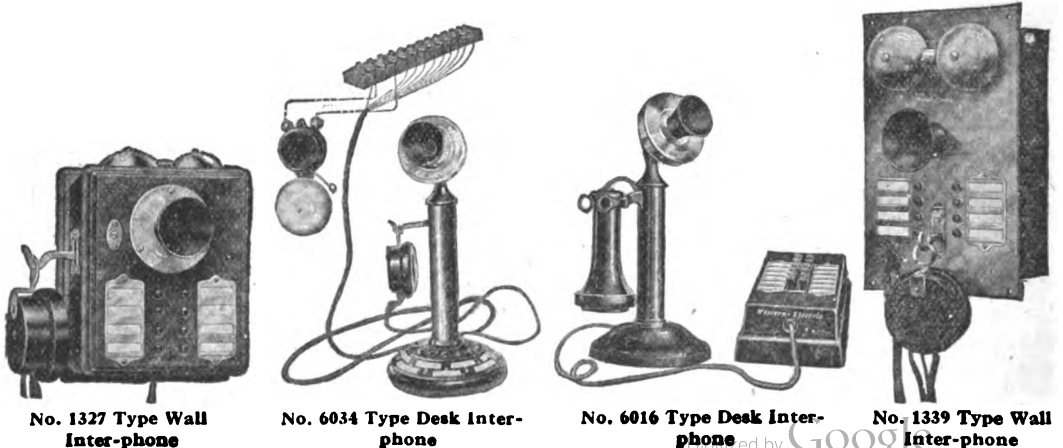
EACH SET REQUIRES ONE BUTTON FOR EACH OTHER STATION IN THE SYSTEM, THUS-4 BUTTON SETS WILL PROVIDE FOR A 5 STATION SYSTEM. STATION #1 CAN RING STATIONS 2,3,4 & 5; STATION #2 CAN RING STATIONS 1,3,4 AND 5 - ETC. - SEE MARKING ON PUSH BUTTONS IN DIAGRAM ABOVE.

The class of service described under this system is known as Selective Ringing and Common Talking.

Capacity. The standard Inter-phones are equipped with 4, 8 and 12 buttons, accommodating the following number of stations in a system:

4 button	5 stations
8 button	9 stations
12 button	13 stations

Types of Instruments. Wall, desk and hand set Inter-phones can be used interchangeably in the same system.



No. 1327 Type Wall
Inter-phone

No. 6034 Type Desk Inter-
phone

No. 6016 Type Desk Inter-
phone

No. 1339 Type Wall
Inter-phone

INTER-PHONES

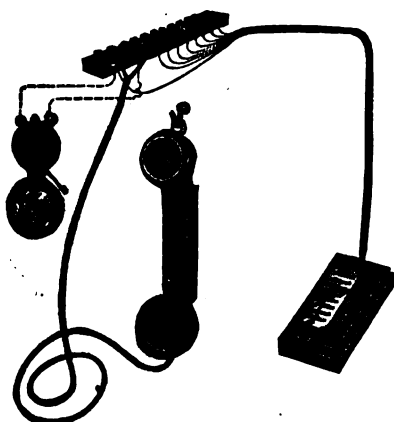
System No. 11

(Cont'd.)

Type	No. of Buttons	Illustrated on Page
1327	4 and 8	Wood 32
1339	4 and 8	Metal 32
1324	12	Metal 31
1325	12	Metal 31
6034*	4 and 8	Metal 32 and 33
6016*	12	Metal 41 and 33

*Either desk or hand set type.

Write our nearest distributing house for particulars and prices.



No. 6034 Type Hand Set Inter-phone



No. 6016 Type Hand Set Inter-phone

System No. 12

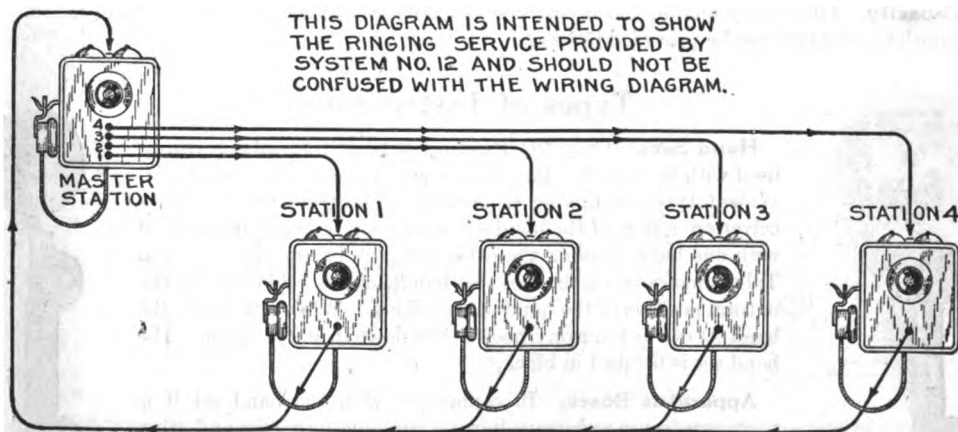
The No. 12 Inter-phone system consists of one centrally located Inter-phone called the "Master Station," to which a number of other Inter-phones, known as "Outlying Stations," are connected. This system is adopted for the same class of service as outlined under the No. 16 system, and provides communication from a central point to different rooms, and vice versa. It differs from the No. 16 system in that wall, desk or hand set Inter-phones can be used interchangeably in the same system, whereas the No. 16 system makes use of hand sets only.

Operation. The master station is equipped with a number of push buttons, one for each outlying station in the system. Associated with the buttons are card holder frames to hold cards designating the name or station number of the buttons. By depressing the button marked with the name or number of the outlying station wanted, the bell of that station will be rung. No other Inter-phone in the system will be signaled but the one desired.

The outlying stations are equipped with only one button, which will signal the master station when depressed.

Service. The service provided by Inter-phone System No. 12 is called two-way service, which signifies that it is possible to select and ring individually any one of the outlying stations from the master station, and vice versa, any one of the outlying stations can call the master station. No provision is made for having the outlying stations call one another. If this feature is desired, systems No. 1, 11 or 15 should be used.

Only one conversation can be carried on at a time.



1 MASTER STATION AND 4 OUTLYING STATIONS

Capacity. One master station and from two to twelve outlying stations can be connected.

Types of Instruments. Wall, desk and hand set type Inter-phones can be used interchangeably in the same system.

INTER-PHONES

System No. 12 (Continued)

MASTER STATIONS



No. 1339 Type Wall
Inter-phone
Outlying Station

Types	Number of Buttons	Illustrated on Page
1327	4 and 8, wood.....	32
1339	4 and 8, metal.....	32
1324	12, metal.....	31
1325	12, metal.....	31
6034*	4 and 8, metal.....	32 and 33
6016*	12, metal.....	32 and 33

*Either desk or hand set type.

OUTLYING STATIONS

1327	1, wood.....	34
1339	1, metal.....	34
6015	1, wood.....	38
6034	1, metal.....	38
6042	1, metal.....	34
6043	1, metal.....	34

Write our nearest distributing house for particulars and prices.



No. 1327 Type Wall
Inter-phone
Outlying Station

System No. 16

GENERAL

The No. 16 Inter-phone system consists of one centrally located Inter-phone called the "Master Station" connected to a number of other Inter-phones called "Outlying Stations." This system is particularly adapted to residences, country places, hotels, hospitals, schools, etc., where it is desired to communicate from a central point to various rooms, and vice versa; for example:-

In residences for calling a central point, such as the kitchen or pantry, from the living-room, bedroom, garage, laundry, vestibule, attic, etc.;

In apartment houses for dumb-waiter service, where telephonic communication is desired between the tradesmen at the foot of the dumb-waiter shaft and the apartments;

In stores, offices, banks, where a number of people must frequently consult with the department heads, and vice versa;

In schools where the principal desires to call the teachers individually and the teachers to call him, but not to call each other;

In hospitals where the house doctor or head nurse may be wanted in a hurry;

In prisons or asylums where the superintendent, warden or other officials are likely to be summoned suddenly.

Capacity. One master station and any number of outlying stations, up to 24, can be installed. Additional outlying stations can be provided if desired.

Types of Instruments

Hand Sets. Only the hand set type of Inter-phone can be used with System No. 16. This represents one of the most convenient types of talking equipment. The transmitter and receiver are a part of the hand set, which can be held and operated with one hand, leaving the other free. A bar marked Press to Talk is mounted on the hand set handle and is held down by the natural position of the hand while talking. When not in use, the hand set can be hung on a hook or laid down in any position. The hand set is finished in black.

Apparatus Boxes. In connection with the hand set it is necessary to use apparatus boxes containing terminals and other accessories. Two types of apparatus boxes can be furnished.

1. Round boxes arranged for non-flush mounting and equipped with an insulated base, black finished metal cover and nickel hook.

2. Metal boxes arranged for flush mounting, intended to be set in wall and equipped with a brush brass finished face plate.



No. 6042 Type
Master or Out-
lying Station



No. 6043 Type
Master or Out-
lying Station

INTER-PHONES

System No. 16 (Continued)

FLEXIBILITY



With the non-flush apparatus box, the hand set cord is permanently attached to the hand set and box. With the flush mounted apparatus box the hand set cord is not permanently attached to the box, but terminates in a plug (except with No. 6042L and G, System No. 16B). This plug can be inserted into a receptacle located in the center of the face plate just below the push button, thereby connecting the hand set to the system. This feature makes it possible to discontinue telephone service at any point by simply removing the plug and the hand set. A hand set can be carried around from room to room to serve as an outlying station at any place where a flush apparatus box is located. The plug is equipped with a hook on which the hand set can be hung when not in use.

Three kinds of ringing service are possible with System No. 16. They are designated as Nos. 16A, 16B and 16C. Any one can be obtained by specifying appropriate equipment.

No. 16A: One-way Service, Master Station Can Call Outlying Stations. Any one of the outlying stations can be called from the master station. No other Inter-phone in the system will be signaled but the one desired. The outlying stations cannot ring the master station.

No. 16B: One-way Service, Outlying Stations Can Call Master Station. Any one of the outlying stations can ring the master station, but the master station cannot ring the outlying stations.

No. 16C: Two-way Service. This is a combination of No. 16A and 16B in which any one of the outlying stations can ring the master station and the master station can ring any one of the outlying stations. No other Inter-phone in the system will be signaled but the one desired.

Only One Conversation Can Be Carried on at a Time, no matter what class of ringing service is to be used. No provision is made for having the outlying stations call one another. If this feature is desired Systems Nos. 1, 11 or 15 should be used.

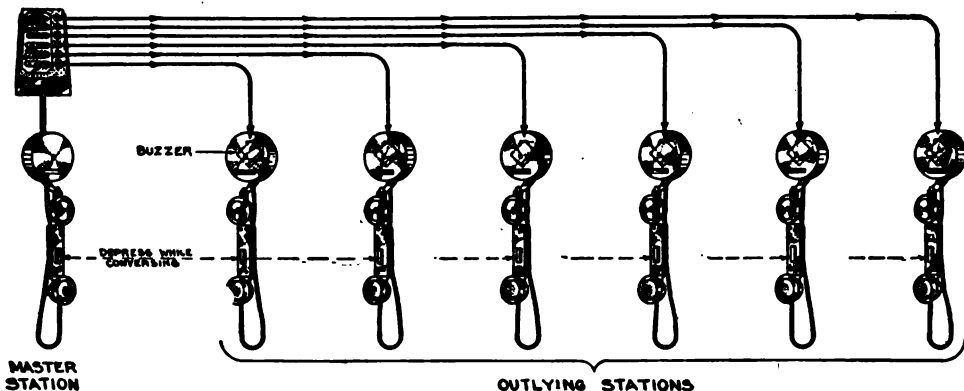
System No. 16A

PROVIDING ONE-WAY SERVICE

Master Station Can Call Outlying Stations

The master station may consist of a hand set with either a flush or a non-flush mounted apparatus box, and a push button block, with as many push buttons as there are outlying stations to be called. Associated with the buttons are card holder frames for holding cards to designate the name or station number of each button. The blocks come in capacities of 4, 6, 8, 10, 12, 14, 16 and 20 buttons.

THIS DIAGRAM IS INTENDED TO SHOW THE RINGING SERVICE PROVIDED BY SYSTEM NO. 16A AND SHOULD NOT BE CONFUSED WITH THE WIRING DIAGRAM

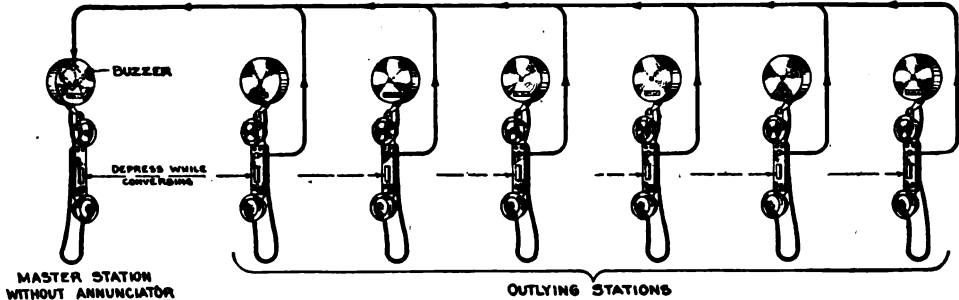


To call an outlying station from the master station, the button marked with the name or number of the station wanted must be depressed. This will operate the buzzer at the outlying station. No other Inter-phone in the system will be signaled but the one desired. Conversation can be carried on by depressing the talking bar in the hand set handle. In this system the outlying stations cannot call the master station nor can the outlying stations call one another.

Write our nearest distributing house for particulars and prices.

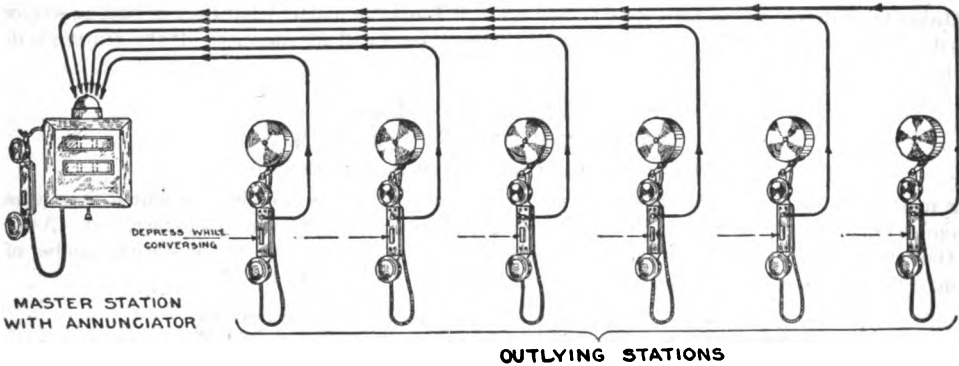
INTER-PHONES**System No. 16B****PROVIDING ONE-WAY SERVICE****Outlying Stations Can Call Master Station**

THIS DIAGRAM IS INTENDED TO SHOW THE RINGING SERVICE PROVIDED BY
SYSTEM NO. 16-B AND SHOULD NOT BE CONFUSED WITH THE WIRING DIAGRAM



The master station may consist of a hand set with either a flush or non-flush mounted apparatus box, or a hand set and an annunciator. The outlying stations may consist of a hand set with either a flush or a non-flush mounted apparatus box.

THIS DIAGRAM IS INTENDED TO SHOW THE RINGING SERVICE PROVIDED BY
SYSTEM NO. 16-B AND SHOULD NOT BE CONFUSED WITH THE WIRING DIAGRAM



Each outlying station is provided with a push button, which when depressed will signal the master station. If the master station consists of a hand set and apparatus box, there will be nothing to indicate which outlying station originated the call. If such an indicating arrangement is desired, an annunciator, equipped with as many drops as there are outlying stations, is required in place of the apparatus box. Each call from the outlying stations will then be registered by the operation of one of the drops, thereby indicating what outlying station signaled. Conversation can be carried on by depressing the talking bar in the hand set handle.

The master station cannot call the outlying stations, nor can the outlying stations signal each other.
Write our nearest distributing house for particulars and prices.

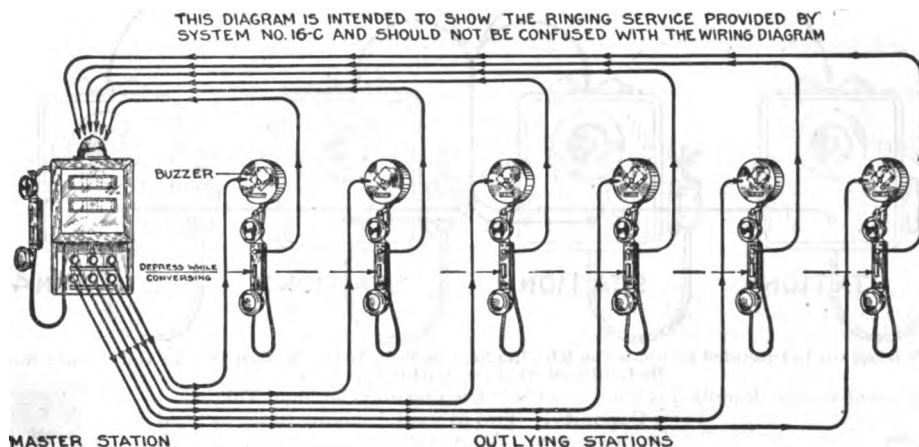
System No. 16C**PROVIDING TWO-WAY SERVICE****Master Station Can Call Outlying Stations and Vice Versa**

In the No. 16C system the master station consists of a hand set and an annunciator equipped with a bell, a number of drops and a corresponding number of push buttons, one for each outlying station. Associated with these buttons are card holder frames for holding cards to designate the name or station number of each button. The outlying stations may consist of a hand set and apparatus box arranged for either flush or non-flush mounting.

Each outlying station is provided with a push button to ring the bell of the master station annunciator, and at the same time operate one of the annunciator drops.

INTER-PHONES

SYSTEM NO. 16C (Continued)



To signal an outlying station from the master station, the annunciator push button corresponding to the station wanted must be depressed, thereby operating the buzzer at the outlying station. No other Inter-phone will be signaled but the one desired.

Conversation can be carried on by depressing the talking bar in the hand set handle.

EXTENSION CORDS

The standard hand set cord is three feet long. Longer cords are often needed, as in case of illness or for other reasons, so that the hand sets can be used in bed or any other point some distance from the apparatus box. In such cases hand sets for outlying stations can be furnished provided for or equipped with an extension cord in addition to the standard three-foot hand set cord. Each extension cord is eight feet long and as many extension cords can be connected as desired.

Write our nearest distributing house for particulars and prices.

System No. 15

The No. 15 Inter-phone system is a simple and inexpensive system for smaller residences, warehouses, stores or other mercantile establishments, where only a few stations are required and the number of calls between the stations are few.

Operation. Each station is equipped with one push button for signaling the other Inter-phones in the system. Whenever the push button at any one station is depressed the bells at all the other stations will ring simultaneously.

When there are more than two stations in the system, it becomes necessary to provide some means whereby it is possible to indicate to the various stations which one of them is wanted to respond to the ring of the bell. This can be arranged by a code of signals made up of various numbers of rings; for instance: One ring for station No. 1, two rings for station No. 2, three rings for station No. 3, etc. Thus a certain number of rings originated at any one of the stations will indicate the station desired, and none of the others, to whom the signal will also be audible, will respond.

If more than six stations are in service, the signaling code becomes cumbersome and mistakes are likely to occur, due to the possibility of misunderstood signals.

Only one conversation can be carried on at a time.

This system requires one battery station, which should be located near the battery. The other Inter-phones in the system should be of the non-battery station type. In a system consisting of five stations, for example, there should be one battery station and four non-battery stations.

INTER-PHONES

Systems for Apartment Houses

Apartment House Inter-phones are for use in place of the old-time speaking tube for effecting communication between the vestibule, apartments, janitor and tradesmen.

Apartment House Inter-phone Systems may be divided primarily into two classes, in accordance with the service they will furnish:

1. Systems Nos. 7, 8, 9 and 10 will furnish selective ringing and selective talking or non-interfering service, making it possible for a number of conversations to take place simultaneously.
2. System No. 20 will furnish selective ringing and common talking service, making possible only one conversation at one time.

SYSTEMS NOS. 7, 8, 9 AND 10

These systems are planned throughout with the utmost care to insure satisfaction under all service conditions. The telephone instruments themselves are neat and attractive in design. Systems Nos. 7, 8, 9 and 10 differ from one another in the variety of points in the apartment house that can be connected for inter-communicating service. They are, however, so arranged that one system may be expanded into another by merely supplying additional apparatus.

Operation. The systems may consist of one, two, three or more central or master Inter-phones located in the vestibule, janitor's or tradesmen's entrance. These sets may be connected to (from 3 to 24) Inter-phones located in the apartments.

The vestibule, janitor's and tradesmen's Inter-phones are equipped with a number of push button keys one for each apartment station. Associated with these push button keys are card holder frames to hold cards designating the name or apartment number of the buttons. By simply depressing the button marked with the name or the number of the apartment desired, the bell of the Inter-phone installed in that apartment will be rung. No other station in the system will be signaled but the one desired.

The suite Inter-phones can be provided with one or two buttons which, when depressed, will ring the janitor's station or operate an electric door opener.

Separate conversations may take place simultaneously between each of the vestibule, janitor's and tradesmen's sets, and three different apartments. This is manifestly impossible with a single speaking tube system.



No. 1362 Vestibule Inter-phone with Letter Boxes

Types of Instruments. Wall or hand set type Inter-phones may be used interchangeably in the same system for suite service. The vestibule, janitor's and tradesmen's Inter-phones are of the wall type only. The vestibule letter boxes are equipped with either two or four separate compartments.

SYSTEM NO. 7

Service. Vestibule can call apartments. Apartments can open door, if desired.

Capacity. One vestibule Inter-phone and any number of suite Inter-phones up to 24.

SYSTEM NO. 8

Service. Vestibule can call apartments and janitor.

Apartments can call janitor and open door, if desired.

Janitor can call apartments.

Capacity. One vestibule Inter-phone, one janitor's Inter-phone and any number of suite Inter-phones up to 24.



No. 1327 Type Suite Inter-phone



No. 1339 Type Suite Inter-phone

INTER-PHONES

Systems for Apartment Houses (Continued)

SYSTEM NO. 9

Service. Vestibule can call apartments and janitor.

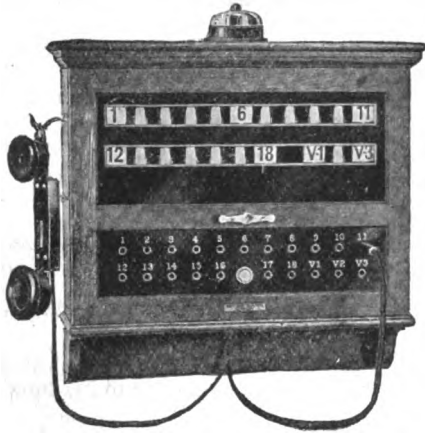
Apartments can call janitor and open door, if desired.

Janitor and tradesmen can call apartments.

Capacity. One vestibule Inter-phone, one janitor's Inter-phone, one tradesmen's Inter-phone and any number of suite Inter-phones up to 24.

SYSTEM NO. 10

Service. This system provides the same service as outlined under System No. 9, but on a larger scale. It is intended for use where several vestibules in the same or adjoining apartment houses are to be served by one janitor. In this case, the janitor's equipment consists of a switchboard which combines the functions of a wall type Inter-phone and annunciator.



Janitor's Annunciator Switchboard
for System No. 10



No. 1350 Type
Janitor's and
Tradesmen's Inter-phone

Capacity. One janitor's switchboard, two or more vestibule and tradesmen's Inter-phones and any number of suite Inter-phones up to 70.

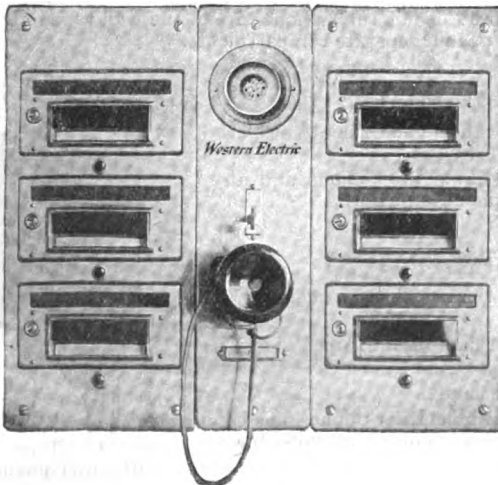
Type		Number of Buttons	Illustrated on Page
Vestibule Inter-phones	1362	*7, 13, 17, 21, 25, metal	39
Suite Inter-phones	1327	1, 2, wood	39
	1339	1, 2, metal	39
	6042	1, 2, metal	34
	6043	1, 2, metal	34
Janitor's and tradesmen's Inter-phones }	1350	+7, 13, 25, wood	40

*The odd button is for calling the janitor.

+The odd button is for conversing with vestibule. Disregard button in tradesmen's Inter-phones.

SYSTEM NO. 20

The No. 20 Inter-phone System has been designed to provide an inexpensive and reliable means of communication between vestibule, apartments, janitor's quarters, laundry and tradesmen's entrance. There are eight different combinations of the No. 20 System, differing from each other in the variety of points in the apartment house that can be connected for intercommunicating service. The operation of each of these combinations, however, is the same.



Vestibule Equipment for Six Apartments

Operation. The vestibule equipment consists of one vestibule Inter-phone and any number of letter boxes.

The vestibule Inter-phone is provided with necessary talking equipment and one push button, the latter to be used for calling the janitor. Each letter box is provided with three compartments. A push button is mounted below each compartment. When depressed this button will ring the bell of the Inter-phone in the apartment to which the letter box compartment has been assigned. No other Inter-phone in the system will be signaled but the one selected. Each letter box compartment is also equipped with a card holder for indicating the name or apartment number.

The suite sets can be provided with a number of push buttons, depending upon the combination selected. These push buttons when depressed will operate the door opener, call the janitor, laundry or any other combination desired.

Write our nearest distributing house for particulars and prices.

INTER-PHONES

Systems for Apartment Houses (Continued)

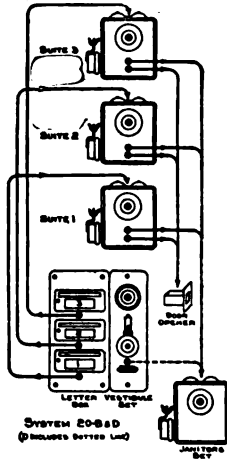
SYSTEM NO. 20 (CONTINUED)

The janitor's, laundry and tradesmen's Inter-phones can be arranged either for receiving calls from the other stations without being able to signal back, or for receiving calls and for signaling any one of the suite sets. In the latter case a separate push button block must be used, which can be mounted conveniently beside the instrument.

Only one conversation can be carried on at a time over this system.

The class of service as described under this system is known as "Selective Ringing and Common Talking."

There are eight combinations of the No. 20 System available. The diagrams associated with this description are intended to show the ringing service provided and should not be confused with the wiring diagram.



SYSTEM NO. 20A

Service. Vestibule can call apartments, apartments can open door.

SYSTEM NO. 20V

Service. Vestibule can call apartments, apartments can open door and call janitor.

SYSTEM NO. 20C

Service. Vestibule can call apartments and janitor, apartments can open door.

SYSTEM NO. 20D

Service. Vestibule can call apartments and janitor, apartments can open door and call janitor.

SYSTEM NO. 20E

Service. Vestibule can call apartments and janitor, apartments can open door and call janitor and laundry.

SYSTEM NO. 20F

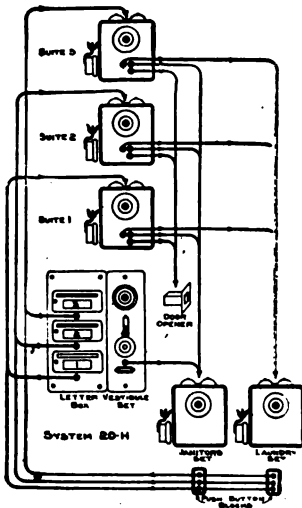
Service. Vestibule can call apartments, apartments can open door and call janitor or laundry, and laundry or janitor can call apartments.

SYSTEM NO. 20G

Service. Vestibule can call apartments and janitor, apartments can open door and call janitor, and janitor can call apartments.

SYSTEM NO. 20H

Service. Vestibule can call apartments and janitor, apartments can open door and call janitor and laundry. Janitor and laundry can call apartments.



No. 1520 Type

	Types	Number of Buttons	Illustrated on Page
Vestibule Inter-phones	1520	1 metal	50
Suite Inter-phones	1327	1, 2, 4 wood	34 and 32
	1339	1, 2, 4 metal	34 and 38
Janitor's, laundry and tradesmen's Inter-phones	1327	wood	34

Capacity. One vestibule set and any number of letter boxes can be used. One letter box will take care of 3 suite Inter-phones.

Write our nearest distributing house for particulars and

INTER-PHONES

Annunciator System No. 18

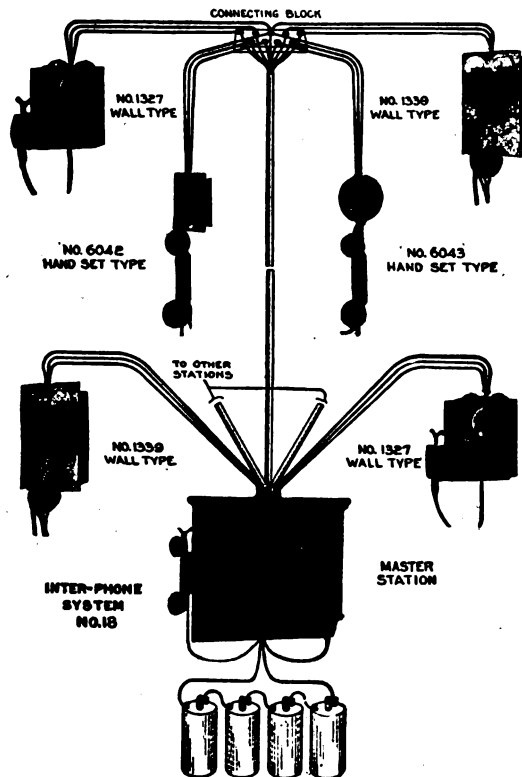
The No. 18 Inter-phone Annunciator System is designed to provide the service required in hotels, clubs Y. M. C. A. buildings, schools, hospitals, asylums, prisons, and in fact wherever it is found desirable to establish communication between a central point and a large number of points in one or several buildings. No connection can be made between this system and a public telephone system.

The system consists of one centrally located Inter-phone equipment called the "Master Station" to which are connected a number of other Inter-phones called "Outlying Stations."

Operation. The master station equipment is a combination of an annunciator and a hand set type Inter-phone. The annunciator consists of a number of drops and jacks (one of each for every outlying station in the system), a cord and plug and a hand set Inter-phone. The associated drops and jacks are provided with corresponding numbers. From the master station it is possible to select and ring any one of the outlying stations in order to carry on conversation. This is done by inserting the plug into the jack bearing the number of the outlying station wanted and depressing a push button mounted on the front of the annunciator.

Each outlying station is provided with one push button which, when depressed, will ring the bell of the master station, and at the same time operate an annunciator drop bearing a number corresponding to that of the station calling. In response to this signal, the plug of the annunciator cord at the master station should be inserted in the jack corresponding to the operated drop. This connects the calling outlying station to the master station Inter-phone.

Capacity. This system provides for one master station and 10 to 70 or more outlying stations.



Types of Instruments

Wall or hand set type Inter-phones can be used interchangeably in the same system. The master station equipment consists of an annunciator and a hand set type Inter-phone. The outlying stations of either 1327 wooden or 1339 metal wall Inter-phones or 6042 or 6043 metal hand Inter-phones.

Write our nearest distributing house for particulars and prices.

INTER-PHONES
Outfit No. 14

This consists of two wall type Inter-phones suitable for a private telephone line between house and barn or garage, or for a line that is wholly within a house. It may also be used in offices or shops between two buildings or in one building.



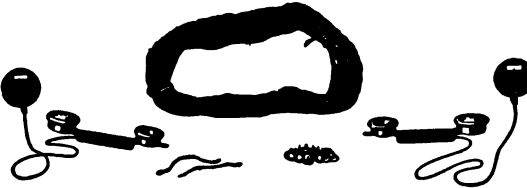
Outfit No. 14-B

Either station can ring and talk to the other. The Inter-phones are the same as those used for Inter-phone System No. 15. The instruments are of wood, arranged for non-flush mounting and finished in golden oak. Concise and fully illustrated instructions for installing are included in every package.

Outfit No.	Description	Retail Price	List Price Each
14	Includes two wall type Inter-phones in one box but no installing or wiring material.	\$15.60	\$31.20
14A	For use where the wiring is to be run entirely under cover and not exposed to moisture or weather. Includes one No. 14 outfit in one box, and another box containing 75 feet of insulated 3 conductor copper wire, two battery connectors, insulated nails for fastening wires, and illustrated installing instructions.	17.85	35.70
14B	For use where the wiring is to be run in the open between or outside of buildings, and exposed to weather and moisture. Includes one No. 14 outfit in one box, and another box containing 150 feet of outside 3 conductor copper wire, two brackets with screws, hooks and knobs to attach wires to building, two porcelain tubes to insulate wires when entering building, two battery connectors, 25 insulated nails for fastening wires inside building, and illustrated installing instructions.	22.25	44.50

Outfit No. 15

This consists of two hand set type Inter-phones suitable for the same class of service for which the No. 14 type outfit is intended. The Inter-phones are identical with the non-flush type hand sets used in Inter-phone System No. 15.



Outfit No. 15-A

Either station can ring and talk to the other. The instruments are finished in black with transmitter and receiver on one handle, and equipped with a small non-flush apparatus box. Complete instructions for installing are included in each package.

Outfit No.	Description	Retail Price	List Price Each
15	Includes two hand set type Inter-phones in one box but no installing or wiring material.	\$19.40	\$38.80
15A	For use where the wiring is to be run entirely under cover and not exposed to moisture or weather. Includes one No. 15 outfit in one box, and another box containing 75 feet of insulated 3 conductor copper wire, two battery connectors, insulated nails for fastening wires, and illustrated installing instructions.	21.60	43.20
15B	For use where the wiring is to be run in the open between or outside of buildings, and thus exposed to weather and moisture. Includes one No. 15 outfit in one box, and another box containing 150 feet outside 3 conductor copper wire, two brackets with screws, hooks and knobs to attach wires to buildings, two porcelain tubes to insulate wires when entering building, two battery connectors, 25 insulated nails for fastening wires inside building, and illustrated installing instructions.	26.10	52.20

Outfit No. 16

Two hand set type Inter-phones are furnished with this outfit, which is intended to be used for converting any existing bell, buzzer or annunciator circuit into a practical working telephone system. This can be done by using the existing wires, bell and batteries, replacing the push button with one hand set and connecting the other hand set to the wire near the bell. As only one bell is used, calls can be made in one direction only. An outfit of this type placed in the office makes it unnecessary for the clerk or office boy to run back and forth when file information is required by the executive.



Outfit No. 16-A

Outfit No.	Description	Retail Price	List Price Each
16A	For use with any existing circuit consisting of one bell or buzzer and one push button. Includes two hand set type Inter-phones, two connecting blocks with mounting screws, 25 feet of insulated twisted pair copper wire (to connect the Inter-phones to the existing wiring), 20 insulated nails for fastening wires, two hooks for holding hand sets and illustrated installing instructions.	\$13.20	\$26.40

INTER-PHONES

Outfit No. 16 (Continued)

If the existing bell, buzzer or annunciator circuit consists of two or more push buttons, a No. 16A outfit should be used—one hand set for the bell, buzzer or annunciator station, the other to replace one of the push buttons—and one No. 16B Inter-phone outfit for each additional push button.

Outfit No.	Description	Retail Price Each	List Price Each
16B	To be used in addition to No. 16A outfit if existing bell, buzzer or annunciator circuit has two or more push buttons. Includes one hand set type Inter-phone, one connecting block with mounting screws, 12 feet of insulated twisted pair copper wire, 10 insulated nails for fastening wires, one hook for holding hand set, and illustrated installing instructions	\$7.20	\$14.40



No. 17 Outfit

Outfit No. 17

This consists of two **Hand Set Type Inter-phones** with all the material required to install a simple intercommunicating system between two points not over 80 feet apart, and where the wire will be wholly indoors and not exposed to weather conditions or moisture.

When installed in accordance with the directions furnished with each outfit, **either station can call or talk to the other.** Although intended primarily for business use, the No. 17 outfit can be used equally well in the home.

Outfit No.	Description	Retail Price Each	List Price Each
17	Includes two hand set type Inter-phones, two connecting blocks with mounting screws, 80 feet of insulated twisted pair copper wire, 60 insulated nails for fastening wire, two hooks for holding hand sets, two bells, two battery con- and illustrated installing instructions	\$15.50	\$31.00

INTER-PHONE ACCESSORIES

Extension Bell



No. 11B Extension Bell

Code
No.

11B

Description

This bell is wound to 10 ohms, and may be used as an extension bell for any Inter-phone system. It should also be used for any separate signaling circuit, such as a door bell operating from the Inter-phone batteries...

List Price
Each

\$1.80



No. 1A—Battery Box

Battery Boxes

1A

Black japanned sheet metal box lined with an insulating material. Holds 3 Blue Bell dry cells. Size of box, $8\frac{3}{4}$ inches long by $3\frac{7}{8}$ inches wide by $7\frac{3}{8}$ inches high.

\$2.40

2B

Similar to the No. 1A. Holds 9 Blue Bell dry cells. Size of box, $14\frac{5}{8}$ inches long by $5\frac{1}{2}$ inches wide by $7\frac{5}{8}$ inches high.

8.50

Push Button



No. 1396 Push Button

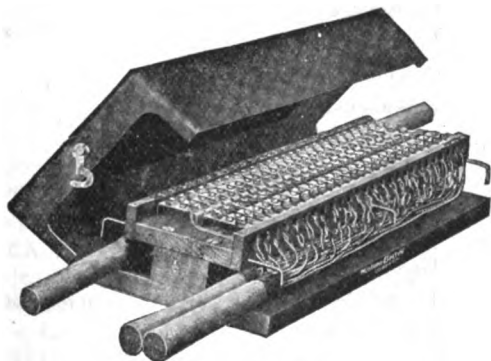
1396

Wood push button.

\$0.15

No. 19 Type Cable Terminals

The No. 19 Type cable terminal is admirably suited for interior distributing work. It was designed after a great deal of study, and is thought to be the best of its kind on the market. Made of hard wood, numbered and shellacked, and equipped with a japanned sheet metal cover.



No. 19B. Cable Terminal

Code No.	Capacity in Pairs	—Dimensions, Inches—			List Price Each
		Length	Width	Depth	
19A	14	8	$5\frac{1}{8}$	$2\frac{1}{2}$	\$8.60
19B	26	14	$5\frac{1}{8}$	$2\frac{1}{2}$	11.00

Connecting Blocks

No. 6 TYPE

These consist of brass studs embedded in a hard composition base. Studs fitted with two nuts (one a split check nut) and two washers.

Code No.	Capacity in Pairs	Length	Width	List Price Each
6A	7	$5\frac{5}{8}$ ins.	$1\frac{7}{8}$ ins.	\$1.80
6B	11	$8\frac{5}{8}$ ins.	$1\frac{7}{8}$ ins.	2.30
6C	16	$12\frac{5}{8}$ ins.	$1\frac{7}{8}$ ins.	2.90
6D	21	$16\frac{1}{8}$ ins.	$1\frac{7}{8}$ ins.	4.00
6E	26	$19\frac{7}{8}$ ins.	$1\frac{7}{8}$ ins.	4.80



No. 6B Connecting Block



No. 11A Connecting Block

Nos. 11 AND 12 TYPES

These consist of a composition base in which the screw terminals are imbedded. Each terminal consists of two screw bushings electrically connected by means of a metal strip, and provided with screws and washers.

Code No.	No. of Terminals	Size Inches	List Price Each
11A	2	$1\frac{1}{8} \times 1\frac{1}{2}$	\$0.50
11B	Same as No. 11A	except equipped with a cover.	.60
12A	3	$1\frac{1}{8} \times 1\frac{1}{2}$	.60
12B	Same as No. 12A	except equipped with a cover.	.70

INTER-PHONE ACCESSORIES

Inter-phone Cable

The conductors are provided with double silk and single cotton insulation, which is colored in such a way that each pair and each single wire can be identified. The cable is then impregnated with a wax compound and is covered with servings of paper and a heavy braiding, which is given a heavy coat of fireproofing paint.

The impregnation with wax prevents the insulation from fraying when the cables are installed. It also serves to protect the formed ends against moisture.

Three general types of cable are provided. Each type has its particular use, and care should be taken to order the proper cable for any desired purpose. These types are as follows:

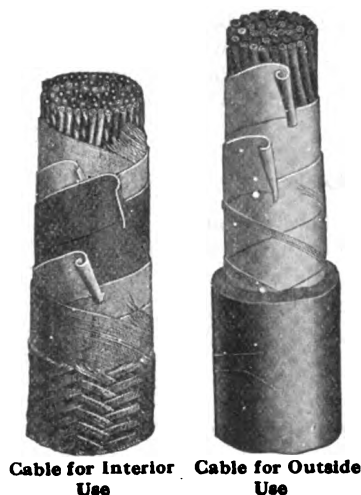
1. *Interior cable with outside braiding treated with gray fireproofing paint. Use only in dry places.*

2. *Interior cable with green glazed cotton outside braiding. Use only in dry places where exposed to view.*

3. *Outside cable, lead covered. Always use this cable outside, and inside in every case where there is apt to be moisture even in a small degree*

Lead-covered cables are not listed with separate Code Nos. Any fireproofed type of cable may be ordered with a lead sheath.

All cables are provided with a standard color scheme, so that each pair can be distinguished from any other. The pairs are properly twisted to prevent inductive disturbances.



Code No.	Conductors B. & S. Gauge	Covering	Approx. Outside Diameter	List Price per 100 Feet
185	4 singles No. 22	Fireproofed braid	$\frac{1}{4}$ in.	
161	8 singles No. 22	Fireproofed braid	$\frac{1}{8}$ in.	
161 (Lead)	8 singles No. 22	Lead sheath	$\frac{1}{8}$ in.	
142	8 singles No. 22	Green cotton braid	$\frac{1}{8}$ in.	
162	12 singles No. 22	Fireproofed braid	$\frac{1}{2}$ in.	
162 (Lead)	12 singles No. 22	Lead sheath	$\frac{3}{8}$ in.	
163	12 singles No. 22	Green cotton braid	$\frac{1}{2}$ in.	
164	6 singles No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{2}$ in.	
164 (Lead)	6 singles No. 22, 2 pair No. 16	Lead sheath	$\frac{1}{2}$ in.	
165	6 singles No. 22, 2 pair No. 16	Green cotton braid	$\frac{3}{8}$ in.	
134	6 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{2}$ in.	On request
134 (Lead)	6 pair No. 22, 2 pair No. 16	Lead sheath	$\frac{1}{8}$ in.	
155	6 pair No. 22, 2 pair No. 16	Green cotton braid	$\frac{1}{2}$ in.	
141	12 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{8}$ in.	
141 (Lead)	12 pair No. 22, 2 pair No. 16	Lead sheath	$\frac{1}{2}$ in.	
156	12 pair No. 22, 2 pair No. 16	Green cotton braid	$\frac{1}{8}$ in.	
157	16 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{2}$ in.	
157 (Lead)	16 pair No. 22, 2 pair No. 16	Lead sheath	$\frac{1}{8}$ in.	
159	16 pair No. 22, 2 pair No. 16	Green cotton braid	$\frac{1}{2}$ in.	
158	20 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{8}$ in.	
158 (Lead)	20 pair No. 22, 2 pair No. 16	Lead sheath	$\frac{1}{2}$ in.	
160	20 pair No. 22, 2 pair No. 16	Green cotton braid	$\frac{1}{8}$ in.	
136	24 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{1}{2}$ in.	
136 (Lead)	24 pair No. 22, 2 pair No. 16	Lead sheath	$\frac{5}{8}$ in.	
150	24 pair No. 22, 2 pair No. 16	Green cotton braid	$\frac{1}{8}$ in.	
140	31 pair No. 22, 2 pair No. 16	Fireproofed braid	$\frac{5}{8}$ in.	

MECHANICAL CODE SIGNALING SYSTEMS

General



APPLICATION. In every mercantile establishment it is often necessary to communicate immediately with the manager, superintendent or other executive who is not at his desk or within hearing range of his telephone bell at the moment.

In schools the principal, his assistant or the janitor are frequently wanted when they may be in any one of several places about the building.

The same is true of hotels and Y.M.C.A. buildings where the presence of the janitor, engineer or manager may be urgently needed at the office.

In hospitals the house doctor or head nurse may be wanted in a hurry when they are on their rounds.

In prisons or asylums the superintendent, warden, head keeper, or other official is apt to be suddenly wanted on an important matter.

No. 1A. Signaling Set To call different telephones (if such equipment is part of the building) one at a time, or to send a messenger in order to locate the desired person, frequently takes a considerable period of time, but with a mechanical code signaling system installed, the operator, clerk or other employee in the office or other central point gives a turn to a revolving key marked with the name of the individual wanted, which instantly signals the person desired wherever he may be.

DESCRIPTION. The equipment consists of a centrally located wooden cabinet equipped with revolving contact keys. A number of bells are mounted in different parts of the building which, when actuated from the central key cabinet, will ring simultaneously.

OPERATION. The key cabinet is equipped with a number of revolving keys. When the handle of a key is turned one-half revolution it slowly moves back to its original position, making and breaking an electrical contact a number of times at different intervals, thus forming a combination which is repeated four times before the key comes to a final stop. Each key produces a combination different from any of the other keys.

By placing the bells in such locations that, no matter where a person may be, he will always be within hearing distance of one of them, and by installing at a central point a key cabinet equipped with as many keys as there are persons in the organization who are apt to be frequently wanted on important matters, a call can be sent out for any one of them just by turning the key assigned to him. All bells will immediately sound the proper combination, and on hearing his call the person wanted steps to the nearest telephone and is in communication with the office immediately.

In addition to the regular signals described above, a special signal giving a continuous series of impulses to attract attention above all other signals can be furnished if desired. This special signal is intended to be used for emergency, fire, etc.

CAPACITY. The system can be furnished with keys for sending out 4, 6, 8, 10, 12, 14 and 16 different signals, thus producing maximum calling facilities for sixteen persons, which is usually all that average conditions require. When the special signal mentioned above is furnished this reduces by one the capacity for regular signals.

BELLS. It has been found that single stroke bells with 6 inch gongs will give satisfactory service under ordinary conditions. Any number and various sizes of bells can be combined to form one system.

INSTALLATION. The signaling system can be used alone or in connection with an Inter-phone System.

1. Independently. The signaling system can be installed and operated entirely separate and apart from any other system, and requires only two wires for its operation. As many bells as desired can be connected and made to simultaneously sound any desired code by turning the proper key in the key cabinet.

2. With Intercommunicating Telephone Systems. These signal sets can be connected directly to our inter-phones of System No. 1 without any change in the wiring of the instruments, or special bells. In this case, the bells on the instruments sound the code signals simultaneously whenever any one of the calling keys in the key cabinet is set in motion.

In case, however, loud ringing bells are required, or bells in locations where telephones are not installed, it will be found more satisfactory to install this code signaling system independently of any other equipment.

3. With Private Exchange or Private Branch Exchange Telephone Systems. A mechanical signaling system, when installed in connection with telephone systems of this class, should be put in as a separate system without special regard for the location of the various telephone instruments, the object being rather to so locate the bells that they will be best heard from every nook and corner of the plant.

MECHANICAL CODE SIGNALING SYSTEMS

General—(Continued)

CONNECTION DIAGRAMS. No connection diagrams are given for the reason that there are many different signaling systems in which the code signaling sets can be used. We furnish, upon application, detail information covering the connection of these sets with inter-phones and with large and small bells and buzzers. If you will advise us as to your requirements, we will be very glad to work up a suitable signaling system and make you a quotation.

REQUIREMENTS. The following apparatus and accessories are usually required:

The key cabinet (state capacity) with 4 (or less) up to 16 keys.

Any number and size of bells.

One resistance coil and condenser box (to prevent sparking at contacts).

One or more relay boxes, depending upon the number and size of bells and the length and size of wire.

Necessary wire to connect the apparatus.

One or more batteries consisting of four or more cells, depending upon the number and size of bells and the length and size of wire.



No. 2A Code Signaling Set



Model "ASS"
Single-stroke En-
closed Type



No. 262F
Coil and Condenser Box

Code Signaling Sets

The cabinets are made of golden oak, quarter-sawn. The metal face is finished in dull black with nickel trimmings. The sets are made only in 4 and 6 key sizes (each key providing a different signal), but they can be mounted side by side when 8, 10, 12, 14 or 16 signals are required.

Code No.	No. of Signals	Description	List Price Each
1A	4	Used for 4 signals.....	\$153.00
1B	4	Used with 1A for 8 signals.....	153.00
1C	4	Used with 2A for 10 signals.....	153.00
1E	4	Used with 1A and 1B for 12 signals....	153.00
1F	4	Used with 2A and 1C for 14 signals....	153.00
1D	4	Used with 1A, 1B and 1E for 16 signals.	153.00
2A	6	Used for 6 signals.....	196.50
2B	6	Used with 1A for 10 signals.....	196.50
2C	6	Used with 2A for 12 signals.....	196.50
2E	6	Used with 1A and 1B for 14 signals....	196.50
2D	6	Used with 2A and 1C for 16 signals....	196.50

Each of the above key cabinets may be ordered partially equipped.

If a special signal is desired one set should be ordered equipped with signal wheel No. 17.

Bells and Horns

BELLS

Bells of the enclosed type, either single stroke or vibrating, with 4, 6 or 8 inch gongs, can be furnished, the particular type and size depending on the local conditions.

HORNS

Factory signaling horns can be furnished when a signal of this type for extremely noisy places is necessary.

Coil, Condenser and Relay Boxes

With each code signaling set a resistance coil and condenser box, No. 262F, is required to prevent excessive sparking at the contacts. This box is made of quarter-sawn oak to match the set.

A relay box is necessary under certain conditions, depending upon the number and size of bells and the length and size of wire. This box contains a resistance coil and a condenser in addition to the relay. It is similar in appearance to the No. 262F, and is known as the No. 262G Relay Box.

Code No.	Description	List Price Each
262F	Coil and condenser box. Used to prevent spark- ing at contacts.....	\$11.70
262G	Relay box.....	20.30