

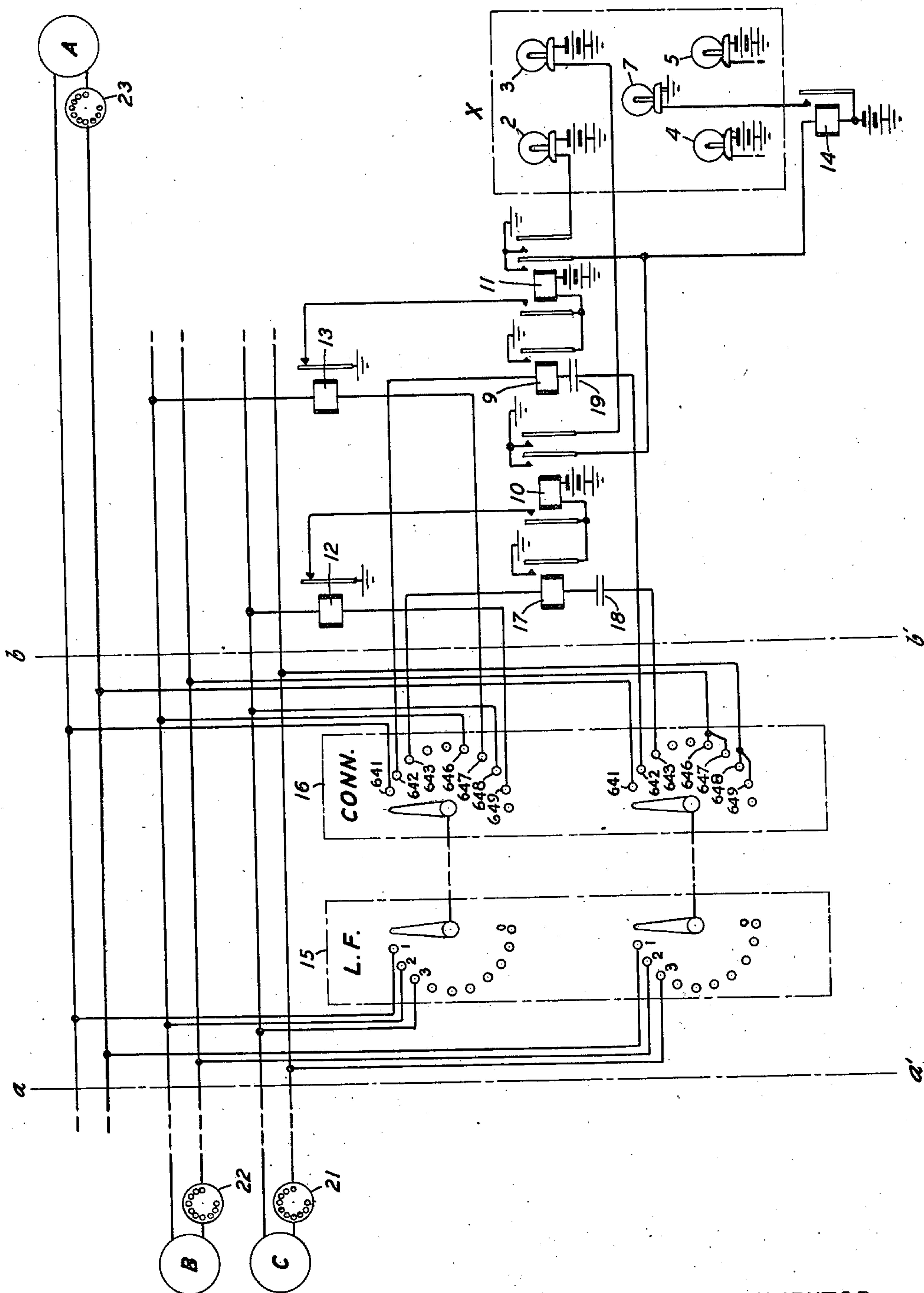
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ANNUNCIATOR SYSTEM

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ANNUNCIATOR SYSTEM

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This invention relates to automatic telephone systems and more particularly to special signaling systems auxiliary thereto whereby a subscriber is enabled to display a particular signal, at some distant point in the system, by dialing a predetermined private or secret code, which serves as an indication to a particular person that he shall call the subscriber.

An object of the invention is to automatically retire the displayed signal when the person signaled calls back and the subscriber answers.

A feature of the invention whereby the foregoing object is attained resides in relay means serially connected between the subscriber's line and terminals of the final selector or connector switch giving access to that line which, when operated, causes the signal to be retired.

For a better understanding of this invention, reference may be made to the accompanying drawing which shows three subscribers' stations A, B and C, whose lines terminate in an automatic private branch exchange, schematically indicated between the broken lines *aa'* and *bb'*, together with an annunciator and its control equipment in accordance with the present invention at the right of line *bb'*.

To illustrate the invention by a particular example, let us assume that station A is a regular subscriber's station connected to a private branch exchange and located on or adjacent to the trading area or floor of a stock exchange, and that stations B and C are located in brokers' offices that have representatives trading on the floor of the said stock exchange. It will be further assumed that the annunciator "X" is located on the wall of the trading room or in some other equally visible and conspicuous location where it will be under continuous observation by the floor representatives making use of this special service. Let it also be assumed that the broker at station C wishes to communicate with his representative on the floor of the exchange. This he does by dialing a predetermined private code, which may only be known to himself and which let us further assume is No. 643, and upon hearing the well-known ringing tone hangs up his receiver. The dialing of this code causes the private branch exchange equipment to function in a well-known manner to connect the brushes of the connector 16 to terminal 643 with which is associated the equipment for displaying the desired annunciator signal. When ringing current is connected to terminal 643, in the usual procedure of the establishment of a connection, relay 17 is operated in series with condenser 18

across the No. 643 terminals of the upper and lower banks of the connector, thereby closing an obvious circuit to operate relay 10 which in operating closes a locking circuit through its left-hand contacts, and the normally closed contacts of relay 12 to ground. Relay 10 in operating also closes an obvious circuit to light lamp 3 of the annunciator and to operate auxiliary relay 14, which in turn causes the pilot or auxiliary lamp 7 to be lighted. Lamps 2, 3, 4, 5, etc. are signals assigned to particular brokers' representatives and lamp 7 is an auxiliary signal lighted whenever any one of the lamps 2, 3, 4, 5, etc. is lighted. Lamp 7 is larger and more conspicuously placed than the other lamps of the annunciator and is used to draw attention to the individual signals.

When the lighted lamp 3 is observed by the broker's representative to whom it is assigned, and recognized as indicating that he call broker C, he retires to a conveniently located telephone such as station A, and initiates a connection to station C. In order to retire the signal of the annunciator, instead of dialing the listed number of station C, he dials a second private code, in this case No. 649 and known only to himself, which causes the equipment of the private branch exchange to again function in the usual manner and eventually cause the brushes of connector 16 to stop on terminals 649. As usual in the establishment of a connection, ringing is connected at this time to the 649 terminals of the connector, and passes through the upper bank terminal 649 through the winding of relay 12, over the line, through the ringer of station C, and back over the line to the lower bank terminal 649, thereby causing the ringer at station C to operate. When the receiver at station C is removed from the switch-hook, battery and ground from the private branch exchange flowing in this circuit cause relay 12 to operate, if it has not already operated on the ringing current. Relay 12 in operating causes the release of relay 10 by opening its previously traced locking circuit and relay 10 in releasing opens the previously traced circuits for lamp 3 and relay 14. This extinguishes lamp 3 and releases relay 14, which in turn extinguishes auxiliary lamp 7.

It should be here noted that the private code by which the floor representative calls the broker at station C is not the number listed and by which station C is called by the general public which may, for example, be 648 or any other suitable number within the limits of the private branch exchange line designations.

The reason for the private code used by the floor representative in calling the broker is to cause actuation of relay 12 for the purpose of retiring or extinguishing the floor representative's annunciator lamp which must not be extinguished by any other intervening calls which would of course pass over the regular listed terminals of the connector, shown on the drawing as 648.

It will therefore be evident that station C may be called, when idle, by its listed number at any time after the floor representative's annunciator lamp 3 has been lighted, without extinguishing the lamp, and that the lamp can only be extinguished by dialing the private code thereby establishing an auxiliary connection to the line through relay 12 which must be operated to retire the annunciator signal.

A connection originated at station B functions in a manner similar to the above described connection from station C, except that relays 9, 11 and 13 and lamp 2 replace those enumerated above. Lamp 7 and relay 14 are reused as previously described.

When the receivers are replaced on the switch-hooks at the end of the above described connections, the circuits of the private branch exchange involved in the connections such as line finder 15 and connector 16 return to normal in the usual well-known manner.

As this invention may be used with any type of manual or mechanical central energy telephone system and any type of lamp or signal annunciator system, the above described illustra-

tion should not be construed as limiting the scope of application of this invention to the particular arrangement described.

What is claimed is:

1. In an automatic telephone system, a plurality of subscribers' lines, a signal line, a signal associated therewith, switching means for connecting a first subscriber's line to said signal line and for displaying said signal, and means for connecting a second of said subscribers' lines to said first line including means operative when said first subscriber answers to retire said signal.

2. In a telephone system, subscribers' lines, a signal line, automatic switches for interconnecting any two of said lines, a signal associated with said signal line, means for displaying said signal when a first one of said subscribers' lines dials said signal line, and means for retiring said signal when a second one of said lines dials the first line and the first subscriber answers.

3. In an automatic telephone system, a first subscriber's line, a second subscriber's line, a signal line, automatic switches adapted to be controlled over said first line to interconnect said first and signal lines, and controlled over said second line to interconnect said second and first lines, a signal device associated with said signal line, means responsive to ringing current applied to said signal line to operate and lock in said signal device, and means interposed in the connection when said second and first lines are connected, and operated when the first subscriber answers, to unlock said signal device.

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