

July 28, 1936.

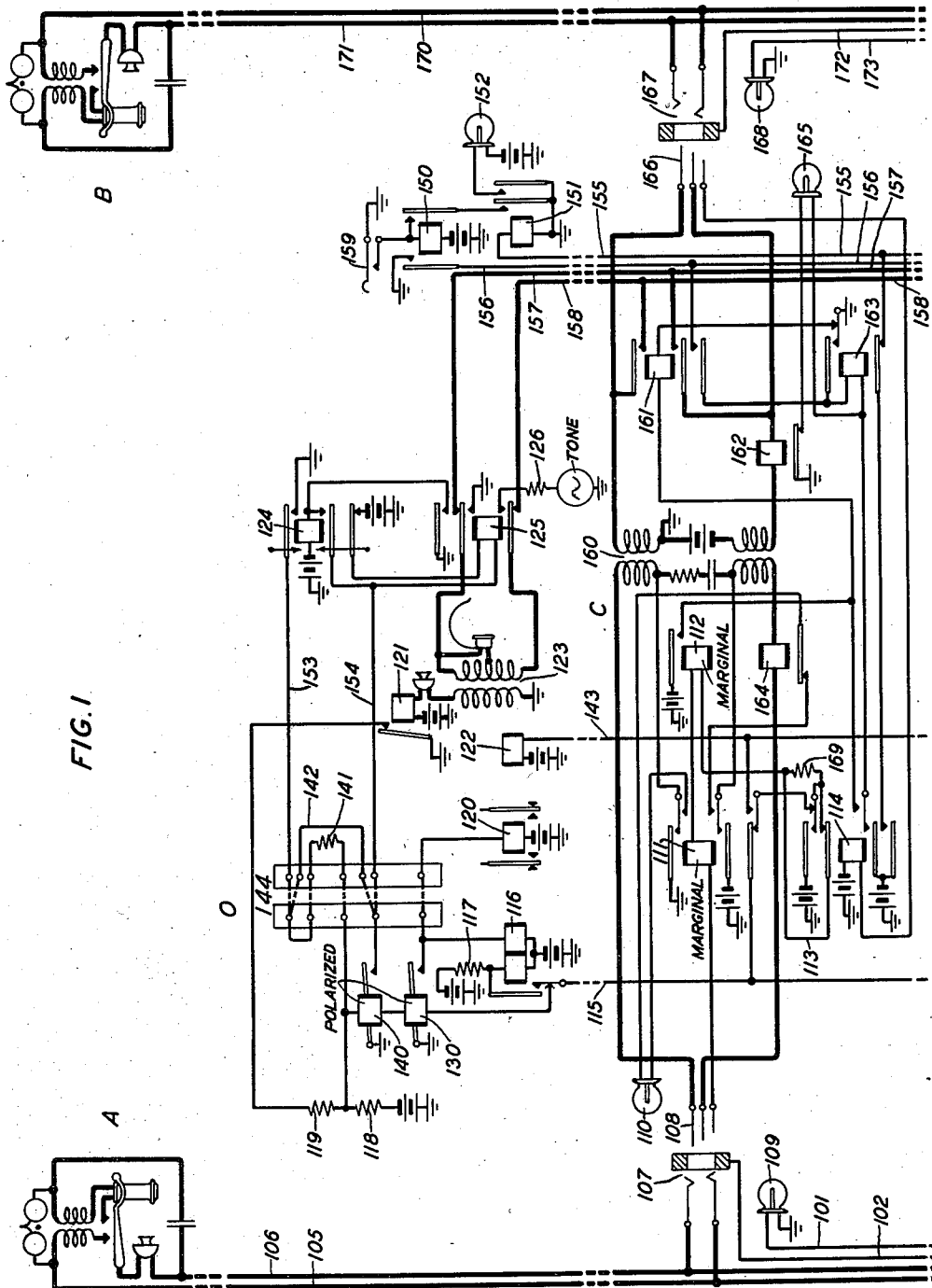
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2,049,183

TELEPHONE SYSTEM

Filed March 9, 1935

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

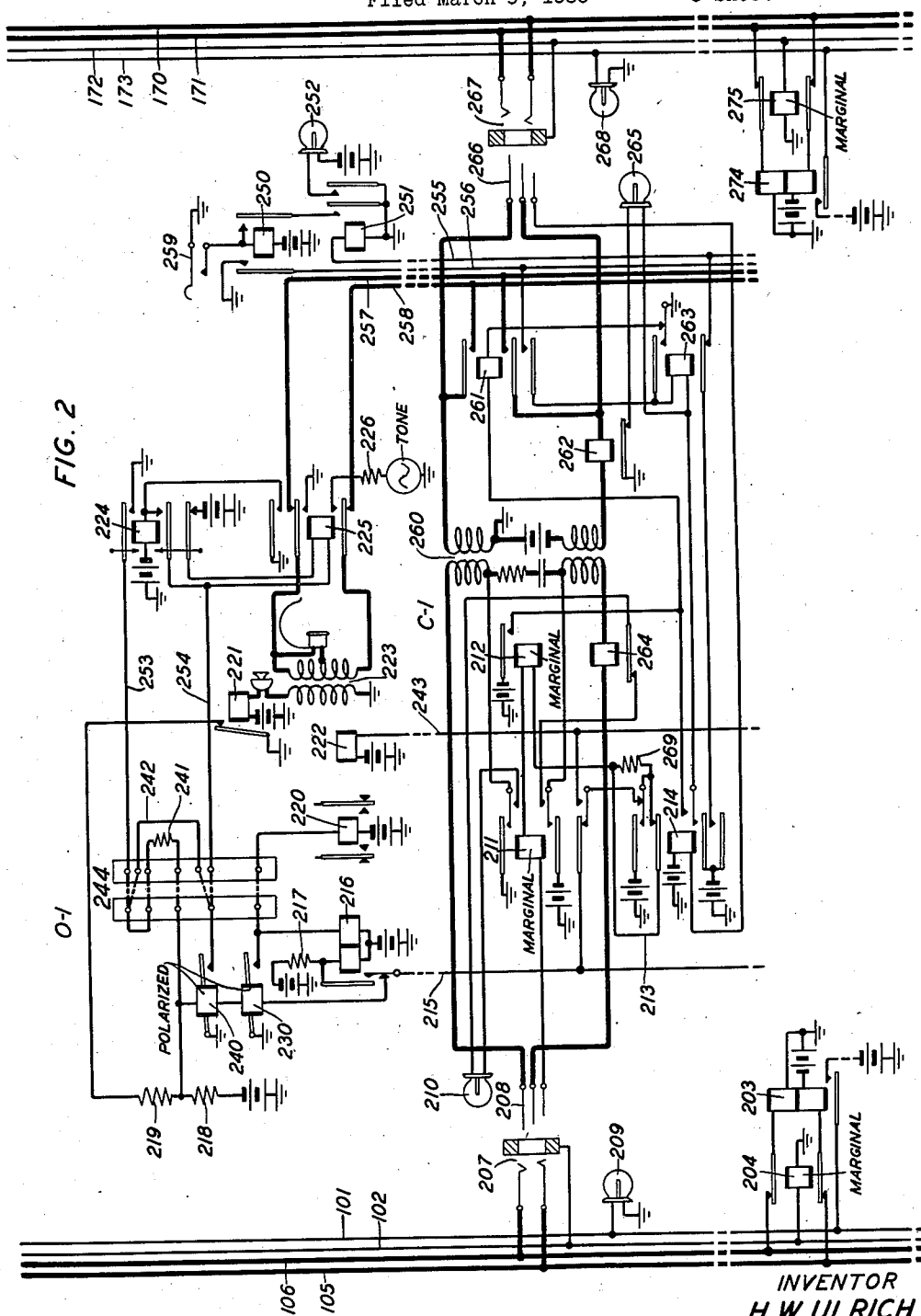


FIG. 2

O-1

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FIG. 3

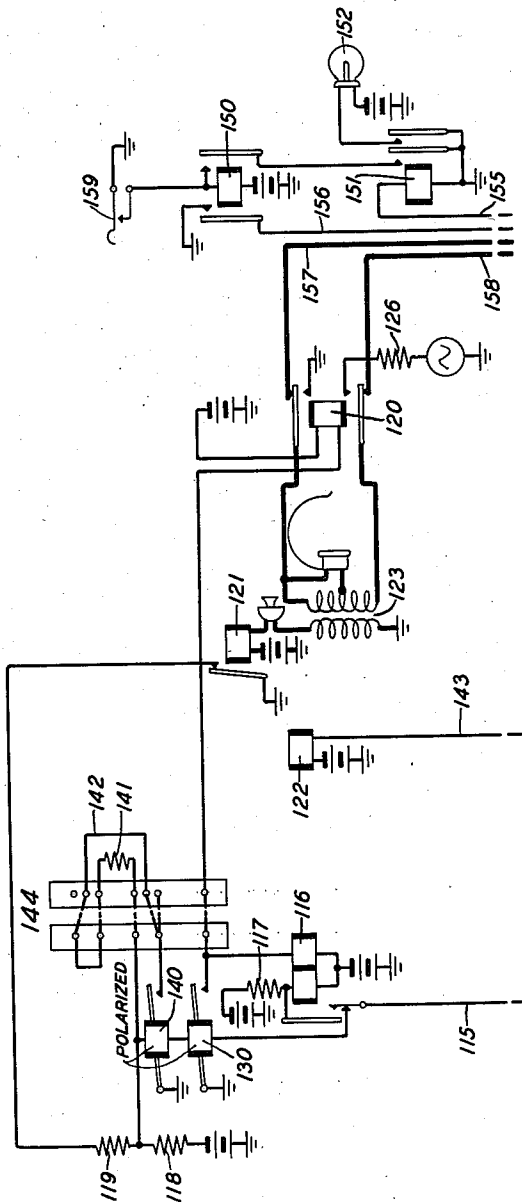
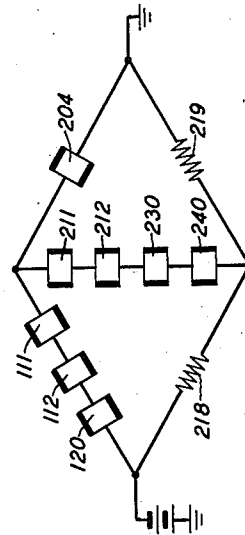


FIG. 4



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2,049,183

TELEPHONE SYSTEM

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Application March 9, 1935, Serial No. 10,230

9 Claims. (Cl. 179—55)

This invention relates to telephone systems and particularly to those of the manual type in which operators' cord circuits are used for establishing telephone connections.

5 The object of the invention is to simplify and improve manual telephone systems in which the subscribers' lines are available to a number of operators, any one of which may offer to serve in the establishment of a connection.

10 It has been the practice heretofore to allow several operators who may be idle at the time to answer a calling subscriber's line signal. In such arrangements the first operator to insert her cord in the subscriber's line jack proceeds to accept the called number and set up the desired connection, and any operator who answers subsequently withdraws as soon as she finds she has been preceded by another operator. The act of answering the call causes battery supply to be connected to the operator's cord circuit for talking purposes whether she is the first or a subsequent operator to respond.

According to the present invention, an alternative to these prior systems is provided in which the first operator's cord to be connected to a line is supplied with current that flows over the line to enable the subscriber and operator to converse, whereas any other cord subsequently connected to said line, while telephonically connected thereto so that the operator manipulating such second cord can both listen and speak to the subscriber, is not supplied with battery current. Hence the insertion and withdrawal of a second cord does not alter the flow of current in the connection between the subscriber's line and the first operator's cord.

35 A feature of the invention is a cord circuit having two relays, one of which operates in any case to connect the operator's telephone set to the cord when a line is answered and the other of which operates to supply current to the cord only in case no other operator has previously connected to the line.

Another feature is an arrangement in a system of this character in which any operator, other than the first operator to answer the call, receives a warning tone.

Another feature is a system of the character described in which only the first operator to answer a call receives a tone to advise her of the fact that she is first and may proceed to accept the call.

The foregoing and other features of the invention will be described more fully in detail in

the following specification and also in the appended claims.

The invention is illustrated in the accompanying drawings in which:

Fig. 1 shows a calling station A and a called station B, one of a plurality of connecting or cord circuits C at an operator's position which may be used to interconnect such stations, and the operator's telephone set and position equipment O common to the cord circuits. In this figure the operator's telephone circuit is arranged to give no indication to either operator or to give an indication to the second operator answering the call that the call has been answered.

Fig. 2 shows the line circuits associated with the calling station A and called station B, one of a plurality of connecting or cord circuits C—1 at a second position, and the operator's telephone set and position equipment O—1.

Fig. 3 shows an alternative arrangement of the operator's telephone circuit O which is used when an indication is given to the operator who has first answered the call.

Fig. 4 shows diagrammatically an unbalanced Wheatstone bridge circuit in which the controlling relays of the testing circuit are connected when a second cord circuit is connected with a line with which another cord circuit is already connected.

Each of the stations A and B is shown terminating at the central office in a plurality of answering jacks. Each answering jack has a signaling device such as a lamp associated therewith. The answering jacks and their associated line lamps for a station terminate at different operators' positions.

It is to be understood that the invention is not limited to the use of the particular apparatus shown in the drawings as the apparatus and the circuit may be changed or modified in order to perform the desired circuit functions. Only such parts of the cord circuits and of the operators' telephone circuits as are necessary to illustrate the invention have been shown.

Referring to Fig. 1, when a subscriber at station A initiates a call, the receiver is removed from the switchhook and a circuit is established for energizing the line relay 203. Relay 203, being energized, completes a circuit extending from grounded battery through the lower front contact of relay 203 and the filaments of line lamps 209 and 109, which are located in front of different operators at the central office, any one of which operators may answer the call. The lamps

209 and 109 are illuminated, notifying all the operators that a call is awaiting attention.

It will be assumed that at this time the operator at the position O, at which lamp 109 is located, is free to handle the incoming call. This operator, therefore, inserts the plug 108 associated with the cord circuit C into jack 107 located at her position and associated with the line of the calling station A. Upon the insertion of plug 108 into jack 107, relay 130 will become energized in a circuit extending from ground through the winding of the marginal cut-off relay 204, the sleeve contact of jack 107, the sleeve contact of plug 108, windings of marginal relays 111 and 112, conductor 113, upper back contacts of relay 114, lower back contact of relay 111, conductor 115, left back contact of relay 116, windings of polarized relays 130 and 140, through resistance 118 to grounded battery in the operator's telephone circuit. This circuit will be in parallel with a circuit through resistance 119 to ground on the left front contact of relay 121 thereby forming a potentiometer arrangement. The polarized relay 140 will not operate with the current flowing in this direction. Marginal relays 204, 111 and 112 will not receive enough current to cause them to become energized.

Relay 130, however, is energized and closes a circuit from ground through the front contact of relay 130 to grounded battery through the winding of relay 116 for operating relay 116 which locks through its left front contact to ground on conductor 115. Opening of the left back contact of relay 116 opens the holding circuit for the relay 130 which now releases. Closure of the left front contact of relay 116 establishes a circuit from grounded battery through the left-hand winding of relay 116 and the left front contact of relay 116 to conductor 115 in multiple with a circuit established from grounded battery, through resistance 117 and the left front contact of relay 116 to conductor 115. Battery through the left-hand winding of relay 116 in parallel with resistance 117 to conductor 115 increases the current flow in conductor 115 sufficiently to operate marginal relays 204, 111 and 112 over the circuit previously described for operation of relay 130. When cut-off relay 204 operated, it disconnected the line relay 203 from the calling line thereby extinguishing the multiple line lamps 109 and 209. Operation of relay 111 closes a circuit from ground through the upper front contacts of relay 111, lamp 110, through the lower back contact of relay 164 to grounded battery through the lower front contacts of relay 111. Lamp 110 will not operate at this time since closure of the upper front contact of relay 111 connects ground through the upper left-hand winding of repeating coil 160 to the tip conductor of the cord C and closure of the lower inner front contacts of the relay 111 connects battery through the lower left-hand winding of repeating coil 160 to the ring conductor of the cord C thereby closing a loop circuit over the line of calling station A and causing relay 164 to operate and open its lower back contact. Opening of the lower back contact of relay 111 will open the circuit to the start lead 115. This will remove the holding ground for the relay 116 in the operator's telephone circuit thereby permitting relay 116 to release. Relay 111 will lock however, over a circuit from ground, winding of relay 204, conductor 102, sleeves of jack 107 and plug 108, windings of relays 111 and 112, conductor 113 the upper back contacts of relay 114,

lower outer front contact of relay 111, conductor 143, winding of relay 122 to grounded battery.

Relay 112, being energized, will establish a circuit from grounded battery, through the upper front contact of relay 112, winding of the relay 161, through the upper back contact of relay 163 to ground. Relay 161 will become energized in this circuit and connect the operator's telephone circuit through conductors 158 and 157, the upper front contact and the lower inner front contact of relay 161 to battery and ground over the tip and the ring, respectively, of cord circuit C.

Connection of battery and ground to the tip and the ring of the cord circuit C supplies talking current for the circuit between the operator's telephone set and the calling station A. The operator ascertains the party or number desired, and finding that the party desired is station B makes a busy test through the tip conductor of the calling end of cord C in a manner well known to the art. If the desired number is idle, the operator inserts the plug 166 of the calling cord into the multiple jack 167. This establishes a circuit from grounded battery, through the winding of relay 114, the sleeve contact of plug 166, the sleeve contact of jack 167, conductor 172, through the winding of relay 275 to ground. Relay 114 having operated removes the shunting path from around resistance 169 and opens the circuit to conductor 143 and relay 122. Closure of the upper front contact of relay 114 places grounded battery through resistance 169, the windings of relays 112 and 111 to the sleeve circuit of the calling station A. This resistance 169 reduces the current drain in the sleeve circuit. Closure of the lower inner front and the lower middle front contacts of relay 114 will close three circuits; the one from grounded battery, the winding of relay 161 to ground on the upper back contact of relay 163; the second from grounded battery, through lamp 165 to ground on the lower back contact of relay 162; the third from grounded battery, through the winding of relay 163, the lower outer front contact of relay 161, conductor 156 to the left-hand armature of relay 150. Closure of the lower outer front contact of relay 114 will establish a circuit from grounded battery, through the lower back contact of relay 163, conductor 155, winding of relay 151 to ground. Relay 151 will operate and establish a circuit from ground through its right outer front contact to grounded battery for illuminating lamp 152 which is a signal to the operator to signal the called station B. Relay 275 having operated opens its back contacts and thereby disconnects line relay 274 from the tip and the ring conductors of the line of the called station B.

The operator noting that the supervisory lamp 152 is lighted will depress the key 159 in the common ringing key circuit, which will cause the called station B to be signaled in a manner well known to the art. Operation of the key 159 also will close a circuit from ground through the front contact of key 159, winding of relay 150 to grounded battery, thereby causing relay 150 to become energized and lock to ground in a circuit through its right front contact and the inner right front contact of relay 151. Operation of relay 150 will establish a circuit from ground through the left front contact of relay 150, conductor 156 the lower outer front contact of relay 161, winding of the relay 163, the lower middle front contact of relay 114 to grounded battery, thereby causing relay 163 to become energized. Closure of the upper front contact of relay 163 will establish a locking circuit for re-

lay 163 from ground through the upper front contact of relay 163, winding of relay 163 to grounded battery through the lower middle front contact of relay 114. Opening of the upper back contact of relay 163 will open the holding circuit through relay 161 which will release thereby opening its front contacts and disconnecting the operator's telephone circuit O from the cord circuit C. Opening of the lower back contact of relay 163 will open the holding circuit through conductor 155 to the winding of relay 151 which will now release. Releasing of relay 151 will open the locking circuit through the winding of relay 150 and the circuit through supervisory lamp 152. Relay 150 will release and lamp 152 will be extinguished. Release of relay 150 will remove the ground from conductor 156 and the operating circuit previously described for the relay 163 leaving relay 163 locked to ground through its upper front contact.

When the called station responds, supervisory relay 162 operates in a circuit established from grounded battery, lower right-hand winding of repeating coil 160, winding of relay 162, ring contact of plug 166, ring contact of jack 167, subscriber loop, tip contact of jack 167, tip contact of plug 166, upper right-hand winding of repeating coil 160 to ground. On the operation of relay 162, the lower back contact of relay 162 is opened thereby opening the circuit through supervisory lamp 165 which is now extinguished as a signal to the operator that the called station B has answered.

The subscriber at calling station A and the subscriber at called station B may now converse with each other and upon completion of the conversation and restoration of their respective receivers to the switchhooks, supervisory relays 164 and 162 become de-energized, causing their associated lamps 110 and 165, respectively, to light, indicating to the operator that conversation has ceased. The operator, noting the lighted condition of the supervisory lamps, may withdraw plugs 108 and 166 from their associated jacks whereupon all of the apparatus is restored to normal.

Having described in detail the establishment of a connection between a subscriber at station A and a subscriber at station B, it will now be assumed that the operator at position O (see Fig. 1) has answered a call from the subscriber at station A and that an operator at the position O—1 (see Fig. 2) attempts to handle the call upon the illumination of lamp 209. It is to be understood that the operator at such a position attempts to handle an incoming call immediately after the first operator has answered a call, otherwise lamp 209 would have been extinguished upon the insertion of plug 108 into jack 107.

Indication to second operator

The second operator's cord and the associated test and operator's circuits shown in Fig. 2 are identical with the ones shown in Fig. 1 for the first operator. Assume that straps 142 and 242 on Fig. 1 and Fig. 2, respectively, are not connected to the terminals on the connecting blocks 144 and 244, and the circuit will function in the following manner to give the second operator an indication that the call has been answered. The second operator inserts the plug 208 of her cord circuit into jack 207. The sleeve of jack 207, being multiplied with that of jack 107, now has a busy potential connected thereto owing to the insertion of plug 108 of the orig-

inal cord into jack 107 by the first operator. The potential on the sleeve of jack 207 has been provided from the battery associated with the sleeve of the plug 108 of the cord of the first operator.

Upon the insertion of plug 208 of the second cord circuit into jack 207, a circuit is established over a path extending from sleeve of jack 207, sleeve of plug 208, winding of relay 211, winding of relay 212, conductor 213, upper back contacts of relay 214, lower back contact of relay 211, conductor 215, left back contact of relay 216, winding of relay 230, winding of relay 240, to the potentiometer circuit including resistances 218 and 219. Due to the fact that a plug at another operator's position has been inserted previously into a multiple of the jack 207, current now flows through the polarized relays 230 and 240 in a direction opposite to that in which it flowed through relays 130 and 140 at position O of the first operator to answer, and is in such a direction as to cause the operation of polarized relay 240 only. Polarized relay 230 will not operate because of reversed polarity of the current. Marginal relays 211 and 212 will not operate because there is insufficient current through the windings. The reason that the current flows in a reversed direction at this time is due to the fact that an unbalanced Wheatstone bridge arrangement is formed as shown in Fig. 4 in which the sleeve circuit of the first connected cord circuit and resistance 218 associated with the second connected cord circuit form two adjacent arms with battery connected between them; and resistance 219 of the second connected cord circuit and cut-off relay 204 form the two other adjacent arms with ground connected between them; and in which relays 230, 240, 211 and 212 of the second connected cord circuit form the bridge or galvanometer arm. It has been found that with suitable values of resistance this current reversal exists not only when a second operator plugs into the jack of a calling line but also when a plurality of operators plug into the multiple jacks of a calling line after the first operator has obtained the connection.

The operation of polarized relay 240 associated with the second connected cord circuit closes a circuit from ground, through the front contact of relay 240, winding of relay 225, the lower back contact of relay 224 to grounded battery thereby causing relay 225 to become energized. Opening of the back contacts of relay 225 will disconnect the operator's telephone set from the cord circuit temporarily. Operation of relay 225 will establish also a circuit from ground through the upper inner front contact of relay 225, the operator's telephone set, and the lower front contact of relay 225 to a tone lead 226, thus giving the operator a tone indicating that the call has already been answered by another operator. Operation of the relay 225 will close a circuit also from ground through the upper outer front contact of relay 225, winding of slow operating relay 224 to grounded battery. Relay 224 will become energized and lock through its lower front contact to ground on the front contact of relay 240. Opening of the lower back contact of relay 224 will disconnect the grounded battery from the energizing circuit of relay 225 thereby permitting the release of relay 225 and disconnecting the tone from the operator's telephone set so that the operator has received tone for only a short duration of time. Release of relay 225 will reconnect the operator's telephone circuit to conductors 257 and 258 of the cord circuit. Closure

of the upper front contact of relay 224 will establish a circuit from ground through the upper front contact of relay 224, terminal strip 244, resistance 241 (the strap 242 being disconnected), resistance 218 to grounded battery. This will increase the current flow through the windings of marginal relays 211 and 212 causing relay 212 to become energized and furnish grounded battery through its upper front contact to the winding of relay 261 to ground on the upper back contact of relay 263. Relay 261 being energized closes its upper front contact and its lower inner front contact thereby connecting conductors 258 and 257 to the tip and the ring of cord circuit C-1. Marginal relay 211 will not operate under this marginal condition and battery and ground will not be connected to the tip and ring of this cord circuit.

No indication to either operator

In case it is not desired to have an indication furnished to either the first or the second operator answering a call, the operators' telephone circuits O and O-1 of Figs. 1 and 2 are arranged in the following manner. In Fig. 1, the strap 142 is connected to the terminal block 144 at the points indicated and conductors 153 and 154 are disconnected from the terminal block 144. In Fig. 2, the strap 242 is connected to the terminal block 244 at the points indicated and conductors 253 and 254 are disconnected from terminal block 244.

It will now be assumed that the operator at position O has answered a call from the subscriber at station A and that the operator at the position O-1 attempts to handle the call upon the illumination of lamp 209. In operation, the telephone and cord circuits of the first operator to answer the call function in the manner described heretofore. It is to be understood that the operator at position O-1 attempts to handle the incoming call immediately after the first operator has answered the call, otherwise lamp 209 would have been extinguished upon the insertion of plug 108 into jack 107.

The second operator inserts the plug 208 of her cord circuit into jack 207. The sleeve of jack 207, being multiplied with that of jack 107, now has a busy potential thereon owing to the insertion of plug 108 of the original cord into jack 107 by the first operator. The potential on the sleeve of jack 207 has been provided from the battery associated with the sleeve of the plug 108 of the cord of the first operator. Upon the insertion of plug 208 of the second cord circuit into jack 207, a circuit is established through the windings of relays 230 and 240 over a path identical with that outlined heretofore when the second operator receives an indication. Relay 230 will not operate and relay 240 will operate as outlined heretofore. The operation of polarized relay 240 associated with the second connected cord circuit closes a circuit from ground, through the front contact of relay 240, strap 242 on terminal block 244, resistance 241, resistance 218 to grounded battery. This will increase the current flow through the windings of marginal relays 211 and 212 causing relay 212 to become energized. Marginal relay 211 will not operate under this marginal condition. Operation of relay 212 will establish a circuit for operating relay 261 which relay 261 will operate and connect the operator's telephone set to the cord circuit in the manner outlined heretofore when the second operator receives an indication.

Indication to first operator

In case it is desired to have an indication furnished to the first operator who answers a call, the operator's telephone circuit shown in Fig. 3 should replace the operators' telephone circuits O and O-1 on Figs. 1 and 2.

Referring to Fig. 3 in which the numerical designations correspond with similar designations shown in Fig. 1, when a subscriber at substation A initiates a call, the receiver is removed from the switchhook and a circuit is established for energizing the line relay 203. Relay 203 being energized, completes a circuit extending from grounded battery through the lower front contact of relay 203 and the filaments of line lamps 209 and 109, which are located in front of different operators at the central office, any one of which operators may answer the call. The lamps 209 and 109 are illuminated notifying all the operators that a call is awaiting attention.

It will be assumed that at this time the operator at the position at which lamp 109 is located is free to handle the incoming call. This operator, therefore, inserts the plug 108 associated with the cord circuit C into jack 107 located at her position and associated with the line of the calling station A. Upon the insertion of plug 108 into jack 107, relay 130 will become energized in a circuit extending from ground through the winding of the marginal cut-off relay 204, the sleeve contact of jack 107, the sleeve contact of plug 108, windings of marginal relays 111 and 112, conductor 113, upper back contacts of relay 114, lower back contact of relay 111, conductor 115, left back contact of relay 116, windings of polarized relays 130 and 140, through resistance 118 to grounded battery in the operator's telephone circuit. This circuit will be in a parallel circuit with resistance 119 to ground on the left front contact of relay 121 thereby forming a potentiometer arrangement. The polarized relay 140 will not operate with the current flowing in this direction. Marginal relays 204, 111 and 112 will not receive enough current to cause them to become energized.

Relay 130, being energized, closes circuits from ground through the front contact of relay 130 to grounded battery through the winding of relay 116 and to grounded battery through the winding of relay 120 for operating relays 116 and 120. Opening of the back contacts of relay 120 will disconnect the operator's telephone set from conductors 157 and 158 of the cord circuit temporarily. Closure of the front contacts of relay 120 will connect the operator's telephone set to ground and a source of tone over conductor 126. Opening of the left back contact of relay 116 opens the holding circuit for the relay 130 which now releases, and permits the release of relay 120. Release of relay 120 disconnects the tone or indication from the operator and reconnects the operator's telephone set to conductors 157 and 158. Closure of the left front contact of relay 116 establishes a circuit from grounded battery through the left-hand winding of relay 116 and the left front contact of relay 116 to conductor 115 in multiple with a circuit established from grounded battery, through resistance 117 and the left front contact of relay 116 to conductor 115. Battery through the left-hand winding of relay 116 in parallel with resistance 117 to conductor 115 increases the current flow in conductor 115 sufficiently to operate marginal relays 204, 111 and 112 over the circuit previously de-

scribed for operation of relay 130. Marginal relays 204, 111 and 112 having operated, cause the circuit to function in the manner outlined heretofore in the detailed description of the operation of the circuit shown in Fig. 1. The operator will then complete the call in the manner outline heretofore in the description of Fig. 1.

Should the second operator insert the plug 208 of her cord circuit into jack 207 after the first operator has answered, the second operator's telephone circuit and cord circuit will function in the same manner as outlined heretofore in the case where no indication is given to either operator.

What is claimed is:

1. In a telephone system, a line, a plurality of connecting circuits for making connection with said line, a source of current and means for connecting the same to any one of said circuits for supplying current thereover to said line, a telephone associated with one of said connecting circuits, and means for establishing a telephonic connection between said telephone and said line by way of the associated connecting circuit without connecting said source to such connecting circuit.

2. In a telephone system, a line, a plurality of connecting circuits for making connection with said line, a source of current, means operable in response to the connection of one of said circuits to the line for connecting said source to such circuit to supply current to said line, means also responsive to the connection of a connecting circuit to the line for establishing a telephonic connection between such connecting circuit and the line, and means for establishing a telephonic connection between one of said connecting circuits and said line without connecting said source of current to such connecting circuit.

3. In a telephone system, a line having multiple terminals, a plurality of cord circuits for making connections to said terminals, a source of current, means responsive to the connection of one of said cord circuits with one of said terminals for establishing a direct current path from said source to said line, means for establishing a telephonic connection between said connected cord circuit and said line, and means responsive to the connection of a second cord circuit to one of said terminals for establishing a telephonic connection between such second cord circuit and said line without establishing a circuit for the flow of current from said source to said second cord circuit.

4. In a telephone system, a telephone line having a plurality of terminals, a plurality of cord circuits for making connection to said line through said terminals, a telephone associated with each of said cord circuits, a source of current, means responsive to the connection of one of said cords to said line for telephonically connecting the telephone associated with such cord to the line and for connecting said source of current to the cord to supply current to said line, and means responsive to the subsequent connection of another of said cords to said line for telephonically connecting the associated telephone to said line without connecting said source to such cord.

5. In a telephone system, a subscriber's line having multiple jacks, operators' positions each having a telephone set, cord circuits for said positions for making connection with said line through said jacks, a source of current, relay means for automatically connecting an operator's telephone set in telephonic relation to one

of her cord circuits and said line in response to the insertion of such cord in one of the jacks of said line, means also responsive to the connection of a cord circuit to said line for connecting said source to the cord to supply current thereto and to the subscriber's line, and relay means for automatically connecting another operator's telephone set in telephonic relation to one of her cord circuits and said subscriber's line in response to the insertion of such cord in one of the jacks of said line without connecting said source of current to said last mentioned cord circuit.

6. In a telephone system, a line, cord circuits for making connection with said line, each of said cords having two relays associated therewith, a circuit completed by the connection of one of said cord circuits to said line for operating both of the associated relays, a source of current, a circuit completed by the connection of another of said cords to said line for operating only one of the relays associated with said last mentioned cord, means controlled by one of the relays of any cord for supplying current from said source to the line, and means controlled by the other relay of any cord for establishing a telephone connection between the cord and the line.

7. In a telephone system, a subscriber's line, a plurality of cord circuits for making connection with said line, a telephone set for each of said cord circuits, means responsive to the connection of one of said cords to said line for telephonically establishing a telephone connection between said telephone set and said line by the way of said cords, a source of current, means also responsive to the connection of a cord circuit to said line for completing a direct current path for the flow of current from said source over said connected cord circuit to the subscriber's line, means responsive to the subsequent connection of another one of said cord circuits to said line for establishing a telephone connection between the associated telephone set and said line without completing a path for the flow of current from said source to said last mentioned cord circuit, and means to produce a tone in the telephone set associated with any cord that is connected to the line subsequent to any other of said cords.

8. In a telephone system, a subscriber's line, operators' positions, cords for each of said positions, a telephone set at each position, a tone mechanism for each of said positions, each of said cord circuits having two relays therein, a circuit completed by the connection of one of said cords to said line for operating both of the associated relays, means responsive to the subsequent connection of another of said cords to the line for rendering the tone mechanism at the associated operator's position effective to give the operator a tone, means controlled by said tone mechanism for operating only one of the relays in the subsequently connected cord circuit, a source of current, means controlled by one of the relays of any cord for supplying current from said source to the line, and means controlled by the other relay of any cord for establishing a telephone connection between the associated operator's telephone set and the line.

9. In a telephone system, a subscriber's line, a plurality of cord circuits for connecting to said line, a telephone set associated with each of said cord circuits, a source of current, means responsive to the connection of one of said cord

circuits to said line for telephonically connecting the associated telephone set to said line by way of said cord circuit and for connecting said source of current to the cord to supply current to said line, means responsive to the subsequent connection of another of said cords to said line for establishing a telephone connection between

the associated telephone set and said line by way of said last mentioned cord without connecting said source of current to such cord, and means for producing a tone in the telephone associated with any cord connected to said line provided no other cord is already connected to said line. 5

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