CIRCUIT DESCRIPTION
AMERICAN TELEPHONE & TELEGRAPH CO.,
DEPT. OF DEVELOPMENT & RESEARCH.
BELL TELEPHONE LABORATORIES, INC.
PRINTED IN U.S.A.

PANEL SYSTEM
AUXILIARY LINE CIRCUIT
FOR LONG SUBSCRIBER LINES
HAVING OVER 750 OHMS RESISTANCE
FOR USE ON INDIVIDUAL
TWO PARTY SELECTIVE OR
FOUR PARTY SEMI-SELECTIVE LINES

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 No change.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Rating changed from Provisional Standard to Mfr. Disc. and the following added to the replacement note - Replaced by SD-21466-01.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

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BELL TELEPHONE LABORATORIES, INC.

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CIRCUIT DESCRIPTION
AMERICAN TELEPHONE & TELEGRAPH CO.,
DEPT. OF DEVELOPMENT & RESEARCH.
BELL TELEPHONE LABORATORIES, INC.
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Issue 1
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June 13, 1928
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PANEL SYSTEM
AUXILIARY LINE CIRCUIT
FOR LONG SUBSCRIBER LINES
HAVING OVER 750 OHMS RESISTANCE
FOR USE ON INDIVIDUAL
TWO PARTY SELECTIVE OR
FOUR PARTY SEMI-SELECTIVE LINES

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 Resistance lamp 6-G to 8-A.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 Note 4 was not previously shown.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Resistance lamp 8-A was shown as 6-G.

D.2 Note 107 was not previously shown.

D.3 A filter box was shown in battery leads and fusing note 101 referred to filtered battery instead of quiet battery.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

AMERICAN TELEPHONE & TELEGRAPH CO.,
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CIRCUIT DESCRIPTION
AMERICAN TELEPHONE & TELEGRAPH CO.
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PANEL SYSTEM
AUXILIARY LINE CIRCUIT
FOR LONG SUBSCRIBERS LINES
HAVING OVER 750 OHMS RESISTANCE
FOR USE ON INDIVIDUAL
2 PARTY SELECTIVE OR
4 PARTY SEMI-SELECTIVE LINES

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 This circuit is for use with machine switching subscriber's lines where the loop resistance is between 750 and 1700 ohms.

2. WORKING LIMITS

2.1 External subscriber's circuit loop resistance for dialing, supervision and ringing is 750 ohms min. to 1700 ohms max. The minimum insulation resistance is 10,000 ohms.

2.2 Maximum rated sub. set capacity across tip and ring of line or from either side of line to ground 2 mf.

OPERATION

3. FUNCTIONS

3.1 Signals sub. station on direct and party lines.

3.2 Trips machine ringing during silent period.

3.3 Provides supervision on calls from an operator.

3.4 Operates line relay in the line switch or line finder circuit.

3.5 Repeats dial pulses to the machine switching equipment.

3.6 Holds the connection during conversation.

3.7 Provides for reverting ringing on party lines.

4. CONNECTING CIRCUITS

4.1 Line switch or line finder circuits.

4.2 Sender Circuits.

4.3 Incoming and Final Selector Circuits.

4.4 M.S."A" Cord Circuits Arranged for Ringing on the Answering Cord.

4.5 Subscriber's line circuit.

DETAILED DESCRIPTION

5. INCOMING CALLS - When this circuit is seized by a final selector, the line circuit is made busy at the final multiple bank sleeve terminal. When ringing current is applied to the tip or ring conductor, the (R) relay will operate in turn operating the (R1) relay. The (R1) relay operated, disconnects terminals 4 and 7 of the repeating coil from the line and closes through a metallic circuit from the incoming selector to the line. When the receiver is removed from the switchhook at the called station, and the silent period of the ringing cycle occurs, the (L) relay will operate in turn operating the (PC) relay which closes a bridged circuit toward the incoming selector for tripping machine ringing. The (TR) relay will also operate but will perform no useful function at this time. The bridge closure to the incoming selector controlled by the (L) relay will also provide supervision on calls originated by an operator. On disconnection when the receiver is replaced on the switchhook at the called station the (L), (PC) and (TR) relays will release restoring the circuit to normal.

6. OUTGOING CALLS - When a receiver is removed from the switchhook at a sub-station to originate a call, the (L) relay will operate in turn causing operation of the (PC) and (TR) relays. The (PC) relay operated, will close a bridge circuit through windings 1 to 2 and 5 to 6 of repeating coil, resistance "C" and the line relay in the line switch or line finder circuit to battery and ground. This closure will cause operation of the above mentioned line relay which will in turn cause connection of this circuit to a sender in preparation for selection of the desired line. The (TR) relay operated

will disconnect the (R) relay from the ring conductor and connect the circuit through resistance and condenser "A" across the contacts of the (PC) relay in preparation for functioning to repeat dial pulses. The (TR) relay is made slow to release to insure its holding operated over the open period of dial pulses.

6.1 Dialing - During dialing the (L) and (PC) relays will follow the interruption of the dial repeating the pulses to the machine switching equipment until connection to the desired line is accomplished.

6.2 Disconnection - When the receiver is replaced on the switchhook at the calling station the (L), (PC) and (TR) relays will release, transmitting a disconnect signal to the machine switching train and restoring the circuit to normal.

6.3 Reverting Calls - When a party line subscriber desires to call another party on the same line the code zero is dialed thereby routing the call to the special service operator. The desired number together with that of the calling party and the information that the desired number is another party on the same line is passed to the operator after which the calling party replaces the receiver on the switchhook for a reasonable length of time before again removing it. The special service operator will then cause the bell at the desired station to be rung in the manner determined by the traffic in the particular area and when the called party answers and the calling party again removes the receiver, conversation will take place under similar conditions to that when long line equipment is not provided. On disconnect, when the receiver is replaced on the switchhook at both stations, the (L) relay will release causing release of (PC) and (TR) relays and returning the circuit to normal as described in paragraph 6.2.

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