TEST DISTRIBUTER SELECTOR CIRCUIT 18898 A

REVERSE BATTERY BUSY SUPERVISION
HORIZONTAL TYPE RELAYS.

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This switch is used by a verification operator when she desires to come in on a line that has been reported as in trouble. When it is selected A* is energized thru the back contacts of F. The positive winding of A is connected to direct ground thru the cam springs. A opens a part of the release circuit; closes a circuit to B; and prepares the circuit to the switch ahead.

RELAY A

RELAY B

B operates from ground at A; opens a part of the release circuit; prepares the impulsing circuit; and grounds the release circuit so as to hold the switches back of it in their operated positions. Ground on the release trunk energizes the 1300 ohm winding of G.

IMPULSING

At each interruption of the circuit at the calling device, A drops back and operates the vertical magnet in series with C from ground at A thru the back contact of D and the make contact of B. The vertical magnet raises the shaft and wipers to the called level.

VERTICAL MAGNET

VERTICAL SPARK COND.

A 1/2 M.F. condenser in series with a 10 ohm resistance to ground connected to the make contact of B prevents excessive sparking at the impulse spring of A.

OFF NORMAL SPRINGS

The off normal springs close on the first vertical step, close a part of the release circuit; and prepare the circuit to E.

*NOTE: A,B etc., refer to relays A,B, etc.

RELAY C

C closes a circuit to E from ground on the release trunk thru the off normal springs and shunts D with the same ground.

RELAY E

E locks itself to ground at B thru the off normal and interrupter springs; shunts D from ground at the make contact of B; and prepares the rotary magnet circuit.

After the last impulse of this series, C drops back (not having dropped back during interruptions on account of its slow release action) and closes the rotary magnet circuit from ground on the release trunk thru the make contacts of E.

ROTARY MAGNET

The rotary magnet steps the wipers in onto the contacts of the 1st trunk and opens the locking circuit to E. E restores and opens the circuit to the rotary magnet.

AUTOMATIC SELECTION OF AN IDLE TRUNK

If the first trunk is busy, ground on the private wiper from the grounded private bank contact of the busy trunk will hold D shunted. As soon as the rotary magnet restores, after its circuit is opened by E, ground on the private wiper operates E thru the back contact of D, the rotary interrupter and the off normal springs. E operates as previously explained and closes the rotary magnet circuit. The rotary magnet steps the wipers onto the contacts of the second trunk and opens the circuit to E. E restores and opens the rotary magnet circuit which in turn restores and closes the private wiper circuit to E. If this trunk is also busy the same cycle of operations will be repeated

until an idle trunk is found or the wipers pass off the contacts of the 10th trunk on the 11th rotary step.

ROTARY SPARK COIL & COND.

A 1300 ohm non-inductive resistance wound on top of and in multiple with the winding of E prevents excessive sparking at the rotary interrupter springs. A 1/2 M.F. condenser in series with a 10 ohm resistance to ground connected to one side of the rotary magnet prevents excessive sparking at the make contacts of A.

The private contact of an idle trunk will not be grounded so that when such a trunk is selected operates after E restores from ground on the release trunk thru the interrupter and off normal springs to battery thru E. E, because of its resistance and stiff spring adjustment cannot operate in series with D.

SWITCHING RELAY D

D closes the loop circuit to the switch ahead thru the make contact of A and the 11 1/2 ohm winding of G; opens the vertical magnet circuit; and closes the private and line wiper circuits to the switch ahead.

RELAYING IMPULSES

As the next series of interruptions comes in from the calling device, A opens and closes the loop circuit to the line relay of the switch ahead. The switches ahead complete the connection to the called line.

RELAY G

The 1300 ohm winding of G is energized from ground on the release trunk. The 11 1/2 ohm winding of G is energized in series with the line relay of the test distributer ahead of this switch. G does not operate

because its two windings oppose each other.

TALKING

The operator may talk to the called party over the line circuit thru the two 2 M.F. condensers; one on each side of the line. These condensers are necessary to insulate the talking battery of the called party from that of the operator.

BUSY LINES

If the called line is in use, the test distributer reverses battery over the trunks and causes C to operate as the two windings will then be pulling together. C closes the circuit to F.

RELAY F

F reverses battery to the operator so as to give her a visual signal that the called line is busy.

RELEASE

When the operator releases the connection A restores; opens the circuit of B; and opens the loop circuit to the switch ahead. The switch ahead restores and removes ground from the release trunk which allow D to restore. D restores and closes the release circuit thru the back contact of A and make contact of B and the off normal springs to battery thru a release signal relay. The release magnet releases the switch.

RELEASE MAGNET

As soon as the shaft returns to normal the release circuit is opened at the off normal springs. A 500 ohm non-inductive resistance wound on top of and in multiple with the winding of the release magnet prevents excessive sparking at the off normal release springs.

RELEASE SPARK COIL

COV.TYPE
C.O.34675
11-24-20.

RELEASE SIGNAL RELAY

The battery to the release magnet is taken thru a slow acting relay associated with a group of switches so that in case the release circuit remains closed an alarm will be given. This relay is slow acting so that in case the number of calls is to be registered a meter can be operated.

ALL TRUNKS BUSY

If all the trunks on thelevel called are busy the shaft will rotate until it steps off the contacts of the tenth trunk on the eleventh rotary step. On this

CAM SPRINGS

step the shaft operates the cam springs which open the circuit to D to prevent it from operating; replace the direct ground on the positive winding of A with ground on which is superimposed the busy tone so as to give the operator an audible signal that the trunks are all busy; and operates F. F reverses the battery over the lines to the operator which operates a visual busy signal. The audible signal associated with the visual signal informs her that the trunks are all busy while the visual signal alone operates when she has called a busy line.

The operator must release the connection and dial again in order to select an idle trunk and complete her call. The switch releases as previously explained.

AUTOMATIC ELECTRIC CO.
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