

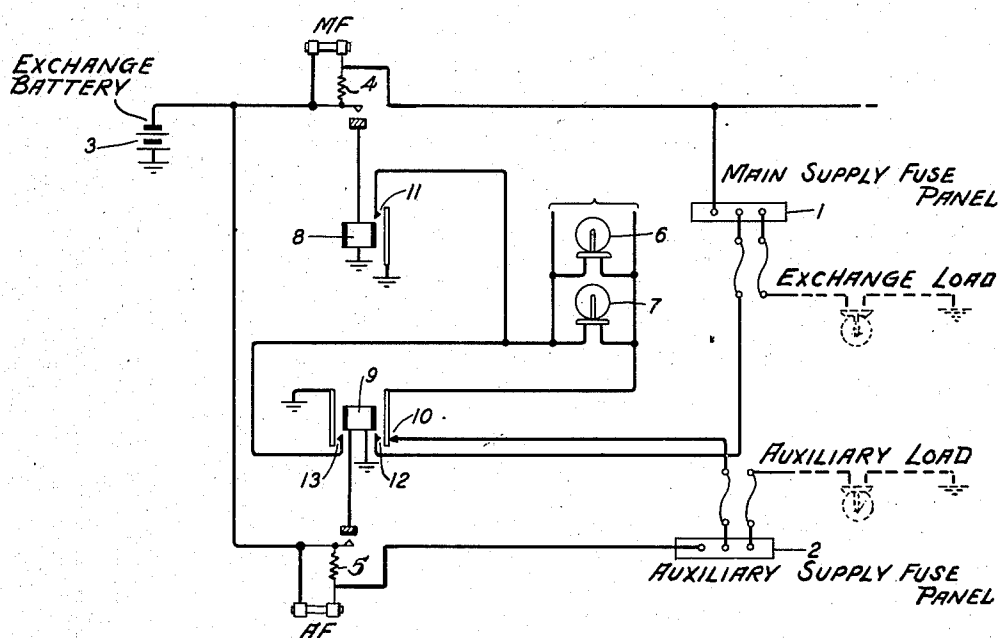
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SIGNALING SYSTEM

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SIGNALING SYSTEM

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3 Claims. (Cl. 177—311)

This invention relates to a signaling system especially adapted for use in telephone central offices. Its object is to insure the operation of an alarm to notify attendants of the operation of current supply fuses.

In the accompanying drawing which illustrates diagrammatically an embodiment of the invention, a power plant or main source of direct current for the operation of a telephone exchange is represented by battery 3, usually 24 volts, which is connected through a main fuse MF to a main fuse panel 1 which supplies current to the exchange load for operating relay lighting signal lamps, etc. as is well known in the art. Battery 3 is also connected through auxiliary fuse AF to an auxiliary fuse panel 2 which supplies current for various auxiliary alarm circuits, etc.

Shunted around the terminal of main fuse MF and auxiliary fuse AF are small capacity alarm fuses 4 and 5, respectively, of a well known type as disclosed in Patent 817,959 to E. B. Craft, issued April 17, 1906, which alarm fuses are so constructed and arranged that when their associated fuse is ruptured the fusible element also ruptures immediately and permits closure of a circuit from the battery 3 to ground through relays 8 and 9, respectively.

The alarm indicating a fuse failure may be in the form of lamps 6 and 7 located at readily visible locations in the exchange.

In case of rupture of the main fuse MF and alarm fuse 4 relay 8 operates in an obvious circuit to close a circuit from ground through lamps 6 and 7, contact 10 of relay 9 to fuse panel 2 and thence to battery 3 through auxiliary fuse AF.

Should fuse AF, and its alarm fuse 5, rupture relay 9 will be operated thereby completing another circuit to light lamps 6 and 7 which may be traced from ground, contact 13 of relay 9, lamps 6 and 7, contact 12 of relay 9 to the main fuse panel 1 and thence to battery 3 through main fuse MF.

Thus the operation of the alarm signal lamps is effected in the event of the operation of either fuse 4 or fuse 5 and in each case by the closure of a circuit through the other unoperated fuse.

What is claimed is:

1. The combination in a current supply and fuse alarm system for a telephone exchange, of a single exchange battery, a main exchange load and an auxiliary exchange load, a main supply circuit extending from one pole of said battery to said main load for supplying current thereto, a separate auxiliary supply circuit extending from the same pole of said battery to said auxiliary

load for supplying current thereto, a fuse in said main supply circuit and a relay operable when said fuse ruptures, a fuse in said auxiliary supply circuit and a second relay operable when said auxiliary fuse ruptures, a single signal lamp for giving an alarm when either of said fuses ruptures, and circuit means controlled by said relays for feeding current to said lamp through either one of said fuses when the other fuse ruptures without establishing any conducting path from one of said supply circuits to the other, the circuit for lighting said lamp when said main fuse ruptures including a path extending from a particular pole of said battery through the auxiliary fuse and contacts of said second relay to a particular terminal of said lamp and a circuit path extending from the other pole of said battery through operated contacts of said first relay to the other terminal of the lamp, and the circuit for lighting said lamp when the auxiliary fuse ruptures includes a path extending from said particular pole of the battery, through the main fuse and another contact of said second relay to said particular terminal of said lamp and a circuit path from said other pole of the battery through a contact of said second relay to said other terminal of said lamp.

2. The combination in a current supply and fuse alarm system for a telephone exchange of a main exchange load and a main supply circuit connected thereto, an auxiliary load and an auxiliary supply circuit connected thereto, a single exchange battery connected to both of said supply circuits for supplying current to said loads, a main fuse and an auxiliary fuse in said main and auxiliary supply circuits respectively, a first relay and means for operating the same in response to the rupture of said main circuit fuse, a second relay and means for operating the same in response to the rupture of said auxiliary circuit fuse, a single signal lamp for giving an alarm when either fuse ruptures having first and second terminals, circuit means effective when the main fuse ruptures for lighting said lamp, without establishing any conducting path between said main and auxiliary supply circuits, comprising a path extending from one pole of said battery through the auxiliary fuse and normal contacts of said second relay to the first terminal of said lamp and including a path extending from the other pole of said battery through operated contacts of said first relay to the second terminal of said lamp, and circuit means effective when the auxiliary fuse ruptures for lighting said lamp, without establishing any conducting path be-

tween said main and auxiliary circuits, comprising a path extending from said first-mentioned pole of battery through said main fuse and operated contacts of said second relay to said first lamp terminal and including a path from said
5 other pole of battery through operated contacts of said second relay to said second lamp terminal.

3. The combination in a current supply and fuse alarm system for a telephone exchange of a main exchange load and a main supply circuit
10 connected thereto, an auxiliary load and an auxiliary supply circuit connected thereto, a single exchange battery having one pole grounded and the free pole connected to both of said supply circuits for supplying current to said loads, a main
15 fuse and an auxiliary fuse in said main and aux-

iliary supply circuits respectively, a first relay and circuit means for operating the same from said battery in response to rupture of said main circuit fuse, a second relay and circuit means for operating the same from said battery in response
5 to rupture of said auxiliary circuit fuse, a signal device having two terminals, and circuit means controlled by the contacts of said relays and effective when either of said fuses ruptures for
10 connecting a particular one of said terminals to the free pole of said battery through the unruptured fuse and for connecting the other terminal of said device to the grounded pole of said battery, without establishing any conducting path
15 between said main and auxiliary circuits.

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