

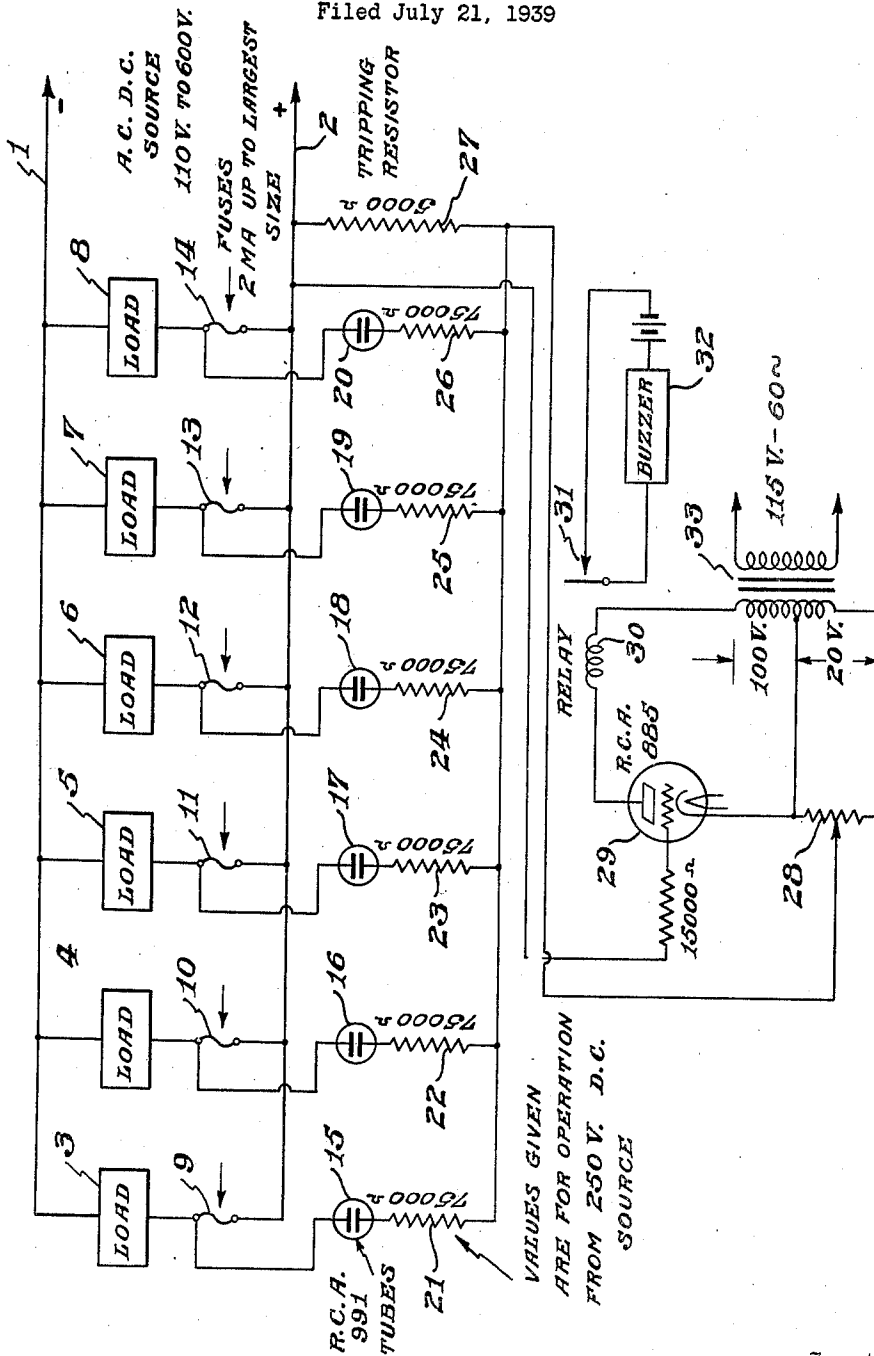
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FUSE INDICATING SYSTEM

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FUSE INDICATING SYSTEM

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2 Claims. (Cl. 177—311)

This invention relates to systems for producing an indication dependent on the functioning of a protective device such as a fuse or the like, and has for its principal object the provision of an improved system and method of operation whereby a voltage change between the terminals of the protective device is utilized to produce an indication of the condition of such device.

The invention will be better understood from the following description considered in connection with the accompanying drawing, and its scope is indicated by the appended claims.

The single figure of the drawing is a wiring diagram of the improved system for indicating the condition of a plurality of fuses each arranged to afford protection for a different load device.

As will appear, the improved system operates (1) to produce an aural indication when any one of the fuses functions to open its particular circuit, and (2) also to produce a visual indication of the particular fuse which has parted. While the protective device is shown as a fuse, it is apparent that the invention is applicable to other types of protective device wherein a voltage change between the protective device terminals results from interruption of the load circuit by the device.

The illustrated system includes electrical circuit terminals 1 and 2, between which are connected a plurality of load devices 3 to 8, each of these devices being connected in series with a protective device such as one of the fuses 9 to 14.

Connected in shunt to the fuses 9 to 14 are a plurality of glow discharge tubes 15 to 20, which may be of the RCA 991 type and are each connected in series with one of a plurality of current-limiting resistors 21 to 26. Due to the rise in voltage between the fuse terminals when the fuse parts, the corresponding RCA 991 tube takes current and produces a visual indication of the particular fuse which has functioned to interrupt its load circuit.

Connected in shunt to all of the fuses 9 to 14 through the individual lamp and resistor circuits is a resistor 27 which, together with a resistor 28, is included in the input circuit of an electron discharge control device or tube 29. The output circuit of this device 29 includes the operating

coil 30 of a relay 31 which functions to control the energization of a buzzer 32 or other aural indicating device. Through a transformer 33, current is supplied to the output circuit of the device 29 and to the input circuit biasing resistor 28.

Since the resistor 27 is connected in shunt to all of the fuses 9 to 14, it follows that the parting of any of these fuses operates the buzzer 32 to produce an aural indication whereby the operator's attention is drawn to the fact that one of the load circuits has been interrupted, the particular circuit being visually indicated by the corresponding one of the devices 15 to 20.

I claim as my invention:

1. The combination of electrical circuit terminals, a plurality of load devices, a plurality of fuses each connected between said terminals in series with a different one of said load devices, a plurality of glow discharge tubes, a plurality of current-limiting resistors for said tubes, a circuit providing a connection through one of said resistors and one of said tubes in series across each of said fuses, thereby to cause the different tubes to respond to a voltage change resulting from the parting of a different one of said fuses, a common resistor in shunt with all of said fuses through the several tube circuits, and a control tube having input electrodes connected with said resistor to receive a control potential therefrom in response to current flow therethrough.

2. The combination with an electrical supply circuit, of a plurality of load devices connected in parallel across said supply circuit, a fuse in the connection for each load device with one side of said circuit, a glow discharge tube and a series current-limiting resistor therefor connected with the load side of each of said fuses and having a common circuit connection to said one side of the electrical supply circuit, a resistor in said last-named common connection and effectively in parallel with each of said fuses through each of said tube and resistor connections, means for deriving a control potential from said last-named resistor, and electronic control means responsive to said control potential comprising a tube having cathode and control grid connections with said resistor.

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