Feb. 3, 1942. S. G. HOUSE 2,271,693

DUAL FUSE BLOCK

Filed June 2, 1941

Fig. 1.

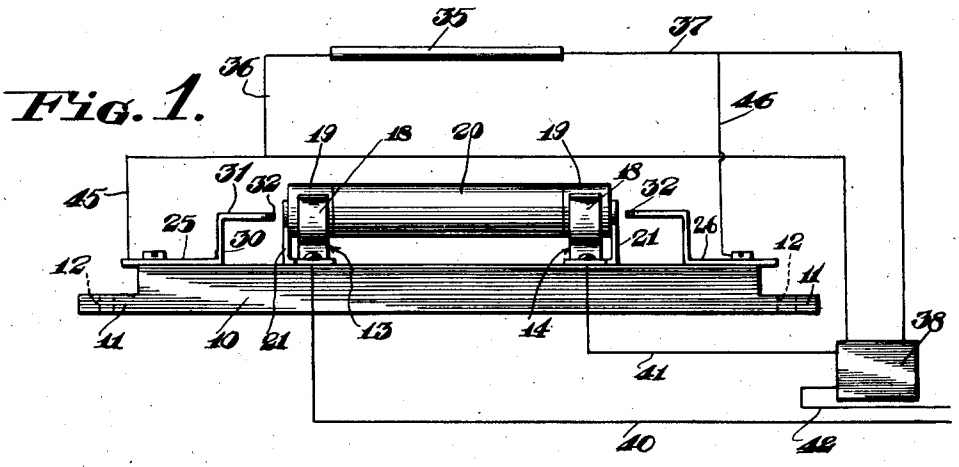


Fig. 2.

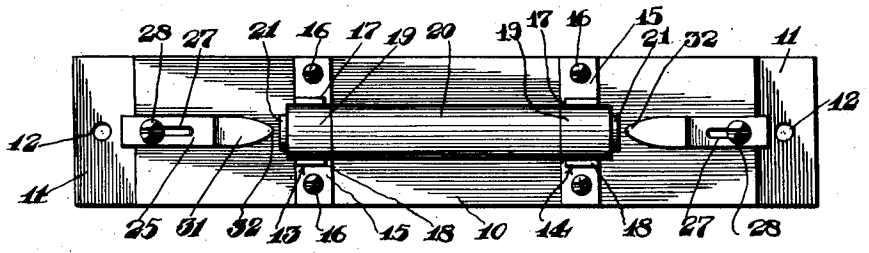
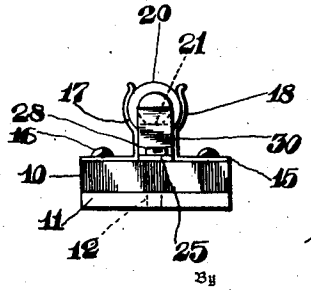


Fig. 3.



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DUAL FUSE BLOCK

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4 Claims. (Cl. 200—115)

This invention relates to a dual purpose fuse block.

An object of the invention is the provision of a fuse block for supporting a fuse, of the usual type, in a predetermined position so that when a greater current is drawn through the circuit in which the fuse is embodied said fuse will be blown or burned out to prevent damage to certain electrical devices, said block being so constructed that the fuse will be burned out when there is an interruption of a secondary circuit also including the fuse therein.

Another object of the invention is the provision of a device for opening a primary circuit when an unauthorized resistance in the circuit causes a greater flow of current, said device also including means for opening the primary circuit when for some reason a current is caused to be built up unnecessarily in a secondary circuit.

A further object of the invention is the provision of a fuse block for carrying a fuse of the standard type in which the fuse is maintained in a predetermined position so that the ends of the fuse will be spaced from points forming the terminals of a secondary circuit of an electrical device so that when the secondary circuit is interrupted a spark will be created between the points and the ends of the fuse for causing the fuse to be ruptured whereby the primary circuit will be opened.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification, nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a side view in elevation of a fuse block constructed in accordance with the principles of my invention and showing more or less diagrammatically several circuits connected with the fuse block.

Figure 2 is a plan view of the fuse block.

Figure 3 is an end view in elevation of the block.

Referring more particularly to the drawing, 10 designates a base member formed of insulating material which has an attaching lip 11 at each end provided with a perforation 12 through which a screw may be passed for securing the block to a fixed support.

A pair of spring clips 13 and 14 are each provided with a base member 15 secured at 16 to the top of the block 10 and in spaced relation with each other. Each of the clips are provided with spring arms 17 and 18 which are bowed outwardly as shown in Fig. 3 to receive the metal conducting caps 19 of a fuse 20 of the standard type.

Each clip is provided with an upstanding finger 21 adapted to engage the outer ends of the metal caps 19 of the fuse 20 for maintaining the fuse in a predetermined position for a purpose which will be presently explained.

It will be appreciated that the finger 21, the spring arms 17 and 18 and the base member 15 may be formed from one piece of metal.

A pair of contacts 25 and 26 are provided with elongated slots 27 which receive a screw or bolt 28. Each contact is provided with an upstanding arm 30 and a horizontally disposed member 31 having a point 32 at its free end and these points are adapted to be spaced a predetermined distance from the ends of the metal conducting caps 19 on the opposite ends of the fuse 20. In order to adjust the points 32 towards and away from the ends of the metal cap it is only necessary to loosen the screw 28 whereby the contacts 25 and 26 may be moved towards the ends of the fuse until the points 32 are spaced the correct distance from the ends of the fuse.

Since the fingers 21 engage the opposite ends of the fuse 20 the fuse will be prevented from shifting laterally in either direction so that after the points 32 are once properly adjusted with respect to the ends of the fuse, proper spacing between the points and the ends of the fuse will be maintained at all times.

The fuse block is adapted to be used in various types of circuits and it is especially adapted for use in connection with certain electrical devices for controlling the operation of elevators, for illuminating purposes, and this device may also be used in connection with generators.

One form of use is illustrated in Fig. 1 by the diagram in which a stepped up voltage is employed for maintaining a lamp 35 illuminated. This lamp has its contacts connected by wires 36 and 37 with a transformer generally designated by the numeral 38 so that said wires and the lamp will be considered a secondary circuit.

The primary circuit is represented by wires 40, 41 and 42. Wires 40 and 42 are connected with a source of current and through the clips 13 and 14 and the fuse 20 the primary circuit is completed.

A wire 45 connects the wire 36 with a contact

25, while the wire 46 connects the wire 37 with a contact 26. It will be seen by this diagram that the fuse 20 is embodied in the primary circuit represented by the wires 40, 41 and 42, but is not directly in the secondary circuit represented by the wires 36 and 37.

If the load becomes too great in the primary circuit the fuse 20 will be destroyed and, therefore, the primary and secondary circuits both will be cut out.

However, if the lamp 35 fails to function normally so that considerable voltage is built up in the secondary circuit said voltage will cause a sparking between the points 32 and the caps 19 of the fuse 20. The high temperature produced by the sparking will cause the fuse 20 to be disrupted and therefore, will not only open the secondary circuit but the primary circuit will likewise be opened as well. In this manner the entire current is cut off from all electrical devices included in the circuits to prevent injury or destruction to said devices.

It very frequently happens that where the secondary circuit of a transformer is interrupted and the primary circuit is maintained the heat caused by the high voltage in the transformer at this time will burn out the transformer whereby all of the circuits will have to be cut off until a new transformer has been installed and after the trouble has been repaired in the secondary circuit.

I claim:

1. A dual purpose fuse block comprising a base formed of insulating material, a pair of metal clips secured to the base in spaced relation, a fuse having the ends thereof clamped in place by the clips, contacts connected with each clip and adapted to be connected to the terminals of an electric circuit, a second pair of contacts mounted on the ends of the base and having points spaced a distance from the ends of the fuse, said second contacts being connected with a second electrical circuit.

2. A dual purpose fuse block comprising a base formed of insulating material, a pair of metal clips secured to the base in spaced relation, a fuse having the ends thereof clamped in place by the clips, contacts connected with each clip and adapted to be connected to the terminals of an electric circuit, a second pair of contacts mounted on the ends of the base and having points spaced a distance from the ends of the fuse, said second contacts being connected with a second electrical circuit, and means for adjustably positioning the second contacts for predeterminately positioning the points relative to the ends of the fuse.

3. A dual purpose fuse block comprising a base formed of insulating material, a pair of metal clips secured to the base in spaced relation, a fuse having the ends thereof clamped in place by the clips, contacts connected with each clip and adapted to be connected to the terminals of an electric circuit, a second pair of contacts mounted on the ends of the base and having points spaced a distance from the ends of the fuse, said second contacts being connected with a second electrical circuit, and spaced means on the block for positioning the ends of the fuse in a predetermined spaced relation with the points.

4. A dual purpose fuse block comprising a base formed of insulating material, a pair of metal clips secured to the base in spaced relation, a fuse having the ends thereof clamped in place by the clips, contacts connected with each clip and adapted to be connected to the terminals of an electric circuit, a second pair of contacts mounted on the ends of the base and having points spaced a distance from the ends of the fuse, lips projecting upwardly from the base and engaging the ends of the fuse for aiding in retaining the ends of the fuse in a predetermined spaced relation with the points, and means for adjustably positioning the second mentioned contacts for properly spacing the points from the ends of the fuse, said second contacts being connected with a second electrical circuit.

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