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2,668,932

MOLDED RESISTANCE DEVICE

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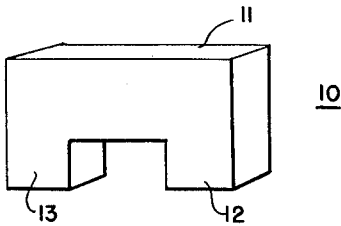


FIG. 2

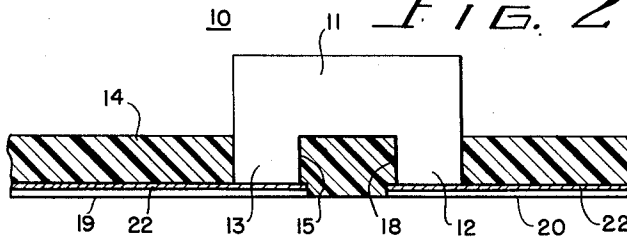
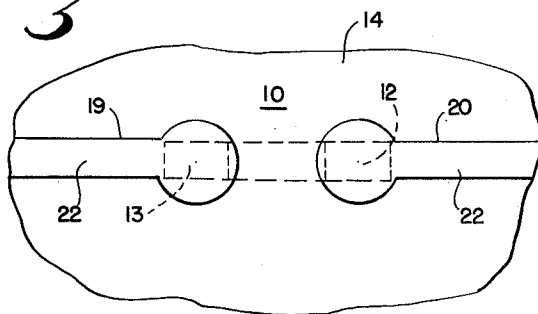


FIG. 3



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MOLDED RESISTANCE DEVICE

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3 Claims. (Cl. 317-101)

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The present invention relates to a new and improved molded resistance device that is especially designed to be used with sprayed circuits.

In present day manufacturing processes the use of sprayed circuits has been considered in an effort to reduce manufacturing costs and to reduce the physical size of many electronic and electrical products. In using the sprayed circuits it is necessary to have circuit components that can be easily attached and yet be solidly mounted so that vibration and physical jar does not disturb the connection between the components and the sprayed wiring. Conventional carbon resistors with wire pigtails are not highly adapted for use with sprayed wire connections unless the wire pigtails are soldered to suitable lugs or eyelets that are connected to the sprayed wire. My invention relates to a carbon resistor that can be molded in automatic machines to provide a simple, inexpensive, and effective circuit component for use with sprayed wiring.

An object of the present invention is to provide an improved molded carbon resistance device that is especially adapted for use with sprayed wire circuit connections.

Another object of the present invention is to provide an improved molded resistance device that can be made with simplified mass production molding machines and methods.

Another object of the present invention is to provide an improved molded resistance device that is solidly connected to a mounting panel thereby protecting the connection made by sprayed wire methods from the results of rugged handling and extreme shock or vibration.

Still another object of the present invention is to provide an improved mounting panel and a molded resistance device that are adapted to cooperate together so that the resistance device is held on the mounting panel in a firm and a rigid manner.

Other objects and advantages of the invention will become apparent from a consideration of the appended claims, specification, and drawing, in which:

Figure 1 is a perspective view of the resistance device of my invention;

Figure 2 is a sectional view of a sprayed wiring panel employing the resistance device of my invention; and

Figure 3 is the plan view of the bottom side of the panel showing the sprayed wire circuit connections that are available to connect my invention to an associate circuit.

Figure 1

Referring to Figure 1, my invention is shown

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therein to be a molded U-shaped resistance device 10 that has a body 11 and at least two legs 12 and 13 that extend at right angles in the same direction away from the body. The resistance of this molded resistance device will depend on the ingredients of the material, which commonly consists of a high percentage of potted carbon, as well as on the overall dimensions and cross-sectional area of the device. The extreme ends of the legs 12 and 13 can be specially treated to provide an adequate surface so that the sprayed wiring materials, that will be explained later in the specification, will provide an adequate connection to the molded resistance device, however, it has been found, after considerable experimentation, that the sprayed material adheres to a clean untreated surface satisfactorily.

Figures 2 and 3

In referring to Figure 2, a panel 14 employing the resistance device 10 is shown in section. The panel that is made out of some type of insulating material such as Bakelite and has two spaced holes 15 and 18 that are adapted to snugly receive the legs 12 and 13 of the resistance device.

Figure 3 is a plan view of the bottom side of the panel 14 showing the two channels 19 and 20 that extend away from the holes 15 and 18 and are adapted to receive the sprayed wiring material 22 that can be applied by a process commonly known to those who are familiar with the art as the Schoop process. This sprayed wire material 22 (commonly a mixture having a high percentage of copper) is applied in a molten state when the resistance device 10 is in the position shown in Figure 2 so that after cooling an electrical circuit is obtained through the sprayed wiring, in the channel 19 through the connection between the sprayed wiring material and the extreme end of the leg 13, through the resistance device 10, and to the connection of the extreme end of the leg 12 and the sprayed wiring material in the channel 20. The legs 12 and 13 of my invention not only provide the connection to the sprayed wire circuit, but they are held in the holes 15 and 18 of the panel 14 so that the resistance device 10 is substantially protected against excessive vibration or extreme physical shock. This substantial mounting is necessary to maintain a good electrical connection between the resistance device 10 and the sprayed wiring 22.

While I have mentioned sprayed wiring previously in the specification, it should be understood that the wiring connections for my invention can be applied by other processes commonly

