Jan. 8, 1957. E. V. SUNDT 2,777,118

FUSE HOLDER

Filed Dec. 2, 1953

Fig. 1.

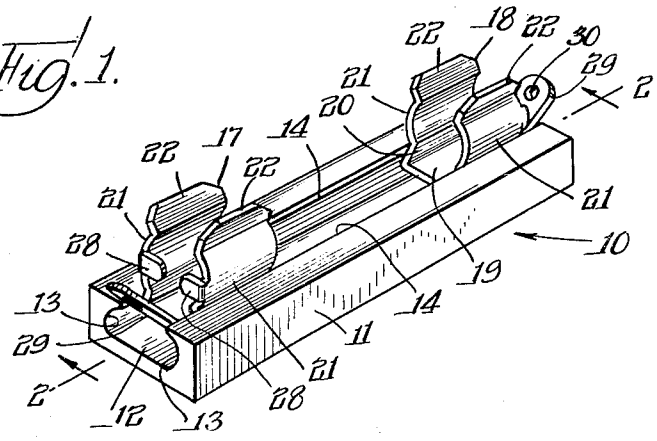


Fig. 2.

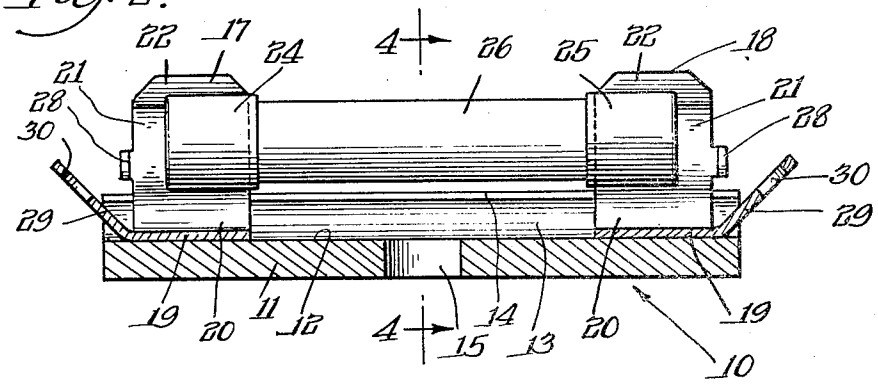


Fig. 3.

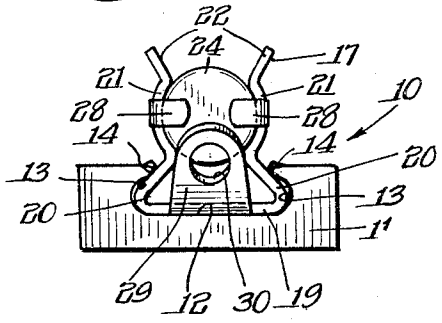
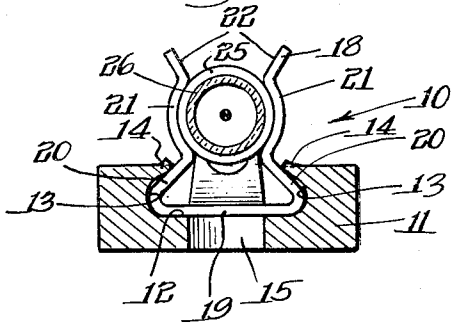


Fig. 4.



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FUSE HOLDER

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2 Claims. (Cl. 339—221)

This invention is directed to a fuse holder for a cartridge fuse.

Basically, a fuse holder or mounting must provide means of holding the fuse and electrically connecting it into the circuit, and means for insulating such holding parts from the conductive panel on which it may be mounted and from other parts of the circuit adjacent the fuse holder. Numerous fuse holders of this type have been developed in the past but they have all embodied a large number of parts and have been expensive to manufacture.

The principal object of this invention is to provide an inexpensive fuse holder which satisfies all requirements for fuse holders, which employs only three parts, which may be inexpensively manufactured and assembled, and which has long useful life.

Briefly, the inexpensive fuse holder of this invention for cartridge fuses includes an elongated substantially channel shaped base of electrical insulating material having a recess extending in one face from end to end and provided with inwardly extending ribs overhanging the recess. In other words, the recess is in the nature of a dovetail recess. A metallic spring clip is received in each end of the recess. Each metallic spring clip includes a base portion and side portions conforming substantially to and resiliently engaging the bottom and sides of the recess, along with extensions on the side portions which are shaped to resiliently grip the cartridge fuse. The spring clips are pressed into the recess and are forcefully and resiliently held in place therein. The sides of the recess of the base also operate to resiliently reinforce the spring clip so that less expensive spring clips may be utilized. When the spring clips are forced into the recess, the ribs adjacent the spring clips are sheared or outwardly deformed to form abutments which effectively prevent longitudinal movement of the spring clips in the recess. In this way the spring clips are securely held in the base without the need for extraneous securing devices such as rivets or the like.

The base may be extrusion molded in an inexpensive manner and may be formed from inexpensive thermoplastic organic synthetic plastics such as nylon, Bakelite No. BMC 11, rigid polyvinyl chloride, fiberglass polyester resin, or the like. Plastics, such as nylon, having a high resistance to heat are preferred so as to meet the approval of Underwriters' Laboratories.

The bottom portion of the spring clips are integrally provided with ears extending out of the ends of the recess for the purpose of making electrical connections to the spring clips. In this way the need for extraneous terminals and fastening means therefor are eliminated which further decreases the cost of the fuse holder. The extensions of the sides of the spring clips are preferably provided with inwardly extending ears to be engaged by the cartridge fuse to limit longitudinal movement of the cartridge fuse in the spring clips.

Further objects of this invention reside in the details of construction of the inexpensive fuse holder and in the

cooperative relationships between the component parts thereof.

Other objects and advantages of this invention will become apparent to those skilled in the art upon reference to the accompanying specification, claims and drawing in which:

Fig. 1 is a perspective view of the inexpensive fuse holder of this invention;

Fig. 2 is a vertical sectional view taken substantially along the line 2—2 of Fig. 1 and in addition, illustrating a cartridge fuse in place in the fuse holder;

Fig. 3 is an end view of the fuse holder looking from the left in Fig. 2;

Fig. 4 is a vertical sectional view taken substantially along the line 4—4 of Fig. 2.

The inexpensive fuse holder of this invention is generally designated at 10. It includes an elongated substantially channel shaped base 11 formed of electrical insulating material. The base 11 has a recess extending in one face from end to end which has a bottom wall 12 and side walls 13 and inwardly extending ribs 14 overhanging the recess. Thus the recess is in the nature of a dovetail recess. A hole 15 extends through the base 11 from the recess and is utilized for receiving a screw or like fastening device for securing the base 11 to a suitable panel board or the like. By reason of the configuration of the base 11, it may be extrusion molded in an inexpensive manner and may be formed from inexpensive thermoplastic organic synthetic plastics such as nylon, Bakelite No. BMS 11, rigid polyvinyl chloride, fiberglass polyester resin, or the like. Plastics having a high resistance to heat are preferred so as to meet the approval of Underwriters' Laboratories.

Metallic spring clips 17 and 18 are received in each end of the recess of the base 11. Each metallic spring clip 17, 18 includes a base portion 19 and side portions 20 conforming substantially to and resiliently engaging the bottom 12 and sides 13 of the recess. The sides 20 of the spring clips are provided with extensions 21 which are shaped to resiliently grip the cartridge fuse. To facilitate mounting of the cartridge fuse the ends of the extensions 21 are flared outwardly as indicated at 22. The caps 24 and 25 of a conventional cartridge fuse 26 are readily inserted between the extensions 21 of the spring clips 17 and 18 thereby providing a fused electrical connection between the spring clips 17 and 18.

The spring clips 17 and 18 are pressed into the recess from the ends thereof and are forcefully and resiliently held in place therein. When the spring clips 17 and 18 are forced into the recess, the ribs 14 adjacent the spring clips are sheared or outwardly deformed to form abutments at the edges of the side portions of the spring clips which effectively prevent longitudinal movement of the spring clips in the recess. In this way, the spring clips 17 and 18 are securely held in the recess in the base 11 without the need for extraneous securing devices such as rivets or the like. The sides 13 of the recess in the base 11 in engaging the side portions 20 of the spring clips operate to resiliently reinforce the spring clips so that less expensive spring clips may be utilized. The weakest portion of the spring clips are at the juncture of the bottom 19 and the side portions 20 and since this juncture is thoroughly reinforced by the base 11 the spring clips may not be readily deformed. Accordingly, they will act over a long period of time to securely receive the cartridge fuse and provide good electrical contact between the spring clips and the caps 24 and 25 of the fuse.

The extensions 21 of the spring clips which receive the cartridge fuse are provided with inwardly extending ears 28. These ears act as abutments for limiting longitudinal movement of the cartridge fuse in the spring clips. The bottom portions 19 of the spring clips are integrally pro-

vided with ears 29 which extend out of the ends of the recess. These ears 29 are for the purpose of making electrical connections to the spring clips and toward this end are provided with holes 30 for receiving wires which may be suitably soldered in place. Because of this integral construction, the need for extraneous terminals for completing the electric circuit are eliminated which further decreases the cost of the fuse holder.

While for purposes of illustration, one form of this invention has been disclosed, other forms thereof may become apparent to those skilled in the art upon reference to this disclosure and therefore this invention is to be limited only by the scope of the appended claims.

I claim as my invention:

1. A fuse holder for a cartridge fuse comprising an elongated substantially channeled shape base of extruded organic synthetic plastic electrical insulating material having a uniform recess extending longitudinally in one face of the body from end to end thereof and provided with inwardly and longitudinally extending ribs overhanging the recess to form a uniform dovetail recess, and a resilient metallic spring clip longitudinally received in each end of the dovetail recess, each resilient metallic spring clip including a base portion and side portions conforming susbtantially to the bottom and sides of the dovetail recess and extensions on the side portions extending beyond the dovetail recess for resiliently gripping the cartridge fuse, said resilient spring clips having slightly greater normal transverse dimensions than the internal dimension of the dovetail recess and being forcefully pressed into the ends of the dovetail recess to be resiliently and firmly secured therein, and the sides of the dovetail recess backing and reinforcing the resilient spring clips to prevent undue distortion thereof.

2. A fuse holder for a cartridge fuse comprising an

elongated substantially channeled shape base of extruded organic synthetic plastic electrical insulating material having a uniform recess extending longitudinally in one face of the body from end to end thereof and provided with inwardly and longitudinally extending ribs overhanging the recess to form a uniform dovetail recess, and a resilient metallic spring clip longitudinally received in each end of the dovetail recess, each resilient metallic spring clip including a base portion and side portions conforming substantially to the bottom and sides of the dovetail recess and extensions on the side portions extending beyond the dovetail recess for resiliently gripping the cartridge fuse, said resilient spring clips havng slightly greater normal transverse dimensions than the internal dimension of the dovetail recess to be resiliently and firmly secured therein, the sides of the dovetail recess being outwardly deformed by the side portions of the resilient spring clips to form abutments for locking the spring clips against longitudinal movement in the dovetail recess, and the sides of the dovetail recess backing and reinforcing the resilient spring clips to prevent undue distortion thereof.

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