July 11, 1933. G. E. WADSWORTH 1,917,860

ELECTRICAL FUSE PLUG SUPPORT

Filed Jan. 22, 1931

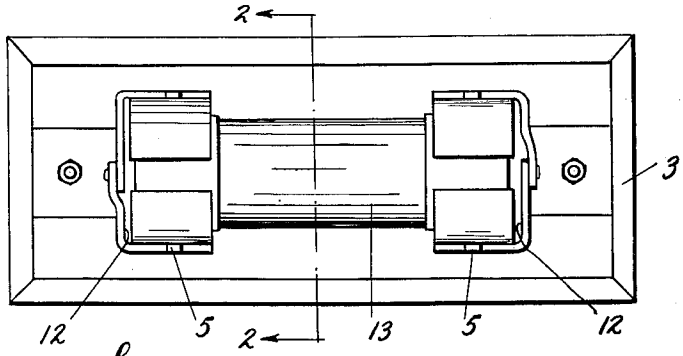


Fig. 1.

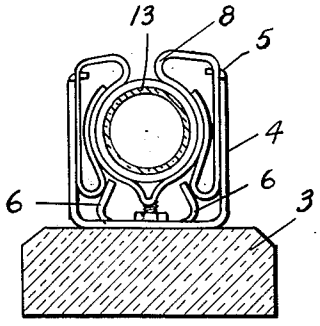


Fig. 2.

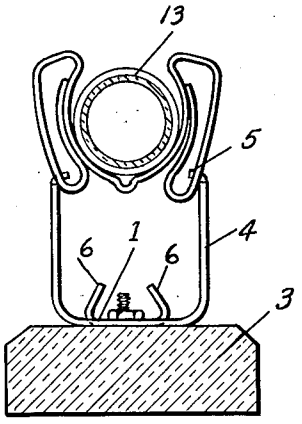


Fig. 3.

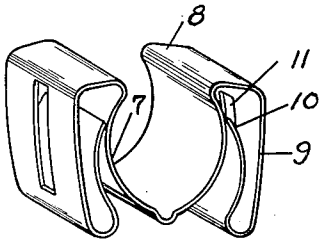


Fig. 4.

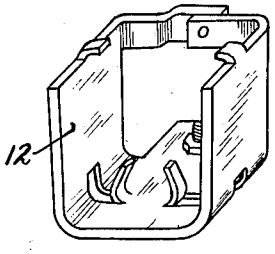


Fig. 5.

INVENTOR.
George E. Wadsworth
BY
Allen Allen
ATTORNEYS

Patented July 11, 1933 1,917,860

UNITED STATES PATENT OFFICE

GEORGE E. WADSWORTH, OF ERLANGER, KENTUCKY, ASSIGNOR TO THE EARL ELECTRIC MFG. COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO

ELECTRICAL FUSE PLUG SUPPORT

Application filed January 22, 1931. Serial No. 510,428.

My invention relates to electrical fuse supporting devices and particularly to such supports as are adapted to resiliently receive cartridge fuses.

Panel parts for cartridge fuses have in the past been composed of arcuate curved strips of an alloy metal spaced apart and with the concave openings in the strips facing each other. When the cartridge is applied to these supports the arcuate strips are pried apart and then snapped together to support the terminal portions of the fuse. Such spring supports for cartridge fuses have two objectionable properties, one being that if the clips are sprung too far apart they do not firmly support the fuse and there is only a very limited contact space between the strips and the contact ends of the fuse.

It is the object of my invention to provide fixtures or metal brackets which are supported on the panel board with spring pieces which fit within the brackets and into which the cartridge fuses are pressed.

Another object is the provision of a permanent set of brackets which allow a limited range of movement of the spring clips so that the fuses may be readily withdrawn and inserted.

With the old type of supports if the members which receive the contact ends of the cartridge fuse become bent they have to be removed by removing the screws from the back of the panel, and it is one of the objects of my invention to provide a mounting for the cartridge fuses which is not subject to any strain so that it never has to be removed.

A still further object of my invention is the provision of spring members which will make contact with a cartridge fuse over substantially more than half of a circle at the contact end of the fuse, in contrast to the old type of support which only made contact over a very limited arc.

The above objects and other objects to which reference will be made in the ensuing disclosure, I accomplish by that certain combination and arrangement of parts of which I have shown a preferred embodiment.

Referring to the drawing:

Figure 1 is a plan view of a panel showing my preferred type of cartridge fuse mounting.

Figure 2 is a sectional view taken along the line 2—2 in Figure 1.

Figure 3 is a sectional view taken along the same line as that from which Figure 2 was taken, showing the spring clips in fuse discharge position.

Figure 4 is a perspective view of one of the spring clips.

Figure 5 is a perspective view of the mounting bracket for the spring clip.

Mounted on a suitable panel I have shown the supporting brackets within which the spring clips are received. The brackets are formed with base portions 1 having suitable holes therein through which screws or bolts may be extended to retain the bracket on a panel board such as is indicated at 3. The brackets have straight side walls 4 with lugs 5 extending from the tops of the walls for a purpose which will hereinafter be described. The base member 1 has tongues 6 which extend up and cause the spring clips to be firmly pressed into surface contact with the inner surfaces of the upstanding walls 4.

The brackets also have end walls 7 which prevent longitudinal displacement of the fuse and which also tend to retain the spring clips in position. The spring clips have a semi-circular fuse receiving portion 8, flat upper surface portions 9, outer side walls 10, and spring portions 11 which bear against the outer surfaces of the semi-circular receiving portion 8.

The spring members are preferably formed from a continuous resilient strip of copper bent into the shape indicated in the drawing. The outer walls 10 of the spring members are provided with slots 15 into which lugs 5 extend, thereby restraining the movement of the spring clips to a range indicated in Figures 2 and 3, in which Figure 2 shows the spring members entirely within the brackets and Figure 3 shows the spring members removed from the brackets in position to release the contact portions of the fuse.

Referring to Figure 2 it will be noted that in fuse retaining position the spring members have the outer surfaces of the walls 10

pressed firmly against the inner surfaces 12 of the walls 4. Just before the spring members arrive at the "in" position the loops of metal formed between the walls 10 and the spring ends 11 engage the outer surfaces of the tongue 6 which cause complete contact between the spring clip and the bracket pieces over the entire area of the outer surface of the walls 10.

When a cartridge such as is indicated at 13 and which ordinarily has cylindrical metal contact portions 14 is inserted into the support the semi-circular receiving portions 8 of the clips loosely receive the contact portions 14. By pressing inwardly on the insulated middle part of the fuse, the fuse and the spring members are pressed into firm contact, as is illustrated in Figure 2, so that more than 5/6 of the complete cylindrical area of the contact portions of the fuse make contact with the spring members.

With the use of my new fuse receptacle, while the initial cost may be slightly more, the cost of renewing the receptacle will be limited to renewing only the spring members, as the brackets should be substantially permanent and never require replacement.

It will further be found that the tendency for the contact portions of the support to burn out will be minimized.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent is:

1. A receptacle for cartridge fuses comprising a pair of spaced permanently secured brackets having resilient spring members movably mounted therein, said spring members having semi-circular fuse receiving portions and side walls for making contact with the permanently secured brackets.

2. A receptacle for cartridge fuses comprising a pair of spaced permanently secured brackets having resilient spring members movably mounted therein, said spring members having semi-circular fuse receiving portions and side walls for making contact with the permanently secured brackets, and means extended from said brackets to insure positive surface contact of the side walls of said spring members with walls of said brackets.

3. A receptacle for cartridge fuses comprising a pair of spaced permanently secured brackets having resilient spring members movably mounted therein, said spring members having semi-circular fuse receiving portions and side walls for making contact with the permanently secured brackets, and means extended from said brackets to insure positive surface contact of the side walls of said spring members with walls of said brackets, said spring members removable from said brackets.

4. A cartridge fuse mounting comprising members adapted to be permanently mounted on a panel and removable spring members for receiving the fuse movable within said first named members from fuse receiving to fuse securing position.

5. A cartridge fuse mounting comprising members adapted to be permanently mounted on a panel and removable spring members for receiving the fuse movable within said first named members from fuse receiving to fuse securing position, said spring members being demountable from said supporting members.

6. A cartridge fuse mounting comprising U shaped supports and U shaped spring members for receiving a fuse, means for mounting said U shaped spring members within said U shaped supports, and means for limiting the range of movement of said U shaped spring members within said supports to a movement from fuse receiving to fuse retaining position.

7. A cartridge fuse mounting comprising U shaped supports and U shaped spring members for receiving a fuse, means for mounting said U shaped spring members within said U shaped supports, and means for limiting the range of movement of said U shaped spring members within said supports to a movement from fuse receiving to fuse retaining position, said spring members movable with the fuse from fuse receiving to fuse retaining position.

8. A cartridge fuse mounting comprising U shaped supports and U shaped spring members for receiving a fuse, means for mounting said U shaped spring members within said U shaped supports, and means for limiting the range of movement of said U shaped spring members within said supports to a movement from fuse receiving to fuse retaining position, said U shaped spring members comprising semi-circular fuse receiving portions with returned bent sides having slots, said U shaped supports having tongues extending into said slots for limiting the range of movement of said spring members.

9. A cartridge fuse mounting comprising U shaped supports and U shaped spring members for receiving a fuse, means for mounting said U shaped spring members within said U shaped supports, and means for limiting the range of movement of said U shaped spring members within said supports to a movement from fuse receiving to fuse retaining position, said spring members being compressible to permit their complete removal from said supports.

10. A cartridge fuse mounting comprising rigid spaced supports, fuse receiving resilient members, movably mounted in said supports, said resilient members compressible to enable their complete removal from said supports.

11. A cartridge fuse mounting comprising rigid spaced supports, fuse receiving resilient members, movably mounted in said supports, said resilient members compressible to enable

their complete removal from said supports, said supports having arms extending over the ends thereof for limiting the longitudinal movement of a fuse supported therein.

12. A cartridge fuse mounting comprising rigid U shaped supports having bases for permanent mounting on a panel, U shaped spring members formed with semi-circular fuse receiving portions and side wall contact portions, said portions having slots and said rigid supports having tongues engaging said slots.

13. A cartridge fuse mounting comprising rigid U shaped supports having bases for permanent mounting on a panel, U shaped spring members formed with semi-circular fuse receiving portions and side wall contact portions, said portions having slots and said rigid supports having tongues engaging said slots, said rigid supports having upstanding tongues for insuring an extensive surface contact between said supports and said spring members.

14. A cartridge fuse mounting comprising rigid U shaped supports having bases for permanent mounting on a panel, U shaped spring members formed with semi-circular fuse receiving portions and side wall contact portions, said portions having slots and said rigid supports having tongues engaging said slots, said rigid supports having upstanding tongues for insuring an extensive surface contact between said supports and said spring members, said supports provided with means for preventing longitudinal displacement of a cartridge fuse retained within said spring members in said supports.

GEORGE E. WADSWORTH.