Jan. 13, 1942. H. A. TRIPLETT 2,269,960

FITTING

Filed Aug. 2, 1940

Fig. 1.

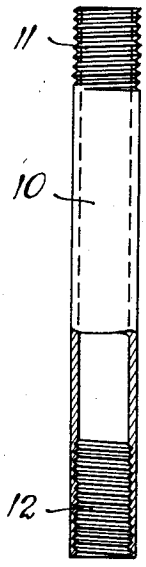


Fig. 2.

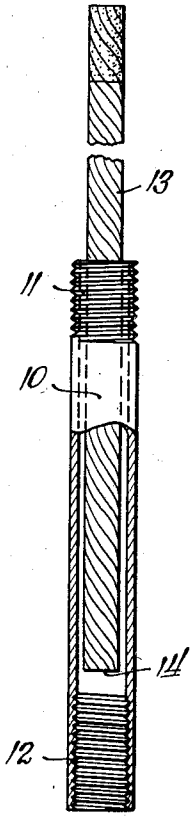


Fig. 3.

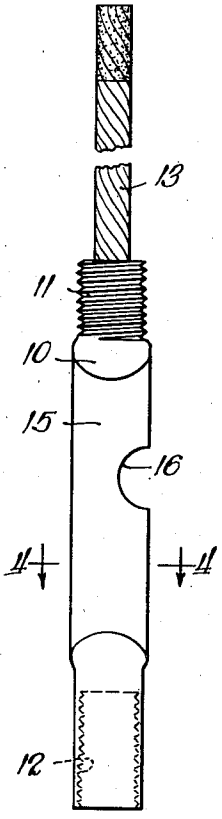


Fig. 5.

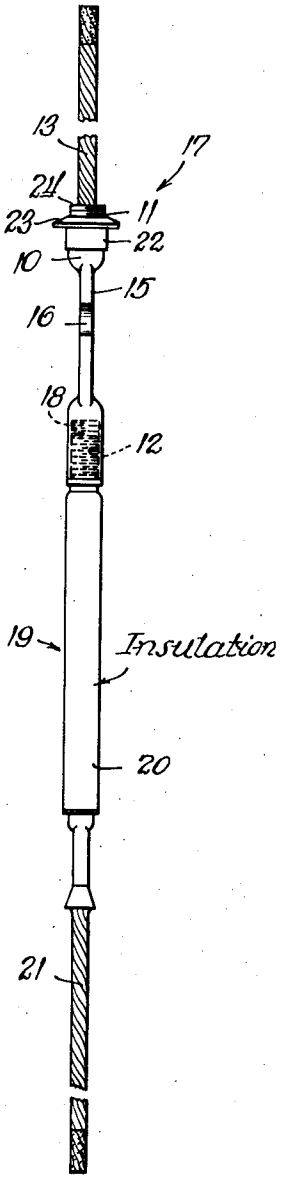
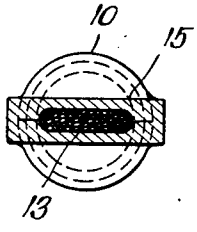


Fig. 4.



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Patented Jan. 13, 1942 2,269,960

UNITED STATES PATENT OFFICE

2,269,960

FITTING

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Application August 2, 1940, Serial No. 349,710

5 Claims. (Cl. 200—135)

This invention relates, generally, to adapters and fittings, and it has particular relation to the construction of adapters and fittings for renewable or replaceable fuse links, such as shown in Triplett application Serial No. 758,372, filed December 20, 1934, to adapt them for use in various forms of fuse tubes and housings.

An object of this invention is to provide for attaching a flexible conductor to a metallic sleeve which is adapted to be secured in a detachable manner to a fuse link.

Another object of the invention is to deform the sleeve onto the flexible conductor so as to provide good electrical and mechanical connection therebetween.

A further object of this invention is to remove a portion of the deformed part of the sleeve so as to adapt it for connection to a screw terminal.

Still another object of the invention is to externally thread the end of the sleeve from which the flexible conductor projects for receiving a flanged fitting to facilitate holding the fuse link attached to the adapter at one end of an expulsion type fuse tube.

Other objects of this invention will, in part, be obvious and in part appear hereinafter.

For a more complete understanding of the nature and scope of this invention, reference can be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a view partly in side elevation and partly in section, showing the metallic sleeve after it has been threaded and before it has been deformed;

Figure 2 is a view, similar to Figure 1, showing the flexible conductor in place in the metallic sleeve;

Figure 3 is a view, in side elevation, of the adapter after the sleeve has been deformed onto the flexible conductor and showing the notched intermediate section permitting connection to a screw type terminal;

Figure 4 is a detail sectional view taken along the line 4—4 of Figure 3; and

Figure 5 is a view in side elevation of the fitting adapter, constructed according to this invention, applied to a renewable or replaceable fuse link.

Referring first to Figure 1 of the drawing, it will be observed that the reference character 10 designates a metallic tube of good conducting material, such as brass or copper, which is externally threaded as indicated at 11 at its upper end and is internally threaded, as indicated at 12, at its lower end. The tube 10 is preferably slightly more than two inches long and has an outside diameter of slightly more than one-quarter inch. Its walls are relatively thin to permit deforming or flattening, as will be presently described. The threads 11 and 12 are preferably ¼ inch—28 in order to conform to generally standard fuse link constructions now being offered on the open market.

As indicated in Figure 2 of the drawing, the metallic sleeve 10 is arranged to receive a flexible conductor 13 that is formed by a large number of relatively fine wires through the upper end which carries the external threads 11. The flexible conductor 13 projects well within the metallic sleeve 10 so that its lower end 14 is in proximity to the upper end of the internal threads 12.

The metallic sleeve 10 with the flexible conductor 13 assembled therein, as indicated in Figure 2, is placed in a suitable die, and a punch is brought down upon the same so as to deform the portion 15 between the threaded ends 11 and 12 as indicated in Figures 3 and 4 of the drawing. Sufficient pressure is applied so that the walls of the metallic sleeve 10 are pressed into intimate electrical and mechanical engagement with the wires or strands making up the flexible conductor 13. As indicated in Figure 4 of the drawing, these fine wires or strands are substantially reduced to solid form.

The flattened portion 15 is provided with a generally semi-circular notch 16 to permit attachment to a screw terminal. The notch 16 can be formed during the same operation that the intermediate portion 15 is flattened or deformed, or it can be formed subsequently, as desired. The notch 16 preferably has a diameter of about $\frac{7}{32}$".

The adapter or fitting is indicated, generally, at 17 in Figure 5 of the drawing where it is shown in completed form, with its threaded lower end 12 threaded onto the threaded projecting terminal 18 of a renewable or replaceable fuse link, shown generally at 19. The fuse link 19 may be of the type shown in the Triplett application referred to hereinbefore which is illustrative of the general type of renewable or replaceable fuse link that is now available on the open market. The link 19 is provided with a sleeve 20 of insulation which surrounds the fuse link terminals and the fusible means which interconnects them. A flexible lead 21 extends from the sleeve 20 for connection to one line terminal.

It will be noted that a metallic fitting 22 hav-

ing a flanged head 23 is threaded onto the threads 11 at the upper end of the metallic sleeve 10. This flanged fitting 22 is provided so as to hold the fuse link 19 in place at the upper end of an expulsion type fuse tube. A portion of the threads 11 project above the flange 23 as indicated at 24 so as to permit the cap which is threaded onto the upper end of the expulsion type fuse tube to be placed into intimate contact engagement with the upper end of the metallic sleeve 10.

It will be understood that, when the flanged fitting 22 is employed to hold the fuse link 19 in place at the upper end of an expulsion type fuse tube, the flexible conductor 13 will be cut off where it emerges from the metallic sleeve 10. It will also be understood that, where the fuse link 19 is to be connected to a screw terminal, the metallic sleeve 10 will be severed at the upper end of the flattened portion 15, thereby cutting off the threaded upper end 11 and the flexible lead 13.

When it is desired to hold the fuse link 19 at a point midway the ends of an expulsion type fuse tube, then both of the flexible leads 13 and 21 come into play. For this installation the flanged fitting 21 is removed and the link 19, with the adapter or fitting 17 attached thereto, is inserted through one end of the fuse tube. The flexible leads 13 and 21 are of sufficient length so that each extends out of one end of the fuse tube where suitable terminal clamp means are provided as will be readily understood.

Since it is obvious that different embodiments of the invention can be made without departing from the scope of the construction described hereinbefore, it is intended that all matter contained in the foregoing description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What is claimed as new is:

1. For combination with a fuse link, a metallic sleeve, attaching means at one end of said sleeve, and a flexible conductor extending out of the other end of said sleeve, said sleeve being deformed onto said conductor to hold the same in place therein and provide intimate contact engagement therewith, the deformed portion of said sleeve having a notch therein to permit attachment to a screw terminal.

2. For combination with a fuse link, a metallic sleeve threaded at one end for attachment to the fuse link, and a conductor formed by a plurality of relatively fine wires extending out of the other end of said sleeve, said sleeve being flattened onto said conductor to hold the same in place therein and to provide intimate contact engagement therewith, the flattened portion of said sleeve having a generally semi-circular notch on one side to permit attachment to a screw terminal.

3. For combination with a fuse link having external threads at one end, a metallic sleeve internally threaded at one end for engagement with the threaded end of said fuse link and externally threaded at the other end, a flanged fitting threaded on the external threads at said other end, and a conductor formed by a plurality of relatively fine wires extending out of the said other end of said sleeve and secured therein against relative longitudinal movement.

4. For combination with a fuse link having external threads at one end, a metallic sleeve internally threaded at one end for engagement with the threaded end of said fuse link and externally threaded at the other end, a flanged fitting threaded on the external threads at said other end, and a conductor formed by a plurality of relatively fine wires extending out of the said other end of said sleeve from a point therein in proximity to its internally threaded end said sleeve being deformed intermediate its threaded ends onto said conductor to hold the same in place therein and to provide intimate contact engagement therewith.

5. For combination with a fuse link having coupling means at one end for mounting the same, a metallic sleeve having coupling means at each end one of which is adapted to cooperate with said coupling means of said fuse link, a flanged fitting cooperating with the other coupling means of said metallic sleeve, and a conductor formed by a plurality of relatively fine wires extending out of the end of said sleeve associated with said other coupling means and secured in said sleeve against relative longitudinal movement.

HUGH A. TRIPLETT.