May 12, 1942. H. BEYER 2,282,849

ELECTRIC FUSE

Filed Sept. 16, 1940

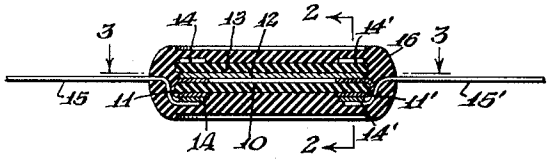


FIG. 1.

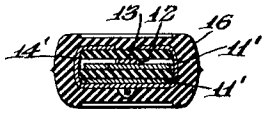


FIG. 2.

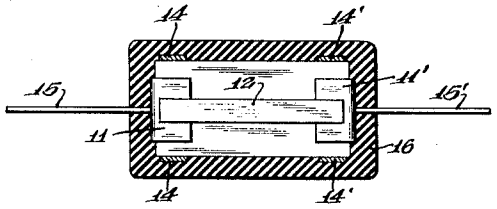


FIG. 3.

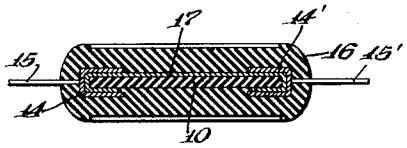


FIG. 4.

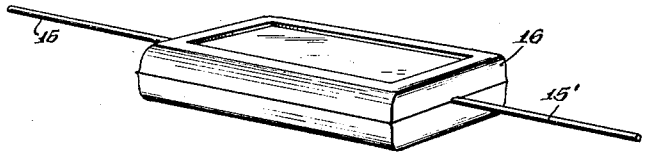


FIG. 5.

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ELECTRIC FUSE

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Application September 16, 1940, Serial No. 356,989

4 Claims. (Cl. 200—113)

The present invention relates to electric fuses especially fuses for small electric currents and one of the objects of the invention is the provision of a fuse of improved construction which is effective in opening an electric circuit when overload conditions exist without danger of setting fire to the objects near the fuse.

Another object is to provide a fuse which is hermetically sealed against air and moisture and can be produced in a simple and economical manner.

Other objects will become apparent from the following description taken with reference to the accompanying drawing forming part of this specification and wherein:

Figure 1 is a longitudinal cross-sectional view through a fuse embodying the principles of the invention,

Figure 2 is a cross-sectional view taken on line 2—2 of Figure 1,

Figure 3 is a cross-sectional view taken on line 3—3 of Figure 1,

Figure 4 is a longitudinal cross-section of a modified fuse construction according to the invention,

Figure 5 is an isometric view showing the outer appearance of the fuse according to the previous figures.

Referring to the drawing wherein like reference numerals identify like parts in the different views, there is shown in Figures 1 to 3 a fuse comprising a support or base plate 10 of ceramic or other suitable insulating material about the opposite end of which are placed contacting metal strips 11 and 11' bent in U-fashion to engage the opposite faces of the plate in the manner shown. An easily fusible element 12 such as a wire or strip is placed upon the plate 10 with its opposite ends engaging the metal strips 11 and 11'. A second insulating plate 13 similar to the plate 10 overlies the latter and the entire assembly is firmly held together by means of a pair of metal clamp elements 14 and 14' which are in electrical connection with the ends of the fusible element 12 through the contacting strips 11 and 11'. Integral with or connected in any suitable manner to the clamp elements 14 and 14' are a pair of terminal elements 15 and 15', respectively, such as flexible wire leads or terminal elements of any other suitable construction. The entire fuse structure, after assembly in the manner shown is enclosed and hermetically sealed by a casing 16 of fusible artificial resin such as of the phenol-formaldehyde, urea-formaldehyde or any other suitable type, to completely protect the fuse element against air and moisture and other foreign agents and to eliminate fire hazard when the strip or wire 12 is burned or fused by an excessive load current passing the fuse.

Referring to Figure 4 there is shown a simplified construction comprising a single insulating plate 10 with a fusible element such as a strip or wire 17 having its opposite ends reversely bent around the ends of the plate and a pair of terminal-clamps 14 and 14' engaging the assembled elements in a manner similar to that shown in the preceding figures.

Further modifications and variations of the structure shown and described for illustration will readily suggest themselves to those skilled in the art and the specification and claims presented are accordingly to be regarded in an illustrative rather than a limiting sense short of the scope of the invention as defined in the appended claims.

I claim:

1. An electric fuse comprising an elongated fusible element, an insulating support for said element, a pair of metal clamp elements engaging the opposite ends of said support and being in electrical contact with the adjacent ends of said fusible element, a casing of fixable artificial resin enclosing and hermetically sealing the assembled elements, and terminal means passing from said clamp elements to the outside of said casing.

2. An electric fuse comprising a pair of insulating plates, an elongated fusible element placed between said plates, metallic strips engaging the ends of said fusible element and being reversely bent upon one face of said plates, a pair of metal clamp elements pressed around the opposite ends of said plates and engaging the bent portion of said metal strips, a casting of fixable artificial resin enclosing and hermetrically sealing the assembled elements, and terminal means passing from said clamp elements to the outside of said casing.

3. An electric fuse comprising a pair of superposed insulating plates, an elongated fusible element placed between said plates, terminal clamp elements pressed around the opposite ends of said plates, contacting metal strips in electrical contact with the opposite ends of said fusible element and the adjacent metal clamps, a casing of fixable artificial resin enclosing and hermetically sealing the assembled elements, and terminal means passing from said clamp elements to the outside of said casing.

4. An electric fuse comprising a pair of superposed insulating plates, a fusible metal strip placed between said plates, a pair of terminal clamp elements pressed around opposite ends of said plates, contacting metal strips having one end clamped between said fusible strip and the adjacent insulating plate, and having their other ends clamped between the adjacent metal clamp and one of said insulating plates, a casing of fixable artificial resin enclosing and hermetically sealing the assembled elements, and terminal means passing from said clamp elements to the outside of said casing.

HAIM BEYER.