

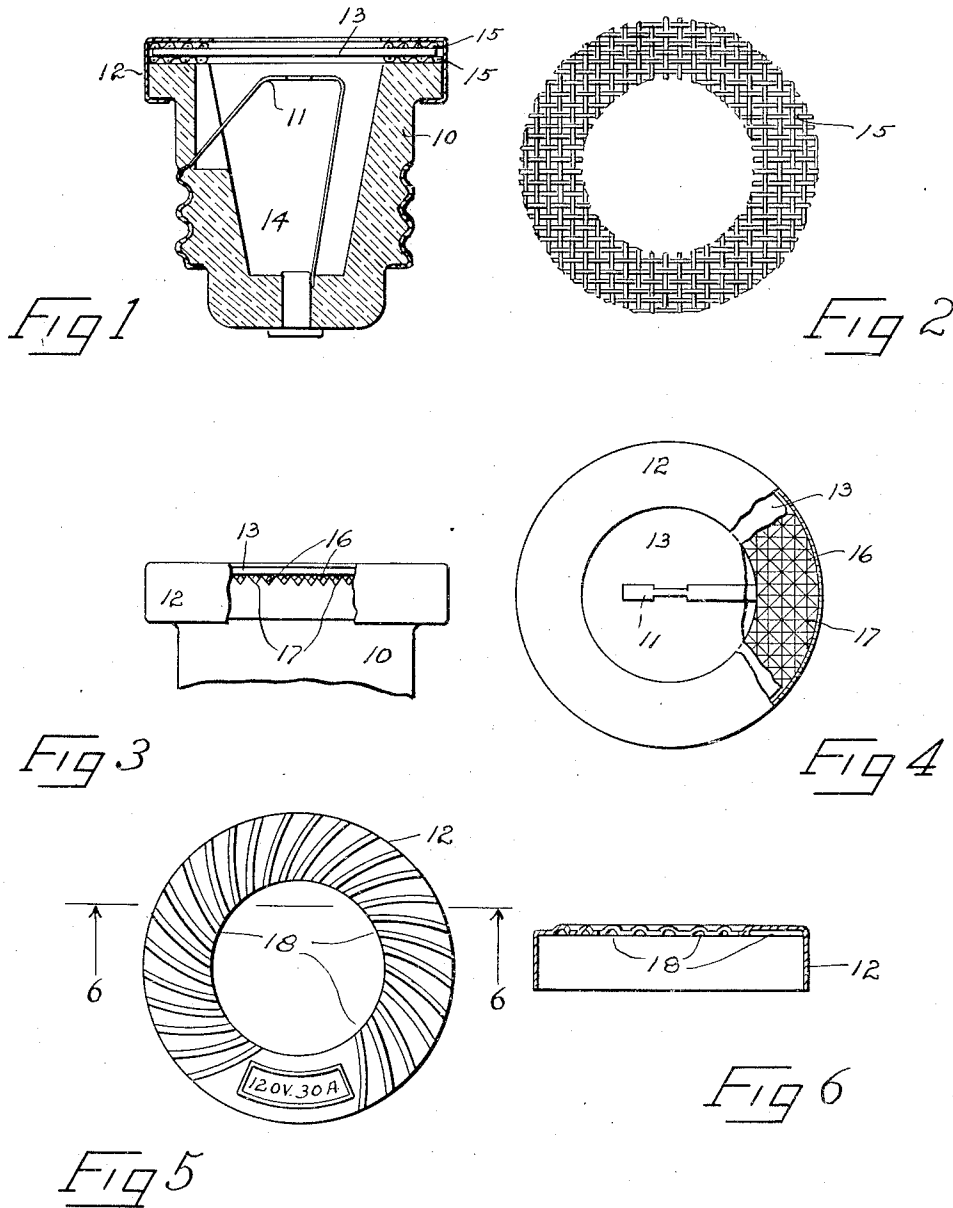
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L. LUDWIG

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VENTING MEANS FOR ELECTRIC FUSES

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INVENTOR.

Louis Ludwig

BY

Samuel J. Schmidt
ATTORNEYS.

UNITED STATES PATENT OFFICE

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VENTING MEANS FOR ELECTRIC FUSES

Louis Ludwig, Brooklyn, N. Y.

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The invention relates to electric fuse plugs and has for its main object to provide means in such fuse plugs for preventing fire or other damage to property or persons when the fuses "blow". It is a well-known fact that a comparatively large amount of gases are created in the interior of such a fuse when the fusible metal link burns out. It is also well known that these gases are often ignited and often cause severe damage by causing fires, or dust explosions resulting in fires or other damages.

If such gases are not liberated from the interior of the fuse at a reasonable fast rate of speed, they are apt to blow off or rupture the metal cap generally used on such fuses, or to rupture some other part to allow the gases to escape. Not only is this likely to cause personal damage, but often, when the gases are ignited, results in disastrous fires. The real problem, as shown by the severe tests made by the various fire underwriter's associations, has always been to find a suitable way to quickly liberate these gases and at the same time extinguish any flame, if the gases have become ignited.

The object of the present invention is to accomplish this in a simple but effective way, without perceptibly adding to the cost of such fuses, altering their general appearance, or materially alter their present construction. Another object is to so construct the means employed for effecting this result that they may be used with fuses of many and various types and makes.

These and various other objects and advantages will be readily understood from the following description and from the accompanying drawing of preferred embodiments of the invention, in which, however, modifications may be made without departing from the scope of the appended claims. In the drawing

Fig. 1 is a cross-sectional side view of a fuse plug to which one embodiment of the invention has been applied,

Fig. 2 is a plan view of the means used in Fig. 1,

Fig. 3 is a fragmental side view of a fuse plug to which another embodiment of the invention has been applied,

Fig. 4 is a top view of Fig. 3,

Fig. 5 is a top view of a fuse plug cap showing still another modification, and

Fig. 6 is a fragmental view of Fig. 5 taken on line 6—6. All the views are enlarged.

In a general way the invention may be said to consist in providing a plurality of venting channels through which the gases may escape, but which will extinguish the flames, if the gases are

ignited. These channels, which are so constructed that they will allow the gases to escape rapidly, may be constructed in various ways; several of which will now be explained.

Reference is first made to Figs. 1 and 2, in which, as well as in the remaining views, the body part of a fuse plug is shown at 10, the fusible metal link at 11, the metal cap at 12, the transparent disc at 13, and the interior chamber at 14.

In this embodiment, wire mesh washers 15, such as shown in Fig. 2, are placed between the body member and the mica disc, as well as between the mica disc and the metal cap, as plainly shown in Fig. 1. This construction is very effective, even with fuses of very high capacity. However, extensive experiments have demonstrated that ordinarily one such washer will suffice and that it may be placed either above or below the mica disc. When one washer is used between the mica disc and the metal cap, the gas created presses the mica disc against the washer and escapes under and around the disc, to be finally released through the tortuous passages formed by the wire mesh. The wire-mesh will quench any flame, should the gases be ignited.

In the embodiment shown in Figs. 3 and 4 the venting channels are formed in the top face of the body member by moulding this part with a plurality of protrusions 16 between which the tortuous passages 17 are formed. The passages offer a ready means for the escape of the gases, but will extinguish any flame. In Figs. 5 and 6, arcuated channels 18, are formed in the metal cap 12. Such channels might, of course, also be formed on the top face of the body member, or the metal cap might be provided with protrusions and channels such as illustrated in the body member.

Various other methods may be employed for providing these channels or gas passages, but it is believed that the ones shown and described sufficiently explain the object of the invention. It will be noted that this invention may be used in connection with fuse plugs of all types and capacities.

Having described my invention and its objects what I claim as new and wish to protect by Letters Patent is:

1. In an electric fuse plug, having a recessed body member, a transparent disc for covering the recess and a centrally apertured cap for clamping the disc to the body member; a plurality of venting passages provided between the top face of the body member and the disc for liberating gases from the recess of the body member; a plurality of venting passages formed in the cap for receiving the gases from the first-mentioned passages

5 after the gases have passed around the edge of the disc; and the exit openings of all the passages in the cap terminating in the central aperture of the cap; the passages in the cap being arcuated and formed at an angle to the radius of the cap so as to impart a twirling movement to the escaping gases.

10 2. In an electric fuse plug, having a recessed body member, a transparent disc for covering the recess and a centrally apertured cap for clamping the disc to the body member; a plurality of tortuous venting passages provided in the top face

of the body member and directly under the bottom of the disc for liberating gases from the recess of the body member; a plurality of venting passages formed in the cap for receiving the gases from said tortuous passages after the gases have passed around the edge of the disc; and the exit openings of all the passages in the cap terminating in the central aperture of the cap; the passages in the cap being arcuated and formed at an angle to the radius of the cap so as to impart a twirling movement to the escaping gases.

LOUIS LUDWIG.