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FUSE UNIT HAVING AN OPERATION INDICATOR

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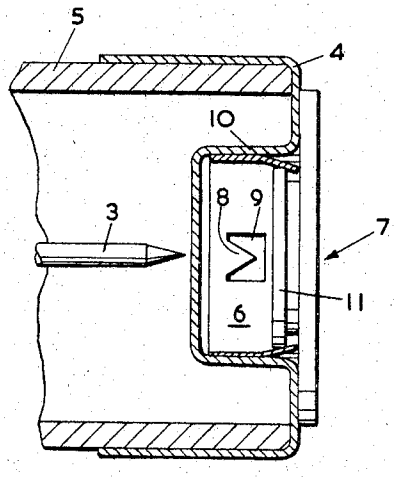

FIG.1

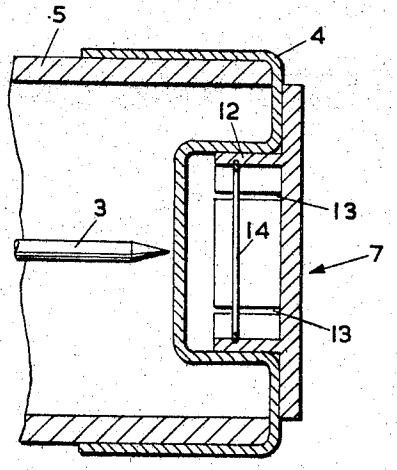

FIG.2

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FUSE UNIT HAVING AN OPERATION INDICATOR

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ABSTRACT OF THE DISCLOSURE

A fuse unit having a striker pin operable upon rupture of the fusible element to eject a disc from the body of the fuse unit and provide thereby an indication of this operation.

This invention relates to fuse units, and more particularly relates to fuse units having means for providing an indication of a fusible element having ruptured.

Basically, the present invention consists in a fuse unit having a striker pin operable upon rupture of the fusible element to eject a disc indicator from the body of the fuse unit and provide thereby an indication of its operation.

More particularly, the disc indicator may normally be held on the end of the fuse unit body by a spring clip or by frictional engagement, and in order to limit the travel of the ejected disc it may be captively held by a length of cord.

This invention is particularly applicable for use with high voltage fuse units since such fuse units are frequently mounted in the open at a considerable height from the ground which makes it difficult for a person standing at ground level to see whether or not a fuse has blown, the visual indication hitherto having been the penetration of the striker pin through the end cap of the fuse unit as a result of the ignition of an explosive charge, or the release of a spring, upon the fuse element being ruptured.

A fuse unit according to this invention thus provides a more positive and readily identifiable means of indicating a fuse which has blown, and the design is such that it may readily be incorporated in existing fuse units having striker pins without modification.

In order that the invention may be fully understood, two embodiments thereof will now be described, by way of example, with reference to the accompanying drawings, in which FIGURES 1 and 2 illustrate axial sections through two different forms of indicating members retained in position on the end of a fuse unit.

Referring firstly to FIGURE 1, there is shown the end portion of a fuse unit having a striker pin **3** mounted with its head lying close to an end cap **4** secured to the tubular wall **5** of the fuse unit body. The end cap has a centrally disposed recess or well in which is secured a tubular spring clip **6** which itself grips an indicator disc **7**. More

particularly, the spring clip has a number of sharply pointed prongs **8** which extend outwardly through "windows" **9** so as to engage tightly the walls of the well and prevent withdrawal of the clip, and in addition includes a number of inwardly extending fingers **10** which embrace an inner lip **11** on the disc **7** and retain it in place.

This assembly thus ensures that the indicator disc cannot be accidentally dislodged.

In operation, the rupture of the fusible element (not shown) results in the striker pin being driven through the end cap whereupon it strikes and ejects the disc **7**, thus affording an indication of the fuse having blown.

In FIGURE 2 there is shown an arrangement similar to that in FIGURE 1, but in this case the indicating disc has an inwardly extending tubular wall **12** which engages the inner walls of the well. In addition, the tubular wall has a number of axially extending slots **13** formed therein, and it also accommodates a circlip **14** which outwardly biasses this wall **12** against the inner walls of the well, thus ensuring the retention of the disc.

Again, upon rupture of the fusible element the striker pin is driven through the end cap whereupon it strikes and ejects the disc **7**.

In order to prevent the ejected disc from falling on to adjacent apparatus or causing danger to personnel it may conveniently be retained by a length of cord. The cord may be fastened between the disc and the end cap, and in the FIGURE 2 embodiment it may be secured to the circlip **14** in the disc. Alternatively, instead of fastening the cord to the end cap it may conveniently be secured to another circlip located in the base of the well and outwardly biassed against its walls.

The indication may be assisted by providing a coloured or reflective material on the outer and/or inner face of the disc, or on the faces of the well in the end cap so that it will be exposed when the disc is ejected. The use of a reflective material in this manner will particularly assist in the identification of a blown fuse in darkness.

The disc **7** may conveniently be made from a light plastics material, e.g. nylon, but in order to prevent the striker pin from piercing this material a metallic plate may be located on the inner side of the disc at the position of impact.

We claim:

1. In a fuse unit comprising a fusible element supported within a tubular body of insulating material between two conductive terminals, a striker pin indicator comprising

an end cap secured to one end of the body and defining an axially recessed wall portion having a colored or reflective surface,

a striker pin housed within, and extending axially of the body, the striker pin being secured to the fusible element under tension and operable upon rupture of the element to be projected through one of the end caps,

a disc indicator frictionally secured within the recessed wall portion of the cap and lying in the path of travel of the striker pin whereby to be ejected by the pin upon rupture of the fusible element and provide thereby an indication of its operation, and

a length of cord secured at one end to the said end cap and to the said indicator at the other end whereby to limit the length of travel of the indicator after its ejection.

2. A fuse unit according to claim 1, wherein the indicator is in the form of a shouldered disc and includes

a spring clip outwardly biassing the disc shoulders into frictional engagement with the recessed wall portion of the cap.

3. A fuse unit according to claim 1, comprising

a spring clip outwardly biassed into frictional engagement with the recessed wall portion of the cap, the indicator being in the form of a plain disc held by said spring clip.

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