Feb. 23, 1937. L. J. SAUDICOEUR 2,071,435

COMBINED FLAME BAFFLE AND INDICATOR FOR FUSIBLE CUT-OUTS

Filed April 20, 1935

Fig. 1

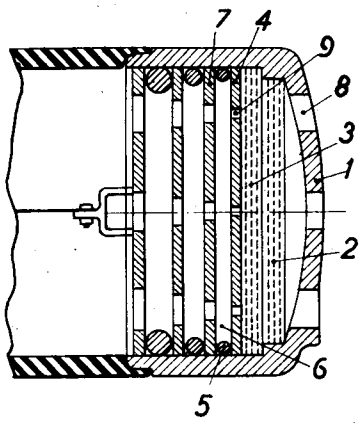


Fig. 2

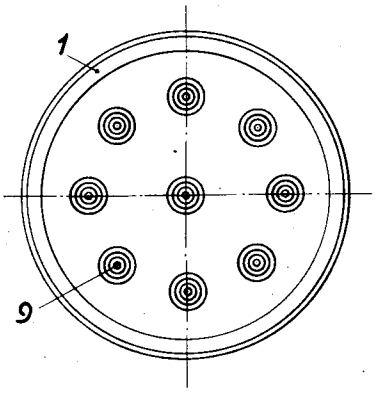


Fig. 3

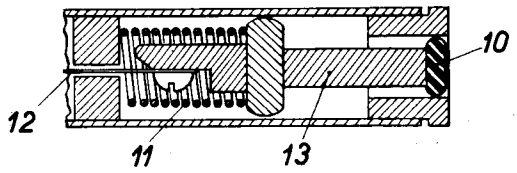
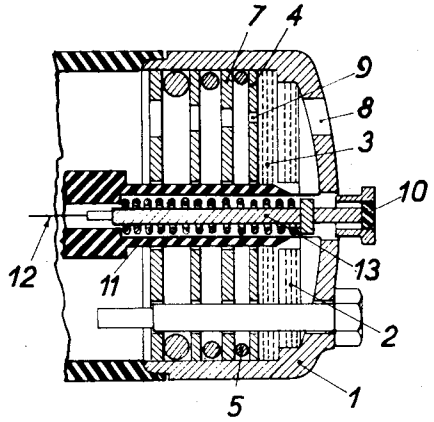


Fig. 4



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COMBINED FLAME BAFFLE AND INDICATOR FOR FUSIBLE CUT-OUTS

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2 Claims. (Cl. 200—120)

In high tension cartridge fusible cut-outs the fuse is frequently subdivided into a number of separate strands connected in parallel and disposed inside a container filled with inert material. When such a fuse is blown the direct evacuation of the hot gases into the atmosphere is very objectionable owing to the violent detonations produced which are inadmissible in practice. On the other hand the controlled evacuation of the gases presents certain difficulties owing to the production of high pressures which, even when relatively feeble currents are interrupted, may provoke the rupture of the cartridge.

The object of the present invention is to overcome these difficulties by ensuring a progressive expansion and cooling of the gases without the production of high pressures.

The object of the invention relates to the combination of a flame baffle and an indicator for cut-outs, characterized in that the flame baffle is constituted by a series of perforated plates, the dimensions of the holes in said plates decreasing progressively from plate to plate considered in the direction of the evacuation of the gases into the atmosphere.

The invention and its aims and objects will be readily understood from the following description, taken in connection with the accompanying drawing of one illustrative embodiment of the invention.

In the drawing:

Fig. 1 is a cross-sectional view of the extremity of a cartridge fuse embodying one illustrative form of the invention.

Fig. 2 is an end view of the embodiment shown in Fig. 1.

Fig. 3 is a cross-sectional view of an indicator.

Fig. 4 is a cross-sectional view showing the combination of the flame baffle with an indicator.

In the illustrative embodiment of the invention shown, flame baffle 1 provided with perforations 8 carries at its bottom a first pack of reticulated diaphragms or discs of fine mesh metal gauze 2 followed by a second pack of similar medium mesh diaphragms 3. Next to said diaphragms 3 is disposed a flame baffle consisting of plate 4 provided with perforations 9 of larger area than the mesh of the neighbouring diaphragms 3; a split ring or spring 5 applied against the edge of plate 4 provides an interval or expansion chamber 6 between said plate 4 and the next plate 7 whose perforations are of larger area than those of plate 4. Said plate 7 is itself followed by another plate with still larger perforations, and so on. The whole of the device is accordingly constituted by a series of parallel plates with perforations, the areas of which increase as one recedes from the bottom of the flame baffle, said plates being separated by expansion chambers the volumes of which simultaneously increase in similar manner. The perforations of the plates may be disposed so as to face one another (Figs. 1 and 2) or may be staggered.

In accordance with the present invention the flame baffle may be advantageously combined with an indicator (Fig. 3); the indicator itself 10 is mounted on rod 13 to which is fixed fuse wire 12 stretched by spring 11. When the fuse wire melts the spring being released reacts on the indicator which is thus made to protrude through a hole in one of the caps of the cartridge.

Fig. 4 shows the combination of a flame baffle with an indicator disposed at one extremity of a cartridge fusible cut-out. This arrangement is equally applicable to cartridge fuses for small as well as for high current intensities. For high intensities, the fusible member being subdivided into a number of parallel strands, the fuse wire 12 of the indicator is an auxiliary wire made from a metal of appropriate resistivity which will always melt last. The indicator will consequently only operate after the fusion of the other strands and this will ensure full security to anyone working on circuits connected on the dead side of a cut-out which has operated.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a fusible cut-out, a flame baffle constituted by a series of spaced perforated plates, the dimensions of the holes in said plates and the volume of the spaces between consecutive plates decreasing progressively from plate to plate considered in the direction of the evacuation of the gases into the atmosphere.

2. In a fusible cut-out, a flame baffle constituted by a series of spaced perforated plates, the dimensions of the perforations in, and the volume of space between, consecutive plates decreasing progressively from plate to plate in a direction outwardly of the cut-out, and reticulated diaphragms disposed next to the smallest apertured plates of the series outwardly thereof.

LOUIS JOSEPH SAUDICOEUR.