No. 891,414. PATENTED JUNE 23, 1908.

C. A. ERNST.

THERMAL CUT-OUT.

APPLICATION FILED APR. 6, 1904.

Fig. 1

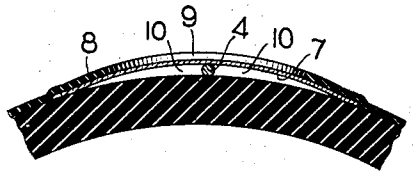


Fig. 2

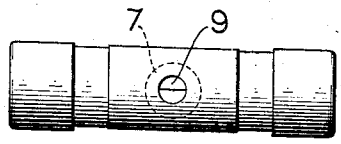


Fig. 3

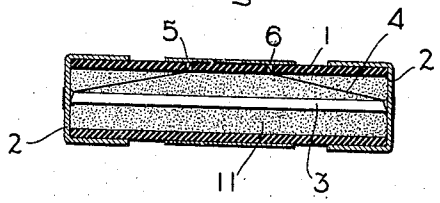
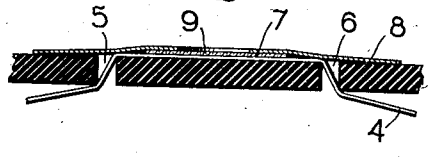


Fig. 4



Witnesses.

Harry A. Tilden.

Helen O'Ford

Inventor.

Charles A. Ernst.

by Albert G. Davis

Att'y

UNITED STATES PATENT OFFICE.

CHARLES A. ERNST, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

THERMAL CUT-OUT.

No. 891,414. Specification of Letters Patent. Patented June 23, 1908.

Application filed April 6, 1904. Serial No. 201,828.

To all whom it may concern:

Be it known that I, CHARLES A. ERNST, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Thermal Cut-Outs, of which the following is a specification.

The present invention relates to thermal cut-out devices for protecting electrical apparatus from abnormal currents, and more particularly to the class of such cut-out devices commonly known as indicator fuses.

The objection to most all of the indicator fuses now on the market is that the flash of the small auxiliary wire is unconfined and, as a consequence, the particles of molten metal thrown out upon blowing of the auxiliary fuse are liable to ignite light combustibles in the vicinity of the cut-out device.

I have found that by inclosing the indicator wire by a layer of stout transparent insulating material, and providing a certain amount of space into which the gases of explosion may expand slightly, this objection is effectually overcome and the facility with which the condition of the indicator wire may be discerned in no way impaired.

In the accompanying drawing, forming a part of this specification and showing one embodiment of my invention, Figure 1 is a central cross-section of a cartridge fuse drawn to a large scale; Fig. 2 is a plan; Fig. 3 is a longitudinal section; and Fig. 4 is an enlarged longitudinal section thereof.

The casing consists of a tube 1 of tough fiber or other insulating material provided with metallic caps or end pieces 2, which serve as the terminals of the main fuse member 3.

The auxiliary or indicator fuse member 4 is connected in parallel with the main fuse member 3, and has a portion of its length exposed to view outside the casing by threading out through a hole 5 and back through a second hole 6 arranged some distance apart in one side of the tube 1.

Over the portion of the auxiliary fuse member 4 exposed to the outside of the casing is placed a sheet of mica 7, and over the mica is placed a larger sheet of tough paper or other fibrous material 8, centrally apertured at 9, and securely pasted to the outside of the tube 1. By this arrangement sealed air chambers 10 are provided on both sides of the indicator fuse wire 4, for the reception of the gases and particles of molten metal.

The space within the casing not occupied by the fuse members is preferably filled with an absorbent material 11. It is of course apparent that the air spaces 10 can be formed in other ways, as by removal of portions of the tube 1 at the sides of the wire 4, or by supporting the transparent sheet 7 out of contact with the wire. Accordingly I do not desire to restrict myself to the particular arrangement of parts herein described and shown.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A thermal cut-out comprising a casing, a main fuse member located within said casing, an auxiliary or indicator fuse member connected in parallel with said main fuse member and having a portion of its length exposed on the outside of said casing, a sheet of transparent insulating material placed over the exposed portion of said auxiliary fuse member, and an apertured sheet of fibrous material secured to said casing over said sheet of transparent insulating material.

2. A thermal cut-out comprising a casing, a main fuse member located within said casing, an auxiliary or indicator fuse member connected in parallel with said main fuse member and having a portion of its length exposed on the outside of said casing, a sheet of transparent insulating material placed over the exposed portion of said auxiliary fuse member, and an apertured sheet secured to said casing over said sheet of transparent insulating material.

In witness whereof I have hereunto set my hand this 5th day of April, 1904.

CHARLES A. ERNST.

Witnesses:
BENJAMIN B. HULL,
HELEN ORFORD.