

F. W. HARRIS.
ELECTRIC FUSE AND FUSE HOLDER.
APPLICATION FILED MAY 9, 1908.

999,780.

Patented Aug. 8, 1911.

Fig. 1.

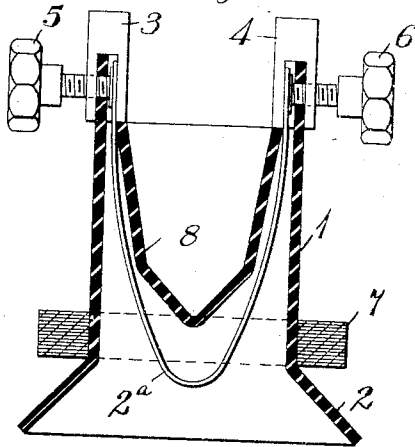


Fig. 2.

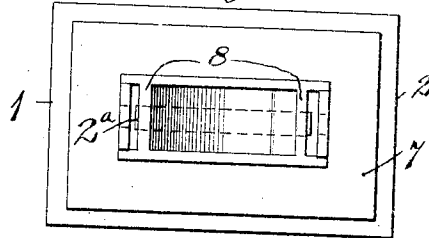
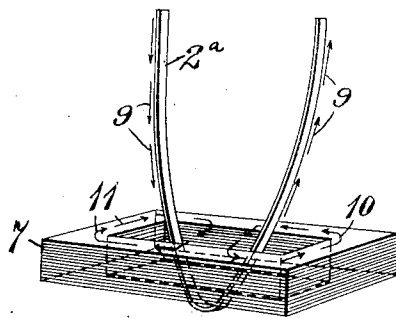


Fig. 3.



WITNESSES:

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ELECTRIC FUSE AND FUSE-HOLDER.

999,780.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed May 9, 1908. Serial No. 431,816.

To all whom it may concern:

Be it known that I, FORD W. HARRIS, a citizen of the United States, and a resident of Wilksburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric Fuses and Fuse-Holders, of which the following is a specification.

My invention relates to fuses and fuse holders or boxes and it has for its object to provide a fuse and holder that shall be simple in construction and adapted for the interruption of relatively high voltage circuits.

In order to accomplish the aforesaid result I have provided a magnetizable structure which forms a part of the fuse box and is so arranged as to produce a magnetic field in the vicinity of that portion of the fuse, where rupture is likely to occur, said magnetic field being produced by the current traversing the fuse.

Figure 1 of the accompanying drawings is a sectional elevation of a device constructed in accordance with my invention. Fig. 2 is a plan view with the terminal members removed of the device shown in Fig. 1, and Fig. 3 is a perspective view showing the relation between the fuse and the magnetizable member which form the principal parts of the device.

Referring to the drawings, the device here illustrated comprises a fiber box 1 having an open flared bottom 2 through which the hot gases, produced by the interruption of the circuit, may be expelled, a flexible strip 2^a, terminal members 3 and 4, clamping screws 5 and 6 and a magnetizable member 7.

The box 1 is provided with an inner wall 8 which is in the form of a hollow wedge and confines the fuse to a relatively small space. The ends of the fuse 2^a are clamped to the terminal members 3 and 4 and the fuse is made of such length as to form a long U between the two terminals. The member 7 is a rectangular magnetizable block, but may be replaced by a ring, or by a continuous member of any other suitable form, to surround the box 1 adjacent to the flared open end 2.

The position of the member 7 relative to the fuse is such that the electric current traversing the fuse passes first downwardly and then upwardly through the member 7

as indicated by the arrows 9 in Fig. 3. The downwardly flowing current tends to produce a magnetic flux traversing the member 7 in one direction and the upwardly flowing current tends to produce an opposing magnetic flux so that the resultant flux as indicated by the arrows 10 and 11, passes in the air through the space between the arms of the fuse in the same direction and through the two ends of the member 7 in opposite directions.

It is evident that a strong magnetic field is set up near the middle point of the fuse between its arms. Accordingly, if the fuse is ruptured near its middle point, as is usually the case, the magnetic field just described will be particularly effective in diverting and quenching the arc.

The form of the box 1 is such as to prevent the hot gases, produced when the circuit is interrupted, from rising between the terminals 3 and 4 and such as to assist the magnetic field in dispelling the arc.

I desire that structural modifications which do not depart from the spirit of my invention shall be included within its scope.

I claim as my invention:

1. A circuit interrupter comprising stationary terminal members, a current-conducting fuse of U shape secured to the terminal members and depending therefrom, and a continuous magnetizable member surrounding the lower end of the fuse.

2. A circuit interrupter comprising a continuous magnetizable member and a current-conducting fuse of U shape which projects downwardly and is surrounded by said magnetizable member.

3. A circuit interrupter comprising a fuse box of insulating material provided with terminal members at its top and having a flared lower end, a fuse of U shape suspended from the terminal members and supported thereby, a magnetizable member surrounding the lower end of the fuse and supported by the flared end of the box.

4. A circuit interrupter comprising a continuous magnetizable member and a current-conducting fuse of U shape the depending middle portion of which is surrounded by said magnetizable member whereby the current traversing the fuse passes downwardly and upwardly through the space surrounded by the magnetizable member

and produces a magnetic field within which the fuse is partially located.

5. A fuse box of approximately M-shape in longitudinal section and provided with terminals at its upper end, a fuse of U-shape suspended from the terminals and located within the box and a magnetizable core surrounding the lower end of the box.

In testimony whereof, I have hereunto subscribed my name this 30th day of April, 1908.

FORD W. HARRIS.

Witnesses:

G. L. CHRISTMAN,
BIRNEY HINES.