T. E. MURRAY.

ELECTRIC FUSE.

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1,120,221.

Patented Dec. 8, 1914.

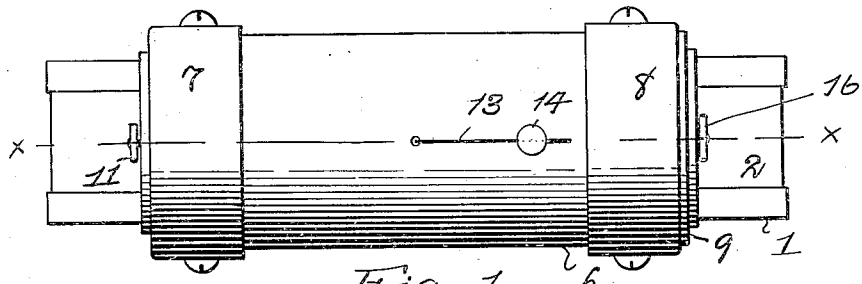


Fig. 1.

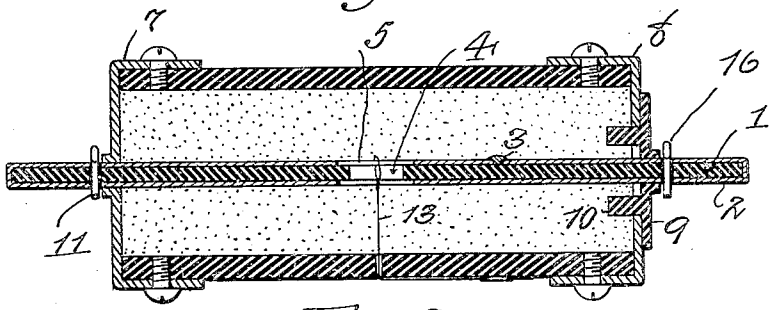


Fig. 2.

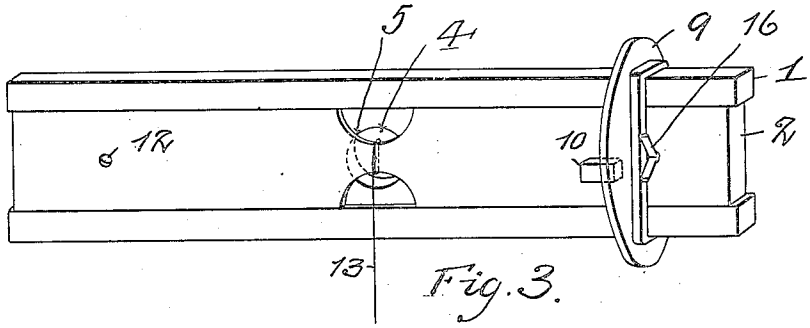


Fig. 3.

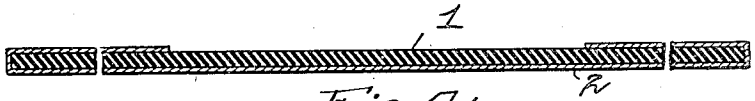


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

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ELECTRIC FUSE.

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To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Electric Fuses, of which the following is a specification.

The invention relates to electric fuses, and consists, first, in the construction of the carrier bar and fuse strip thereon—second, in the disposition of said fuse carrier in the case, so as to be readily insertible into and removable therefrom—and third, in the means for determining the blowing of the fuse, without opening the case.

In the accompanying drawings—Figure 1 is an elevation of my device. Fig. 2 is a longitudinal section on the line x, x of Fig. 1. Fig. 3 is a perspective view of the carrier bar, fuse strip and covering plate. Fig. 4 is a longitudinal section of the carrier bar, showing a single fuse strip thereon.

Similar numbers of reference indicate like parts.

The carrier 1 is a bar of fiber or other insulating material, preferably having shallow channels on both sides and in the ends, in which channels the fuse strip 2 is secured. Said strip may be made annular by soldering or otherwise uniting its ends, as shown at 3. The strip is preferably made of a width to fill the channels, so that its lateral displacement on the carrier is thus prevented. At about the middle of the carrier is an aperture 4. The parallel parts of the strip where they cross said aperture may be contracted, as shown at 5, to localize the blowing point.

6 is a cylindrical case of fiber or other insulating material, on which are secured the metal end caps 7, 8. The cap 7 has an elongated transverse opening through which the carrier bar is slidable. The cap 8 has a larger opening, which is closed by a plate 9, also of insulating material, on the inner face of which are guide projections 10. In the plate 9 is an opening, through which the carrier bar 1 is also slidable.

In assembling the device, the plate 9 being removed and the fuse strip 2 being in position on the carrier bar 1, the carrier bar is inserted into the case through the opening in cap 7, until a split pin 11, previously placed in a hole 12 in said bar, meets said cap. A thread 13 or cord of asbestos is inserted through an opening in the wall of the casing. A loop is made on the end of said cord which is slid down on the carrier bar until it enters the notches forming the contraction in the fuse strip. The cord is then pulled taut, and secured to the outside of the case, preferably by a disk of gummed-paper 14. The filling of pulverized refractory material is then put into the case through the opening in cap 8, and when the case is filled, the plate 9 is passed over the end of the carrier bar and placed in contact with the outer face of cap 8. A split pin 16 entering another opening in carrier bar 1 holds plate 9 in position.

This device gets rid of the usual troublesome and expensive soldering of the fuse strip to the end caps, common in cartridge fuses of this general type. The carrier bar with its attached fuse strip is easily inserted, and as easily removed. All that is needed to release it is to take out one of the split pins. The cord 13 is a means of finding out whether the fuse strip has blown or not, without opening the case. If the fuse has blown, the loop on the fuse strip will be released so that the cord can be drawn out of the case by pulling on its outer exposed portion. If the fuse has not blown, the cord cannot be pulled out.

The arrangement of the fuse strip shown in Fig. 2, completely encircling the carrier bar, provides a double fuse. If a single fuse is desired, the ends of the strip are not brought together on one side of the carrier bar, but, as indicated in Fig. 4, are left separated and secured to said bar in any suitable way.

I claim:

1. A tubular case, end plates thereon having openings, a straight removable bar longer than said case and extending through and slidable in said openings, and a fuse strip secured longitudinally on said bar.

2. A tubular case, end plates thereon having openings, a straight removable bar longer than said case and extending through and slidable in said openings, and a fuse strip secured longitudinally upon said bar and having its end portions folded over the extremities of said bar outside of said case.

3. A case, filling material, end caps on said case having openings, the opening in one of said caps being larger than the opening in the other cap, a removable plate covering said larger opening and itself having

an opening, a carrier bar extending through and slidable in said smaller cap opening and said plate opening, and a fuse strip secured upon and extending longitudinally to said bar.

4. A case, filling material, end caps on said case having openings, the opening in one of said caps being larger than the opening in the other cap, a removable plate covering said larger opening and itself having an opening, a carrier bar extending through and slidable in said smaller cap opening and said plate opening, a fuse strip secured upon and extending longitudinally to said bar, and means on said bar for preventing endwise movement thereof.

In testimony whereof I have affixed my signature in presence of two witnesses.

THOMAS E. MURRAY.

Witnesses:

GERTRUDE T. PORTER,

MAY T. MCGARRY.