Nov. 24, 1925. 1,562,985

T. E. MURRAY

FUSE

Filed April 11, 1921

Fig. 1.

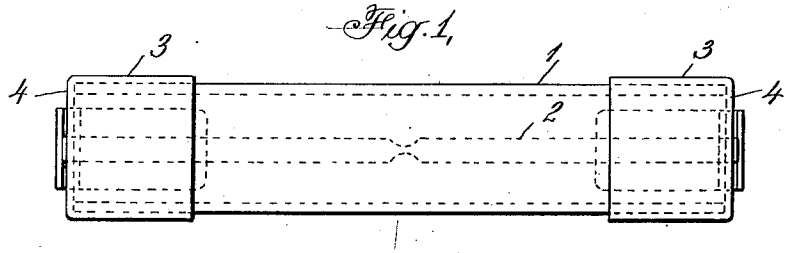


Fig. 2.

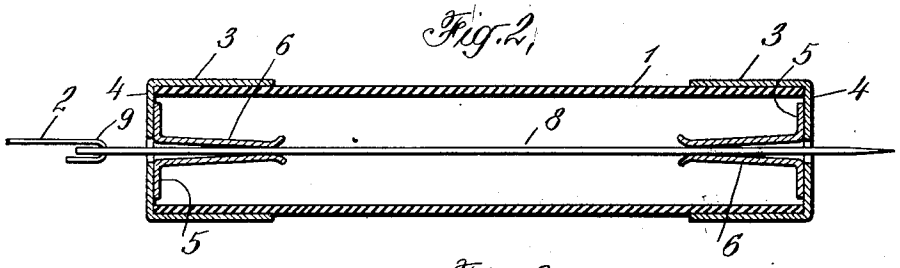


Fig. 3.

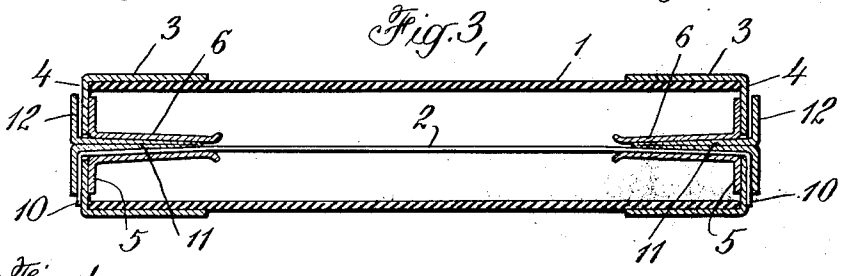


Fig. 4.

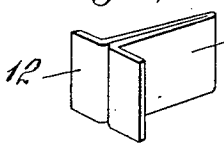


Fig. 5.

Fig. 6.

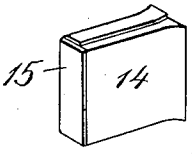


Fig. 7.

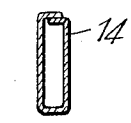


Fig. 8

Inventor

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By his Attorneys

D. Anthony Usina

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UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF BROOKLYN, NEW YORK.

FUSE.

Application filed April 11, 1921. Serial No. 460,219.

To all whom it may concern:

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

My invention aims to provide an electric fuse and a method of constructing the same by which such fuse can be manufactured very rapidly and economically.

The accompanying drawings illustrate embodiments of the invention.

Fig. 1 is a side elevation of a fuse of the ordinary cartridge type;

Fig. 2 is a horizontal section of the same in the course of manufacture;

Fig. 3 is a similar section of the same fuse completed;

Fig. 4 is a perspective view of a detail of the same;

Fig. 5 is a perspective view of a fuse with blade type contacts on the ends;

Fig. 6 is a perspective view of a detail, and Fig. 7 is a cross-section of Fig. 6;

Fig. 8 is a perspective of another modified construction.

Refering to the embodiments of the invention illustrated, the fuse comprises a cylindrical shell 1 of paper, asbestos fibre or the like, with one or more fuse strips or links 2 therein, the ends of the shell being closed by means of caps 3 cemented or otherwise fastened on.

According to the design of Figs. 1 to 4, the caps or end pieces 3 constitute the contact members which in use are inserted between suitably shaped spring terminals of the line wire. Each cap 3 has a cylindrical portion on the outside of the shell 1 to make contact with the line terminals and has a head portion 4 closing the end of the shell except for a narow opening therethrough. On the inner faces of the heads 4 and lying within the shell 1 are inside end plates 5 with tongues 6 projecting inward. The inside plates 5 may be fastened to the head 4 by spot-welding or otherwise. They are inserted into the ends of the shell 1, with the caps 3, 4 fitting over such ends holding the parts in position and reinforcing the structure. We have thus a complete case closed at the ends as in Fig. 2, except for the slots which are bounded by the tongues 6.

The width of the slots is made sufficient for the passage of the fuse link or links 2 therethrough and between the tongues, and the links are threaded into place after the practically closed shell is thus formed. They may be inserted, for example, by means of a needle 8 long enough to extend through and beyond the case and having an eye at its rear end into which the flexible end 9 of the fuse link is inserted and bent back as shown. The link is made of sufficient length to allow its two ends to project beyond the casing and to be bent down outside of the heads of the casing as at 10, Fig. 3.

To ensure close contact of the fuse strip and a closing of the heads in the ends of the case, I use spring wedges 11 which are forced into the slot between the ends of the fuse strips on one side and tongues 6 on the other side. The wedges are provided with flanges 12 on their outer ends which serve as stops to limit their inward movement and one of which will also bear against the ends 10 of the fuse strips and press them against the head of the case. The fuse strips are thus brought into intimate contact with the conducting metal of the head or contact member of the case. Preferably the inside plate 5 and tongues 6 are formed of copper as well as the end pieces 3 and heads 4.

In the construction of Figs. 5, 6 and 7, fuse strips 2 are simliarly threaded through the casing and are left with their ends projecting therefrom, as shown at the left of Fig. 3. A filler of plastic material 13 or asbestos fibre or the like is introduced between the projecting ends of the strips and above and below the top and bottom strips and projects sufficiently into the slots in the ends of the case to hold the strips firmly in position. The projecting ends are then enclosed in a member 14, Fig. 6, shaped to provide a blade terminal which can be introduced into the usual spring blade terminals of the line wires. The terminal member in this case is made of a sheet or strip of copper having its sides bent up and its edges overlapped, as shown in Fig. 7, and having a flange on its outer end which is bent over as at 15, in Fig. 6, to close this end. The mouth of the terminal member is flared and the sides have sufficient strength so that they may be forced over the projecting ends of the fuse strips and

will make a good contact therewith. It may be held in place by the cement inserted beforehand or in various other ways.

Fig. 8 shows another construction with a blade type of terminal. Here the end piece 3 carries a pair of tongues 16 projecting through the head 4 and fastened on the inside, and the fuse strip 2 is threaded between them in the manner indicated in Fig. 2. The two tongues 16 are formed from a single piece of metal folded along the lower edge as indicated, and at the inner end it has flanges analogous to the flanges 5 of Fig. 2 which are fastened to the end piece of the casing. A wedge 17, also formed by folding a short piece of copper along its lower edge is forced into the space between the strip 2 and one of the tongues 16. The tongues 16, therefore, constitute the outer parts of a blade which is in close frictional contact with the end of the fuse strip.

Though I have described with great particularity of detail certain specific embodiments of my invention, yet it is not to be understood therefrom that the invention is restricted to the particular embodiments disclosed. Various modifications thereof in detail and in the arrangement of the parts and in the method of assembling them may be made by those skilled in the art without departing from the invention as defined in the following claims.

What I claim is:

1. A fuse case with an opening through one of its ends and with inwardly projecting tongues on opposite sides of said opening adapted to embrace the fuse strip, said tongues having a passageway between them which is open at the outer end so that a fuse strip can be inserted from the outside, in combination with a wedge for fastening the end of the strip between said tongues with a good frictional engagement.

2. A fuse comprising a case with an opening through its ends, and with inwardly projecting tongues on opposite sides of said opening having a passageway between them open at its outer end so that fuse strips can be inserted from the outside, in combination with a plurality of strips extending through said passageway at the ends of the case and a common terminal at each end engaging the several strips.

3. A fuse case with an opening through one of its ends and with inwardly projecting tongues on opposite sides of said opening adapted to embrace the end of a fuse strip, said tongues having a passageway between them opening at its outer end so that a fuse strip can be inserted from the outside, in combination with such a fuse strip with its end embraced by said tongues and fastened thereto.

4. A fuse case having heads on the inside of which are end plates with tongues projecting inward, the space between the tongues being open at the outer end so that a fuse strip can be inserted from the outside, in combination with such a strip having its ends between said tongues and fastened thereto.

In witness whereof I have hereunto signed my name.

THOMAS E. MURRAY.