

Nov. 5, 1929.

J. JOHNSON

1,734,211

RENEWABLE FUSE

Filed May 14, 1928

Fig. 1.

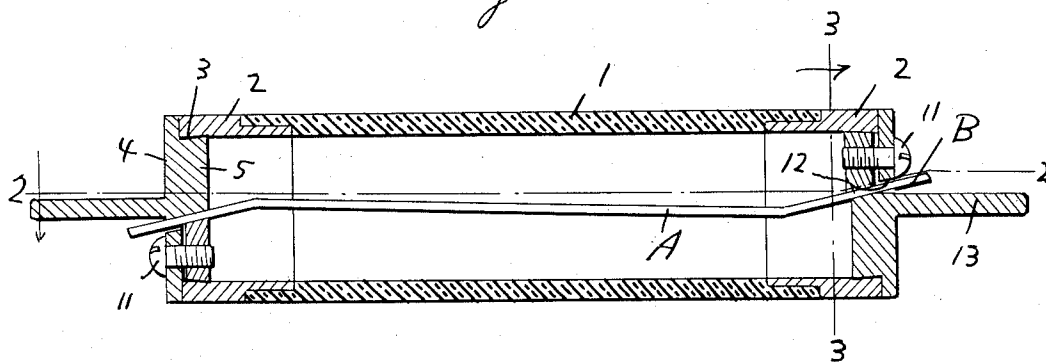


Fig. 2.

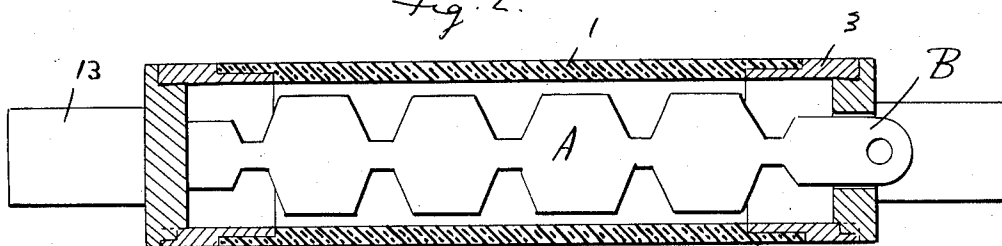


Fig. 3.

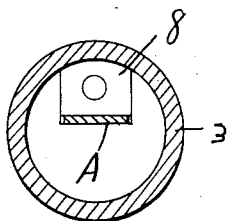
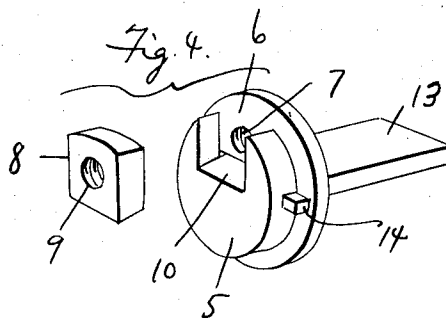


Fig. 4.



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RENEWABLE FUSE

Application filed May 14, 1928. Serial No. 277,699.

The present invention pertains to improvements in fuses, and includes means whereby the fusible elements may be quickly renewed after fusing.

5 There are a number of such devices now on the market, but the same are of such intricate construction as to prevent the sale thereof at a price within the economic demand. The present invention comprises
10 briefly a shell partially of insulating material, removable caps at the opposite ends of the shell, and means carried by said caps for not only securing the fusible element within the shell but also being operable for
15 securing the cap within the respective ends of the shell.

An important object of the invention resides in the provision of a fuse employing means for retaining a fusible element, and
20 wherein this means may be actuated for disengaging the fusible element after the same has been fused to allow the replacement of the new fuse.

Other novel objects and advantages of this
25 invention will become apparent as the same is better understood from the following specification and claims.

In the drawings:

30 Figure 1 represents a longitudinal sectional view through the fuse, and disclosing the fusible elements secured therein.

Figure 2 also represents a longitudinal sectional view, which is taken substantially on the line 2—2 of Figure 1.

35 Figure 3 is a cross sectional view of the fuse and fusible element, and is taken substantially on the line 3—3 of Figure 1, and

40 Figure 4 is a perspective view of one of the end caps and discloses the means employed for securing the fusible element and said cap within the end of said shell.

Now for a more detailed description of this invention, reference is made to the drawings, wherein like numerals designate like parts.

45 In Figures 1 and 2 of the drawings, an electrical insulating shell is disclosed and consists of either an opaque or transparent tube 1 and the metallic sleeve 2, at each end thereof. It is preferable that the interior of each
50 end of the glass tube be counter-bored, while

the inner end portion of the respective sleeves is reduced, so that the respective sleeves may snugly receive the counter-bores of the fiber tube 1, in the manner disclosed in the aforementioned figures of the drawings. The internal side of the respective sleeves 2 adjacent their outer ends is converged as at 3, for the purpose hereinafter fully described.

The metallic cap 4 is provided for each end of the shell and is adapted to abut the outer end of the sleeve 2, while the circular boss 5 formed at the inner side of each cap is adapted to project within the sleeve. A suitable portion of the periphery of the boss 5 is bevelled in acute angular respect to the cap 4.

The boss on each cap member is formed with a substantially square opening 6, extending inwardly from the periphery thereof. The cap is formed with an opening 7, which opens at its inner end within the recess 6, while a block member 8 formed with a threaded opening 9 is adapted for disposition within said opening 6. The inner end wall of the opening 6 is bevelled, as at 10, while the inner end of the block 8 is also bevelled. The outer end of the block is curved in conformity with the curvature of the boss and is also bevelled for engagement with the converging internal sides 3 of the sleeve 2. A set screw 11 is insertible through the opening 7 and threadable through opening 9 of the block 8 for tightly gripping the end of a fusible element A, arranged within the fuse. This fusible element A is of conventional design and employs the reduced end tabs B.

Slots 12 are formed through the respective caps 4, in substantially coplanar relation with the inclined surface 10. The end caps are provided with the usual securing lugs 13, for engagement with the usual clips or supporting members upon which the fuse is to be mounted. In certain conventional designs of fuse mountings where the clips engage the ends of the shell securing lugs 13 are omitted. The boss 4 of each cap is also provided with a dowel or lug 14, engageable with a similar shaped recess in the outer edge of the sleeves 3 for preventing

the rotation of the caps after the same have been applied to the sleeve with their boss portions projecting therein.

After the fusible elements A have been fused and a new fuse is to be used, the set screws 11 are loosened whereby the bevelled outer ends of the blocks 8 will disengage from the converging inner sides of the sleeve 3, and further resulting in the disengagement of the bevelled inner end of the block from wedged contact with the tab portion 12 of the fusible element. By unthreading the set screws 11 sufficiently, the end cap 4 may be entirely removed from the ends of the sleeves 3, leaving the portions of the fused elements either within the shell or carried loosely within the slots 12 of the respective end caps. By removing these fused portions, one end of a new fuse may be inserted through the slot 12 of one of the caps, and the cap and fusible element inserted within the shell, so that the boss will project within the outer end of the sleeve and the block 8 will properly engage the converging inner side of the same. By tightening the screw 11, the block 8 will be caused to wedge between the surface 3 and the inclined disposed tab portion of the fusible element for not only securing that particular end of the fuse but also securing the cap within the end of the shell. Obviously, the other cap is secured within the opposite end of the shell in substantially the same manner.

Having thus described the invention, what is claimed is:

1. In a fuse cartridge, a shell open at each end, a cap for each end of said shell, said caps being each provided with a fork at their inner sides, a clamp member carried on each fork, one end of said clamp member being adapted to engage the inner surface of the shell for securing the cap to the shell and the other end being adapted to engage one end of a fusible element for securing the same within the shell.

2. In a fuse cartridge, a shell open at each end, a cap for each end of said shell, said caps being each provided with a boss at its inner side, a wedge member operable on each of said bosses, and means for operating said member for simultaneously gripping one end of a fusible element and securing said cap within the end of the shell.

In testimony whereof I affix my signature.
JARL JOHNSON.