

E. B. MALLORY.
REFILLABLE CARTRIDGE FUSE.
APPLICATION FILED OCT. 10, 1911.

1,045,051.

Patented Nov. 19, 1912.

FIG. 1

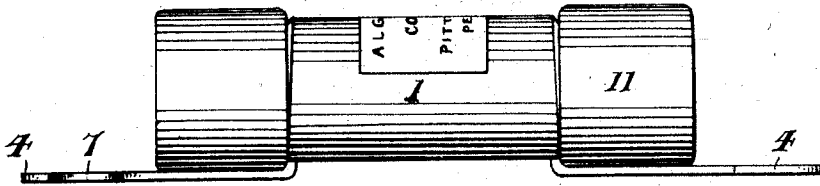


FIG. 2

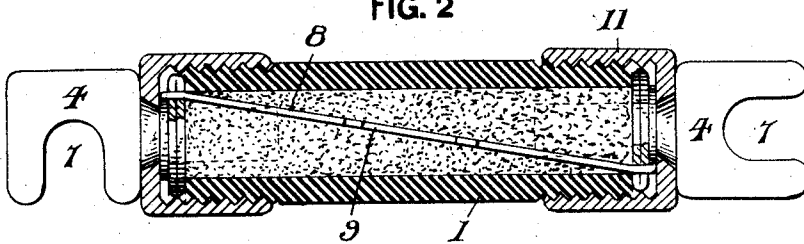


FIG. 3

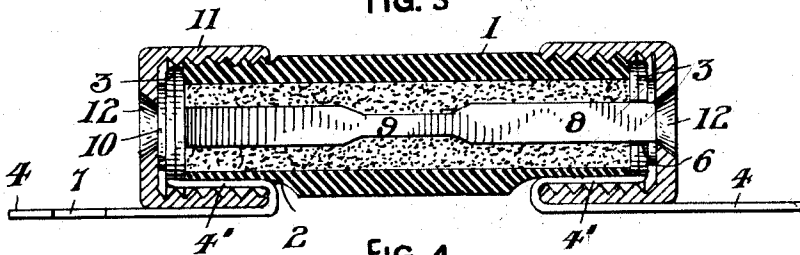


FIG. 4

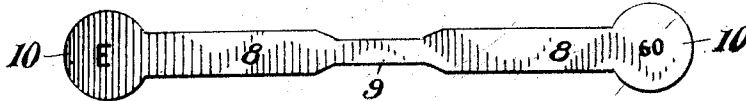


FIG. 5

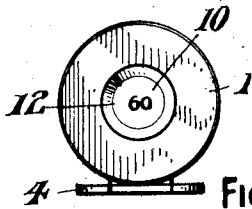


FIG. 6

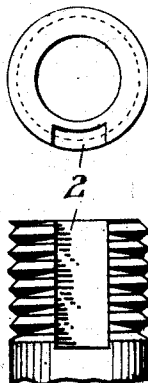


FIG. 7

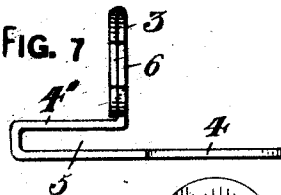
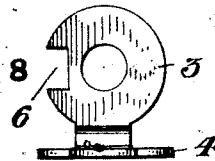


FIG. 8



WITNESSES

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REFILLABLE CARTRIDGE-FUSE.

1,045,051.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD B. MALLORY, a citizen of the United States, residing at Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Refillable Cartridge-Fuses, of which the following is a specification.

My invention pertains to refillable cartridge fuses of the electrical class, and of a type to accommodate currents of high or low capacity, which are capable of being recharged when the fuse blows out, and which can be used repeatedly.

The primary object of my invention is to provide a renewable cartridge fuse of the design commonly known as "Type A" in the art, the same being adapted for securing by screws or other similar means to the switchboard or adequate places provided for their reception. In addition said fuse involves the functions of good electrical and mechanical contact, and further means is provided at the ends of the fuse whereby both the rated capacity of the fuse element and trade-mark or design of the manufacturer is always exposed to view.

A still further object of my invention is the provision of a removable fuse element, to be used in conjunction with the other contact pieces, wherein the central portion thereof will be of a predetermined less width in cross section than the balance of said fuse, and the end sections of a somewhat greater width than the main body of said fuse.

I do not limit myself to the exact form and configuration shown and hereinafter described, which is simply illustrative of one embodiment of the invention, but reserve the right to make all necessary changes that will be in conformity and within the scope of the appended claims.

In the accompanying drawing forming a part of this specification, Figure 1 shows my improved fuse in assembled formation; Fig. 2 is a longitudinal side sectional view of the assembled fuse; Fig. 3 is a similar view looking at the fuse from a different angle; Fig. 4 illustrates one form of a removable fuse element; Fig. 5 is an end view of the assembled fuse showing end of the fuse element exposed on which the manufacturer's rated capacity mark appears; Fig. 6 is a plan and end view of one

end of a cartridge shell showing grooved formation; Fig. 7 illustrates a side view of one form of a combined washer and blade element, and Fig. 8 is an end view of the same member.

Throughout the different views shown in the drawing the numeral 1 designates the shell or body portion of the cartridge made preferably of a non-conducting material, and having the exteriorly threaded end portions, which latter are provided with a longitudinally positioned groove 2, formed at each end of the shell, and preferably on the same plane, as shown.

Adapted to seat over and against the open ends of the shell 1 are the integral washer portions 3 of the securing blade members 4. These washer portions are formed at approximately right angles with the shank or connecting member 4', which is bent back to form the parallel blade 4, as shown in Fig. 7, leaving a space 5. Each of the said washer elements is provided with a slot 6 and its blade 4 has a recess 7.

The removable fuse element 8, which is here shown in what is commonly known in the art as a strap configuration, preferably is formed with a reduced middle section 9, and enlarged end sections 10; substantially as shown in Fig. 4. This fuse element is positioned interiorly of the shell 1, diagonally from end to end, passing through the slot 6 formed in the washer 3, and is then bent over so that the enlarged end portions will be adapted to closely engage and contact with the outer face of said washers.

Owing to the novel formation of the combined washer and blade elements, when this member is seated in position at the extreme outer end of the shell, the shank portion 4' will engage in the slot 2 formed in said shell, and will be adapted to adequately shoulder therein, so that when the interiorly threaded screw cap member 11 is turned on over the end of the shell it will surround and retain the said shank 4' in its seat, and further will press the said fuse element against the outer surface of the washer 3 to obtain good electrical contact. Said washer portion 3 and blade 4 being integrally formed it is evident that this particular construction eliminates all intermediate contacts between the fuse element and the exterior blade portions and, further

minimizes the number of parts necessary to the construction of a fuse of this type. It is further evident that the blade members at the ends of the shell will be retained in absolute parallel alinement at all times, as it will be impossible to apply the cap members 11 to the shell member 1 unless the shank portions 4' of the blade members are properly seated in the grooves 2 formed in said shell. Each of said caps 11 is provided with a central aperture 12 in order to expose the bent over portion of the fuse element, which, on one end is stamped with the capacity numeral of said fuse, and on the opposite end with a letter, design, or trademark, denoting the secret sign of the manufacturer. This feature is of great advantage to the consumer, as it will render it possible to see and determine at a glance the rated capacity of the fuse without removing from the board, and further will guard against the insertion of any fusible element not conforming to the specifications of the manufacturer.

The blade portions 4 will extend beyond the outer ends of the cap members 11, as shown, thereby making it possible to quickly secure the fuse to or remove the same from the switch-board provided for their reception, said blade members having apertures or recesses 7, formed as shown, to conform to the established construction of non-renewable fuses of this class.

What I claim as my invention is:

1. A refillable cartridge fuse, comprising the combination of a shell, a washer engaging each end of said shell, a fusible element having its ends bent over into contact with the outer surfaces of said washers, a blade element attached to each of said washers, and a cap on each end of said shell, said cap adapted to maintain said fusible element in close engagement with said washer and to hold the washer in position, substantially as described.

2. A refillable cartridge fuse, comprising the combination of a shell, a washer engaging each end of said shell, a fusible element having its ends bent over into contact with the outer surfaces of said washers, a blade element attached to each of said washers, a cap on each end of said shell, said cap adapted to maintain said fusible element in close engagement with said washer and to hold the washer in position, and means for alining the blade elements attached to said washers, substantially as described.

3. A refillable cartridge fuse, comprising a shell of non-conducting material, a longitudinal groove formed in each end portion of said shell, apertured washers to seat at

the ends of said shell, each washer provided with an integrally formed shank to seat in said groove and a parallel extension bent back on said shank and terminating in a securing blade, an interiorly positioned removable fuse element whose end portions pass through and are bent over against said washers, and a cap member to seat over each end of the shell and adapted to press the fuse element against said washer, thereby forming a positive electrical contact between said fuse and said washer, substantially as described.

4. A refillable cartridge fuse, comprising a shell of non-conducting material whose end portions are exteriorly threaded, longitudinal grooves formed exteriorly of said threaded portions, apertured washers removably seated over the open ends of said shell, each washer having an integrally formed shank portion adapted to seat in one of said grooves and a parallel extension blade member to protrude beyond the shell, an interiorly positioned and removable fuse element adapted to pass through and be bent over against the said washers, and screw cap members to seat over the ends of the shell and lock each of said shank portions in its grooved seat and adapted to press said fuse element against said washer to form a positive electrical contact therewith, each of said cap members having an aperture to expose the bent over end of said fuse element, substantially as described.

5. A refillable cartridge fuse, comprising a shell of non-conducting material, apertured washers removably seated over the open ends of the shell, each washer having formed therewith a shank portion and a parallel extension bent back on said shank and extending beyond the ends of the shell, said extension terminating in a securing blade, seats formed in the shell to receive said shank portions of the washers, a removable fuse element within the shell, the end portions of said fuse element passing through and engaging said washers, and cap members adapted to be removably seated over the ends of the shell and between the shank and extension portions of said washers, thereby locking the shank portions in their respective seats and pressing the end portions of the fuse elements against said washers to form a positive electrical contact between said fuse and said washers, substantially as described.

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Witnesses:

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