May 10, 1932. R. T. ATHEY 1,857,581

RENEWABLE FUSE

Filed Oct. 10, 1928

FIG. II.

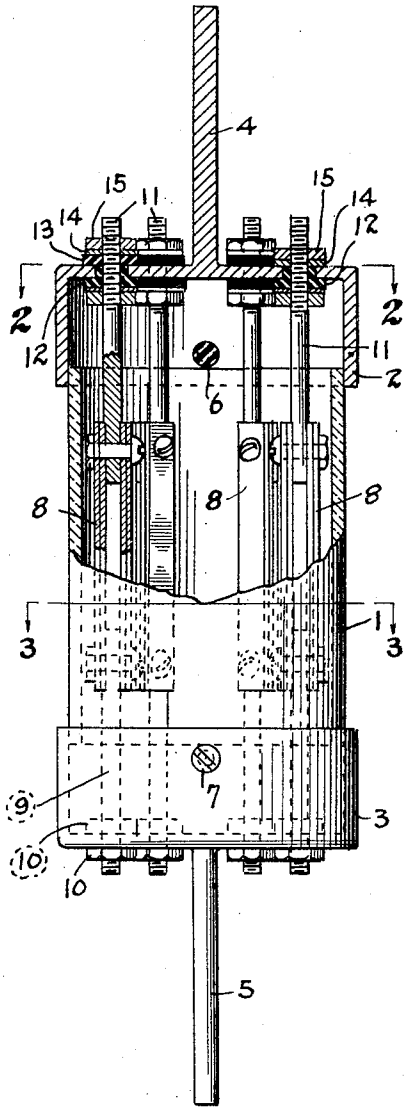


FIG. III.

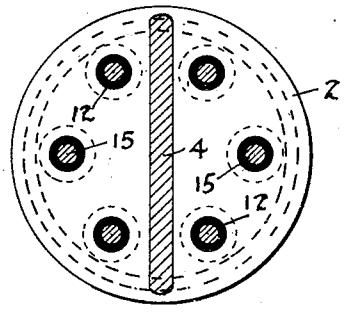
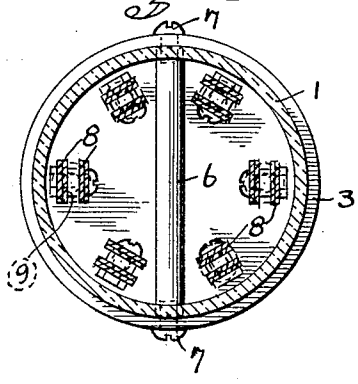


FIG. IV.



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UNITED STATES PATENT OFFICE

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RENEWABLE FUSE

Application filed October 10, 1928. Serial No. 311,574.

My invention relates to improvements in renewable fuses, and it consists in the combinations, constructions, and arrangements hereinafter described and claimed.

An object of my invention is to provide a renewable fuse in which all of the fuses are viewable from outside of the container, and in which novel means is provided for connecting in a new fuse when one has been burnt out.

A further object of my invention is to provide a device of the type described in which all of the fuses are connected to the terminals of the fuses, and yet are insulated therefrom, with the exception of the fuse in use. When this fuse burns out it is merely necessary to remove the insulating member of one of the other fuses whereupon this fuse becomes electrically connected. This change can be accomplished without removing the burnt out fuse, and without the necessity of opening up the fuse container in order to connect the new fuse.

Further objects and advantages will appear in the following specification, and the novel features of my invention will be particularly pointed out in what I hereinafter claim.

My invention is illustrated in the accompanying drawings forming a part of this application, in which

Figure 1 is a side elevation of the device, the upper portion being shown in section for clarity;

Figure 2 is a section on line 2—2 of Figure 1; and

Figure 3 is a transverse section through the device.

In carrying out my invention, I provide a container that has a transparent cylindrical portion 1 made of a non-conducting material, such as glass or mica, and ends 2 and 3 which are made of a conducting material. The ends 2 and 3 carry terminals 4 and 5 of the fuses. These ends are prevented from moving toward each other by fiber rods 6 that are held in place by means of screws 7, (see Fig. 3).

A number of fuses 8 connect the ends 2 and 3 together, as shown in Fig. 1. The fuses are secured to threaded rods 9, and the latter are passed through openings in the end 3, and are secured in place by means of nuts 10. The rods 9 and nuts 10 form an electrical connection between the fuses and the terminals 5.

The other ends of the fuse 8 are secured to threaded rods 11. The left-hand rod shown in Fig. 1 is insulated from the end 2 by means of a bushing 12 and a washer 13. The washer also insulates the end 2 from a metal washer 14 and a lock-nut 15. There are two washers 14 and lock-nuts 15 on each rod 11. It will be seen from this that the left-hand fuse 8 does not form an electrical connection between the terminal 5 and the terminal 4. The right-hand fuse 8 has a rod 11 that is passed through a bushing 12. The outermost washer 14 contacts with the end 2 and the insulating washer 13 is dispensed with. The washer is held in place by the nut 15. It will, therefore, be seen that there is an electrical connection from terminal 4 to terminal 5 through the fuse 8 disposed in the right-hand side of Fig. 1.

Should the fuse burn out, any one of the other fuses may be electrically connected by merely removing the insulating washer 13 of the fuse in question and then tightening up upon the outer nut 15. The cylinder 1 is made transparent for the purpose of seeing what fuse is burnt out.

In Fig. 1, I have shown each fuse as being composed of two pairs of fusible members connected to the rods 9 and 11. I have further shown six fuses, although it is obvious that this number may be changed at will.

Although I have shown and described one embodiment of my invention, it is to be understood that the same is susceptible of various changes, and I reserve the right to employ such changes as may come within the scope of the invention as claimed.

I claim:

1. A fuse comprising a tubular casing, metallic covers telescoping over said casing for closing the open ends thereof, terminals carried by said covers, insulated members extending transversely of said covers and bearing against said casing for preventing the

covers from moving toward each other, and a plurality of fusible members disposed in said casing and being connected to said covers for preventing the same from moving apart.

2. A fuse comprising a casing having two terminals and a transparent body portion, fusible members mounted in said casing and being connected to said terminals, and being observable from the exterior of the fuse, one of said terminals having openings therein for receiving said members, and insulating means disposed between said members and the terminals, said members being electrically connected to both terminals when said insulating means is removed.

3. A fuse comprising a casing made of a transparent and non-conducting material, metallic covers closing the ends of said casing, terminals carried by said covers, fusible members mounted in said casing and being connected to said covers, insulating bushings disposed between said members and one of said covers, insulating washers mounted on said members, and nuts securing said washers in place, said nuts being movable into contact with the cover when the washers are removed thus forming an electrical connection between the terminals.

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