

J. A. VOLK, JR.
 RENEWABLE FUSE FOR ELECTRIC CIRCUITS.
 APPLICATION FILED APR. 20, 1910.

981,088.

Patented Jan. 10, 1911.

Fig. 1.

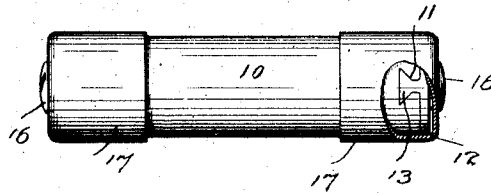


Fig. 2.

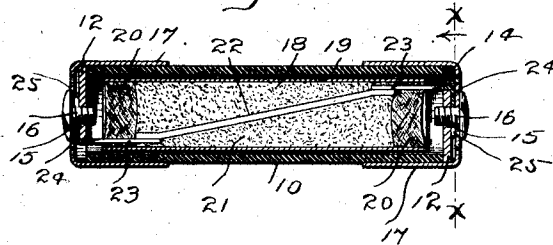


Fig. 3.

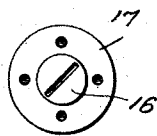
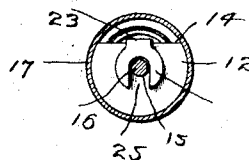


Fig. 4.



WITNESSES:

Wm. B. Enfield.
S. W. Atherton.

INVENTOR

Joseph A. Volk Jr.

BY

A. M. Wooster
 ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH A. VOLK, JR., OF SOUTH NORWALK, CONNECTICUT.

RENEWABLE FUSE FOR ELECTRIC CIRCUITS.

981,038.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH A. VOLK, JR., a citizen of the United States, residing at South Norwalk, county of Fairfield, State of Connecticut, have invented an Improvement in Renewable Fuses for Electric Circuits, of which the following is a specification.

This invention has for its object to provide a renewable fuse for electric circuits which shall cost no more to make than ordinary fuses, will fully meet the requirements of the underwriters and the trade, the body of which shall be practically indestructible and which shall be adapted to receive removable cartridges which cost but a trifle and can be replaced when burned out in a moment's time and without the use of any tools whatever.

With these and other objects in view I have devised the novel renewable fuse which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is an elevation of my novel fuse partly broken away; Fig. 2 a longitudinal section thereof; Fig. 3 an end elevation; and Fig. 4 is a section on the line $x-x$ in Fig. 2 looking in the direction of the arrow.

The body of my novel fuse consists of a tube 10 of vulcanized fiber or any suitable non-conducting material. At the ends of the tube and opposite to each other are dovetail recesses 11, one only being shown, (see Fig. 1).

12 denotes end plates provided with dovetail lugs 13 lying at a right angle thereto which are adapted to engage the recesses in the ends of the body by lateral movement to secure the plates to the body and retain them against endwise displacement. Each end plate is provided with an opening 14 at one side, for a purpose presently to be explained, and with a central threaded hole 15. This hole is engaged by a central screw 16 in the inner side of a cap 17 to which the screw is rigidly secured. It will be understood therefore that the caps which inclose the ends of the body retain the end plates against lateral displacement and the engagement of the dovetail lugs on the end plates with the recesses in the body retain the end plates and the caps also against longitudinal displacement, so that when the caps are screwed to

place all the parts are retained firm and secure.

18 denotes the cartridge as a whole which lies within the body and may be readily replaced when burned out by removing the caps and the end plates. This cartridge is made at trifling expense. It comprises a casing 19 made of paper which is closed at the ends by plugs 20 which may be made of paper and is filled with a suitable non-fusible material as sand, plaster of paris or granular asbestos, indicated by 21.

22 denotes the fuse proper which is made of lead or any suitable alloy that will melt at a low temperature and extends diagonally through the filling. Each end of the fuse is connected to a plate 23 which extends through the plug, is adapted to extend through the opening 14 in the corresponding end plate and is provided with a head 24 having a slot 25 through which the screw 16 of the corresponding cap passes when the head is bent down over the end plate in assembling, as shown in Figs. 2 and 4. When the caps are in place the heads are clamped between the end plates and the bases of the caps. Should the fuse melt or blow out, the caps are removed, the heads 24 of plates 23 are bent out straight and the end plates removed by lateral disengagement of the dove-tail lugs from the recesses in the body and the cartridge is allowed to drop out. A new cartridge slips readily into place, then the end plates are engaged with the body by lateral movement, as already described, plates 23 on the cartridge extending through the openings in the end plates, then the heads of plates 23 are bent down over the end plates and then the caps are turned to place, the entire operation being performed in a moment's time.

Having thus described my invention I claim:

1. A renewable fuse comprising a non-conducting body, end plates detachably secured thereto, a removable cartridge containing a low melting fuse and having connections with the end plates, and caps having central screws engaging the end plates.

2. A renewable fuse comprising a non-conducting body, end plates detachably secured thereto and provided with central threaded holes, a removable cartridge containing a low-melting fuse and having

plates adapted to be bent over the end plates and caps having central screws engaging the holes in the end plates.

3. A renewable fuse comprising a non-conducting body having dovetail recesses in its ends, end plates provided with threaded central holes and having lugs engaging the recesses by lateral movement, a removable cartridge containing a low melting fuse and having plates engaging the end plates and caps having central screws engaging the end plates, the plates from the cartridge being clamped between the end plates and the caps.

4. A renewable fuse comprising a non-conducting body, end plates detachably secured thereto and provided with openings in one side, and central threaded holes, a removable cartridge having plates adapted to pass through the openings in the end plates

and to be bent down over the end plates and caps having central screws engaging the holes in the end plates.

5. A non-conducting fuse body having dove-tail recesses in its ends, end plates having lugs engaging said recesses by lateral movement and central holes and caps having central screws engaging said holes.

6. A non-conducting fuse body having end plates detachably secured thereto and provided with central holes and caps having central screws engaging said holes.

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

JOSEPH A. VOLK, JR.

Witnesses:

EDWARD B. SMITH,
FRANK T. BRUNDAGE.