No. 671,271. Patented Apr. 2, 1901.

W. L. R. EMMET.

ELECTRIC FUSE.

(Application filed Jan. 27, 1900.)

(No Model.)

Fig 1

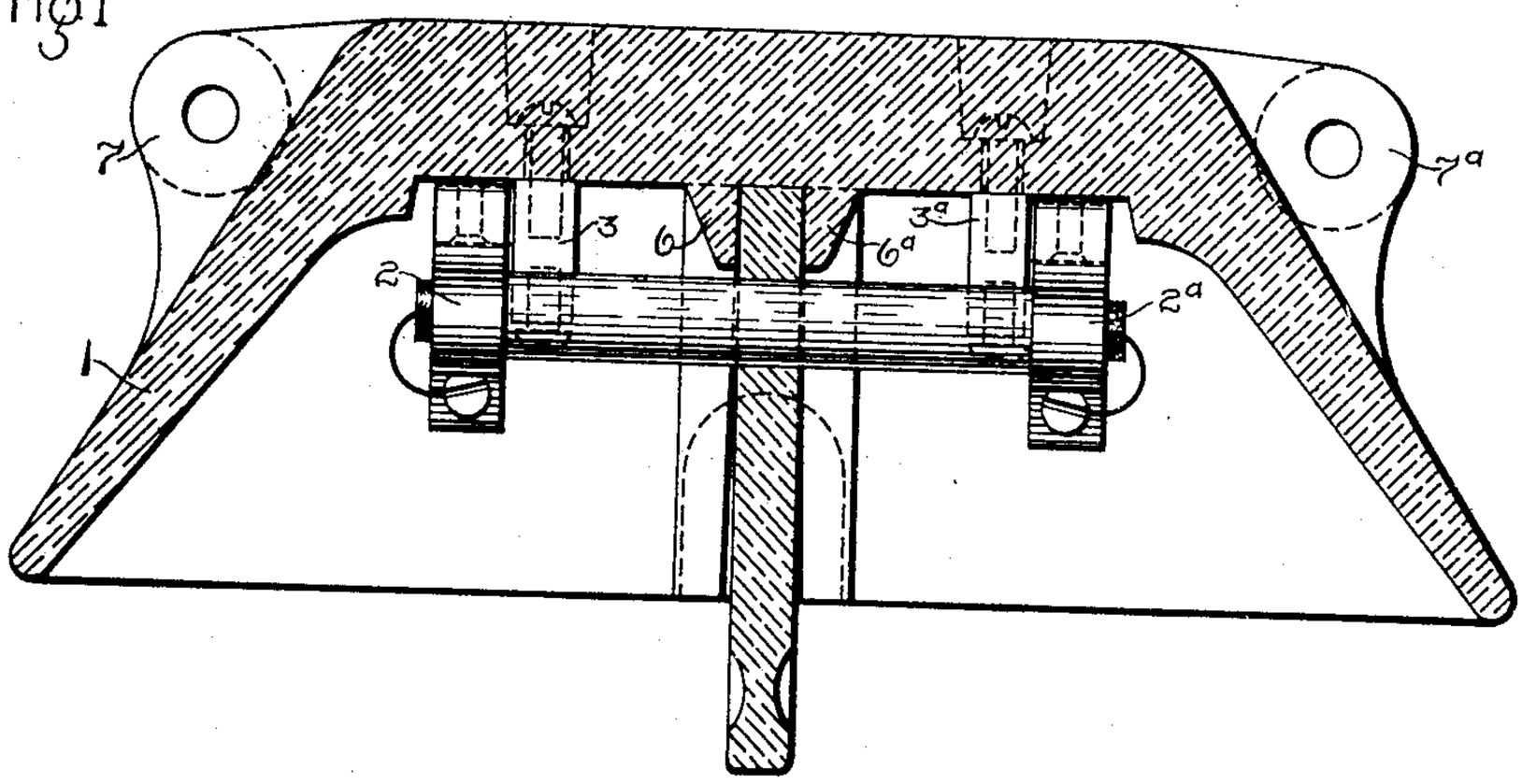


Fig. 2

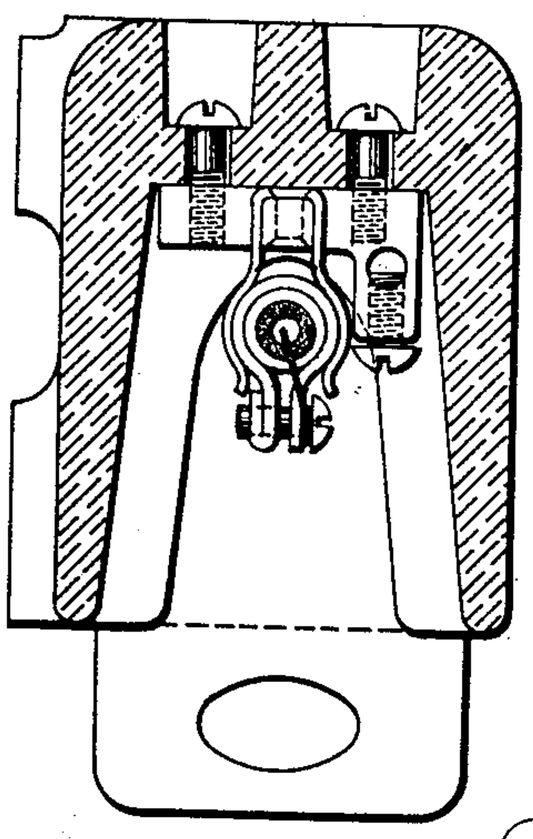


Fig. 3

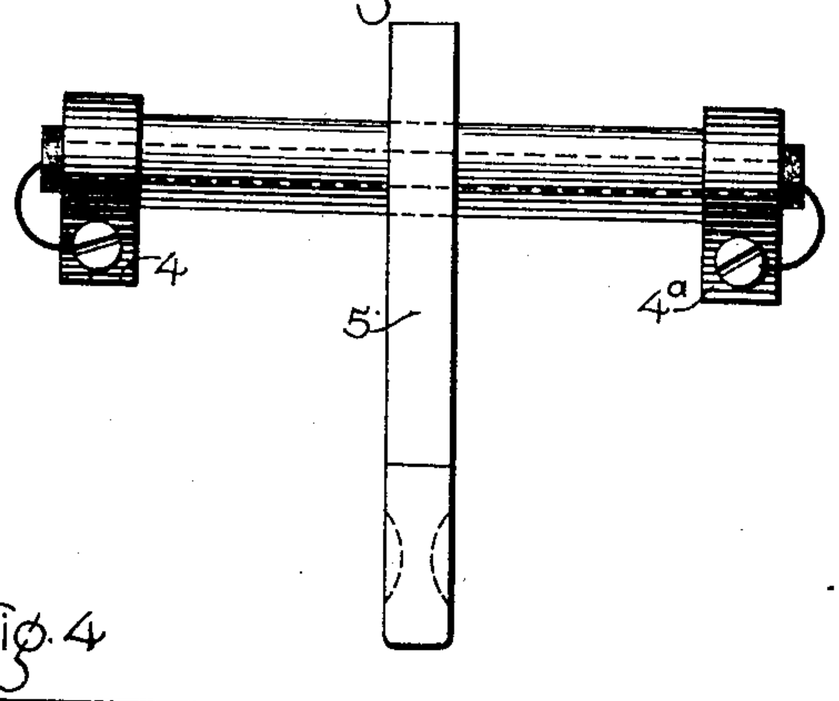
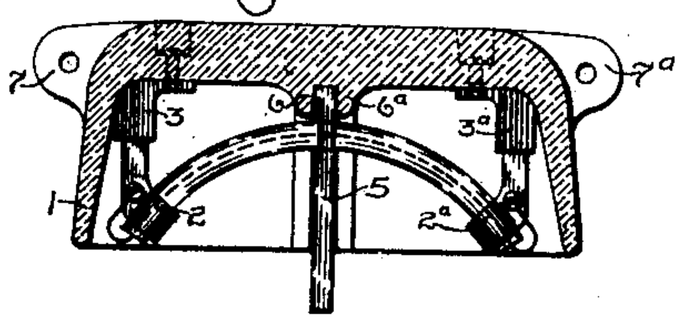


Fig. 4



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM L. R. EMMET, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE GENERAL ELECTRIC COMPANY, OF NEW YORK.

ELECTRIC FUSE.

SPECIFICATION forming part of Letters Patent No. 671,271, dated April 2, 1901.

Application filed January 27, 1900. Serial No. 2,948. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LE ROY EMMET, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Electric Fuses, (Case No. 1,126,) of which the following is a specification.

One object of my present invention is to provide a fuse mounted on a supporting-base, so as to be protected from damage and from the effects of the weather, and adapted to be easily inserted and withdrawn from the circuit-terminals.

A further object is to facilitate rupture of the circuit by promoting an effective expulsion of the arc-vapors generated when the fuse blows.

In carrying out the invention I provide an insulating-support, on the underside of which the fuse is mounted, said support being provided with a petticoat to protect the fuse from the weather and to guard it against damage by shock. The socket thus formed for the fuse is provided with guide-ribs for a barrier, through which extends the tube containing the fuse-wire, to the end that the whole may be inserted in the socket and the fuse connected with the circuit-terminals without the necessity of the operator touching or getting dangerously close to any of the live parts.

My invention involves various structural features which will be hereinafter described and will be definitely indicated in the claims.

In the accompanying drawings, Figure 1 is a sectional view of a fuse and its support embodying my improvements. Fig. 2 is a median cross-section on a plane at right angles to that of Fig. 1. Fig. 3 is a detail of the fuse and the combined handle and barrier with which it is connected, and Fig. 4 is a modification.

1 represents a recessed support made of some good insulating material, such as porcelain, and provided with a deep recess, so that the side walls of the recess shall extend well below the fuse. This support is provided with spring-clips 2 2^a in good electrical connection with the terminals 3 3^a, screwed fast to the body of the support. The fuse-wire itself is contained in an insulating-tube, preferably of glass or other transparent material, so that its condition may be easily seen, and may with advantage be surrounded with a tube of asbestos, the latter being between the fuse-wire and the walls of the tube. The asbestos tube may project slightly from the ends of the rigid tube, and the ends of the fuse-wire are carried around and fastened by a screw or other convenient fastening to conducting-bands 4 4^a, firmly secured to the ends of the glass tube and provided with ears at the bottom, to which the ends of the fuse may be connected. To put the bands in place, the tube containing the fuse-wire is passed through an opening in the handle 5, which is made of some insulating and preferably fireproof material, by which the fuse may be handled without touching its parts when connecting it in circuit. The support is provided on the inside with grooves or guideways 6 6^a to line up the terminals of the fuse with the circuit-terminals when it is being connected in circuit. The jaws of the spring-clips 2 2^a are so shaped that the fuse-terminals 4 4^a may be forced between them when the handle is inserted in the guide and forced upwardly. The handle 5 is made of such a width as to extend from side to side of the hollow support 1, and thus constitutes an effective barrier against the transit of arc-vapors from one end of the fuse to the other outside of its containing-tube when it blows, and the end walls are given a slope to deflect the vapor outwardly.

In Fig. 4 I have shown a modification which involves the same plan of construction as the device just described, except that the fuse-supporting tube is curved, a construction which admits of the device being embraced within small compass, since a steeper slope may be given to the sides of the support, the arc-vapors being directed by the tube itself away from its ends.

It will thus be seen that to detach a blown fuse from the circuit and to replace it by a new one is an easy and safe proceeding, the parts being removed from the support, the ends of the old fuse taken out and a new one inserted, and the whole then replaced in position by means of the insulating-handle. To facilitate the mounting of the fuse upon a

switchboard or other support, one side of it may be provided with ears, as indicated at 7 7ª, perforated to admit a screw or bolt.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An electric safety device, comprising an insulating supporting-tube, conductive terminals on the ends of the same electrically connected to the fuse-wire, an insulating-handle connected to the fuse, spring-clips adapted to receive the conductive ends in electrical connection with the fixed circuit-terminals, and an open frame in which said clips are mounted, affording free vent to the gases when the fuse blows.

2. A fuse device comprising a recessed support of insulating material, a fuse surrounded by a tube mounted within the recess, said recess being provided with sloping walls to lead away the arc-gases.

3. A fuse device comprising an insulating-support containing a recess in which the fuse is supported, an inclosing tube of insulating material around the fuse, a barrier outside of the tube and between the fuse-terminals, and means for guiding the arc-gases away from the fuse-terminals.

4. A fuse device comprising a hollow insulating-support, a removable barrier dividing the same into two chambers, a tube carried by the said barrier, and movable with it, containing a fuse-wire, and circuit-terminals adapted to be brought into electrical connection with the fuse-terminals when the barrier is inserted in place.

5. A fuse device comprising an insulating-support provided on its under side with a recess, a barrier extending from one wall to the other of said recess, guides in said walls for the barrier, an insulating-tube mounted on the barrier, a fuse-wire within the tube, contacts connecting with the fuse-terminals on the tube, and spring-clips connected with the fixed circuit-terminals, adapted to engage the tube and connect the fuse in circuit.

6. An electric fuse contained within a curved insulating-tube and having its terminals on the outside of the tube.

7. An electric fuse contained in a curved insulating-tube mounted on a support having deflecting-walls at the curved end of the tube to direct the arc-vapors.

8. The combination with a receptacle, terminals thereon, a fuse structure adapted to make contact with said terminals, an insulating-tube for the fuse, and a barrier removably secured to the receptacle by the fuse structure, said barrier being narrow relatively to the length of the fuse-tube.

9. The combination of a receptacle with a barrier removable therefrom, said barrier being narrow relatively to the socket in the receptacle, guide-walls in the receptacle, and a tube carrying a fuse passing through said barrier.

In witness whereof I have hereunto set my hand this 25th day of January, 1900.

WILLIAM L. R. EMMET.

Witnesses:
BENJAMIN B. HULL,
MABEL E. JACOBSON.