

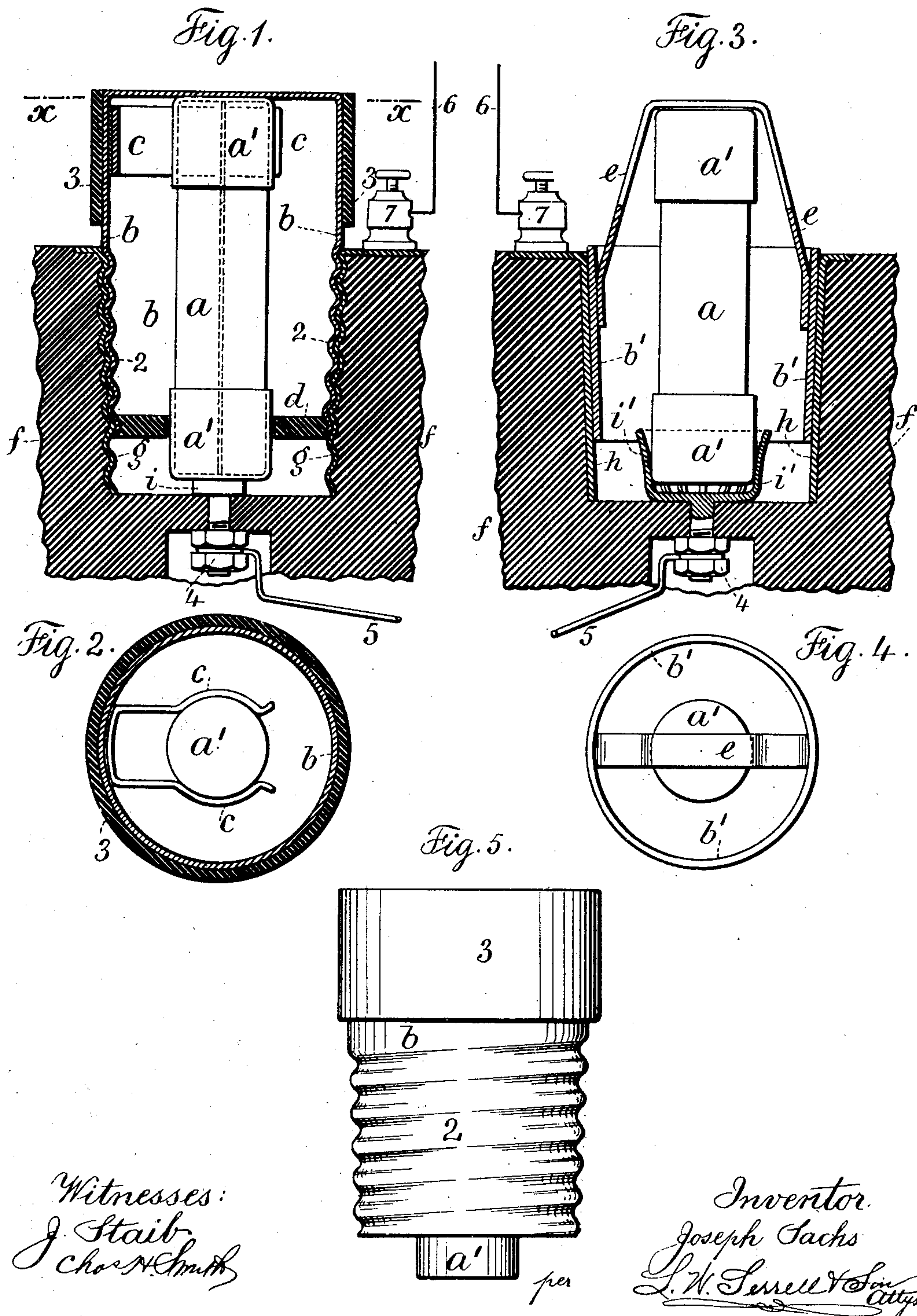
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J. SACHS.
FUSE PLUG FOR CUT-OUT BLOCKS.

(Application filed Dec. 8, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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FUSE-PLUG FOR CUT-OUT BLOCKS.

SPECIFICATION forming part of Letters Patent No. 688,031, dated December 3, 1901.

Application filed December 8, 1900. Serial No. 39,121. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SACHS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented an Improvement in Fuse-Plugs for Cut-Out Blocks, of which the following is a specification.

My invention relates to a fuse-plug adapted for use in cut-out blocks, such as the well-known Edison fuse-plug blocks. Fuse-plugs as heretofore employed for use in such cut-out blocks have not been satisfactory, owing to the ordinary fuse-wire being exposed in the plug and open to the objection of arcing.

The object of my invention is to provide a fuse-plug in which the ordinary fuse-wire shall not be exposed or liable to the objection of arcing, and in this connection I employ a fuse-case and inclosed fuse and in combination therewith a cylindrical conducting-shell and a support connected therewith for the fuse-case and inclosed fuse.

The fuse-plug is constructed to fit any form of receiving-contacts and may be built of any size for use in single cut-out blocks, panels, or switches. The fuse-case and inclosed fuse is connected at one end to the conducting-body or cylindrical conducting-shell, and the other end of the fuse-case and inclosed fuse is free from said conducting-body or cylindrical conducting-shell, the said conducting-body or cylindrical conducting-shell surrounding the fuse-case and inclosed fuse and being preferably concentric therewith. The said conducting-body is of such shape that it is adapted to be received in a cylindrical shell of slightly greater diameter secured within the receiving-contact or fuse-block, the free end of the fuse-case being adapted to come in contact with a metal part, completing the electric circuit. The fuse-plug may be grasped by hand and placed in or removed from the cut-out block.

In the drawings, Figure 1 is a vertical section and partial elevation, and Fig. 2 a sectional plan at $x-x$ of Fig. 1, representing a form of my invention. Fig. 3 is a vertical section and partial elevation, and Fig. 4 a plan view of parts shown in Fig. 3, representing another form of my invention; and Fig. 5 is an elevation of the parts shown in Figs. 1 and 2.

The fuse-case and inclosed fuse is represented at a and the same is of well-known construction, in which the tubular portion is of insulating material, with metal ends a' , the fuse passing longitudinally and centrally through the insulating-case to contacts with the metal ends, the fuse being shown in Fig. 1 by dotted lines. The conducting-body or cylindrical conducting-shell of metal may be closed at one end and open at the other end or the same may be open-ended. This conducting-body or cylindrical conducting-shell may have a tapering portion formed with a screw-thread, or the tapering portion may be plain.

In Fig. 1, b represents the conducting-body or cylindrical conducting-shell open at one end and closed at the other and formed with a tapering screw-threaded portion 2 and with the closed end surrounded with an insulating-band 3. The cut-out block f , Fig. 1, of suitable insulating material, may be provided with a cylindrical metal shell g of screw-threaded form and of slightly greater diameter than the conducting-body b , so that the body b is screwed down into the shell g .

In Figs. 3 and 4 the conducting-body or cylindrical conducting-shell b' is plain and tapering and open-ended and is received within a plain tapering cylindrical case h , secured in an opening in the cut-out block f , and the conducting-body b' fits within the cylindrical portion h and is held therein by friction.

With the forms shown in Figs. 3 and 4 a metal yoke e is employed and is soldered at its respective ends to the opposite inner faces of the conducting body or shell b' , and it is also connected in a suitable manner to the metal end a' of the fuse-case, so that one end of the fuse-case is securely fastened to the conducting-body, but the other end free therefrom, the fuse-case and inclosed fuse occupying a central position in the conducting-body b' and the body being concentric thereto.

In the form shown in Figs. 1 and 2 the fuse-case and inclosed fuse is removable from the conducting-body or cylindrical conducting-shell b . In this form I employ a spring-clip c , of U shape, fastened at its base by solder to the inner surface of the conducting-shell and at its free end bent to engage and hold and form an electrical connection with the metal

end a' of the fuse-case, and I prefer to employ in the form shown in Figs. 1 and 2 a perforated insulating-disk d , of some suitable non-conducting material, placed within the open
 5 end of the conducting-body b and frictionally held therein, the central opening in it being large enough for the free passage of the fuse-case a and its metal ends a' .

In the form shown in Figs. 1 and 2 the lower
 10 metal end a' when the conducting-body is in place in the cut-out block comes into contact with a bolt i , passing through the base of the cut-out block f , and a wire 5 is securely clamped to the bolt i by a nut 4.

In the form shown in Figs. 1 and 2 the disk
 15 d insures the fuse-case and inclosed fuse remaining approximately central to the conducting-body; but in the form shown in Figs. 3 and 4 I prefer to employ instead of the bolt i
 20 a head of spring-arms i' , receiving and centering the lower metal end a' of the fuse-case. A wire 5 is secured to the stem of this device i' by a nut 4, and the other circuit-wires 6 are fastened by binding-posts 7 or in any well-
 25 known manner to the cylindrical bodies g and h in the cut-out blocks.

With the form shown in Figs. 1 and 2 the fuse-plug is readily inserted by screwing the same to place, while in the forms shown in
 30 Figs. 3 and 4 the fuse-plug may be pressed down to place and is held frictionally, and while the fuse-case and inclosed fuse is not wholly covered in the form shown in Figs. 3 and 4, the same as it is in the form shown in
 35 Figs. 1 and 2, yet the form shown in Figs. 3 and 4 is the generic structure.

I claim as my invention—

1. In a fuse-plug, the combination with an inclosed fuse placed endwise, of a conducting-body extending along the case of the fuse
 40 but appreciably distant therefrom, and conducting devices holding one end of the fuse-case in contact with said body, and from which body the other end of the fuse-case is free,
 45 the conducting-body and free end of the fuse-case being adapted for connection with socket-terminals, substantially as specified.

2. In a fuse-plug, the combination with a fuse-case and fuse inclosed therein, of a conducting-body extending around the fuse-case
 50 and appreciably distant therefrom, and an engaging electrical connection between the said body and one end of the fuse-case, and an insulating member between the other end
 55 of the fuse-case and said conducting-body, substantially as set forth.

3. In a fuse-plug, the combination with a fuse-case and inclosed fuse, of a conducting-body extending around the said fuse-case and
 60 to which the fuse-case is concentric, an internal engaging electrical connection secured to the inner surface of the conducting-shell and extending therefrom to engagement with the inner end of the fuse-case, and an insulating

device at and supported by the other end of
 65 the conducting-shell and through which the free end of the fuse-case passes, and by which it is kept from contact with the conducting-body and is removable therefrom at pleasure,
 70 substantially as set forth.

4. In a fuse-plug, the combination with a fuse-case having metal ends, and an inclosed fuse, of a cylindrical conducting-shell closed at one end and open at the other end and adapted to receive the said fuse-case and fuse,
 75 a spring-clip within the cylindrical conducting-shell adjacent to its closed end and secured to the inner surface thereof and adapted to engage and hold the fuse-case at one
 80 metal end, a disk of insulating material perforated for the passage of the fuse-case surrounding the same and fitting within and secured to the open end of the cylindrical conducting-shell, substantially as set forth.

5. In a fuse-plug, the combination with a
 85 fuse-case having metal ends and an inclosed fuse, of a cylindrical conducting-shell closed at one end and open at the other end and adapted to receive the said fuse-case and fuse,
 90 a spring-clip within the cylindrical conducting-shell adjacent to its closed end and secured to the inner surface thereof and adapted to engage and hold the fuse-case at one
 95 metal end, a disk of insulating material perforated for the passage of the fuse-case surrounding the same and fitting within and supported at the open end of the cylindrical conducting-shell, one end of the cylindrical conducting-shell being provided with a screw-thread and a band of insulating material sur-
 100 rounding the cylindrical conducting-shell between the threaded portion and the closed end, substantially as set forth.

6. The combination with a cut-out block of insulating material having an opening, an
 105 electrical device secured thereto at the base of the opening and a cylindrical metallic lining connected to the sides of the opening, of a fuse-case having metal ends and a fuse inclosed therein, a conducting-body adapted to
 110 be received within the cylindrical lining of the cut-out block and to form an electrical connection therewith, means for connecting the fuse-case to the conducting-body and by which the said fuse-case is supported at one
 115 end and is movable with said conducting body or shell, and the lower free end of the said fuse-case is brought into electrical contact with the electrical device in the base of the cut-out
 120 block when the conducting-body is in place, substantially as set forth.

Signed by me this 5th day of December, 1900.

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Witnesses:

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