No. 802,246. PATENTED OCT. 17, 1905.

G. B. THOMAS.

ELECTRICAL FUSE PLUG.

APPLICATION FILED MAR. 17, 1905.

Fig. 1.

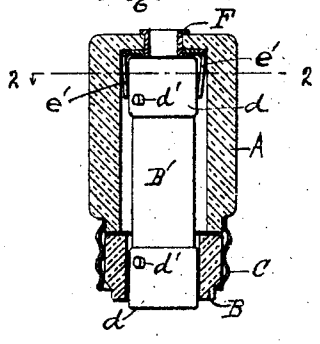


Fig. 3.

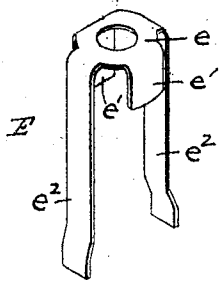


Fig. 4.

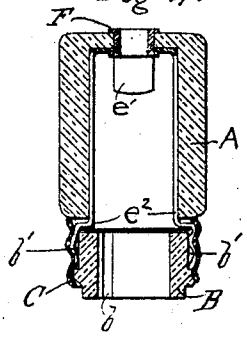


Fig. 2.

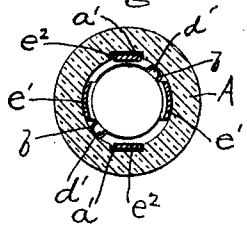


Fig. 5.

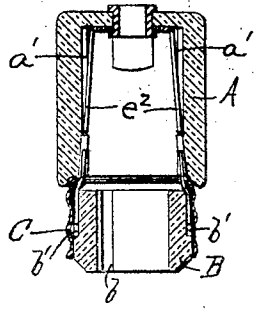


Fig. 6.

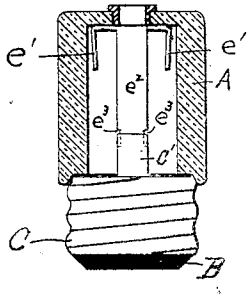
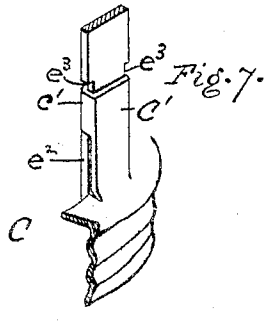


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE B. THOMAS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BRYANT ELECTRIC COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRICAL FUSE-PLUG.

No. 802,246. Specification of Letters Patent. Patented Oct. 17, 1905.

Application filed March 17, 1905. Serial No. 250,612.

To all whom it may concern:

Be it known that I, GEORGE B. THOMAS, a citizen of the United States of America, residing in the city of Bridgeport, in the county of Fairfield, State of Connecticut, have invented an Improved Electrical Fuse-Plug, of which the following is a specification.

My invention relates to thermal cut-out plugs for electrical circuits, particularly to that type of plug which is adapted to hold a removable fuse-cartridge and to be inserted into a suitable receiving or branch block.

The main object of this invention is to provide such a cartridge-fuse plug which will be more efficient and convenient in use and at the same time less expensive to manufacture than such devices as heretofore made.

In the accompanying drawings, Figure 1 represents a vertical axial section of a fuse-plug with a fuse-cartridge therein embodying one form of my invention. Fig. 2 is a sectional plan view taken on the line 2 2 of Fig. 1. Fig. 3 is a perspective view of the fuse-holder and the conductors between the fuse-end base and the external contact-ring. Fig. 4 is a modified form of plug shown in sectional axial elevation at right angles to that of Fig. 1. Fig. 5 is an elevation of another modified form with a part in section. Fig. 6 is a similar view of the same, taken at right angles to Fig. 5; and Fig. 7 is an enlarged perspective view of a detail of the construction shown in Figs. 5 and 6.

A is the casing, of porcelain or other suitable insulating material, preferably in the form of a hollow cylinder open at the lower end and with a central opening in the otherwise-closed upper end. Adjacent to the open end of the casing A is a ring B, also of porcelain or other insulating material, carrying on its exterior a metal terminal ring C. In case the plug is for application to the Edison type of socket-terminals this external ring terminal is threaded, as shown in the drawings. The opening in this insulating-ring B is of a size to permit the passage through it of the usual fuse-cartridge B′, Fig. 1, and as these cartridges sometimes have on their metallic caps *d* projecting pins *d′* notches, such as *b*, may be formed longitudinally on the inner face of the ring B, as shown in Figs. 2, 4, and 5.

As will be understood on reference to Fig. 1, the lower metallic end of the fuse-cartridge forms the central terminal, which makes contact with the central terminal in the socket of the branch block, and consequently the metallic upper end of the fuse-cartridge has to be in electrical connection with the ring terminal C on the block.

My invention has special reference to the means whereby this connection is effected. For this purpose I provide the metallic clip-piece E, which is best illustrated in Fig. 2 and which can be easily stamped up out of a single piece of metal. It comprises a plate *e*, which in the present instance has four legs, forming a spring-clip to receive and mechanically hold, as well as electrically connect with, the metallic end *d* of the inserted cartridge, Fig. 1. In the present instance two of these legs *e′* opposite each other are short ones, while the others, e^2, are of sufficient length to extend from the upper end of the casing A to overlap at their lower ends the ring terminal C. These lower ends are for this purpose bent outward, as shown in the drawings, so as to fit into notches *b′* in the outer side of the insulating-ring B, so that these ends of the legs e^2 may be soldered or be otherwise securely connected to the ring terminal C both electrically and mechanically. If desired, the extreme lower ends of the legs e^2 may be corrugated to conform closely to the inner threaded face of the ring C, as illustrated in Fig. 4. Instead of securing these legs to the ring C by solder only, they may be secured by other means. For instance, in Figs. 5, 6, and 7 I have illustrated the ring C as provided with upwardly-projecting parts C′, having lugs *c′* adapted to be bent around the legs e^2, which are notched at e^3 to receive those lugs.

I prefer to provide on the inner face of the insulating-casing A longitudinal grooves *a′* to receive the legs e^2 of the clip-piece, and thereby prevent the latter and the rings B and C from turning in the casing A.

Care is taken to form the notches *b* on the inner face of the ring B with such relation to the notches *b′* on the outer face that the pins *d′* on the upper end of the cartridge will enter the notches between the adjacent legs *e′* and e^2 of the stirrup.

The clip-piece E, with the rings B and C, may be secured in the inner end of the casing

A by any suitable means—as, for instance, by an eyelet F.

I claim as my invention—

1. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing and the insulating-ring carrying an external ring terminal, with a separate clip-piece secured in the inner end of the insulating-casing, said clip-piece being mechanically and electrically connected to said external ring terminal.

2. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing and the insulating-ring carrying an external ring terminal with a separate clip-piece secured to the inner end of said casing, said clip-piece having legs mechanically and electrically connected to said ring terminal.

3. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing and an insulating-ring carrying an external ring terminal, with a clip-piece secured in the inner end of the said casing and having legs mechanically and electrically secured to the ring terminal, said insulating-ring being notched on its outer face to receive the said legs.

4. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing and an insulating-ring carrying an external ring terminal with a clip-piece secured in the inner end of the said casing and having legs mechanically and electrically secured to the ring terminal, said insulating-ring being notched on its outer face to receive the said legs, and also having notches on its inner face for the passage of the fuse-cartridge pins.

5. The combination of the insulating-casing and external ring terminal of a fuse-plug, adapted to receive a fuse-cartridge with a separate clip-piece adapted to be secured to the inner end of said casing, said clip-piece having four legs, two short ones to act as clips and two long ones metallically secured to the external ring terminal.

6. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing, and external ring terminal adapted to receive the fuse-cartridge, with a separate clip-piece having legs in said casing, and upwardly-projecting parts on said ring terminal secured to the legs on said clip-piece.

7. In a fuse-plug for fuse-cartridges, the combination of the insulating-casing, and external ring terminal adapted to receive the fuse-cartridge, with a separate clip-piece in said casing, notched legs on said clip-piece, upwardly-projecting parts on said ring terminal, with lugs bent around said notched legs.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE B. THOMAS.

Witnesses:
G. W. GOODRIDGE,
H. G. WALES.