No. 745,493. PATENTED DEC. 1, 1903.

J. H. HANSON.

PLUG FUSE.

APPLICATION FILED JULY 31, 1903.

NO MODEL.

Fig. 1.

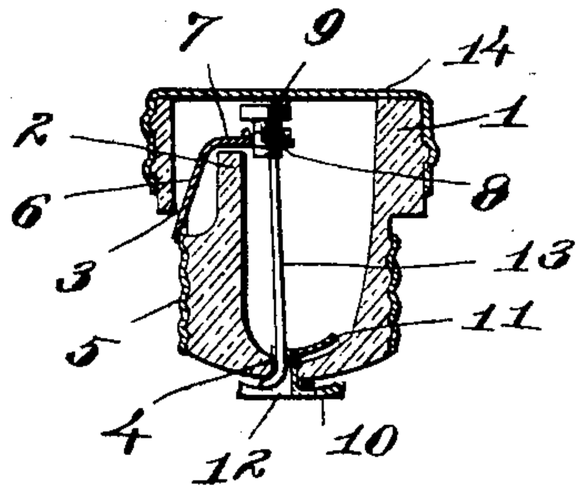


Fig. 2.

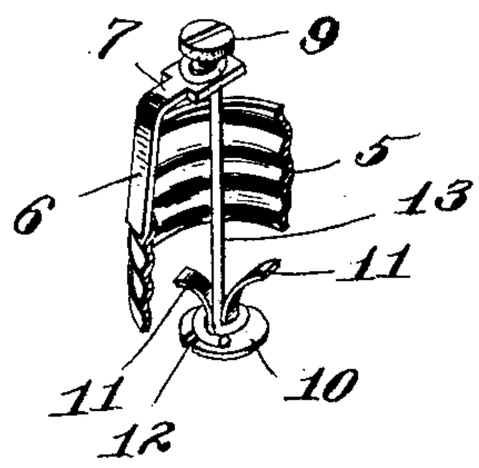
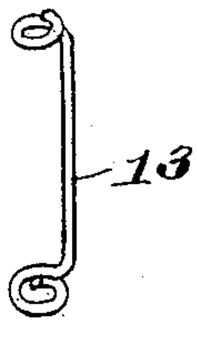


Fig. 3.



Witnesses.

G. A. Rauberschmidt

George L. Chindahl

Inventor.

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By Luther L. Miller

Atty.

No. 745,493. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

JOHN H. HANSON, OF CHICAGO, ILLINOIS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO STEPHEN H. LOUGHMAN AND REUBEN G. GALUSHA, OF CHIGAO, ILLINOIS.

PLUG-FUSE.

SPECIFICATION forming part of Letters Patent No. 745,493, dated December 1, 1903.

Application filed July 31, 1903. Serial No. 167,721. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HANSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Plug-Fuses, of which the following is a specification.

This invention, as stated, relates to plug-fuses, and has for its object the provision of improved means for securing within such fuses the wire fuse commonly employed to connect the terminals of the plug. As at present constructed, the ends of the wire fuse are soldered to said terminals. Owing to the low melting-point of fuse-wire and the confined space within which the work must be done, the soldering of the wire to the terminals of the plug is difficult and tedious.

The object of this invention, therefore, is to provide a plug-fuse into which the fuse may be quickly and easily inserted and wherein good electrical contact between the fuse and the terminals is insured.

In the accompanying drawings, Figure 1 is a vertical central sectional view through a plug-fuse embodying the features of my invention. Fig. 2 is a detail perspective view of the contact-points and the fuse. Fig. 3 is a perspective view of the fuse, showing its form when in place in the plug.

In the construction of a plug-fuse embodying my invention I provide an insulating-cup 1 substantially circular in horizontal cross-section. A vertical partition 2 extends across the interior of said cup, to one side of the vertical center thereof, for a purpose to appear later herein, and in the wall of the cup 1 adjacent to the middle point of the partition 2 is formed an opening 3. An opening 4 is provided centrally of the lower end of the cup to receive the end contact of the plug. To the outer side of the lower portion of the cup is secured a sleeve 5, exteriorly screw-threaded to engage the interior screw-threads of a common attaching-socket, (not shown,) said sleeve forming the side terminal of the plug.

A bracket 6 is rigidly secured to the sleeve 5 in any suitable manner, as by soldering, and extends upwardly into the cup 1 through the opening 3 in the side thereof. The upper portion 7 of this bracket is bent with relation to the lower portion thereof and projects over the partition 2 to a point near the longitudinal axis of the plug. The outer end of this upper portion 7 is provided with a screw-threaded opening 8, adapted to receive the headed screw 9.

The end contact 10 of this plug-fuse is secured in place by means of a stem comprising the prongs 11, fixed to said contact and extending through the opening 4 in the lower end of the cup 1, the inner ends of said prongs being clenched to retain the terminal 10 in position. Said terminal is loosely connected with the cup 1 to provide a space of varying size between the contact and the end of the cup for a purpose to appear later herein. A slot 12 is cut through said terminal from the center to the periphery thereof to facilitate the insertion of the fuse, to be next described, and the inner side of said terminal is made concave for a purpose to be mentioned hereinafter.

The side terminal 5 and the end terminal 10 are connected by means of a piece of fuse-wire 13, one end of said wire being wrapped around the securing-prongs 11 of the terminal 10 and lying in the space between said terminal and the lower end of the cup 1. The terminal 10 is loosely connected with the cup 1 to provide a space between said terminal and the end of the cup adapted to receive fuse-wire of different sizes. The other end of the wire fuse is coiled about the screw 9, beneath the head thereof, said screw clamping the wire between said head and the bracket 6. By reason of the concave inner side of the terminal 10 the pressure exerted upon said terminal when the plug is being screwed into its socket tends to force the fuse-wire toward the center of said terminal, insuring good electrical contact.

A cap 14 is provided to close the open upper end of the cup 1, said cap having a screw-thread connection with the exterior of the cup.

A fuse is inserted into the plug in the following manner: The cap 14 being removed, a length of fuse-wire is inserted into the open upper end of the cup 1 and one end passed through the opening 4 in the lower end of

said cup and through the radial slot 12 in the end contact 10. Said end is then coiled about the securing-prongs 11 of said contact and any outwardly-projecting portion cut or pinched off. The other end of the fuse-wire is now wrapped around the screw 9, beneath the head thereof, and said screw tightened down to clamp the fuse firmly in place. The partition 2 extending across the interior of the insulating-cup separates the terminals 5 and 10, thus preventing the formation of an arc upon the blowing out of the fuse.

It is apparent that various changes may be made in the embodiment herein shown of this invention without departing from the spirit and scope thereof, wherefore I desire not to limit myself to the precise details herein set forth.

I claim as my invention—

1. In a plug-fuse, in combination, an insulating-cup; a side terminal for said cup; an end terminal having a stem for securing said terminal to said cup, said stem comprising a prong adapted to be clenched to hold said terminal in position; and a wire fuse having electrical connection at one end with said side terminal and at its other end coiled about the stem of said end terminal between said end terminal and the end of the cup.

2. In a plug-fuse, in combination, an insulating-cup; a side terminal and an end terminal for said cup, said end terminal being slotted to facilitate the insertion of a fuse; and a wire fuse having electrical connection at one end with said side terminal and having its other end coiled between the end of said cup and said end terminal.

3. In a plug-fuse, in combination, an insulating-cup; a side terminal for said cup; an end terminal having a slot extending therethrough to facilitate the insertion of a fuse, also having a stem for securing said terminal to said cup; and a wire fuse having electrical connection at one end with said side terminal and at its other end coiled about the stem of said end terminal.

4. In a plug-fuse, in combination, an insulating-cup; a side terminal for said cup; an end terminal having a slot extending therethrough to facilitate the insertion of a fuse, also having a stem for securing said terminal to said cup, said stem comprising a prong adapted to be clenched to hold said terminal in position; and a wire fuse having electrical connection at one end with said side terminal and at its other end coiled about the stem of said end terminal, the inner side of said end terminal being concave to retain the end of the fuse in place.

5. In a plug-fuse, in combination, an insulating-cup; a side terminal and an end terminal for said cup; a partition in said cup extending between said side terminal and said end terminal; a bracket mounted in said cup at one side of said partition and extending to the other side of said partition, said bracket having electrical connection with said side terminal; and a wire fuse having electrical connection at one end with said bracket and at its other end with said end terminal.

JOHN H. HANSON.

Witnesses:
S. H. LOUGHMAN,
GEORGE L. CHINDAHL.

Corrections in Letters Patent No. 745,493.

It is hereby certified that Letters Patent No. 745,493, granted December 1, 1903, upon the application of John H. Hanson, of Chicago, Illinois, for an improvement in "Plug-Fuses," was erroneously issued to Stephen H. Loughman and Reuben G. Galusha, as owners of the entire interest in said invention; that said Letters Patent should have been issued to the inventor *John H. Hanson and Stephen H. Loughman and Reuben G. Galusha, jointly*, said Loughman and Galusha being the assignees of two-thirds interest only in said patent, as shown by the record of assignments in this office; also that the residence of said assignees was erroneously printed at the head of the specification "Chigao" instead of *Chicago;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of December, A. D., 1903.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.