No. 861,315. PATENTED JULY 30, 1907.

R. S. PEIRCE.

FUSE.

APPLICATION FILED JUNE 12, 1905.

Fig. 7.

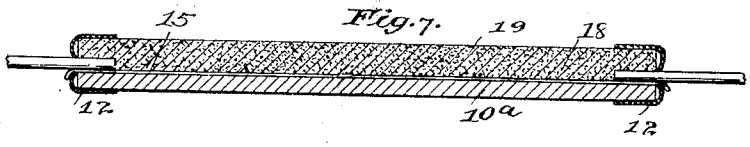


Fig. 1.

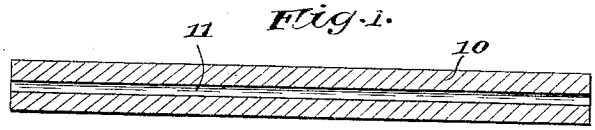


Fig. 2.

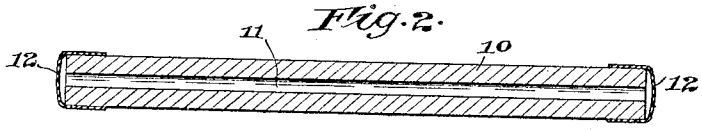


Fig. 3.

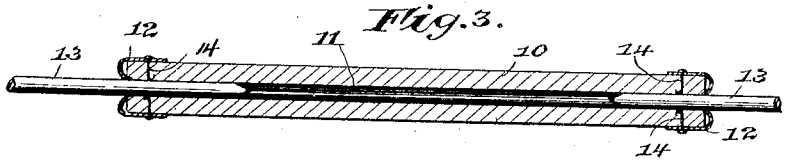


Fig. 4.

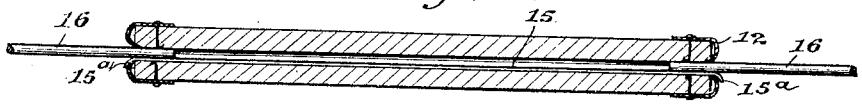


Fig. 5.

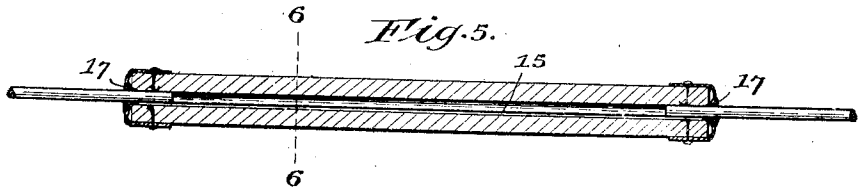
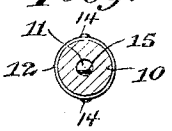


Fig. 6.



Witnesses,

F. C. Mann,

S. N. Pond

Inventor,

Ralph S. Peirce,

By Offield, Sowle & Linthicum

Attys.

UNITED STATES PATENT OFFICE.

RALPH S. PEIRCE, OF HINSDALE, ILLINOIS, ASSIGNOR TO PEIRCE SPECIALTY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

FUSE.

No. 861,315. Specification of Letters Patent. Patented July 30, 1907.

Application filed June 12, 1905. Serial No. 264,867.

To all whom it may concern:

Be it known that I, RALPH S. PEIRCE, a citizen of the United States, residing at Hinsdale, in the county of Dupage and State of Illinois, have invented certain new and useful Improvements in Fuses, of which the following is a specification.

My invention relates to fuses for electrical conductors such as are employed in telephone and telegraph wires to prevent damage to the instrument, building, etc., from an accidental passage of an abnormal current thereover, the fuse in such event melting or otherwise breaking and interrupting the conductor. A type of fuse commonly employed for this purpose consists of a tube or cylinder containing a conducting material having a low fusing point, to the ends of which are permanently secured clamping devices for securing the fuse between the main and branch line conductor or between the interrupted ends of any line conductor; such clamping devices constituting a permanent part of the fuse proper. In such a device, when the fuse is "blown" or destroyed, the entire fuse including the attaching means at the ends thereof is thrown away and replaced by a new one. The attaching means being frequently the most expensive part of the fuse, a large waste is thus incurred, rendering the use of such fuses uneconomical. Furthermore, such fuses are necessarily of comparatively heavy construction since they are employed as handles for the attachment of the wire clamps thereto.

My invention has for its primary object to simplify and cheapen the construction and cost of fuses of this character; and this object I accomplish through the provision of a fuse of light weight and simple construction, capable of attachment by means of independent connectors, which, in the event of the destruction of the fuse, can be saved and reused to connect in the succeeding new fuse.

My invention, in a simple and preferred form, is illustrated in the accompanying drawings, wherein,—

Figure 1 is a central longitudinal sectional view of the body portion or holder of the fuse, in the form of a cylindrical axially apertured strip of wood or similar non-conducting substance; Fig. 2 is a similar view showing the end caps applied; Fig. 3 is a similar view illustrating the manner and means of securing the end caps to the body by means of pins riveted on the inside by means of mandrels inserted from each end; Fig. 4 is a similar view showing a still further stage in the manufacture of the fuse wherein the fuse strip and end wires are introduced; Fig. 5 is a similar view showing the completed article; Fig. 6 is a cross-sectional view on the line 6—6 of Fig. 5; and Fig. 7 is a view corresponding to Fig. 5, but illustrating a modified construction of body or holder.

My invention will perhaps be best understood by describing the preferred manner of making the same; although it is to be understood that the invention pertains to the article itself and is not limited by the described or any other manner or mode of manufacture.

In making the article shown in Figs. 1 to 6 inclusive, I first take a straight cylindrical strip of wood or other suitable non-conducting material, designated by 10, and axially bore the same as shown at 11. I then fit over the ends of the strip metal caps 12 which may be cheaply stamped from sheet tin or other sheeted metal, as shown in Fig. 2. This done, I introduce through the head of each cap, by piercing the same, a mandrel 13, the pointed end of the latter entering the tube somewhat beyond the transverse plane of the inner end of the cap, as shown. I then drive through the cylindrical wall of the cap a number of small pins or tacks 14, the points of which, striking the surface of the mandrel, are turned up thereby and clenched in the wall of the bore, as plainly shown in Fig. 3. The mandrels are then retracted, and a thin narrow strip 15 of a fusible metal, preferably some one of the fusible compounds now in common use, is laid in and through the bore, with its ends 15^a projecting through the punched openings of the end caps 12. Short flexible copper or other leading-in wires 16 are then inserted in the ends of the strip, said wires overlapping and lying in snug contact with the end portions of the fusible strip 15. These wires are then secured in place, preferably as shown in Fig. 5, by drops of solder 17 introduced around the wire between it and the countersunk opening in the cap, thus permanently uniting the wire, cap and fusible strip. Of course, either or both of these leading-in wires might be the end or ends of the main and branch line wires to be connected within the purview of the invention.

While the axially bored wooden or other tube forms a simple, cheap and easily constructed body for the fuse, yet other forms of body may be used, within my invention, a modification thereof being shown in Fig. 7, wherein 10^a designates a wooden or other strip of any suitable cross-section or form, which has formed longitudinally thereof a saw-cut 18 in which is laid the fusible strip 15, such strip being secured in place by a filling of plaster, cement, or any other suitable material indicated at 19. The strip thus formed may be completed by the application of the end caps and the introduction of the leading-in wires, the same as in the principal form of the device already described.

The fuse hereinabove described is applied by simply clamping, by means of any suitable connector or binding device of conducting material, the flexible leading-in wires 16 to the main and branch line wires, or to the interrupted ends of the line wire of any circuit. When the fuse has been "blown" or destroyed, the operator

removes the same by releasing the connectors, and substitutes a new fuse, securing it in position by the same clamps or connectors previously used to secure the original fuse, thus avoiding the discarding of the original clamps or connectors and the waste and expense consequent thereon.

While I have shown simple and practicable forms of my invention, yet it is to be understood that such a showing is illustrative merely of the principle of the invention, and might be varied or modified in respect to details without departing from the spirit or sacrificing any of the advantages of the invention.

I claim:

1. An electric fuse comprising an axially bored non-conducting body, caps for the ends of said body perforated in line with the bore thereof, means the sole function of which is to fasten said caps to said body, a fusible strip laid in said bore with its ends extended through the perforations of said caps, leading-in wires also passed through said perforations and into the ends of said bore in contact with said fusible strip, and solder uniting each leading-in wire to the fusible strip and to the corresponding cap.

2. An electric fuse comprising an axially bored non-conducting body, caps secured to the ends of said body and perforated in line with the bore thereof, tacks securing said caps to said body, said tacks passing through the caps and the body to the bore and being headed at their outer ends and clenched or bent over at their inner ends, a fusible strip laid in said bore with its ends extended through the perforations of said caps, leading-in wires also passed through said perforations and into the ends of said bore in contact with said fusible strip, and solder uniting each leading-in wire to the fusible strip and to the corresponding cap, substantially as described.

RALPH S. PEIRCE.

Witnesses:
SAMUEL N. POND,
L. F. MCCREA.