Feb. 21, 1933. C. E. GILBERT 1,898,359

SAFETY PLUG

Filed March 11, 1930

Fig. 2.

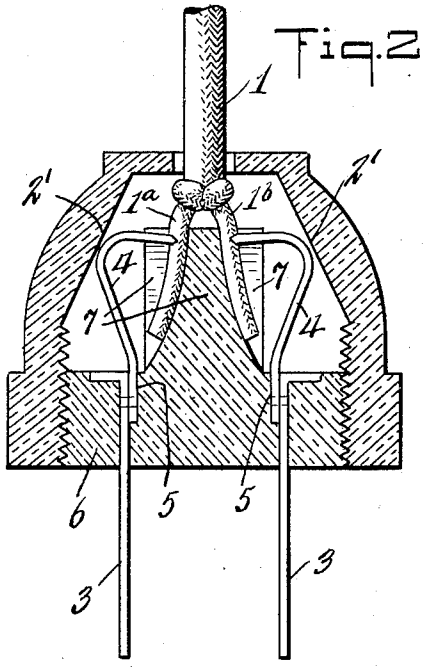
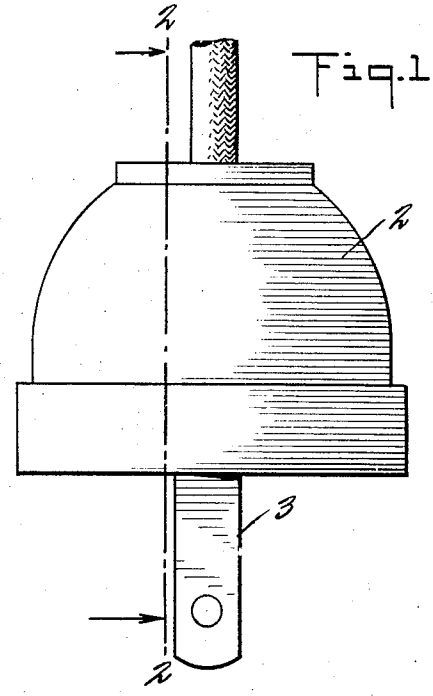


Fig. 1.



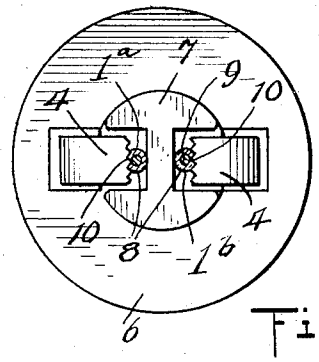


Fig. 3.

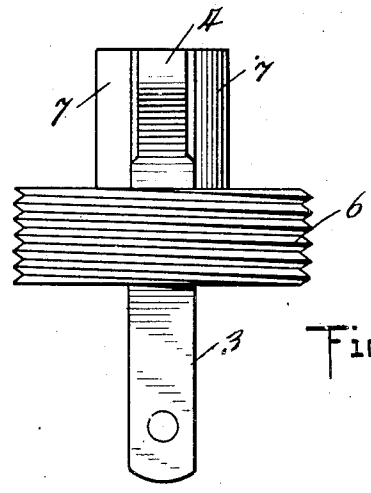


Fig. 4.

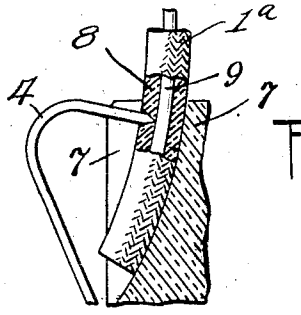


Fig. 5.

INVENTOR
Charles E. Gilbert
BY
Darby & Darby
Its ATTORNEYS

Patented Feb. 21, 1933 1,898,359

UNITED STATES PATENT OFFICE

CHARLES E. GILBERT, OF NEW YORK, N. Y., ASSIGNOR TO GILBERT & HERTZ, INC., A CORPORATION OF NEW YORK

SAFETY PLUG

Application filed March 11, 1930. Serial No. 434,873.

This invention relates to the novel improvement in electric safety plugs.

One of the objects of this invention is the provision of a novel electric safety plug cheap and rugged in construction and adapted to rapid and easy connection with insulated electric wires.

A further object of this invention is the provision of a novel electric safety plug structure wherein there are means whereby connection between the contact prongs and the conductors encased in an electric cord is obtained, without removal of the insulation, and to prevent the withdrawal of such conductors and hold the same fixedly in place.

Various other objects and advantages of the invention will appear more fully hereinafter. The invention consists substantially in the construction, combination, arrangement, and relative location of parts more fully hereinafter set forth and finally pointed out in the appended claims.

In the drawing;

Figure 1 is an elevational view of my novel plug;

Fig. 2 is a sectional view taken along the line 1—1 in Fig. 1;

Fig. 3 is a plan view of the structure shown in Fig. 2 with the cap unscrewed and removed;

Fig. 4 is a side elevational view of the structure shown in Fig. 3 with the wires of the electric cord removed;

Fig. 5 is an enlarged broken partial view of the connecting clip electric cord and body of the plug showing how the contact clip is forced into such cord.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Heretofore in the manufacture of electric plugs, various methods and means have been used to yield a plug adaptable to ready connection to electric cords with the expenditure of the minimum of effort in splicing, cleaning, removing insulation and securing such cords firmly in electrical contact with the plugs.

It is a purpose of this invention to provide as heretofore set forth, a plug structure wherein it is merely necessary to insert the two wires of the electric cord, screw the prong holding plug into the outer cap and thereby effect an electrical and mechanical contact between the wires of the cord and the contact prongs.

Referring specifically to the drawing, it will be observed that in Fig. 1, I have shown an electric cord 1 entering an outer cap 2 from the bottom of which projects the contact prongs 3. These contact prongs, as will be noticed from Fig. 2, are in electrical contact with or formed integrally with spring jaw elements 4 and are supported by threaded plug 6. The threaded plug 6 has a center extension 7, preferably integral therewith, the conformation of which will be clearly understood from Figs. 3 and 4, respectively.

All that is necessary to secure the wires 1A and 1B of the cord 1, both electrically and mechanically to the spring contact prongs 3, is to push back the outer insulation usually of silk, cotton, or the like, so that the two insulated wires can be separated, followed by the insertion of each of said wires between the jaws of the spring elements 4 and the extension 7 of the plug 6. Following this insertion the screwing down of the outer cap 2 on the threaded plug 6 operates to force the spring jaws 4 through the insulation of the wires 1A and 1B and into contact with the conductor elements therein contained. The further the cap is screwed onto the plug elements 6, the greater becomes the biting action of the spring jaws 4 with respect to the wires 1A and 1B. To attain this biting action by the screwing down of the cap 2 on the plug the inner surface of the cap is so shaped that it will coact with the spring jaws 4 to force them inward towards the extension 7.

As a specific example of a surface which will attain this desired end, I have shown an inner surface 2′ of the cap of substantially conical formation. I have also shown the spring elements 4 as being curved to contact with the surface 2′ and be gradually forced by the decreasing diameter at the point of contact as the plug 6 is screwed into the casing 2 into a greater biting contact

with the wires. The manner in which the spring element 4 bites into the wire 1A will be best understood from Fig. 5 wherein the spring element 4 is shown as having bitten through the insulation 8 of the wire 1A and into contact with the conductor element 9 thereof.

It is, of course, clear that various modification may be made in the structure as I have above disclosed it, and I do not intend to be limited by the specific examples herein before given for purposes of illustration. For example, the edges of the spring jaw elements 4 may be provided with a knife edge or with a serrated edge 10, as I have shown in Fig. 3. It is further possible to provide means formed on the prong member whereby the same will be secure of withdrawal from the molded plug 6, or still further to provide any one of a number of contours 2' which would yield the same desirable end above discussed. It is my purpose, therefore, not to be limited by the illustrations above given further than I am by the scope of the appended claims.

What I seek to secure by United States Letters Patent is:

1. In an electric plug having a threaded casing and a plug having contact prongs thereon adapted to threaded engagement with said casing, the combination of a plurality of spring jaw members, and means on said casing for forcing such jaw members through the insulation of electric cord wires and into electric and mechanical contact therewith.

2. In an article of the type described, a plug member, contact prongs mounted thereon, spring jaw members mounted thereon having serrated edges and extending in a direction oppositely to that of the prongs, a threaded casing adapted to threaded engagement with said plug, and means whereby the screwing of said plug into said casing forces said jaw element into an electrical and mechanical contact with a plurality of insulated wires.

3. In an article of the type described, a plug member, contact prongs mounted thereon, spring jaw members mounted thereon and extending in a direction opposite to that of the prongs, a threaded casing adapted to threaded engagement with said plug, and means whereby the screwing of said plug into said casing forces said jaw element into electrical and mechanical contact with a plurality of insulated wires, said means being the mechanical formation of the inner surface of the casing.

4. In an electric safety plug, a body having a central extension thereon and provided with means for making electrical contact with an electrical outlet and also provided with resilient insulation piercing means for making electrical contact with insulated electric wires, and a cap for attachment to said body having a conical inner surface which cooperates with said extension to force said insulation piercing means into electrical contact with the wires within the insulation when the cap is attached to said body.

In testimony whereof I have hereunto set my hand this 7th day of March A. D., 1930.

CHARLES E. GILBERT.