May 8, 1934. A. F. HOPKINS, JR 1,957,778

SEPARABLE PLUG

Filed July 25, 1932

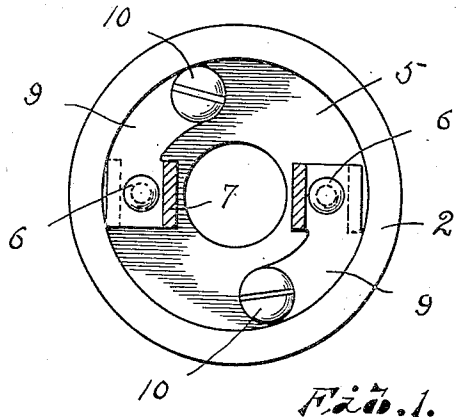


Fig. 1.

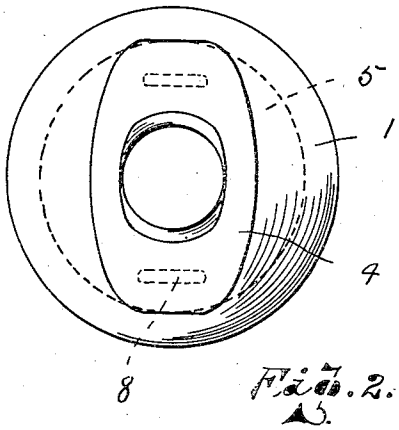


Fig. 2.

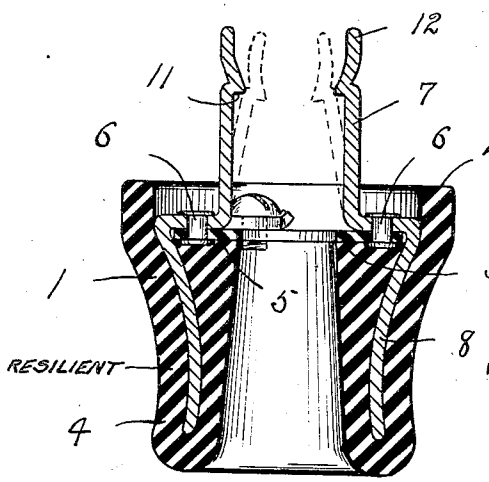


Fig. 3.

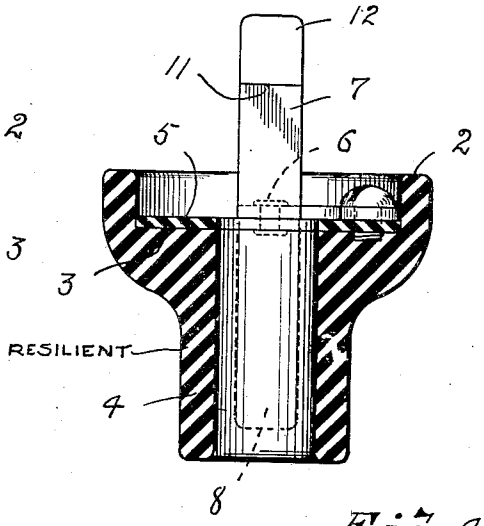


Fig. 4.

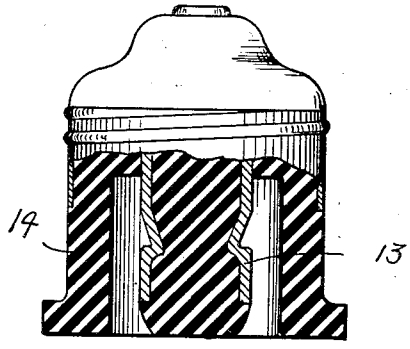


Fig. 5.

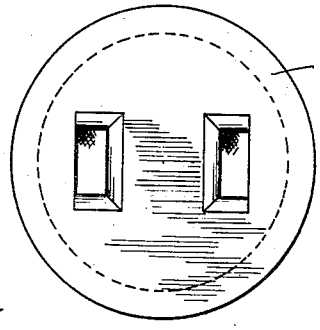


Fig. 6.

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1,957,778

SEPARABLE PLUG

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Application July 25, 1932, Serial No. 624,523

4 Claims. (Cl. 173—361)

This invention relates to a separable plug for electric wire terminals, the principal object being to produce a more practical and efficient device of this character than heretofore known.

Other objects and advantages of the invention will appear in the following description thereof.

Referring now to the accompanying drawing, forming part of this application and wherein like reference characters indicate like parts; the separable plug consists of a plug cap as shown in Figures 1, 2, 3 and 4, and a plug base as shown in Figures 5 and 6; and more specifically

Figure 1 is a plan view of the face of one of the improved plug caps with the prongs thereof illustrated in section;

Figure 2 is a plan view of the opposite end of the cap;

Figure 3 is a central horizontal section through one of the caps.

Figure 4 is a view similar to Figure 3, but taken at right angles thereto;

Figure 5 is a combined section and elevation of the cooperative plug base for the cap; and

Figure 6 is a face view of Figure 5.

1 represents the body portion of the cap which is made of resilient rubber, or rubber like material, the upper end or face 2 of which is circular and recessed to form an annular rim about the stepped circular shoulder portion 3, while the opposite end 4 of the cap is of oval or substantially elliptical form as clearly illustrated in Figure 2, the object of which will presently appear.

This cap is provided with an axial bore, circular at its face or prong end and concentric with the face thereof, while the opposite end is somewhat elongated and similar in shape to the external portion thereof, the relative position of the termini of such bore being clearly seen in Figure 2.

A circular washer like member 5 is provided for installation upon the face of the shoulder 3, and which washer is of yieldable material such as semi-flexible fiber or the like. This washer carries fixed thereto as by the rivets 6 and upon opposite sides thereof the prongs 7 which protrude from the face of the cap when installed therein, and for which latter purpose these prongs each have an arcuately shaped tail portion 8 which is incorporated within the opposite extremities of the elongated portion of the cap. The purpose of this washer is to maintain proper and fixed distance in the plane of said washer between prongs, and also maintain fixed relative position of the prongs, which, at the same time, is flexible enough to permit sufficient lateral movement of the ends of the prongs. Laterally from each attachment of the prongs is formed an extension 9 upon the free end of each of which is a suitable screw 10 for the attachment of the terminal ends of the wire to which the cap is attached as a connecting means, so that this portion of the cap and its connection to the wires are similar to that of a common plug cap connection.

Now the free protruding ends of the prongs 7 are offset or notched inwardly as at 11, forming hook-like members with outwardly flared termini 12 for slipping engagement over the similar notched prongs 13 in the cooperative plug base 14. If desired, it is obvious that these notches while of sufficient depth to insure against ordinary accidental separation of the cap and plug base will still permit of forceful separation without injury to either cap or plug base. The plug base may be of common construction, and were the cap provided with holes in the prongs thereof as hereinafter described in place of the notches, the same could be used in conjunction with an ordinary plug base, in which case the prongs of the cap would function in the usual manner as an adequate connection. However it is preferred that the plug base and plug be made to correspondingly register as previously described. The plug cap is of yieldable material, such as rubber, and by which is meant, a material that may be readily squeezed together longitudinally of the elongated portion 4 of the body. Being of such form, obviously assures the cap being grasped in a manner to contract the opposite extensions of the body portion in order to release the grip of the prongs. Were this portion of the cap not so formed, it would require skill and experimentation to determine in what manner or position to squeeze the cap in order to spread the prongs and release same from its cooperative receptacle or plug base. Furthermore, the volume of material being less upon opposite sides thereof transverse the shorter dimension of the cap, permits of more ready manipulation thereof. The hole in the end of the cap is made substantially oval in order to allow the necessary room between electric cord and cap for operating the releasing mechanism.

It is to be understood that in lieu of the notches 11 in the prongs, they may be provided with small elongated holes, as are sometimes found in such caps, that would register with inwardly projecting tits in the plug base, and thereby

accomplish similar results, and other modifications of my means for providing a positive connection of the two parts may be resorted to without departing from the spirit of the invention.

From the foregoing it is evident that I have produced a practical form of plug that may be so shaped as to have much greater security in its connection with a plug base than at present employed, and yet one readily and easily inserted or released when desired. Since the connection of the two parts is made by a spring-like action it has the advantage of constant and positive contact at all times. This method of spring contact is believed novel in that the spring-like action takes place in the cap as contrasted with the usual method of incorporating the spring in the plug base. The method, herein stated is not a mere adjustment of the prongs to the plug base, but the prongs of my improved cap exert a definite and sustained pressure toward each other on the contact pieces within the plug base. The normal relative position of the prongs when withdrawn from the plug base is shown in dotted lines in Figure 3.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. An electrical plug cap comprising an inherently resilient hollowed out body portion having a wire passage therethrough a flexible disc frictionally held in said hollowed out body, contact prongs fixed to said disc and one end of each being embedded within said body substantially the full length thereof and their other ends extending from said body in spaced relation, and means whereby when the embedded ends of the prongs are pressed toward each other, their extending free ends will be correspondingly separated.

2. An electrical plug cap comprising an inherently resilient hollowed out body portion having a wire passage therethrough, contact prongs secured to said body portion pivoted intermediate of their ends and extending therefrom for contact with a cooperative plug base, means upon said prongs for assuring fixed electrical contact with said plug base, said contact being broken by pressing the secured ends of the prongs together which separates their extending ends and releases said fixed contact.

3. An electrical plug cap comprising an inherently resilient integral hollowed out body portion having a wire passage therethrough, contact prongs fixed to said body portion by extending therewithin a substantial distance on opposite sides of said passage, said prongs projecting from said body for contact with a cooperative plug base, means for pivotally connecting said prongs intermediate of their ends and means whereby when the ends of the prongs within the body are pressed toward each other their projecting ends will separate correspondingly.

4. A separable plug comprising an inherently resilient hollowed out cap and a plug base therefore each having contact members to establish electrical communication when joined, flexible means within the cap for providing a pivotal connection of the cap contact members, means integral with said contact members and due to the inherent resiliency of the cap to assure said electrical communication against any normal stress, and means whereby said communication may be broken by squeezing the cap and thereby separating its contact members releasing them from the plug base.

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