Oct. 11, 1938. H. D. GEYER 2,132,870

ELECTRIC CONNECTER PLUG

Filed Nov. 29, 1935

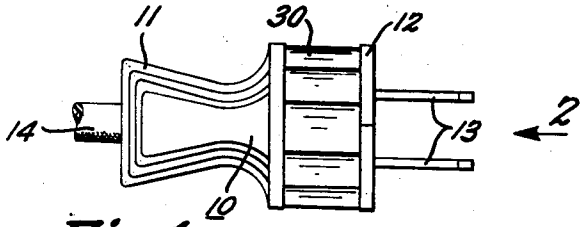


Fig. 1.

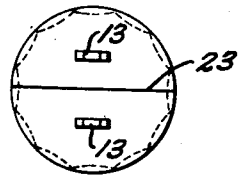


Fig. 2.

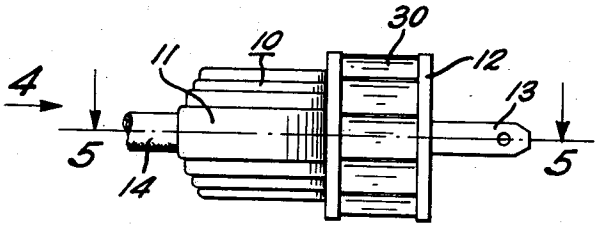


Fig. 3.

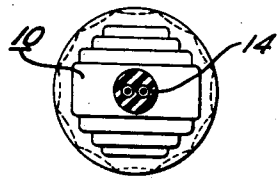


Fig. 4.

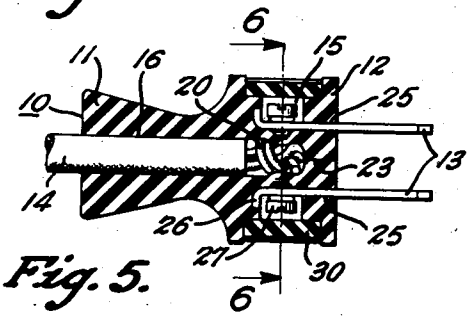


Fig. 5.

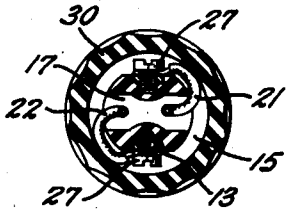


Fig. 6.

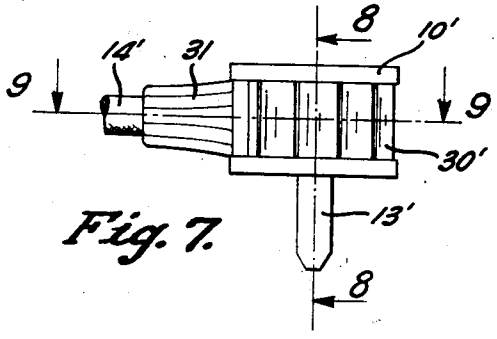


Fig. 7.

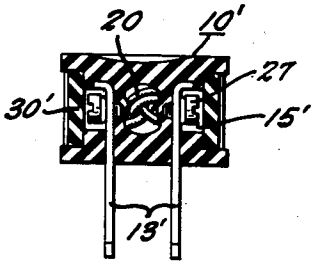


Fig. 8.

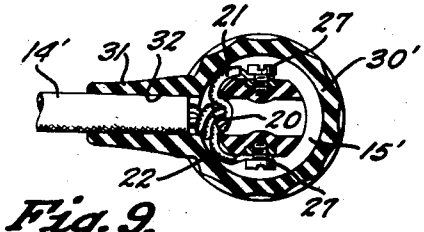


Fig. 9.

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ELECTRIC CONNECTER PLUG

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Application November 29, 1935, Serial No. 52,172

2 Claims. (Cl. 173—361)

This invention relates to electric connecter plugs such as are used to connect electric extension cords to convenience outlets or other electric receptacles.

An object of this invention is to provide a connecter plug which is substantially unbreakable, easy to attach to the end of an electric cord or insulated wire and at the same time gives a firm anchorage of the cord to the connecter plug so as to take the strain off the connection of the cord to the contact prongs, and which is efficient and durable in use, neat in appearance, and economical to make and assemble.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred embodiment of the present invention is clearly shown.

In the drawing:

Fig. 1 is a side elevation of the completely assembled plug.

Fig. 2 is an end view taken along arrow 2 of Fig. 1.

Fig. 3 is a plan view of Fig. 1.

Fig. 4 is an end view taken along arrow 4 of Fig. 3.

Fig. 5 is a section taken on line 5—5 of Fig. 3.

Fig. 6 is a cross section taken on line 6—6 of Fig. 5 and shows how the two wires of the cord are connected to the two contact prongs.

Figs. 7, 8 and 9 show a modified form of the invention wherein the electric cord extends at right angles to the contact prongs.

Fig. 7 is a side elevation of the plug.

Fig. 8 is a section taken on line 8—8 of Fig. 7.

Fig. 9 is a section taken on line 9—9 of Fig. 7.

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

Referring to Figs. 1 to 6, the connecter plug comprises a main body 10, molded in one piece from semi-soft or resilient rubber so that it will not crack due to a sharp blow as when it is let fall upon a hard floor. This main body 10 has an elongated handle portion 11 and a preferably enlarged head portion 12 which serves to retain the metal contact prongs 13 in the proper spaced location. Head portion 12 has an annular molded groove or recess 15 therein which is preferably open to the outside lateral surface of the main body 10 all around its periphery. A second molded recess 16 extends axially thru the handle portion 11 and is of such size as to snugly fit the electric cord 14 when it is inserted therein and thus aid in holding said cord against being pulled out of said body. This cord recess 16 communicates with the annular groove 15 thru a diametral transverse recess 17 (see Fig. 6) which is preferably of sufficient size to permit access to the inner end of the cord 14 after it has been pulled into proper place into its recess 16 and thus enable a knot 20 to be tied in the two insulated wires 21 and 22 contained in the cord 14 (see Fig. 5). In order to tie the knot 20 more conveniently, the cord 14 may be pulled thru its recess 16 and out laterally thru recess 17 so that its end projects far enough out of groove 15 to conveniently tie a suitable knot 20 in wires 21, 22, after which cord 14 may be pulled back until the knot 20 is located at the center of the transverse recess 17 as shown in Fig. 5. Or if desired the rubber head portion 12 may be slit diametrically across at 23 after it is molded, so that said slit 23 may be opened temporarily sufficiently to pull the cord 14 out thru slit 23 to more conveniently tie the knot 20 thereinafter which cord 14 is pulled back in place as shown in Fig. 5. This knot 20 is somewhat larger than the main portion of cord 14 and hence aids materially in anchoring cord 14 in the rubber connecter plug.

The two metal contact prongs 13 may be molded in place as inserts, but preferably they are not so molded in place but are separately snugly inserted in correspondingly shaped molded recesses 25 in the soft rubber body 10. Contact prongs 13 preferably are each formed with an angle 26 at its inner end to provide more endwise bearing surface to better hold it in its proper location. After prongs 13 are properly inserted in place, the ends of the two wires 21 and 22 are passed out of opposite ends of transverse recess 17 and individually electrically connected to the two prongs 13 by binding screws 27, this being easily done since at this time the molded annular groove 15 is still uncovered by the separate closure ring 30 which will now be described.

This closure ring 30 is shown in the drawing as an elastic rubber ring or annulus which is snapped into place to completely cover the groove 15 after the wires 21 and 22 are connected to the contact prongs 13 and provide a neat appearance to the connecter plug. Ring 30 is better retained in place by the molded shoulders on the rubber main body 10. If the slit 23 has been provided in body 10 as above described, ring 30 will also serve to hold this slit 23 tightly closed. If desired, this ring 30 may be of metal or other non-stretchable material since the soft rubber retaining shoulders on body 10 may be

made sufficiently distortable to permit a non-expansible closure ring to be pushed into place as the final step of assembling.

Figs. 7, 8, and 9 show a form of the invention wherein the electric cord 14' extends at right angles to the contact prongs 13'. This form is similar to that described above except that the handle portion 31 thru which the cord 14' extends is formed integral with the flexible rubber closure ring 30' rather than integral with the main body 10' for obvious reasons. In assembling this form, the cord 14' is first threaded thru hole 32 and out thru one end of closure ring 30' sufficiently far to permit the knot 20 to be tied in wires 21 and 22 and the ends of these wires to be properly connected to the contact prongs 13' after they have been inserted to proper position in the main body 10'. The closure ring 30' is then slipped along cord 14' until the knot 20 abuts the inner end of the handle portion 31 and in the mean time the annular portion of ring 30' is distorted and snapped over one end of the main body 10' so that it will completely close the open groove 15' as clearly shown in Fig. 8. This laterally open groove 15' serves the same purpose in this form as in the first form, namely, to provide ready access to both the inner ends of the wires and the inner ends of the contact prongs so as to permit the connection of these parts after they have been separately inserted into the main body of the connecter.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. An electric push-in plug attached to the end of a flexible electric cord, said plug comprising: two metal contact prongs, a resilient rubber main body having two spaced recesses into which said two prongs are snugly inserted and a second recess communicating with the inner ends of said prongs into which the flexible cord is snugly inserted, the portion of said resilient body opposite said second recess having a normally closed slit therein which may be temporarily opened by flexure of the rubber body to aid insertion of said cord, said rubber body having a molded peripheral opening permitting access to the inner ends of both of said prongs and the flexible cord after insertion in said body whereby said cord may be properly connected to said prongs, and a separate elastic closure ring for said peripheral opening snapped in place after said cord has been connected to said prongs and holding said slit normally closed.

2. An electric push-in plug attached to the end of a flexible electric cord, said plug comprising: two metal contact prongs, a one piece resilient rubber main body having two spaced recesses into which said two prongs are snugly inserted and a second recess communicating with the inner ends of said prongs into which the flexible cord is snugly inserted, the portion of said resilient body opposite said second recess having a normally closed slit therein which may be temporarily opened by flexure of the rubber body to aid insertion of said cord, said rubber body having a molded lateral opening of substantial size permitting access to the inner ends of said two prongs and cord after insertion in said body whereby the individual wires of said cord may be connected to said prongs, and a separate ring-like closure member surrounding the slitted portion of said body and covering said lateral opening.

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