Feb. 20, 1940. W. P. HERMAN 2,191,384

CONTACT PLUG

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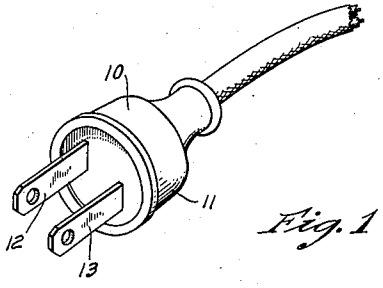


Fig. 1

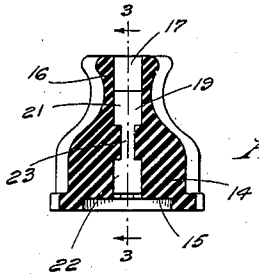


Fig. 2

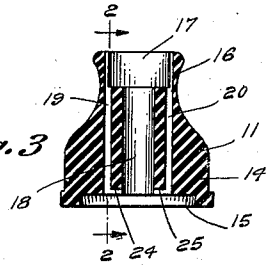


Fig. 3

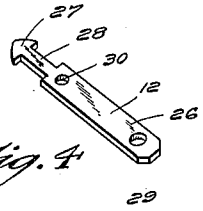


Fig. 4

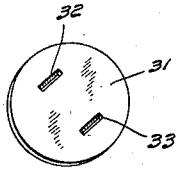


Fig. 5

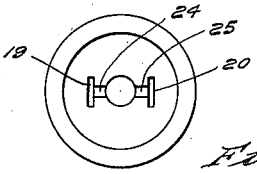


Fig. 6

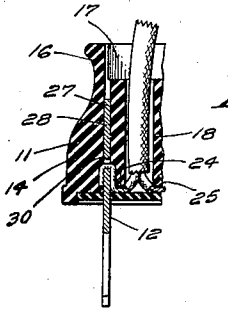


Fig. 7

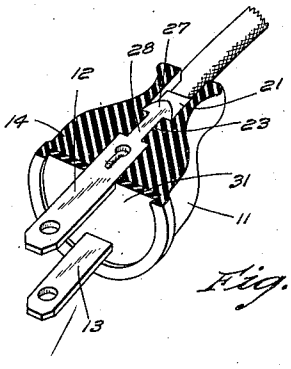
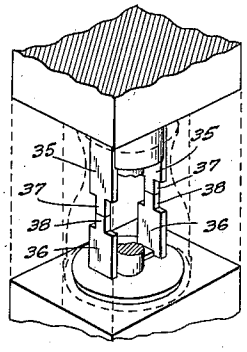


Fig. 8

Fig. 9



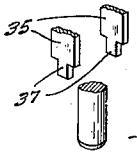
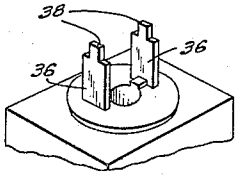


Fig. 10



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2,191,384

CONTACT PLUG

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Application May 21, 1935, Serial No. 22,506

8 Claims. (Cl. 173—361)

My present invention relates to the electrical art, and has particular reference to contact plug constructions.

It is the principal object of my invention to devise a plug construction that is readily molded, and is adapted to receive the prongs from either end.

It is a further object of my invention to provide a positive lock between the plug and the prongs, whereby the prongs are substantially permanently retained in the plug after insertion therein.

It is an additional object of my invention to utilize a novel mold construction and a novel molding operation for obtaining prong lock recesses in the plug body.

With the above and other objects and advantageous features in view, my invention consists of a novel contact plug construction, more fully disclosed in the detailed description following, in conjunction with the accompanying drawing, and more specifically defined in the claims appended thereto.

In the drawing,

Fig. 1 is a perspective view of the novel contact plug;

Fig. 2 is a section thereof, on the line 2—2 of Fig. 3;

Fig. 3 is a section thereof, on the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of one contact prong;

Fig. 5 is a perspective view of the end disk;

Fig. 6 is a bottom plan view of Fig. 3;

Fig. 7 is a sectional detail showing the lead connection;

Fig. 8 is a sectional perspective showing the locking of the prongs on the plug body; and

Figs. 9 and 10 are views of the mold dies, showing them in closed and open positions.

It has been found desirable to construct a contact plug which is molded to provide recesses for receiving contact prongs or blades and to lock the prongs in place, the prongs being insertable from either end. I therefore utilize a body mold of standard type, but including spaced tongues in the upper and lower dies which are shaped to contact and form lock recesses in the body, and to move outwardly after the molding operation, whereby prong channels are provided at each end of the plug body.

Thus, referring to Figs. 1 to 8, the contact plug 10 includes a plug body 11, preferably of rubber, and two contact prongs 12, 13, the plug body having a base 14 recessed as at 15, and a neck portion 16 having a generally rectangular recess 17, and a central cable passageway 18 extending between the recesses. Two spaced aligned slot passageways 19, 20 are provided, each including end sections 21, 22, and an intermediate restricted slot passageway 23; short wire channels 24, 25 communicate the central cable passageway with the slot passageways 19, 20.

The contact prongs or blades are alike, and preferably of brass, and include a shank 26, a triangular tip 27, and a connecting neck portion 28 of small diameter. The shank is preferably cut or rounded as indicated at 29 at the end, and has an opening 30 adjacent the neck portion to receive a wire end. The contact prongs, or blades, see Fig. 4, are thus of rectangular shape, and are provided with an intermediate rectangular portion, at the head end, which has laterally extending lock portions or shoulders for engaging the spaced lock shoulders provided in the slot passageways.

Although the prongs may be inserted in the plug body from either end, they are preferably inserted from the base end, the wire ends being first passed through the openings 30, see Fig. 7, whereby the tips 27, pass through the restricted slot passageways 23 and lock in the end sections 21, see Fig. 8, the wire ends entering the slots 24, 25 and being locked as shown in Fig. 7. An end disk 31, see Fig. 5, provided with spaced slots 32, 33, is passed over the shanks 12, and seats in the recess 15, which preferably has its periphery slightly bevelled to lock the end disk in place. The slot passageways thus comprise flat slots, which as illustrated in the drawing, are rectangular linear slots of narrow width.

The plug body is molded in the usual manner, with standard molds; the upper and lower dies are, however, provided with tongues 35, 36 which have stepped ends 37, 38, whereby the tongues permit molding of the restricted slot passageway 23, and are withdrawn as shown in Fig. 10 when the dies are separated.

The plug body is thus readily molded of resilient rubber or the like, and the contact prongs or blades are readily inserted and when inserted are locked in place. The novel construction is inexpensive to manufacture, is readily assembled, and the prongs cannot become loose or withdrawn when subjected to ordinary use.

Although I have described one specific embodiment of my invention, it is obvious that changes in the size of the parts, in the mate-

rials used, and in the relative arrangement of the cooperating portions, may be made to suit the requirements for different contact plug designs, without departing from the spirit and the scope of the invention as defined in the appended claims.

I claim:

1. In a contact plug construction, a plug body of resilient material having a flat slot passageway therethrough, said passageway having integral spaced separate parallel portions projecting towards each other to form a restricted slot passageway intermediate the ends of said flat slot passageway, and a flat contact prong seated in said flat slot passageway and extending in alignment therewith, said contact prong having a reduced portion intermediate its ends interlocking with the restricted slot passageway portions.

2. In a contact plug construction, a plug body of resilient material having a flat slot passageway therethrough, said passageway having integral spaced separate parallel portions projecting towards each other to form a restricted slot passageway intermediate the ends of said flat slot passageway, said projecting portions having shoulders at each end thereof, and a flat contact prong seated in said flat slot passageway and extending in alignment therewith, said contact prong having a portion of a cross section corresponding to said restricted passageway intermediate its ends, and interlocking with the shoulders on the passageway portions.

3. In a contact plug construction, a plug body of resilient material having a central cable opening and spaced flat slot passageways therethrough, said passageways each having integral spaced separate parallel portions projecting towards each other to form a restricted slot passageway intermediate the ends of said flat slot passageway, said projecting portions having shoulders at each end thereof, and a flat contact prong seated in each flat slot passageway and extending in alignment therewith, each prong having a portion of a cross section corresponding to said restricted passageway intermediate its ends, and interlocking with the shoulders on the passageway portions.

4. In a contact plug construction, a plug body of resilient material having a flat slot passageway therethrough, said passageway having integral spaced separate parallel portions projecting towards each other to form a restricted slot passageway intermediate the ends of said flat slot passageway, said projecting portions having shoulders at each end thereof, and a flat contact prong seated in said flat slot passageway and extending in alignment therewith, said contact prong having a reduced portion intermediate its ends with abrupt shoulders, interlocking with the shoulders on the restricted passageway portions.

5. In a contact plug construction, a plug body of resilient material having a flat slot passageway therethrough, said passageway having integral spaced separate parallel portions projecting towards each other to form a restricted slot passageway intermediate the ends of said flat slot passageway, said projecting portions having shoulders at each end thereof, and a flat contact prong seated in said flat slot passageway and extending in alignment therewith, said contact prong having a portion of a cross section corresponding to said restricted passageway intermediate its ends with abrupt shoulders, interlocking with the shoulders on the restricted passageway portions.

6. In a contact plug, a one piece base of resilient flexible material having an upper central recess adapted to receive a cord and two flat slots extending downwardly therefrom through the plug, said base having integral spaced separate parallel portions in each slot projecting towards each other to form restricted slot passageways intermediate the ends of said slots, said projecting portions having shoulders at each end thereof.

7. In a contact plug, a one piece base of resilient flexible material having an upper central recess adapted to receive a cord and two flat slots extending downwardly therefrom through the plug, said slots being spaced equidistant with the diameter of said upper central recess, said base having integral spaced separate parallel portions in each slot projecting towards each other to form restricted slot passageways intermediate the ends of said slots, said projecting portions having shoulders at each end thereof.

8. In a contact plug, a one piece base of resilient flexible material having an upper central recess adapted to receive a cord and two flat slots extending downwardly therefrom through the plug, said base having integral spaced separate parallel portions in each slot projecting towards each other to form restricted slot passageways in said slots, said projecting portions having shoulders at each end thereof.

WILLIAM P. HERMAN.