Jan. 16, 1940. N. CHIRELSTEIN 2,187,489

ATTACHMENT PLUG

Filed June 28, 1939

Fig. 1

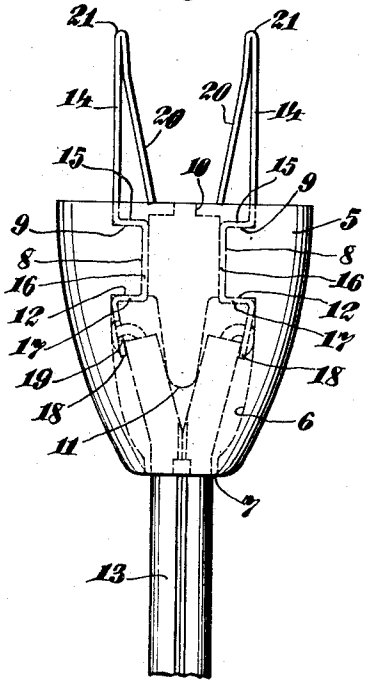


Fig. 3

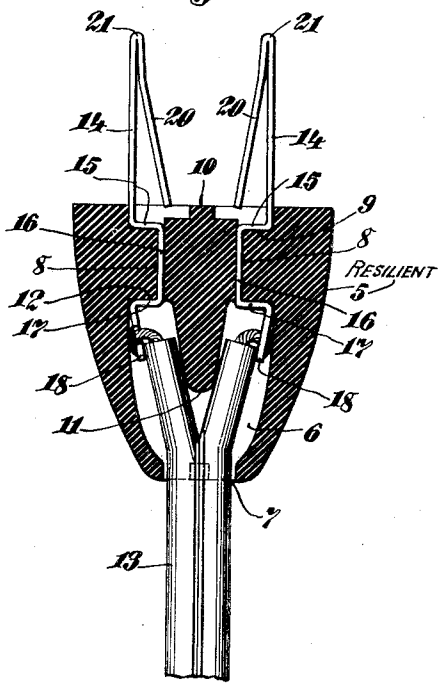


Fig. 2

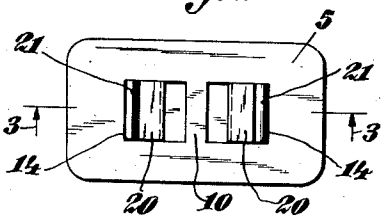
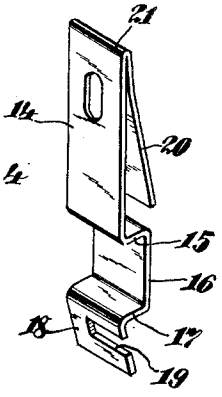


Fig. 4



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ATTACHMENT PLUG

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2 Claims. (Cl. 173—361)

The invention here disclosed relates to electrical attachment plugs.

Special objects of the invention are to provide a plug of simple inexpensive construction, which can be readily assembled into permanent form and which will be wholly practical and desirable.

The novel features of the invention by which the foregoing and other desirable objects are attained are set forth and will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates one practical commercial embodiment of the invention. Details of construction however may be modified and changed as regards this particular illustration, all within the true intent and broad scope of the claims hereinafter.

Fig. 1 is a side elevation of one of the new plugs.

Fig. 2 is a front end view of the same.

Fig. 3 is a longitudinal sectional view on substantially the plane of line 3—3 of Fig. 2.

Fig. 4 is a detached perspective view of one of the blade members.

One of the special features of the invention is the molding of the plug body 5, in rubber or similar insulating material, sufficiently resilient or elastic, at least at the time of assembling, to permit it to stretch enough for the plug blades to be drawn into locked position therein.

In structure, the stretchable rubber-like body is formed, in the case illustrated, with an internal cavity or chamber 6, a cord passage 7, opening through the back of the plug and relatively spaced narrow passages 8, opening through the front of the plug.

Also, the plug body is shown as having seats 9, formed in its front face in line with the narrow passages 8, said seats being separated by an intervening partition or abutment portion 10.

Within the chamber, a tapering projection 11 forms a separator between the inner ends of passages 8. Abrupt shoulders 12, at the inner ends of passages 8 are provided substantially parallel with and opposite the seats 9, at the outer ends of the passages. These generally parallel surfaces at the outside and the inside of the plug thus define in effect a transverse wall forming the front end of the plug and constituting a separator between the chamber at the inside and the end face of the plug.

The cord 13, may be of any usual or special design and is shown as entered loosely through the passage 7, and having the wires of which it is composed separated by the barrier 11, and attached to the inner ends of blades extending through the front end passages 8.

The contact blades 14, are shown as having sharply angled base portions 15, seating snugly in the external seats 9, longitudinal portions 16, extended from said sharply angled base portions, fitting in passages 8, sharply angled portions 17, engaging the internal shoulders or inner faces 12, and the relatively angled inner terminal ends 18. The latter are shown as notched inward from one side at 19, to receive the wire ends, the wires preferably being soldered in position in such notches.

The reversely angled portions 15, 17, together with the longitudinally extending connecting portions 16, constitute in effect sharply angled U-bends in the body or base portions of the contact blades and the proportions are preferably such that when the blades are located as in Fig. 3, the outer angled portions 15, will fit firmly against the outer face of the wall forming the end of the plug, the intermediate portions 16, will fit firmly in the passages 8, through said wall and the reversely angled inner portions 17, will firmly engage the inner face of the wall. So combined, the parts constitute a permanent assembly in which the contacts can not be pushed or pulled one way or the other, without destroying the plug.

To assemble the parts, it is necessary that the plug material be resilient, at least temporarily so, so that the blades, after the wires are attached on the outside, can be pulled through the blade passages to the fully interlocked position shown in Fig. 3. A partly soft or semi-hard rubber has been satisfactorily used. This material may further harden with age, but this is no disadvantage, since the parts are purposely interlocked so that once assembled, they can not be separated.

While straight or other shaped contact blades may be used, the spring contact type illustrated is preferred, having the return end bends 20, for making yielding, self-adjusting gripping engagement with the companion socket contacts. This type of contact has rounded ends 21, and a generally wedge-shaped formation which can be pulled through the passages 8, without tearing or otherwise permanently injuring the plug body. The spring tongues 20, in such case act as yielding spreaders, gradually opening up the passages 8, to admit the angled base portions 15.

The wall forming the front end portion of the plug body and through which the passages extend

is relatively thick and heavy to provide a substantial base and support for the plug blades. The transversely extending U-bends in the base portions of the blades form clamps which hold the blades in the end wall, resisting movement of the blades in all directions.

What is claimed is:

1. An attachment plug, comprising a one-piece molded resilient plug body having an internal chamber with a cord passage opening thereinto at the back of the body and having separated depressed seats molded in the front of the body, said plug body having narrow spaced passages at the inner ends of said seats and extending from said seats, substantially parallel, to said chamber within the plug body and abrupt shoulders at the inner end of said chamber extending outwardly away from the inner ends of said passages and contact blades of substantially the same width full length, said blades having exposed contacting portions and wire terminal portions at opposite ends of the same and sharply angled inwardly extending U-bends in the intermediate portions of the same and of the full width of said blades, said U-bends including sharply angled portions at the bases of the exposed contacting portions engaged in said depressed seats in the front of the base, longitudinally extending connecting portions extending through said passages and sharply angled outwardly extending portions engaging said outwardly extending abrupt shoulders at the inner ends of said passages, said wire terminal portions extending in sharply angled relation from the outer ends of said outwardly extending angled portions of said U-bends.

2. An attachment plug, comprising a one-piece molded resilient plug body having an internal chamber with a cord passage opening thereinto at the back of the body and having separated depressed seats molded in the front of the body, said plug body having narrow spaced passages at the inner ends of said seats and extending from said seats, substantially parallel, to said chamber within the plug body and abrupt shoulders at the inner end of said chamber extending outward away from the inner ends of said passages and contact blades of substantially the same width full length, said blades having exposed contacting portions and wire terminal portions at opposite ends of the same and sharply angled inwardly extending U-bends in the intermediate portions of the same and of the full width of said blades, said U-bends including sharply angled portions at the bases of the exposed contacting portions engaged in said depressed seats in the front of the base, longitudinally extending connecting portions extending through said passages and sharply angled outwardly extending portions engaging said outwardly extending abrupt shoulders at the inner ends of said passages, said wire terminal portions extending in sharply angled relation from the outer ends of said outwardly extending angled portions of said U-bends and the exposed contacting portions of said blades comprising doubled back spring end portions with smoothly rounded bends forming the ends of the blades and inclined spring tongues, facilitating entry and passage of said contacting ends through said passages in said yielding molded plug body.

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