Sept. 25, 1934. W. L. BARTH 1,974,790

ELECTRICAL CONNECTER

Filed Aug. 26, 1931

Fig. 1.

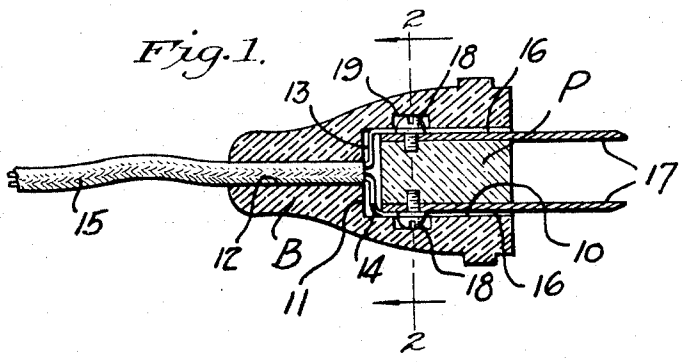


Fig. 2.

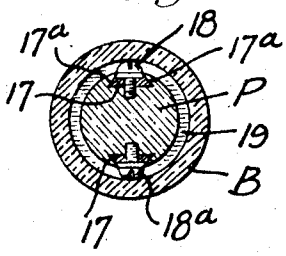
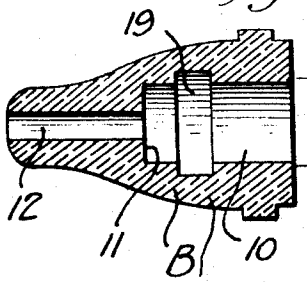


Fig. 3.



Resilient

Fig. 4.

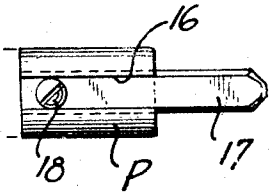


Fig. 5.

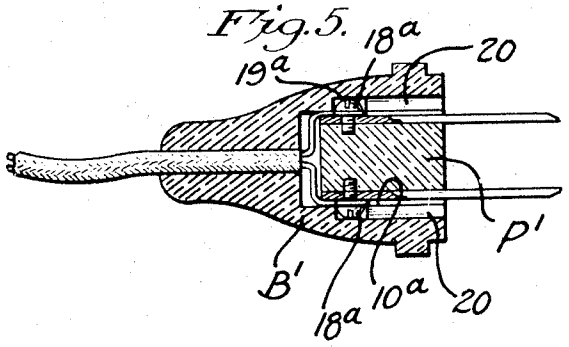
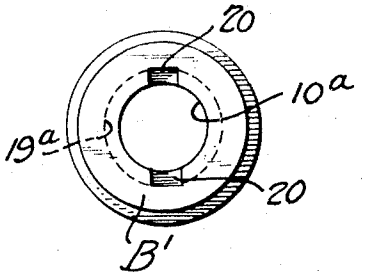


Fig. 6.



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ELECTRICAL CONNECTER

William L. Barth, Venice, Calif.

Application August 26, 1931, Serial No. 559,559

2 Claims. (Cl. 173—361)

My invention relates generally to electrical connecters of the character provided with contact members or fingers to which are connected, flexible conductors leading from an electrical appliance so that upon inserting the contact members into a wall socket or other outlet from a source of current supply, current will be delivered to the appliance or to a suitable switch embodied therein.

It is a purpose of my invention to provide an electrical connecter of the above described character enabling conductors to be readily connected to its contact members, and such electrical connections insulated from each other and completely enclosed, and which is capable of withstanding impacts and crushing stresses without injury, all while affording the desirable qualities of inexpensiveness and compactness.

It is a further purpose of my invention to provide an electrical connecter characterized by a yieldable, pliable, or resilient body of insulating material having a socket through which conductors are adapted to be extended and then connected to contact members carried by a plug of insulating material insertable into the socket, the insertion of the plug into the socket necessitating expansion of the body so that the latter grips and frictionally retains the plug in the socket, all in such manner that the electrical connections between the conductors and contact members will be thoroughly insulated from each other and enclosed when the plug is applied to the socket.

I will describe only two forms of electrical connecter embodying my invention, and will then point out the novel features thereof in claims.

In the accompanying drawing:

Figure 1 is a view showing in longitudinal section, one form of electrical connecter embodying my invention;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1 and looking in the direction of the arrows;

Figure 3 is a detail view in longitudinal section illustrating the body of the connecter;

Figure 4 is a detail view in side elevation of the plug of the connecter;

Figure 5 is a longitudinal sectional view of another form of electrical connecter embodying my invention; and

Figure 6 is a view in end elevation of the body of the form of electrical connecter shown in the preceding figure.

Referring specifically to the drawing, and particularly to Figures 1 to 4 inclusive, in which similar reference characters designate similar parts in each of the several views, my invention in its present embodiment comprises an insulating body B constructed of yieldable, pliable, or resilient material such as rubber, which is provided with a socket 10 cylindrical in cross section and opening to one end of the body. From the bottom wall 11 of the socket extends an axial bore 12 to the opposite end of the body, the bore being of a diameter permitting conductors 13 and 14 enclosed in a sheath of insulating material 15 to be passed through the bore into and through the socket.

For coaction with the body B I provide a plug P also constructed of insulating material such as rubber, the plug being cylindrical in form and preferably slightly resilient. At diametrically opposed points the periphery of the plug is provided with longitudinally extending dovetail grooves 16 into which contact members or fingers 17 are adapted to be forced, the side edges of the contact members being oppositely beveled as indicated at 17*a* to snugly fit the confronting side walls of the grooves 16 so as to be held against displacement from the grooves with an end of each of the members projecting from one end of the plug as illustrated in Figures 1 and 4.

Threaded into the contact members are headed screws 18 constituting terminals to which the free ends of the conductors 13 and 14 are adapted to be connected. The screws 18 constitute terminals projecting laterally from the plug, and in the applied position of the plug in the body B as shown in Figure 1 the heads of the screws are adapted to enter an annular recess 19 formed in the peripheral wall of the socket 10 to the end that the screw heads and recess will coact in releasably retaining the plug in the socket. These screws are also threaded into the plug P as shown in Figure 1 and hold the blades from longitudinal motion. The diameter of the plug is slightly in excess of the normal diameter of the socket as indicated by the broken lines X—X between the body and plug of Figures 3 and 4, respectively, so as to necessitate that the body be expanded in order to insert the plug into the socket, to the end that the body will thus frictionally grip the plug and retain the latter against displacement from the socket. The fact that the plug is constructed of material which is at least slightly resilient aids in frictionally retaining the plug in the socket.

In assembling the body and plug, the conductors are first extended through the bore 12 and socket 10, it being understood that the insulation is previously removed from the free ends of the conductors. The screws 18 are unthreaded from

the contact members sufficiently to enable the bared ends of the conductors to be looped around the shanks of the screws after which the latter are tightened. The plug is now forced into the socket causing the body to be expanded and the screws 18 to enter the annular recess 19, all as shown in Figure 1. The screws and annular recess coact with the frictional gripping of the plug by the body to insure that the plug will be positively retained in the socket 10 against displacement therefrom, yet enabling the plug to be removed at will by exerting a combined pulling and rocking force upon the contact members 17 until the screws are clear of the groove after which the plug can be readily withdrawn. With the plug applied as shown in Figure 1, it will be clear that the electrical connections between the conductors 13 and 14 and the respective screws 18 will be thoroughly insulated from each other and completely enclosed in the body. Furthermore, it will be manifest that due to the yieldable material of which the body is constructed, the connecter will withstand impacts and crushing strains without injury, and that by grasping the body the projecting ends of the contact members 17 can be readily inserted into a wall socket or other outlet to establish electrical connection with a source of current supply.

Referring now to Figures 5 and 6, I have herein shown another form of my invention wherein the plug P' is identical in construction to the plug P, and the body B' differs in construction from the body B to the extent of being provided with longitudinally extending grooves 20 disposed at diametrically opposed points and extending from the open end of the socket 10*a* to the annular recess 19*a*. The grooves 20 are of such transverse dimensions as to permit free passage of the heads of the screws 18*a* as the plug is inserted into the socket, following which the plug can be rotated approximately 90° so that the screw heads will coact with the recess 19*a* in preventing withdrawal of the plug from the socket. This manner of retaining the plug in the socket is reinforced by the frictional gripping of the plug by the body as above described in connection with the first form of my invention.

Although I have herein shown and described only two forms of electrical connecter embodying my invention, it is to be understood that various changes and modifications may be made therein without departing from the spirit of the invention and the spirit and scope of the appended claims.

I claim:

1. An electrical connecter comprising a body of resilient and insulating material having a socket into which conductors are extendible, a plug of insulating material, contact members, headed fastening members constituting terminals for the conductors and having threaded shanks passing through the contact members and threaded into the plug to secure the contact members to the plug, the socket having its wall recessed and the heads of said fastening members projecting laterally from the plug to enter said recess when the plug is inserted into the socket, for co-action of said heads and recess in retaining the plug in the socket against withdrawal therefrom.

2. The combination as embodied in claim 1 wherein the plug is provided with dovetailed grooves into which the contact members are forced, for co-action with the fastening members in rigidly securing the contact members to the plug.

WILLIAM L. BARTH.