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D. C. BLACKMON

2,207,477

ELECTRIC CORD PLUG AND RECEPTACLE

Filed Aug. 16, 1938

Fig. 1.

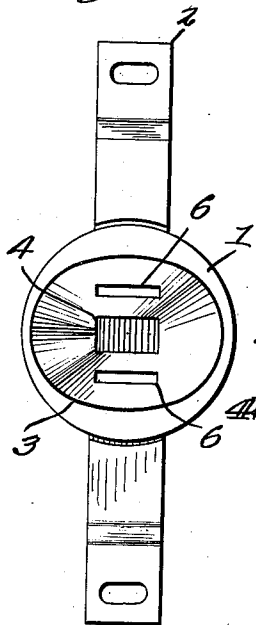


Fig. 2.

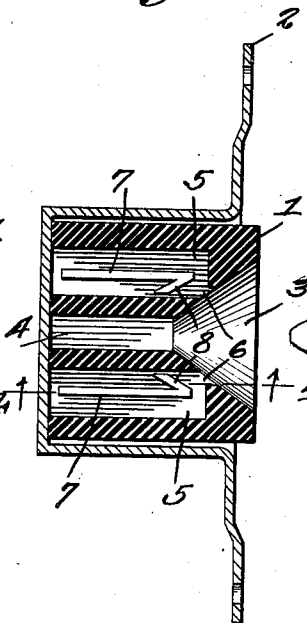


Fig. 3.

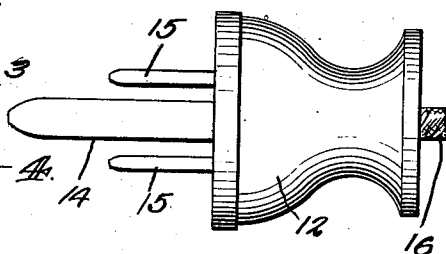


Fig. 4.

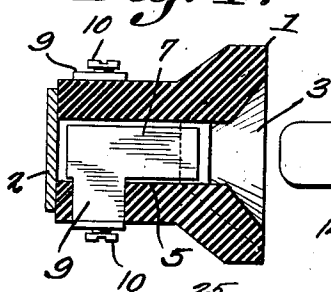


Fig. 5.

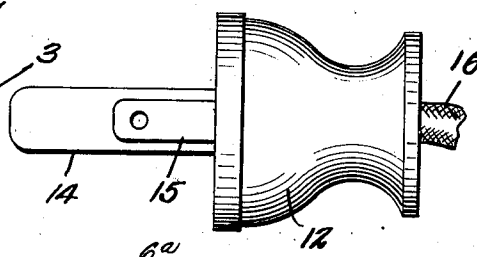


Fig. 6.

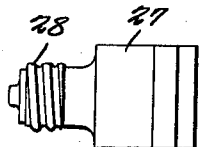
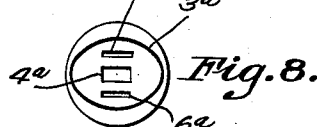
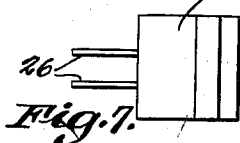
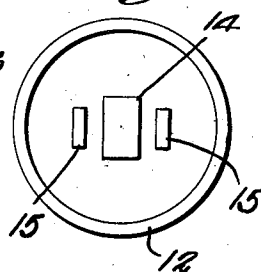


Fig. 9.

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2,207,477

ELECTRIC CORD PLUG AND RECEPTACLE

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Application August 16, 1938, Serial No. 225,203

1 Claim. (Cl. 173-330)

This invention aims to provide cooperating first and second electrical connecting members which are so constructed that the second member may be assembled readily with the first member in the dark, or in places in which the operator has no view of the first and second members, when both parts are put together.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 is an elevation showing the socket or first member on the bracket which carries it;

Fig. 2 is a section of the structure shown in Fig. 1, the cutting plane extending longitudinally of the bracket;

Fig. 3 is an elevation of the second member or plug;

Fig. 4 is a section on the line 4-4 of Fig. 2;

Fig. 5 is an elevation of the plug or second member in position to be assembled with the socket or first member shown in Fig. 4;

Fig. 6 is an end elevation of the plug or second member;

Fig. 7 is a side elevation wherein the first member is an adapter;

Fig. 8 is an end elevation of the parts shown in Fig. 7;

Fig. 9 is a side elevation wherein the first member is a threaded adapter.

In carrying out the invention, there is provided a socket or first member 1, made of porcelain or any other suitable insulating material. The socket 1 is carried by a bracket 2, although the particular way in which the socket is supported, and how it is used, are affairs which may be left to the necessities and the requirements of the user.

The socket or first member 1 is provided in its forward end with an inwardly tapered or conical mouth 3. As shown in Fig. 1, the mouth 3 is of elliptical outline, for a useful end to be made manifest hereinafter. The mouth 3 tapers to

central longitudinal axis of the socket 1. The bore 4 is of unequal transverse dimensions as can be seen in Fig. 1.

On opposite sides of the bore 4, the socket 1 is supplied with longitudinal chambers 5. The chambers 5 are parallel to the bore 4, and in the wall of the mouth 3 there are openings 6 leading to the chambers 5. The openings 6 are of unequal transverse dimensions, and the longer transverse dimensions of the openings 6 and of the bore 4 are parallel to the major axis of the elliptical mouth 3, as Fig. 1 will show.

In the chambers 5 are disposed resilient contact arms 7. The arms 7 have converging inwardly extended fingers 8, the fingers being located directly behind the openings 6 which lead from the tapered mouth 4 to the chambers 5. The contact arms 7 have lateral extensions 9, prolonged outwardly through the socket 1, the extensions 9 carrying binding screws 10 or equivalent means for connecting conductors (not shown) to the contact arms 7.

A second member or plug is shown at 12, and carries a central finding post 14. In cross section, the finding post 14 is so shaped as to be received against rotation in the bore 4 of the socket 1. On either side of the finding post 14, the plug 12 carries prongs 15, disposed parallel to the post, and shaped to fit in the openings of the socket 1. The prongs 15 are considerably shorter than the finding post 14. The conductors in the cable 16 of the plug are connected, respectively, to the prongs 15.

In practical operation, the finding post 14 is inserted carelessly into the mouth 3 of the socket 1 and is guided, by the mouth, into the bore 4 of the socket. There are two reasons for making the mouth 3 elliptical, the least consequential of which is that material is saved. More important is the circumstance that, since the mouth 3 is elliptical, and the finding post 14 of unequal transverse dimensions, the operator does not have to rotate the plug 12 consciously and positively, in order to stick the post 14 into the bore 4. If the plug simply is advanced, the contact between the end of the post 14 and the wall of the mouth 3 will tend to rotate the plug until the longer transverse dimension of the post coincides with the longer transverse axis of the bore 4.

As the finding post 14 enters the bore 4 slightly, relative rotation between the plug 12 and the socket 1 cannot take place. The prongs 15 of the plug 12 are guided through the openings 6 of the socket, and enter the chambers 5, the prongs engaging the fingers 8, the arms 7 being flexed, and

a good electrical contact between the arms 7 and the fingers 8, on the one hand, and the prongs 15 on the other hand, being brought about.

5 The first member of the connection may be an adapter 25, as in Fig. 7, the adapter being supplied with tongues 26. In Figs. 7 and 8, parts hereinbefore described have been designated by numerals already used, with the suffix "a".

10 Instead of providing the tongues 26, an adapter such as that shown at 27 in Fig. 9 may be employed, the adapter 27 having the usual threaded portion 28, replacing the tongues 26.

15 The device is simple in construction, but it will be found highly advantageous for use where the operator cannot see what he is doing, further comment being unnecessary, in view of the foregoing explanation and in view of what is shown in the drawing.

20 Having thus described the invention, what is claimed is:

An electrical connector comprising first and second cooperating members, the first member

being provided with a bore, a tapered mouth leading to the bore, and an opening communicating with the mouth, a second member having a finding post insertible into the bore, the post and the bore being of substantially the same cross section, the second member having a finger insertible into the opening, the post being longer than the finger: the mouth being in the form of an ellipse, considered transversely, the bore and the post being of unequal transverse dimensions, the longer transverse dimension of the bore being parallel to the major axis of the ellipse, all whereby when an operator brings the end of the post into contact with the wall of the mouth, by a careless and approximately right-line movement, there will be resolved out of that movement a component tending to rotate the second member until the post can enter the bore and aline the finger with the opening, for entrance into the opening, and means for completing an electrical circuit when the finger is in the opening.

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