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ELECTRIC PLUG CONNECTION

2,131,884

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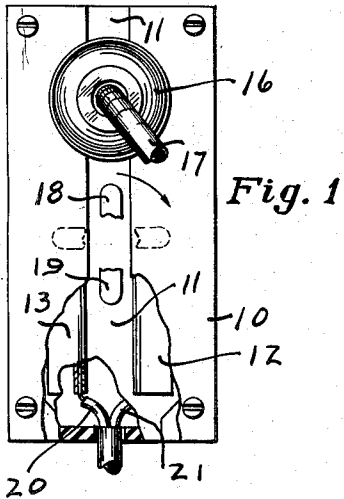


Fig. 1

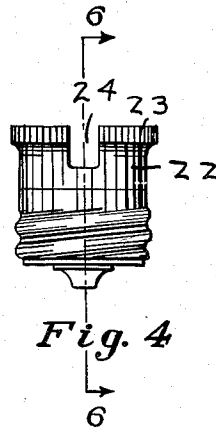


Fig. 4

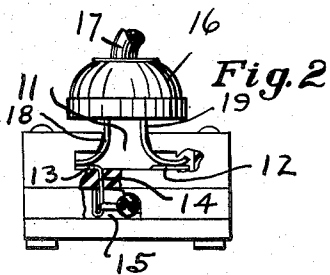


Fig. 2

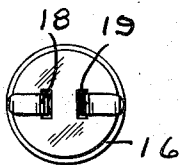


Fig. 3

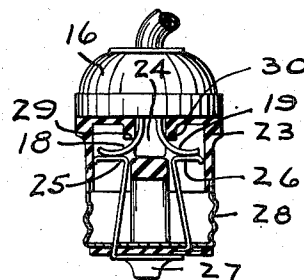


Fig. 5

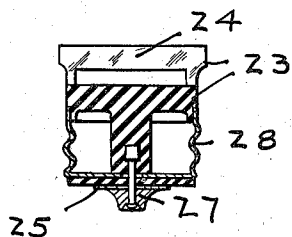


Fig. 6

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UNITED STATES PATENT OFFICE

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ELECTRIC PLUG CONNECTION

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2 Claims. (Cl. 173—343)

This invention relates to the art of electrical connections and particularly to means for plugging in various types of apparatus into an electrical circuit. Heretofore the customary procedure has been to provide a plug having two extending prongs which are to be received within two holes in a receptacle to make contact with members therein. The difficulty has been to initially align the prongs with the holes in the receptacle so that the plug could be fitted promptly without having to fumble around, particularly in the dark, in trying to register the prongs with those holes. Furthermore in providing for a plurality of outlets to receive a plurality of plugs, it has been necessary heretofore to provide a multiple number of receptacles each carrying its own pair of receiving holes into which each set of plug prongs must be inserted.

It is a primary object of my invention to provide a receptacle to receive a plug such that there will be but one opening in the nature of a wide slot into which both prongs of the plug may be inserted so that the connection may be made quickly and readily even in darkness but with perfect safety to the operator.

A further important object of my invention is to provide such a structure that it may be formed in any length desired so that the desired number of plugs may be entered into and carried by the receptacle throughout the length of the slot provided.

Still further important objects and advantages of my invention are to be found in the exceedingly simple structure employed which permits production at a very low cost; and in the extremely rugged and durable structure permitted by the invention.

These and other objects and advantages will become apparent to those versed in the art in the following description of the invention illustrated more or less diagrammatically in the accompanying drawing, in which

Fig. 1 is a top plan view of a structure embodying the invention;

Fig. 2, an end elevation;

Fig. 3, a bottom plan view of the plug;

Fig. 4, a side elevation of a screw type fitting to be received in a lamp base or the like;

Fig. 5, a vertical section through the fitting shown in Fig. 4 with a plug positioned thereon; and

Fig. 6, a central vertical section on the dotted line 6—6 of Fig. 4.

Like characters of reference indicate like parts throughout the several views in the drawing.

Referring first to Figs. 1—3, the invention is illustrated as being applied to a base type receptacle 10. The receptacle 10 is provided in the form herein shown with a central longitudinal inverted T-slot 11 preferably open at each end of the member 10. On the floor of this slot located under the overhanging upper portions of the member 10 are located respectively the contact bars 12 and 13 extending substantially throughout the length of the slot. These bars 12 and 13 are held in position in the member 10 by any suitable means, herein shown as being fixed by a downturned leg 14, Fig. 2, passing through the floor of the member 10 into a chamber 15 thereunder and then turned back upwardly to have the extreme end about the under side of the floor. Of course the bars 12 and 13 may be located and held in position in the member 10 by being molded directly therein where the member 10 is made out of some synthetic resinous or the like product.

In any event a space is left between the top sides of the bars 12 and 13 and the under sides of the upper wall of the member 10 immediately above the lateral extensions of the slot 11.

A plug 16 attached in the usual manner to the cable 17 carries a pair of connecting prongs 18 and 19 initially leaving the under side of the plug 16 in parallel relation. However the lower ends of these prongs 18 and 19 are curved around outwardly one from the other to form feet. In using the structure so far described, the bars 12 and 13 are connected through suitable wires such as 20 and 21, Fig. 1, with a source of electric current and the plug 16 is then turned to have the prongs 18 and 19 to permit their entrance into the slot 11, it being immaterial as to what position along the slot these prongs are entered. After entering the prongs, the plug 16 is then given a rotary movement to revolve it 90 degrees so as to carry the feet of the prongs 18 and 19 under the shoulders of the member 10 and into the lateral extensions of the slot 11 thereunder so as to cause the feet of the prongs 18 and 19 to ride around and over onto the top sides of the bars 12 and 13.

The width of the entering portion of the slot 11 and the vertical height of the lateral extensions of the slot 11 are proportioned in relation to the curvature of the outer ends of the prongs 18 and 19 so that the prongs will engage about the shoulders of the member 10 in the slot 11 and cause the feet of the prongs 18 and 19 to be bent upwardly slightly as they are brought around over the bars 12 and 13 whereby sufficient pressure

may be exerted between the prongs and the bars 12 and 13 as to retain the plug 16 firmly in position and establish good electrical contacts between the respective members. In other words, 5 a slight bending action is produced in the prongs 18 and 19 when they are carried around from their initial position as shown in Fig. 1 by the solid lines to the dash line positions, the prongs being sufficiently elastic to return to their normal positions upon being released upon reverse 10 travel of the plug 16 when it is to be disengaged from the slot 11.

The invention may also be embodied in the screw type base 22 as illustrated in Figs. 4 and 5. 15 One particular form of such a base is herein illustrated. In this form a body 23 is provided with a central diametrical slot 24 through which the prongs 18 and 19 of the plug 16 may be entered and then revolved through 90 degrees to come 20 into contact with the respective members 25 and 26 which in turn are connected to the center contact member 27 on the base of the receptacle and the screw ferrule 28. The body 23 is provided with shoulders 29 and 30 against which the 25 prongs 18 and 19 bear as the plug is revolved so as to supply the necessary pressure of the feet of the prongs against the members 25 and 26.

While I have herein shown my invention in the best form as now known to me, it is obvious that 30 structural variations may be employed without departing from the spirit of the invention and I,

therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

I claim:

1. In an electrical connecting device, a receptacle having a major slot, a contact member carried by the receptacle on each side of the slot, a plug, a pair of contacting prongs extending in a curve from the plug and having feet formed to enter said slot and to be carried into contact with 10 said contact members upon rotation of the plug, said feet being out-turned, and shoulders along said slot under which said prongs are yieldingly extended by contact of the curved portion of the prongs with the shoulders to compressibly retain 15 said feet in contact with said contact member.

2. In an electrical connecting device, a receptacle having a major slot and a chamber entered through the slot, a contact member in the chamber to one side of and extending along said slot, 20 said slot providing a shoulder along its side above said contact member, a plug, a conducting prong extending from the plug a sufficient distance to enter said slot and extend into said chamber, said prong having a curved end formed to be carried 25 yieldingly into contact with and under said shoulder to bend the prongs into contact with said contact member upon rotation of the plug whereby said prong is compressibly retained against said contact member. 30

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