March 17, 1959 T. B. WEISS 2,878,457

ELECTRIC PLUG RECEPTACLE

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Fig. 1

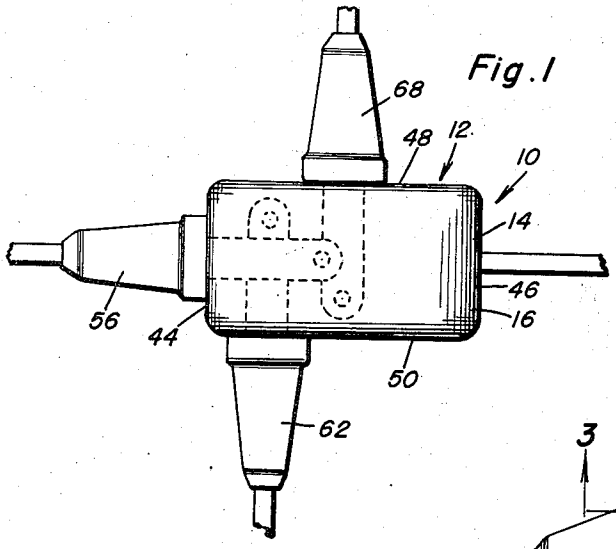


Fig. 2

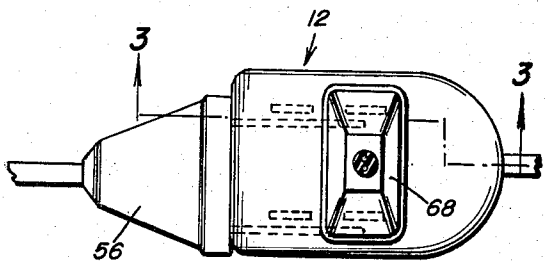
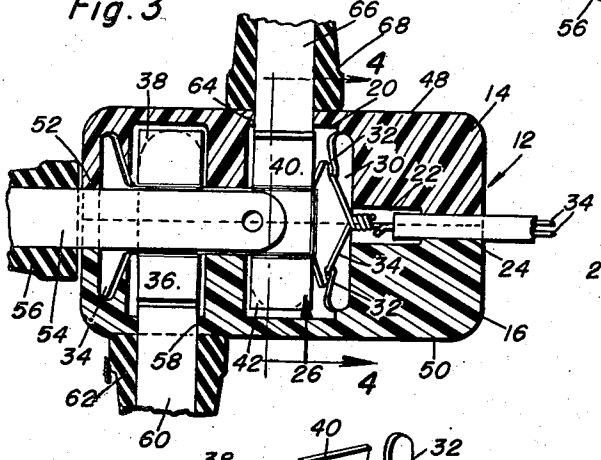


Fig. 3



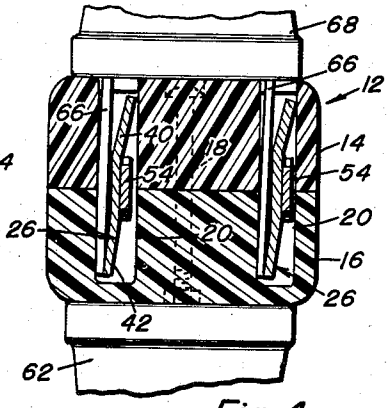


Fig. 4

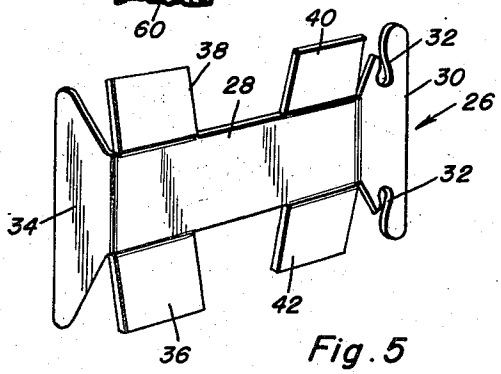


Fig. 5

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ELECTRIC PLUG RECEPTACLE

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2 Claims. (Cl. 339—159)

This invention relates in general to new and useful improvements in electrical fixtures, and more specifically, to an improved electric plug receptacle.

In triple plug receptacles, plug apertures are arranged directly opposed to each other; it has also been necessary for plug apertures to be in longitudinal alignment which necessitates an elongated plug receptacle.

It is therefore the primary object of this invention to provide an electric plug receptacle which is constructed to hold three plugs wherein two pairs of the plug apertures have entrances on opposite sides and are offset so that to hold two plugs, the receptacle will not need to be any thicker than is usually needed for one plug, aperture entrances for the third plug will be at a right angle and at a different level so that third plug will cross over or under the other two plugs, the plug apertures and terminal contacts are thus arranged whereby the prongs of plugs disposed therein will be in cross-cross, yet staggered, relation, the receptacle will thereby be very compact, it will use a minimum of space and material and at the same time, it will assure proper contact for three plugs.

Still another object of this invention is to provide an improved electrical plug receptacle which is so constructed whereby a single type of contact terminal is utilized, the receptacle employing two identical contact terminals.

A further object of this invention is to provide an improved electric plug receptacle which includes a housing having so arranged therein plug receptacles and contact terminals whereby when the prongs of plugs are inserted into the housing, the plugs cooperate with each other to assure a proper contact of their prongs with the contact terminals.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a plan view of the electric plug receptacle which is the subject of this invention and shows the same with three plugs plugged thereinto, the prongs of the plugs being shown in dotted lines;

Figure 2 is a side elevational view of the electric plug receptacle of Figure 1 and shows further the arrangement of the prongs of the plug;

Figure 3 is a longitudinal sectional view taken substantially upon the plane indicated by the section line 3—3 of Figure 2 on an enlarged scale and shows the specific arrangement of the prongs of the plugs with relation to the housing and one of the contact terminals of the receptacle;

Figure 4 is an enlarged transverse vertical sectional view taken substantially upon the plane indicated by the section line 4—4 of Figure 3 and shows the relationship

of a pair of prongs of two of the plugs with respect to the contact terminals; and

Figure 5 is an enlarged perspective view of one of the contact terminals.

Referring now to the drawings in detail, it will be seen that there is illustrated the electric plug receptacle which is the subject of this invention, the electric plug receptacle being referred to in general by the reference numeral 10. The receptacle 10 includes a two-piece housing 12 formed in halves 14 and 16. The halves 14 and 16 are held together by suitable fasteners 18, as is best illustrated in Figure 4. While it has been mentioned that a plurality of fasteners 18 are utilized, it is to be understood that one central fastener could be relied upon.

Formed in the housing 12 is a pair of recesses 20. The right hand ends of the recesses 20, as viewed in Figure 3, are communicated by a transverse recess 22 which terminates in a bore 24 opening into one end of the housing 12. It is to be understood that the recesses 20 are so configurated to conform generally to the outline of contact terminals 26 disposed therein.

Referring now to Figure 5 in particular, it will be seen that each of the contact terminals 26, the two contact terminals 26 being identical, includes an elongated body portion 28 which is provided at one end thereof with an anchoring flap 30. The anchoring flap 30 is provided with notches 32 for receiving an end of a conductor 34.

Disposed at the end of the body portion 28 remote from the flap 30 is a guide 34. The guide 34 and the flap 30 are offset from the plane of the body portion 28 in the same direction.

Extending normal to the body portion 28 adjacent the guide 34 and depending downwardly therefrom is a guide 36. The guide 36 is set out of the plane of the body portion 28 in a direction opposite from the guide 34. Disposed opposite the guide 36 and projecting out of the plane of the body portion 28 in the opposite direction is a terminal 38.

Disposed adjacent the flap 30 and projecting normal to the body portion 28 is a guide 40 and a terminal 42, the position of these two being reversed to that of the guide 36 in the terminal 38. The body portion 28 also functions as a terminal in a manner to be set forth in more detail hereinafter.

Referring once again to Figure 1 in particular, it will be seen that the housing 12 includes a pair of ends 44 and 46, and a pair of sides 48 and 50. As was previously described, the conductors 34 extend through the ends 46. Formed in the end 44 in alignment with the recesses 20 is a pair of plug apertures 52. The plug apertures 52 receive prongs 54 of an electric plug 56. The prongs 54 are guided into engagement with the terminal or body portion 28 by the guide 34, as is best illustrated in Figures 3 and 4.

Formed in the side 50 is a pair of plug apertures 58 which are also disposed in alignment with the recesses 20, but disposed transversely thereof. Seated in the plug apertures 58 are prongs 60 of an electric plug 62. The prongs 60 engage the guides 36 of the contact terminals 26 and are urged into engagement with the terminals 38, as is best shown in Figure 3.

Formed in the side 48 in longitudinally spaced relation with respect to the plug apertures 58, are plug apertures 64. The plug apertures 64 are normal to and intersect the recesses 20. Received in the plug apertures 64 are prongs 66 of an electric plug 68. The plug prongs 66 are guided into position with respect to the contact terminals 26 by means of the guides 40 and are urged

into engagement with the terminals **42**, as is best illustrated in Figure 4.

From the foregoing description of the electric plug receptacle **10** and the relationship of the prongs of the plugs **56**, **62** and **68** with respect thereto, it will be readily apparent that the receptacle is so formed whereby all of the prongs of the previous plug are disposed in full engagement with the contact terminals **26** to provide a complete contact and at the same time, they cooperate with each other to retain such engagement. Further, it is to be noted that the prongs **54** are disposed in generally intersecting relation with respect to the prongs **60** and **66** so as to occupy a minimum space. In view of this, there has been devised a relatively compact receptacle for electric plugs which will accommodate three electric plugs and which at the same time provides the proper contact between the prongs of the plugs and the contact terminals thereof.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described. and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An electrical plug receptacle assembly comprising an electric plug receptacle and three plugs of the type each of which includes a pair of prongs, said electrical plug receptacle including a longitudinally elongated housing, spaced parallel conductor strips mounted in said housing and extending longitudinally thereof, said housing having sides and ends, three pairs of plug apertures formed in said housing, two pairs of said plug apertures being disposed in transverse parallel relation and opening through said sides of said housing, said two pairs of plug apertures having entrances opening in opposite directions, the third pair of said apertures being disposed at right angles to said two pairs of plug apertures and opening through one end of said housing into said two pairs of plug apertures, said third pair of plug apertures lying in planes offset from the planes of said two pairs of plug apertures, said apertures of said two pairs of plug apertures being aligned with first surfaces of said conductor strips, prongs of two of said plugs being disposed in said apertures of said two pairs of plug apertures and engaging said first surfaces of said conductor strips, said apertures of said third pair of plug apertures being aligned with opposite surfaces of said conductor strips, and prongs of the third one of said plugs being disposed in said third pair of plug apertures, said prongs of said third plug transversely crossing said prongs of one of said two plugs and transversely overlying said prongs of the other of said two plugs and engaging said opposite surfaces of said conductor strips.

2. An electrical plug receptacle comprising a longitudinally elongated housing, spaced parallel conductor strips mounted in said housing and extending longitudinally thereof, said housing including sides and ends, three pairs of plug apertures formed in said housing, two pairs of said plug apertures being disposed in transverse parallel relation and opening through said sides of said housing, said two pairs of plug apertures having entrances opening in opposite directions, the third pair of said apertures being disposed at right angles to said two pairs of plug apertures and opening through one of said housing ends into said two pairs of plug apertures, said third pair of plug apertures lying in planes offset from the planes of said two pairs of plug apertures, said apertures of said two pairs of plug apertures being aligned with first surfaces of said conductor strips, said apertures of said third pair of plug apertures being aligned with opposite surfaces of said conductor strips whereby prongs of plugs disposed in said third pair of plug apertures may transversely cross prongs of plugs disposed in said two pairs of apertures.

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