

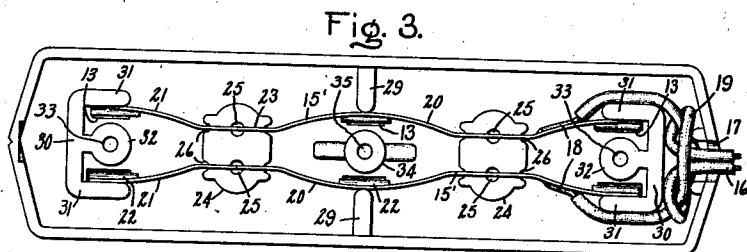
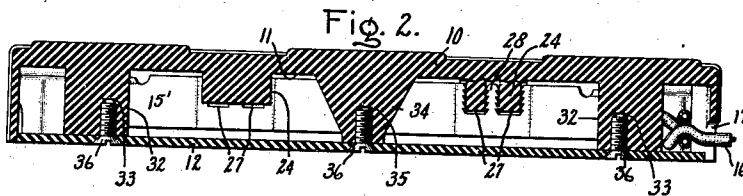
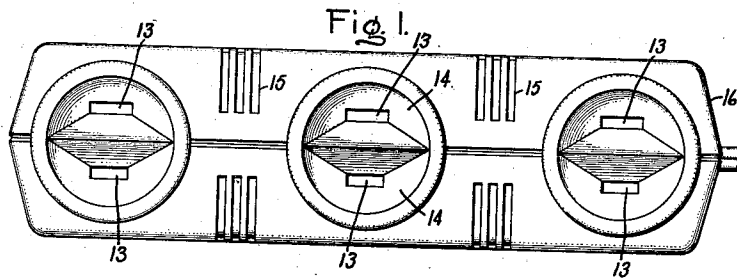
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PLUG RECEPTACLE

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PLUG RECEPTACLE

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1 Claim. (Cl. 173-334)

This invention relates to plug receptacles, and more particularly to a plug receptacle for receiving a plurality of electric plugs. Such a construction is frequently used as a table tap for receiving the plugs of various electric appliances such as toasters, percolators, etc.

It is an object of the invention to provide an improved construction and arrangement in plug receptacles of the type described which comprises relatively few parts, which is of compact and pleasing design, and which may be manufactured at low cost.

In the accompanying drawing Fig. 1 is a plan view of the device; Fig. 2 is a sectional view through the device showing the manner of connecting the contact elements in position; and Fig. 3 is a view of the interior of the device with the cover removed showing the arrangement of the elements within the housing.

Referring to the drawing, the plug receptacle is formed with a housing 10 of insulating material such as a phenolic condensation product, or the like, and the housing is provided with a recess 11 closed by a cover 12. The housing is of elongated rectangular formation and is formed with a plurality of pairs of openings 13 spaced in a line longitudinally of the housing and which are adapted to receive the contact prongs of the conventional plug connector. In order to center the plug prongs within the receptacle openings, the openings are surrounded by recesses 14 such as are customary in this type of plug receptacle. The housing is formed with transverse decorative flutings 15 and beveled ends 16 to create a plug receptacle having a pleasing appearance and one which is suitable for use on a table in servicing a plurality of electric appliances.

As shown more particularly by Figs. 2 and 3, two contact strips 15' are located within the recess 11 and are disposed in opposed relationship for cooperation with the respective pairs of openings 13. An electric cord 16' is brought within the recess through the opening 17 in the end of the body and the conductors of the cord are connected to each of the contact elements at the point 18. Looping of the conductors within the recesses, as shown at 19, provides a strain relief means to absorb pulls and twists on the conducting cord.

The contacts 15' are formed of elongated flat metal strips and are of resilient material such as spring bronze. Each of the strips is formed with an intermediate bowed portion 20 and the strips are likewise bowed at their ends, as shown at 21. Each bowed portion of the strip is pro-

vided with a projecting flange or lip 22 forming a contact means which is normally placed in alignment with the corresponding opening 13 for engagement by the contact prong of a plug connector as it is inserted through the opening 13. The flat portions 23 of the contact strips intermediate the bowed portions 21 provide a means of securing the strips to the body member. To this end, bosses 24 extend from the bottom of the recesses and are provided with openings 25 and grooves 26 to receive the serrated edges of the contact strips formed by the spaced slots 27. The slots are spaced by barriers forming pins 28 which rest in the openings 25. The contact strips are mounted on the bosses simply by forcing them down into the openings 25 and grooves 26 with the serrated edges of the strips gripping the walls of the bosses and holding the strips firmly in position. This structure provides a simple and effective method of mounting the contact strips within the housing and is one which is low in cost because no separate securing means is necessary. The bosses 24 are simply molded integrally with the housing 10.

In order to guide the contact prongs of an electric plug into engagement with the respective contact means upon their insertion through the openings 13, a plurality of ribs or guiding means are located adjacent the openings. In the case of the center pair of openings, projections 29 extend from the wall of the recess to a point in alignment with the outer edges of the corresponding openings 13, and in the case of the end pairs of openings, U-shaped members 30 are provided upstanding from the base of the recess with the arms 31 of the U in alignment with the outer edges of the corresponding openings 13. The base of the U surrounds the ends of the contact strips and insulates them from the remaining portions of the recess. In this manner the conductors of the cord 16' are prevented from rubbing against the ends of the contact strips and possibly causing a short circuit. The ends of the contact strips are spaced from the base of the U-shaped members so that they are free to flex readily upon engagement with the connecting prongs of a plug connector. Each of the U-shaped members is provided with a central extension 32 provided with an opening 33. An abutment 34 is located between the center openings 13 and is likewise provided with an opening 35. The openings 33 and 35 receive self-tapping screws 36 which secure the cover 12 in position to close the recess 11.

According to the invention the contact strips

are held securely within the recess by virtue of their frictional fit with the bosses 24, and there is no danger of the contact elements becoming dislodged or short circuited such as would be the case if they were simply disposed in slots in the body member. The bowed portions 20 and 21 of the contact strips provide a flexible contacting means which make good electrical contact with the prongs of the plug connector, and the strips flex about the fixed supports 24. When the connector prongs are inserted in the openings 13 they first engage the flanges or lips 22 of the contact members and flex these members inwardly so that the prongs are seated between the arms 31 and projections 29 and the contact members. Not only do the arms 31 and projections 29 guide the connector prongs into engagement with the contact means, but they serve to steady the connector plug within the receptacle by engaging the surfaces of the prongs which are away from the contact strips. Two contact strips serve all of the pairs of openings and form a simple and effective contact means for engaging plug connectors which may be tapped into any one or all of the openings.

What I claim as new and desire to secure by Letters Patent of the United States, is:

In a plug receptacle for use with a plurality of electric plugs having spaced contact prongs, the combination of an elongated base of insulating material having a recess therein, said base being provided with three pairs of opposed openings, the openings of each pair being spaced apart a distance corresponding to the spacing of the plug prongs, each pair being spaced apart in line and extending through the bottom of said recess, a pair of flat elongated contact strips located in opposed relation within said recess, each of said strips being provided with bowed portions having contact surfaces in alignment with said openings and flat portions between said bowed portions, bosses in said recess intermediate said pairs of openings, the flat portions of said strips having a frictional fit with each of said bosses and being spaced apart thereon a distance less than the spacing of said openings to secure them rigidly to said base, and means adjacent each opening guiding the prongs of an electric plug as they are inserted into any of said pairs of openings into engagement with the corresponding contact surfaces.

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