Sept. 3, 1929. E. R. KULKA 1,726,745

METHOD OF MAKING PLUG RECEPTACLES AND IMPROVED PLUG RECEPTACLE

Filed April 13, 1927 2 Sheets-Sheet 1

Fig. 1

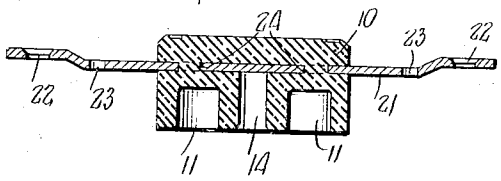


Fig. 2

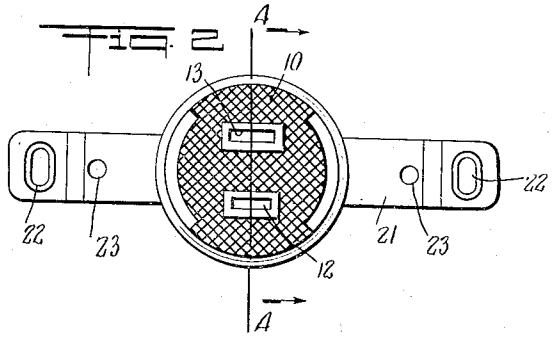


Fig. 3

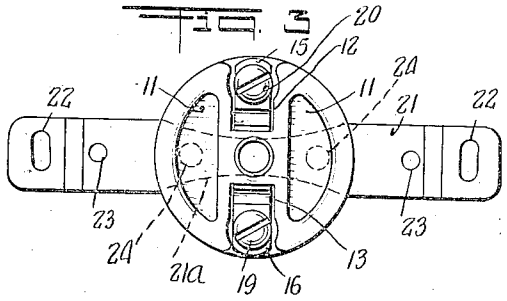


Fig. 4

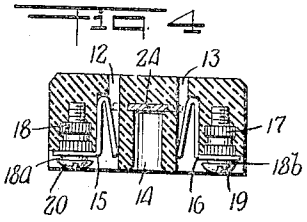


Fig. 5

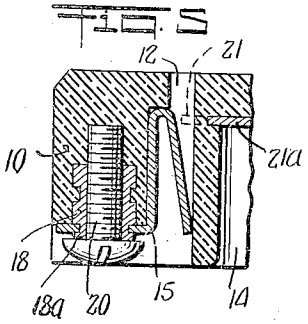
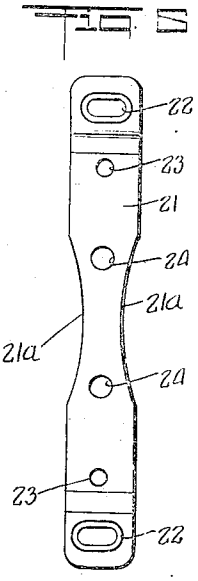


Fig. 5



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Sept. 3, 1929. E. R. KULKA 1,726,745

METHOD OF MAKING PLUG RECEPTACLES AND IMPROVED PLUG RECEPTACLE

Filed April 13, 1927 2 Sheets-Sheet 2

Fig. 7

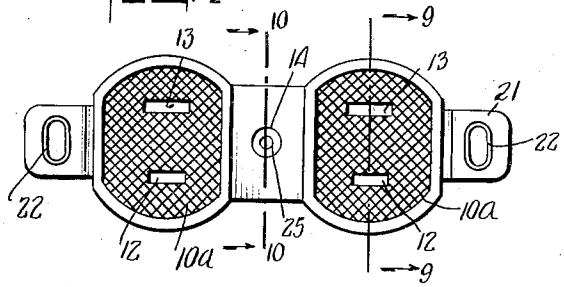


Fig. 8

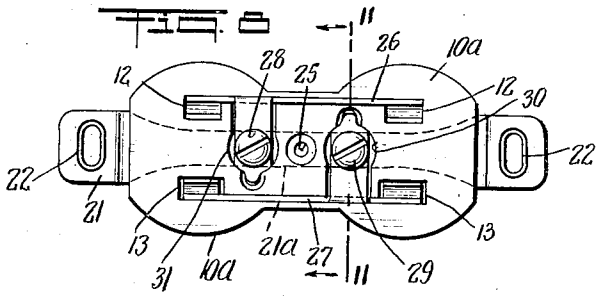


Fig. 9

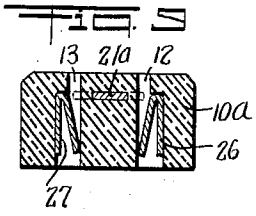


Fig. 10

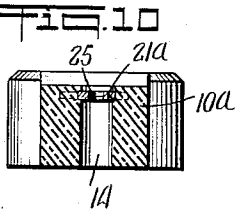


Fig. 11

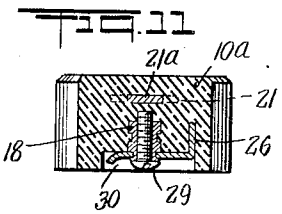


Fig. 12

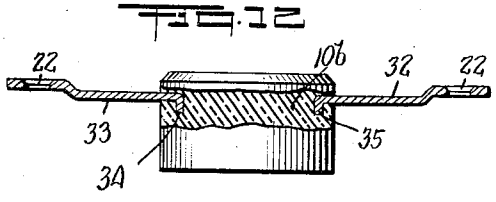


Fig. 13

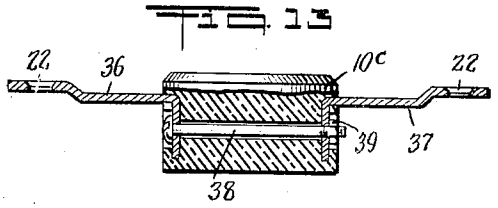


Fig. 14

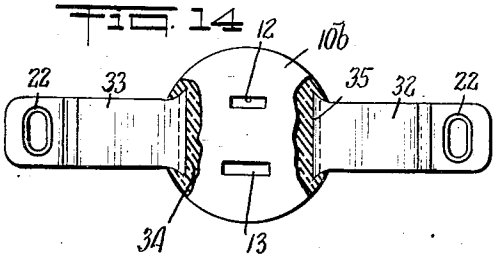
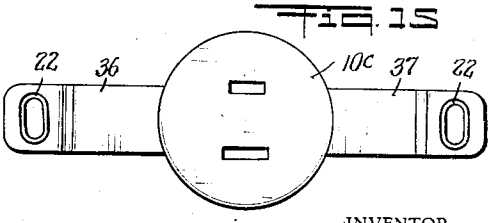


Fig. 15



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Patented Sept. 3, 1929. 1,726,745

UNITED STATES PATENT OFFICE.

EUGENE R. KULKA, OF BROOKLYN, NEW YORK. ASSIGNOR TO C. D. WOOD ELECTRIC CO. INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

METHOD OF MAKING PLUG RECEPTACLES AND IMPROVED PLUG RECEPTACLE.

Application filed April 13, 1927. Serial No. 183,444.

My invention relates to a new and improved method of making a plug receptacle and a new and improved plug receptacle.

One of the objects of my invention is to devise a method of making a plug receptacle whereby the same can be constructed with a minimum of expense and with a minimum number of parts.

Another object of my invention is to provide a method of making plug receptacles combined with a supporting strap or yoke whereby the various parts will be held together with great rigidity and without any need for using supplemental fastening means.

Another object of my invention is to provide a plug receptacle of maximum strength, cheapness and simplicity.

Other objects of my invention will be set forth in the following description and drawings which illustrate preferred embodiments thereof, it being understood that the above general statement of the objects of my invention is intended merely to generally explain the same and not to limit it in any manner.

Fig. 1 is a sectional view showing one embodiment of my invention.

Fig. 2 is a top view of the device shown in Fig. 1.

Fig. 3 is a bottom view of the device shown in Fig. 1.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged detail view showing how the brush contacts are held in position.

Fig. 6 is a plan view of the supporting strap.

Fig. 7 is a top view of a double receptacle.

Fig. 8 is a bottom view of the device shown in Fig. 7.

Fig. 9 is a sectional view on the line 9—9 of Fig. 7.

Fig. 10 is a sectional view on the line 10—10 of Fig. 7.

Fig. 11 is a sectional view on the line 11—11 of Fig. 8.

Fig. 12 shows a third embodiment of my invention illustrating a different method of connecting the receptacle to the metal supporting member or members.

Fig. 13 shows a fourth embodiment of my invention.

Fig. 14 is a top view of the device shown in Fig. 12.

Fig. 15 is a top view of the device shown in Fig. 13.

In the first embodiment of my invention and as illustrated in Figs. 1–6 inclusive, the body 10 of the receptacle which is made of Bakelite or some other material which can be readily molded, is combined with a strap 21 which is preferably made of metal. This strap 21 has an intermediate relatively narrow portion 21^a so as to permit the said strap 21 to clear the contacts 15 and 16 and it is provided with intermediate openings 24, which may be called "body" openings because they extend within the body 10 of the receptacle when the parts are assembled. The body 10 of the receptacle is molded around the supporting strap 21 during the process of manufacturing or molding of the body of the receptacle, so that the moldable material thereof passes through the body openings 24 whereby the members 10 and 21 are held together very firmly. It would not be departing from my invention if the openings 24 were merely recesses or if the moldable material only contacted with a part of the interior walls of said openings 24. The end openings 22 and the adjacent openings 23 are of the usual type to facilitate the mounting of the body of the receptacle. The bottom of the body 10 is formed with a central recess 14 and end recesses 11. The bottom of the body 10 is also provided with internally threaded openings in which externally threaded inserts 17 and 18 are mounted. The inserts 17 and 18 could be firmly connected to the body 10 of the receptacle in any suitable manner, as for example, by providing said inserts with outer recesses or grooves and molding the body 10 of the receptacle around them, in the manner previously described. A brush or other type of contact 15 is connected to the insert 18 by enlarging or upsetting the head of the insert 18 to form a rivet-like enlargement 18^a. The interior of the insert 18 is internally threaded so that the binding screw or terminal member 20 can be firmly held in position. However, the brush contact 15 is held immovably in position by the enlarged head 18^a of the insert 18. even if the binding screw 20 is removed. The binding screw 20 serves to connect a wire

to the brush contact 15. The top of the receptacle is provided with openings 12 and 13, located intermediate the recesses 11 so that the blades of the jack or plug can suitably pass into the body of the receptacle to make contact with the contacts 15 and 16. The insert 17 is constructed similarly to the insert 18 and it is provided with an enlarged head 18^b similar to the enlarged head 18^a previously described. While I have shown the body of the receptacle as being provided with only two brush contacts, it is obvious that said receptacle could be made according to any well known manner. For example, it can be provided with four contacts so as to enable it to be used either in tandem or in parallel. The strip 21 may be suitably perforated to allow the brush contacts to pass through said perforations, insulation being provided by the material of the body 10.

Figs. 7–11 show the second embodiment of my invention and illustrate a double receptacle. The narrow central portion 21^a of the strap 21 is provided with an internally threaded opening 25. This threaded opening 25 enables the device to be directly connected to a standard surface plate by means of a screw. The central recess 14 extends through the central portion of the body 10. Each of the branches or wings 10^a of the body 10 is provided with openings 12 and 13 similar to those previously described. Longitudinal contact blades 26 and 27 are provided and these contact blades 26 and 27 are provided with lateral extensions which extend in bottom recesses 30 and 31. These lateral extensions of the contact blades 26 and 27 are held in place by inserts having enlarged ends as previously described and binding screws 28 and 29 are provided. Hence, the binding screws 28 and 29 and the associated blades 26 and 27 extend within the bottom surface of the double receptacle so as to prevent any undesired electrical connection.

In the embodiment shown in Figs. 12 and 14 the receptacle body 10^b is connected to supporting straps 32 and 33 by means of downwardly turned extensions 34 and 35 of the said straps which are imbedded in the receptacle 10^b during the process of molding the said receptacle.

In the embodiment shown in Figs. 13 and 15 the straps 36 and 37 have bent portions which are also imbedded in the material of the receptacle 10^c during the process of molding the same. The straps 36 and 37 are connected by a bolt 38 having a nut 39.

Since the plane of the strap 21 is substantially perpendicular to the longitudinal axis of the body 10, said body 10 can be molded from phenolic condensation material such as Bakelite, while the molding pressure is applied in the direction of the longitudinal axis.

It is clear that the new and improved construction renders it unnecessary to use any separate fastening members for connecting the receptacle to the supporting metal outlet box, and that the parts cannot become loose or separate and that the device can be manufactured at minimum expense.

It is also clear that since the supporting strap passes through the body of the receptacle intermediate what may be termed the top and bottom faces thereof, that there is little or no danger of this supporting strap, which is ordinarily made of metal, contacting with the live wire leads in the outlet box. While it is preferable to mold the body 10 around the supporting strap so as to provide an integral molded construction, certain advantages of my invention are present even if the strap and body are separately made and are then assembled. For example, certain moldable material such as porcelain cannot be molded around a metal supporting strap because of the high temperature necessary for shaping the porcelain and when porcelain is used, it is necessary to separately form the strap and then assemble the parts. This also applies to other insulating moldable materials which are formed at very high temperatures or which require the use of such high pressure that the metal strap would be injured. Likewise, I have shown the metal strap as being provided with an intermediate narrowed portion for clearing the metal contacts. This construction is necessary because there must be no contact between the metal supporting strap and the electric contacts 15 and 16 connected to the body. Instead of having a continuous metal supporting strap having an intermediate narrow portion, as shown in Fig. 6, metal supporting means of any type, such as shown in Fig. 12, for example, may be employed in which the metal supporting means are connected to the insulating body between the top and bottom faces thereof, the contacts being separated from said metal supporting means.

It will be noted that the metal strap which extends through and which is completely imbedded in the plug receptacle body, as shown in Figs. 1 and 2, has its plane substantially perpendicular to the longitudinal axis of the body of the plug receptacle. This construction is highly advantageous when the plug receptacle is made of Bakelite, or of a similar moldable insulating material, which must be molded under great pressure, because the pressure of the dies is not exerted directly upon the metal strap. It will likewise be noted that the central recess 14 extends up to the metal supporting strap. This facilitates the proper assembly of the plug receptacle body and the supporting strap, during the molding operation.

I have described a preferred embodiment of my invention, but it is clear that numerous changes and omissions could be made without departing from its spirit.

I claim:

A method of forming a flush plug receptacle body made of moldable phenolic condensation material having a metal strap molded integral therewith, which consists in molding said material under pressure around said strap so that a portion of said strap is completely imbedded in said material and the end portion of said strap projects beyond said material, the plane of said strap being held substantially perpendicular to the longitudinal axis of the molded body, during said molding operation and the molding pressure being applied in the direction of said longitudinal axis.

In testimony whereof I affix my signature.

EUGENE R. KULKA.