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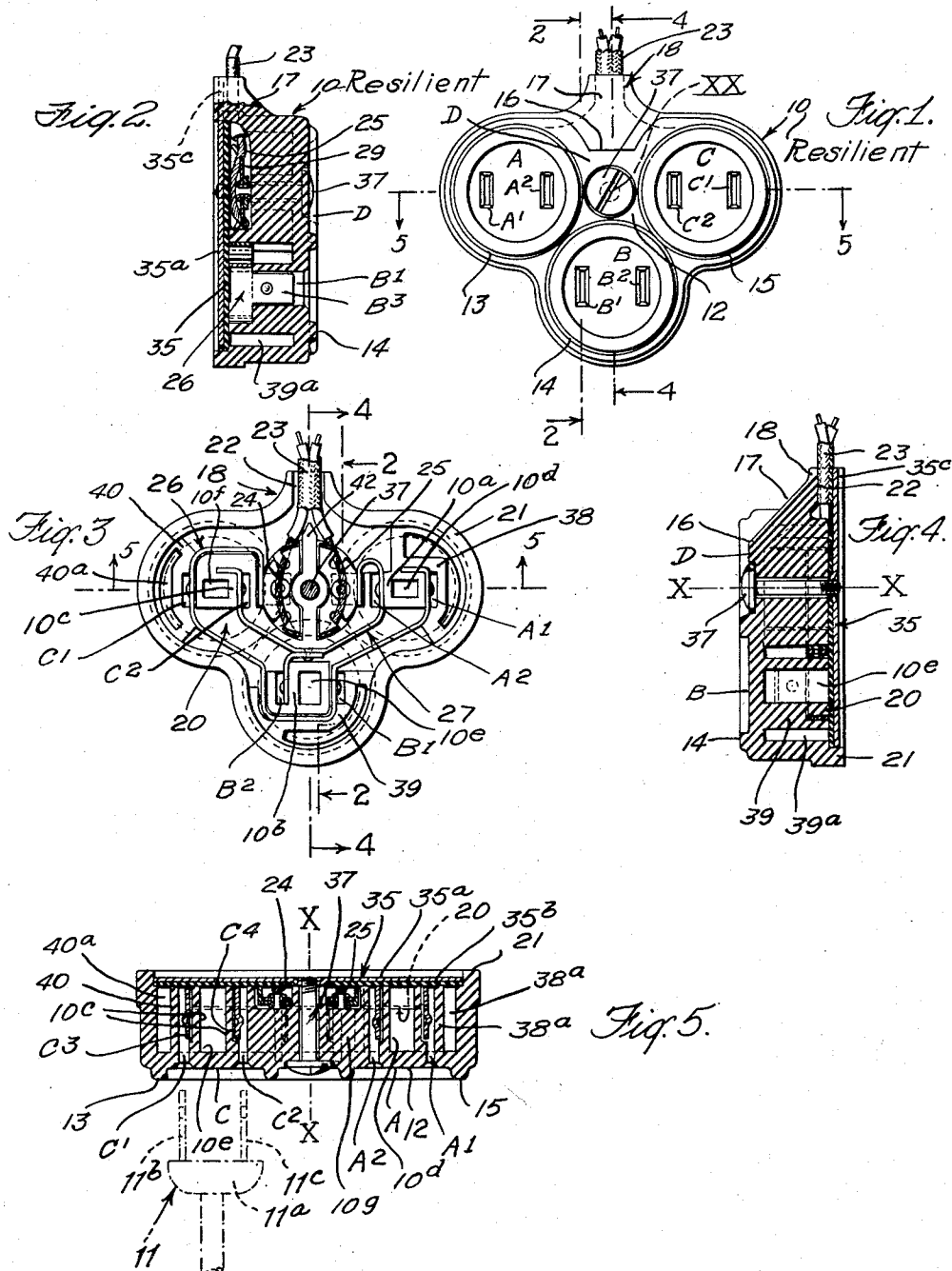
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2,228,334

PLUG RECEPTACLE CONSTRUCTION

Filed March 26, 1938

2 Sheets-Sheet 1



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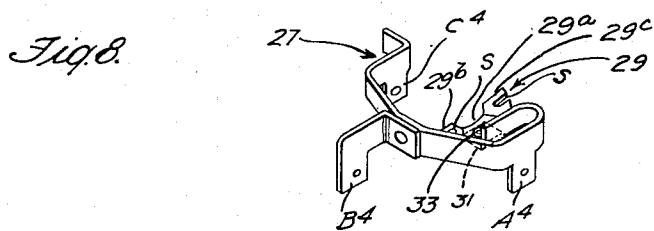
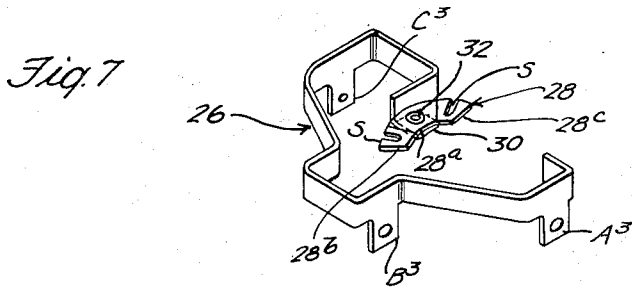
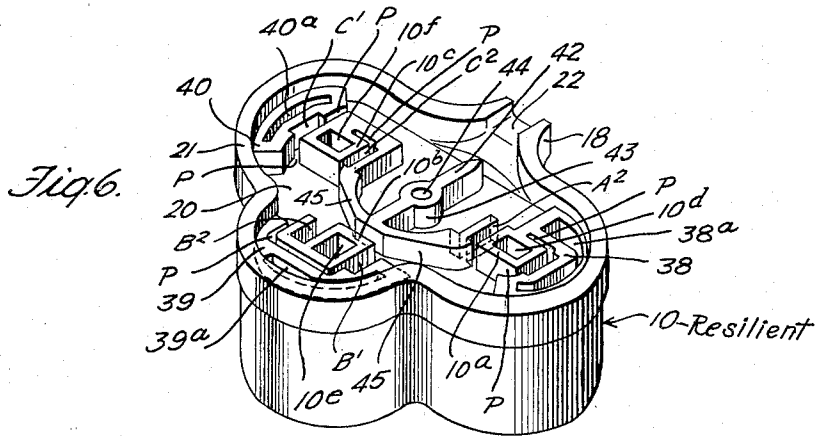
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PLUG RECEPTACLE CONSTRUCTION

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2 Sheets-Sheet 2



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PLUG RECEPTACLE CONSTRUCTION

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Application March 26, 1938, Serial No. 198,175

7 Claims. (Cl. 173—334)

This invention relates to electrical connecting devices of the plug receptacle type.

One of the objects of this invention is to provide a compact, simple and durable construction of the above-mentioned character, and more particularly a plug receptacle that will be compact, attractive in appearance and of long lasting utility. Another object is to provide a plug receptacle, particularly of the kind that may be related to a flexible cord conductor extension, that will be infrangible, well adapted to meet the generally abusive character of use, particularly when associated with a cord extension, free from marring or scraping the surface, such as furniture, flooring, or the like, on which the device may be resting, and capable of embodiment in an inexpensive and efficient form for receiving more than one plug. Another object is to provide a construction of the above-mentioned character in which high dependability of electrical contact engagement with the prongs of the plug may be achieved in a simple, inexpensive and efficient way, and to provide a construction in which such dependability may be long lasting. Another object is to provide a construction of the above-mentioned character in which looseness of mechanical and electrical engagement with the prongs of plug, with accompanying danger, risk and annoyance is dependably eliminated, and also to carry out the just stated object in such a way as to cope successfully and dependably with such variations in dimensions or spacings of the contact prongs of a plug as are frequently met with in practice. Another object is to provide a plug receptacle construction for association with a flexible cord in which strains or pulls on the cord are dependably prevented from detrimentally affecting the relative relationships of the prong-engaging contact members.

Another object is to provide a multiple plug receptacle that readily lends itself to large-scale production, that has a minimum of parts to assemble, and that can be quickly and inexpensively assembled. Another object is to provide a construction of the above-mentioned character that can be quickly and speedily installed and, furthermore, that will be capable of interconnection with the other conductors in a simple, fool-proof and safe manner. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings in which is shown a preferred one of the various possible embodiments of my invention,

Figure 1 is a top plan view of a multiple plug receptacle;

Figure 2 is a vertical sectional view, as seen along the line 2—2 of Figure 1 or along the line 2—2 of Figure 3;

Figure 3 is a bottom plan view of the plug receptacle, as seen from the rear in Figure 1 or from the left in Figure 2, but with the rear closure means removed in order to show certain features of construction more clearly;

Figure 4 is a central vertical sectional view, as seen along the line 4—4 of Figure 1 or along the line 4—4 of Figure 3;

Figure 5 is a horizontal sectional view, as seen along the line 5—5 of Figure 1 or along the line 5—5 of Figure 3;

Figure 6 is a perspective view of the structure shown in Figure 3 but prior to the assembly thereto of certain other parts;

Figures 7 and 8 are perspective views of the conductive parts of the construction representing, respectively, the two sides of the circuit to which the device is related.

Similar reference characters refer to similar parts throughout the several views in the drawings.

In so far as certain features of my invention are concerned, they include features whereby the plug receptacle construction is capable of having related thereto a plurality of plugs with their contact prongs, and it is in that form that the illustrative embodiment of my invention is shown in the drawings and is about to be described, but it is to be understood that that is done not by way of limitation but rather by way of illustration, since such features of my invention need be practiced where a number other than three plugs is to be received by the receptacle and that certain other features of my invention may be carried out in a receptacle construction where only one plug is to be received. In the illustrative embodiment the plug receptacle comprises a main body member generally indicated at 10 (Figures 1 and 2) having a thickness, as better appears in Figures 2, 4 and 5, slightly in excess of the length of the prongs of the plug connector with which the device is to coact, illustratively a two-pronged plug as indicated at 11 in Figure 5 which happens to be, as to prong dimensions, substantially standard construction, the main body member 10 having in plan an area and configuration to present an upper face whose area is commensurate with the aggregate area of the plug or plugs to be received by the receptacle construction. Thus, where three plugs are to be accommodated, I prefer to shape the member 10 to provide three areas A, B and C which, to accommodate the usually circular cap or insulating parts, like 11^a of Figure 5, of plugs now in use, are preferably circular,

and if desired and preferably, these areas may be outlined in the upper face 12 of the body member 10 by upstanding circular ribs 13, 14 and 15. These areas A, B, C, etc., are preferably tangent and preferably are grouped, preferably concentrically, about what I shall term the main axis of the device, that being the axis XX of the device and of the body member 12 and being positioned at the center of a circle that passes through the centers of the circular areas A, B and C, the relative radii being preferably so chosen that there is subtended between the successively tangent circular ribs 13, 14, 15 an area D to provide a portion of the member 10 for purposes later described.

In outline, the main body member 10 preferably follows closely, as is better shown in Figure 1, the general configuration provided by the successively tangential circular areas as one passes from area A to area B to area C, but in passing from the area A to the area C, the outline of the upper face 12 becomes reentrant as along the line 16, thus to form a bounding edge for the area D, while the peripheral face of the member 10 is extended or sloped away from the line 16, as along the surface 17 (Figures 1 and 4), thus to form a stem-like extension 18, strongly reinforced, however, along the sloping surface 17; in the preferred shape of the device, where three plugs are to be accommodated, the receptacle appears in plan to suggest a three-lobed leaf of which the extension 18 is the stem.

Appropriately located with respect to the circular areas A, B and C (see Figure 1), in the front face of the member 10, are pairs of apertures, each pair for the reception of the two prongs of the plug, such as the plug 11; thus, area A has two apertures A¹, A², area B is provided with two apertures B¹ and B², and area C has a pair of apertures C¹ and C².

The main body member 10 is preferably made of a suitable moldable insulation material, preferably of rubber compounded and cured to have suitable resiliency, a resiliency appropriate for the functioning of the rubber in the preferred manner hereinafter described while having sufficient rigidity to resist undue bending or collapse of certain of its parts and to transmit certain strains or forces, as later described in detail; the external configuration thereof, as above described, as well as the preferred internal configuration as about to be described, are, furthermore, of such character that the formation of the body member 10 by molding may be efficiently and economically carried on.

The above member 10 has an under or rear face 20 (see Figures 3 and 6) surrounded by a peripheral rib 21, the latter being of relatively substantial cross-section, being interrupted at the stem-like extension 18 to provide an entry channel 22 of somewhat lesser cross-section than the flexible insulated two-conductor structure or cord 23, whereby the cord may be brought into the space between the plane of the face 20 and the plane of the peripheral rib 21. The conductors, usually stranded, of the cord 23 may be bared at their ends, as indicated in Figure 3 at 24 and 25, whence they may be electrically and mechanically connected to certain parts having preferably structural features about to be described.

In this latter connection, the internal configuration given the body member 10 may be more clearly understood after the conductive parts to which the circuit of the bared conductors 24, 25

is to be extended are first briefly described, and hence reference may be made to Figures 7 and 8.

In order to provide pairs of conductive parts with respect to the pairs of prong-receiving apertures of Figure 1 and appropriately located with respect thereto, I prefer to employ two members 26 and 27, preferred constructions of which are shown in perspective in Figures 7 and 8, respectively, and to each is related a conductor-engaging or connecting device, preferred constructions of which are indicated in Figures 7 and 8 by the reference characters 28 and 29, respectively, these devices coacting with certain other parts later to be described.

The member 26 of Figure 7 is preferably made up of sheet metal of suitable cross-section, being preferably of strap-like form, and it is of a length appropriate to permit it to be bent into the configuration shown. Appropriately distributed, in a manner later made clearer, along its length, are downwardly projecting tabs or extensions, one for each pair of prong-receiving apertures, these tabs being hereinafter called "brushes," and in Figure 7 the member 26 has brushes C³, B³, and A³, for ultimate reception into the apertures C¹, B¹, A¹, respectively, but by insertion therein from the rear face 20 (Figures 6 and 3) of the body member 10. Conductive member 26 also has a tab 30 bent at right angles thereto to underlie the conductor-engaging contact or connecting member 28 which is preferably in the form of an arcuate sheet metal part having a flat central portion 28^a that rests against the tab 30 and is secured thereto in any suitable way, as by an eyelet 32, and two end portions 28^b and 28^c slotted as at S, these end portions being bent upwardly out of the plane of the intermediate portion 28^a. The metal of the member 28 is preferably easily bendable and may also be somewhat springy.

The companion conductive member 27 (Figure 8) is also of strap-like sheet metal and is provided with downwardly extended tabs or brushes C⁴, B⁴ and A⁴ for reception, when inserted from the rear face 20 (Figures 6 and 3) of the body member 10, into the prong-receiving apertures C², B² and A², respectively. Like the member 26, the conductive member 27 has a tab 31 bent at right angles to its plane to which is secured, as by an eyelet 33, the intermediate portion 29^a of the sheet metal conductor-engaging and contact member 29 which is constructed like the member 28 of Figure 7, having upwardly bent end portions 29^b and 29^c slotted as at S. The brush B⁴ (Figure 8) may be and preferably is a separate piece of sheet metal secured to an appropriate part of the member 24, as by a rivet, all as indicated in Figure 8.

The general shape of the two members 26, 27 is such as to follow the general grouping of the parts or areas A, B, C (Figure 1) about the axis XX, and where that grouping, as in the illustrative form of Figures 1 and 3, is in general an arc or U with the axis XX at its general center, the members 26 and 27, disregarding the individual bends therein for purposes later described, are of corresponding arc or U-shape, but one of them, such as the member 27, is of lesser radius or smaller so that it may be encompassed within the other, as is about to be described. These members are inserted into the rear of the body member 10 and against the face 20 thereof, the latter being below the plane of the edge face or rib 21 (see Figure 5) by a distance somewhat greater than the vertical cross-sectional dimension of the strap members 26 and 27, as viewed 75

in Figures 7 and 8, there being thus virtually a recess in the rear of the body member 10, with the face 20 forming the bottom of the recess.

While, therefore, the lower edges of the members 26, 27 rest against the surface 20 (Figures 3 and 6), they are of respective configurations so that the brushes C³, B³ and A³ of member 26 and brushes C⁴, B⁴ and A⁴ of member 27 (Figure 8) enter respectively the apertures C¹, B¹ and A¹, and C², B² and A², projecting into the apertures and toward the front face 12 sufficiently, as indicated in Figure 5, to coact with the prongs of plug members 11 in a preferred manner later described, the shaping of the members 26 and 27 being, furthermore, such that, as is also better shown in Figure 5, the brushes that constitute any one pair, such as the brushes C³ and C⁴, lie snug up against the opposed sides of that portion of the material of body member 10 that lies between the apertures C¹ and C² into which these brushes are respectively received; accordingly, when a plug member like member 11 of Figure 5 is to be connected, the prongs thereof, such as prongs 11^b and 11^c, form a pair of members between which the brushes C³ and C⁴ with the intervening material of body member 10 are received. Preferably, and since the prong members of the plug are usually apertured, all of the brushes are provided with protuberances pressed out of the plane thereof, but in each case outwardly toward the prong with which that particular plug is to coact, the protuberance entering the recess or aperture in the prong.

The portions of the material of body member 10 that extend between the pairs of apertures or pairs of brushes are indicated in Figures 3, 5 and 6 at 10^a, 10^b and 10^c, and as better appears from Figures 5 and 6 these portions are extended beyond the face or bottom 20 of the rear recess to terminate in a plane spaced upwardly, as viewed in Figures 5 and 6, slightly beyond the plane in which the upper edges of the sheet metal strap members 26 and 27 lie though these planes may be coincident. These upward extensions (Figures 5 and 6) aid in holding portions, adjacent the brushes thereof, of the members 26 and 27 spaced from each other, and also are available to be contacted by a rear closure plate 35 which is preferably rigid, preferably comprising a sheet metal member 35^a and a sheet 35^b of suitable insulating material, preferably secured together as by a cement, and together being shaped to be snugly received within the rib 21, resting upon the upper faces of the portions 10^a, 10^b and 10^c and, according to circumstances, engaging also the upper edges of the strap members 26 and 27. Where the material of the body member 10 is resilient, like the rubber above described, the rigid closure plate 35, coacting with features later mentioned, is preferably utilized to exert a force of compression against those parts of the member 10 that engage its under face, as viewed in Figure 5.

The yieldable material of the portions 10^a, 10^b and 10^c may act yieldingly to hold the members of the pairs of brushes between which they respectively extend far enough apart to insure that they are yieldably pressed away from each other and into engagement with the prongs 11^b and 11^c of the inserted plug, and a preferred manner of achieving this action is to keep the interposed portions of rubber under compression in a vertical direction, as viewed in Figures 5 and 6, preferably by way of the rear closure and pressure plate 35. This latter action has the

effect of causing the portions 10^a, 10^b and 10^c to expand laterally and thus to exert a yielding and resilient pressure against the brushes. Preferably, these portions 10^a, 10^b and 10^c are hollowed out from the rear face thereof, illustratively by molding recesses 10^d, 10^e and 10^f, particularly where the rubber, as in the preferred embodiment, is compounded to have appropriate rigidity to resist undue warping or bending of the body member 10 as a whole in which case the resiliency of the rubber is somewhat less; however, by recessing these interposed portions 10^a, 10^b, 10^c, as just pointed out, the latter provide smaller masses of rubber between the members of each pair of brushes, a feature which permits the resiliency of the rubber to act as above described when under compression but also permits of a resilient yielding of the wall-like interposed portions as a whole.

Such resilient yielding actions as these take place as the prongs of the plug are inserted and persist after the prongs have been driven home in their respective apertures, thereby achieving not only a lasting and tight electrical engagement between respective brushes and prongs but also a secure frictional mechanical gripping on the prongs. Where the prongs are apertured to cooperate with protrusions on the brushes themselves, the pressure of the interposed rubber parts acts also yieldingly to force and hold these protrusions in the respective prong apertures.

The closure and pressure plate 35 is held in compressing or pressure-applying relationship by any suitable means, preferably and illustratively by a screw 37, preferably having a relatively large head that rests against the area D (Figure 1) of the front face 12 and that passes through a suitable aperture molded or formed in the body member 10 preferably coincident with the axis XX, whence (see Figures 4 and 5) the threaded end of the screw 37 is threaded into the sheet metal member 35^a of the back plate 35, the plate member 35^a being suitably drawn or given a tube-like shape to provide adequate threads for engagement with the threads of the screw 37.

When the screw 37 is appropriately tightened up, the material of the body member 10 is correspondingly compressed and the generally central portion thereof, underlying the area D of Figure 1 and generally indicated in Figure 5 at 10^e expands somewhat laterally and tends to narrow up the apertures A² and C², thus causing the walls of the latter with the respective contact brushes therein to exert a yielding gripping upon the plug prongs respectively inserted therein; the same would be true were the apertures B¹ and B² aligned along a radius through the axis of the screw 37, as are the apertures C¹, C² and A¹, A², but I prefer the arrangement of Figures 1 and 3 for by the parallel alinement of the apertures of the several pairs I am enabled to use plug type connectors where the cord conductor emerges radially from the cap, as in my co-pending application Serial No. 140,100, matured into Patent No. 2,112,752, thereby to prevent the radially emerging cord of one plug to interfere mechanically with an adjacent plug. However, with the arrangement of Figure 3, the radial resilient expansion of the material of the portion 10^e may be made to effect an appropriate resilient restriction of the apertures B¹, B², and this I may achieve, viewing Figure 3, by causing such action to effect a general compression in an up and down direction, as viewed in Figure 3, of the portion 10^b between the apertures B¹, B², thereby effecting

a yieldable bulging thereof in a direction into these respective apertures.

I may also, and preferably do, provide somewhat irregularly shaped portions of the material of the body member 10 adjacent the inside wall or face of the peripheral rib 21 (Figures 3 and 6), as at 38, 39 and 40 of a height above the rear face 20 to fall substantially in the plane of the faces of the portions 10^a, 10^b and 10^c, thus to provide pressure transmitting portions adjacent the rib 21 for coaction with the rear closure and pressure plate 35; these portions 38, 39 and 40 may be proportioned to have areas small in comparison to the area of the face 20 (Figure 6) and it is against these peripherally distributed small areas that the pressure plate 35 engages to transmit to the compressible material underneath these areas a force of compression which, because of the small areas is appropriately concentrated and hence not dissipated throughout comparatively much larger areas.

Accordingly, the pressure thus applied may compress those portions of the material to one side of the apertures A¹, B¹, B² and C¹, effecting a transverse or lateral expansion of the material into these apertures to coact with the opposed walls of the latter, also compressed, in restricting these elongated apertures yieldingly and thus causing these wall portions to exert a resilient pressure against the prongs of the inserted plugs in a direction to press the prongs against their respective brushes and also mechanically to effect a gripping of the inserted prongs. These compressible portions of the main body member 10 may be recessed from the rear face 20, as at 38^a, 39^a and 40^a (Figures 3, 4, 5 and 6), if desired, to lessen the thickness or mass of rubber to be compressed, as just stated, and thus to lessen the intensity of pressure required, or to lend an easier physical bendability of the rubber portions as a whole, but yieldably, under the applied pressure.

It is preferably by such features of construction that, where the above member 10 is made of a resilient material, I achieve the coaction of the resiliency of the material of the body member 10 with the prong-receiving recesses or the brushes therein or the inserted plug prongs, and dependable mechanical and electrical interengagement of the conductive parts is dependably assured. With such features, a springiness of the sheet metal of the parts 26, 27 (Figures 7 and 8) may, if desired, be made to coact, for the brushes themselves may resiliently flex or may physically move slightly under the resiliency of the strap members 26 or 27 from which they depend, or both.

The members 26 and 27 rest with their bottom edges, as viewed in Figures 7 and 8, against the rear face 20 (see Figures 3 and 6), with the several brushes thereof projecting downwardly from that face into their respective prong-receiving apertures. The configuration of the strap members 26 and 27 is, as is better shown in Figure 3, such that appropriate portions thereof have bends to pass into appropriate relationship to the portions 10^a, 10^b and 10^c which project beyond the face 20 (Figures 3 and 6) appropriate slots or passageways, as indicated at P, being provided to receive appropriate portions of the parts 26 and 27 and so interrelated that the two members are assembled simply by setting them into position against the rear face 20, the various parts of the conductive members and of the body member 10 coacting to prevent relative movement therebetween and between either of them and the

main body member 10, the rear closure plate 35 (see Figures 2, 4 and 5) preventing movement of these inserted parts in disassembling direction. Also, as is seen from Figure 3, the conductive members 26, 27 are shaped to follow the grouping of the plug areas A, B and C, being, in the illustrative embodiment, generally concentric with one another about the axis XX, the one being, moreover, within the other, being in general of lesser radius, and thus compactness of construction achieved. Also, it will be noted that I am enabled to avoid having to cause one conductive part insulatingly to cross the other.

As is better shown in Figures 3 and 6, there is upstanding from the rear face 20 and of the same height as the parts 10^a, 10^b, 10^c, etc., a barrier which, as viewed in Figure 6, is somewhat like an inverted T having a barrier portion 42 that passes through the axis XX and terminates at an appropriate point spaced from the conductor-channel 22, having a central enlargement 43 to accommodate the hole 44 for the screw 37, and also for another purpose about to be described; there is also the barrier portion 45 which extends from the apertures C² and A² to join the barrier 42 and it is along the barrier 55 that a part of the strap member 27 (see Figure 3) extends. But the U-shaped end part of the member 27 (Figures 3 and 8) fits around one end of the barrier 45 and thus positions the conductor-engaging and connecting member 29 with its concave edge up against the barrier 42, 43, the arcuate enlargement 43 taking into the convexity of the member 29. Thus, also the two slots SS in the member 29 are substantially aligned along the barrier 42.

In generally similar manner the conductor-engaging or connecting member 28 of the device 26 becomes positioned to the other side of the barrier 42, its concavity being mated with the convexity of the enlargement 43 of the barrier.

Accordingly, the bared conductor ends 24, 25 (Figures 2, 3 and 5) of the flexible cord conductor 23, with the latter resting in the channel 22 and with the barrier 42 separating the individual insulated conductors thereof, may now be interleaved with the connector plates 28 and 29, respectively, by seating them in the slots of the upstanding or upwardly bent end portions, as is better shown in Figure 3, the bared conductors thus becoming interleaved with their respective connector plates.

The rear closure and cover plate 35 may now be put in place and the screw 37 tightened up, cover plate 35 being preferably shaped to be snugly received within the rib 21 (see Figures 2, 4 and 5) and having a stem-like extension 35^c (Figures 2 and 4) which extends into the channel 22 and thus closes the latter with the conductor 23 therein.

Tightening up of the screw completes the assembly and where the body member 10 is made of a yieldable or resilient material, such as the rubber above-mentioned, its various parts are put under compression. In so far as the resultant yieldable compression of certain of the rubber parts coacts with the brushes and plug prongs, a preferred manner of achieving that coaction has already been described above. But the pressure plate 35 (Figure 5) coacts with the now compressed rubber portion 10^a to substantially straighten or flatten out the interleaved conductor and connecting plate elements 24-28 and 25-29, pressing each conductor into engagement with its connector plate and that throughout a

relatively large area, and at the same time effects a continuous gripping action on the parts, to effect a dependable mechanical anchorage; but the action of the walls of the slots S upon the bared conductors is also a snubbing action upon the latter and thus greater security of anchorage is achieved.

At the same time the channel 22 through which the flexible cord conductor 23 enters the rear recess now closed by the closure member 35 becomes resiliently restricted, its resilient walls being pressed toward the extension portion 35^c of the pressure plate and thus clamping the conductor 23 as a whole securely in position. Thereby pulling out of the conductor under ordinary strains of usage, as well as fraying of the insulating covering, braiding, or the like, is dependably prevented.

For simplicity of illustration, the various bendable or compressible parts are shown in undeformed or undistorted condition.

The body member 10 lends itself to molding out of suitable moldable materials and the metal parts have structural features conducive to low cost of manufacture. Assembly is an exceedingly simple matter and may be carried on at great speed. The user of the device in turn finds that the application of insulated conductors to it is a simple operation and likewise may be speedily effected and, moreover, with great security of mechanical and electrical connection. Various actions and coactions may, moreover, be effectively achieved and maintained over long periods of time since the follow-up action of the resilient characteristic of the rubber assures the continued application of pressure to the various parts and thus the desired or intended actions are long lasting.

Furthermore, the device is compact, is particularly adaptable for table or floor use, is neat and symmetrical in appearance, and the resilient characteristic of the material of the body member 10 insures against marring or damaging of polished surfaces of furniture, floors, or the like. Also, the device will be seen to carry out the various objects above set forth, embodies many advantages, and will be seen to be well adapted to meet the varying conditions of hard practical use.

This application is a continuation in part of my co-pending applications Serial Nos. 140,099 and 140,100, filed May 1, 1937, matured into Patents Nos. 2,112,753 and 2,112,752, respectively; subject matter common to these two applications and my present application is claimed in the said co-pending applications.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth, or shown in the accompanying drawings, to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A plug receptacle comprising two parts at least one of which is of resilient insulating material, said resilient part having a plurality of pairs of recesses for the reception, respectively, of pairs of plug prongs, two conductive parts each provided with as many brushes as there are pairs of plug recesses, said conductive parts having re-

spective configurations to extend along said two parts to present the respective pairs of brushes thereof into the respective pairs of prong recesses, each of said two conductive parts having in electrical connection therewith a plate-like conductor-engaging member, a conductor extending into engagement with each of said conductor-engaging members, and means for holding said two parts together with the resilient material under sufficient compression to clamp said conductors against their respective engaging members and to constrict the prong-receiving recesses having the respective brushes therein for thereby effecting a yielding gripping of each brush with its associated inserted prong between the opposed walls of its recess.

2. A construction as claimed in claim 1 in which said part of resilient material is provided with recesses adjacent at least certain of the prong-receiving recesses thereby to provide relatively thin and more easily yieldable wall thicknesses adjacent said certain prong-receiving recesses for reaction under the compression of said part of yieldable material.

3. A construction as claimed in claim 1 in which said yieldable part is provided at its rear face with a recess of substantial expanse, said two conductive members and said conductor-engaging members being received in said rear recess, the other of said two parts closing over said rear recess.

4. A construction as claimed in claim 1 in which said pairs of prong-receiving recesses are grouped about a single axis in said part of yieldable material and said two conductive members are given respective configurations to follow said grouping about said axis, one of said conductive members being of generally lesser radius than the other.

5. A construction as claimed in claim 1 in which said pairs of prong-receiving recesses are grouped about a single axis in said part of yieldable material and said two conductive members are given respective configurations to follow said grouping about said axis, one of said conductive members being of generally lesser radius than the other and said conductor-engaging members being positioned adjacent said axis.

6. A construction as claimed in claim 1 in which said pairs of prong-receiving recesses are grouped about a single axis in said part of yieldable material and said two conductive members are given respective configurations to follow said grouping about said axis, one of said conductive members being of generally lesser radius than the other and in which the means for holding said two parts together to effect compression of said part of yieldable material comprises means acting along said axis.

7. A construction as claimed in claim 1 in which said pairs of prong-receiving recesses are grouped about a single axis in said part of yieldable material and said two conductive members are given respective configurations to follow said grouping about said axis, one of said conductive members being of generally lesser radius than the other and said conductor-engaging members being positioned adjacent said axis and in which the means for holding said two parts together with said resilient material under compression comprises means acting along said axis.

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