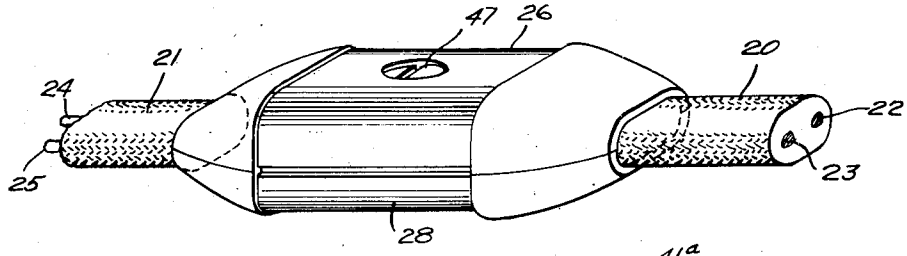
March 29, 1938. C. W. ABBOTT 2,112,753

ELECTRICAL CONNECTING DEVICE

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Fig. 1.



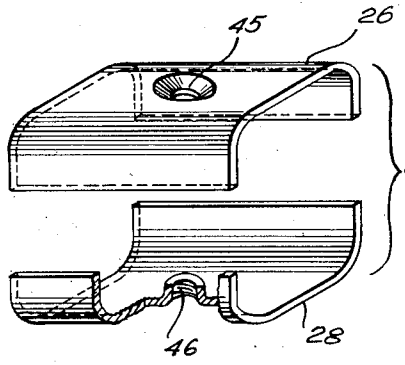


Fig. 2

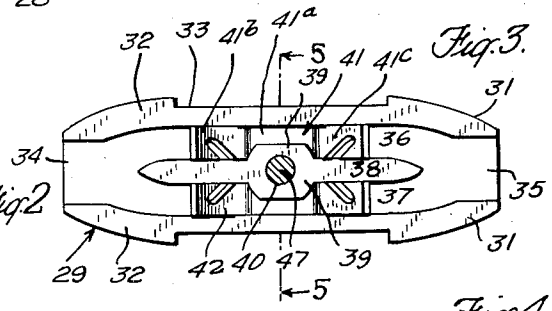


Fig. 3.

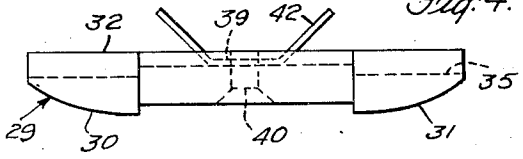
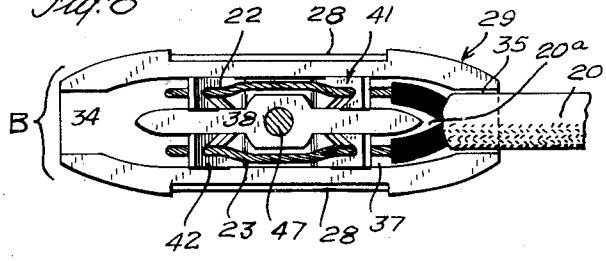


Fig. 4.

Fig. 8



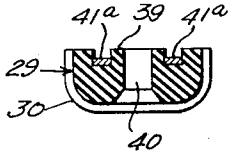


Fig. 5.

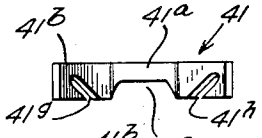


Fig. 6.

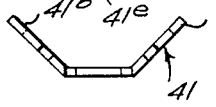


Fig. 7.

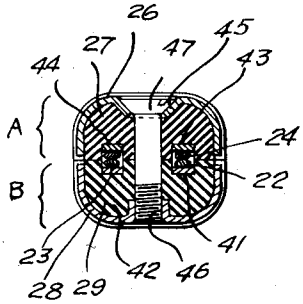


Fig. 9.

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Fig. 10.

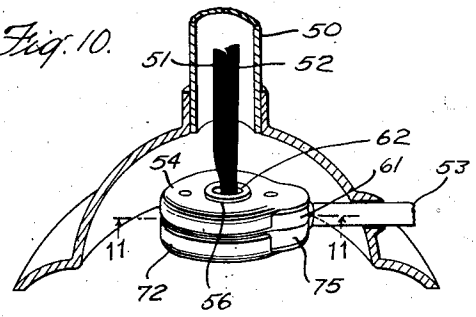


Fig. 12.

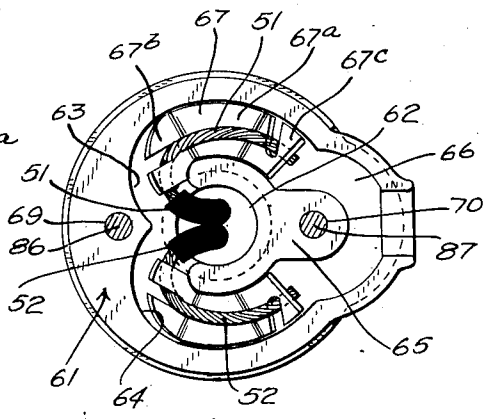
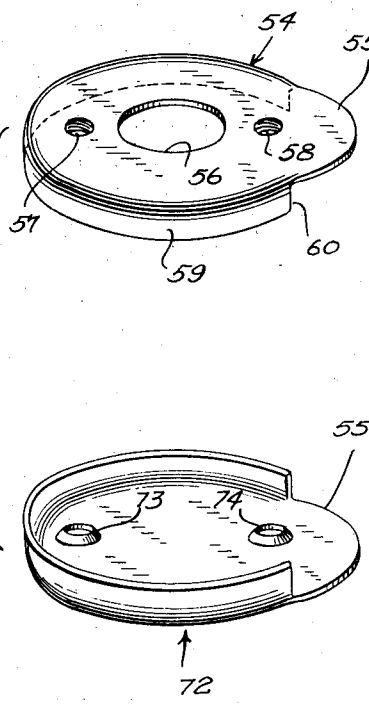


Fig. 14.



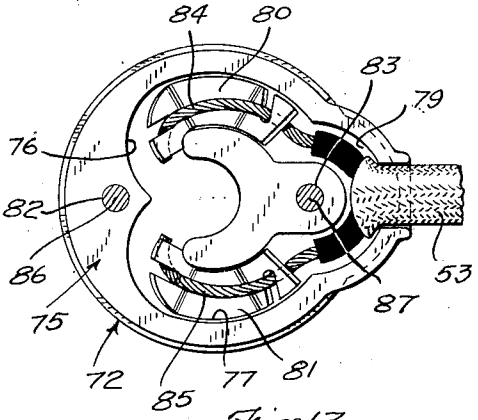


Fig. 13.

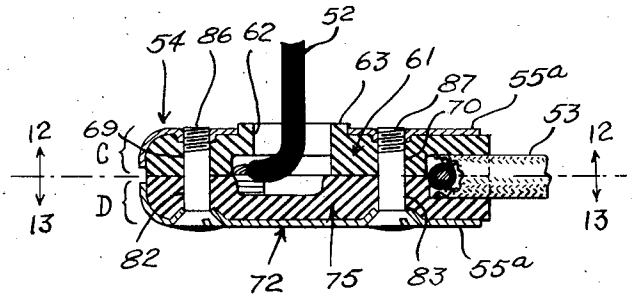


Fig. 11

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UNITED STATES PATENT OFFICE

2,112,753

ELECTRICAL CONNECTING DEVICE

Charles W. Abbott, Larchmont, N. Y.

Application May 1, 1937, Serial No. 140,099

19 Claims. (Cl. 173—268)

This invention relates to electrical connecting devices and more particularly to devices for connecting together multiple insulated conductor structure such as flexible cord conductors of the kind, for example, used in connecting electrical appliances to household power circuits.

One of the objects of this invention is to provide a simple, practical and inexpensive connector construction. Another object is to provide a connecting device that is small, compact, neat in appearance, and non-breakable. Another object is to provide a connecting device for conductors of the above-mentioned type which will be capable of simplicity and ease of manipulation or operation, which will be tamper-proof, and which will give dependable and efficient action and results.

Another object is to provide a connector device of the above-mentioned character that will be dependably safe, free from possibilities of giving rise to hazards of fire or to dangers or injury to body and limb, and capable of dependably maintaining, in a simple and lasting manner, low resistance connection or connections between the electrical conductors to be connected together. Another object is to provide a connecting device of the above-mentioned character in which the metallic conductors are interconnected in a manner free from damaging, abrading, breaking, or otherwise injuring the metallic conductors themselves, and thus to avoid giving rise to high resistance junctions and their attendant defects and hazards. Another object is to provide conductor-engaging and clamping means capable of long-lasting if not permanent clamping action under the usual varied and sometimes abusive conditions of practical use. Another object is to provide a conductor connector or anchorage with simple, inexpensive and durable means for maintaining the anchorage or connection intact. Another object is to provide a connecting device of the above-mentioned character that will be capable of ready, convenient, and easy application in practical use. 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 are shown several of various possible embodiments of my invention,

Figure 1 is a perspective view showing one form of connecting device;

Figure 2 is an exploded perspective of two casing-like or outer parts of the device;

Figures 3 and 4 are respectively a plan view and a front elevation of one of two sub-assemblies of the device of Figure 1;

Figure 5 is a sectional view along the line 5—5 of Figure 3;

Figures 6 and 7 are respectively a plan view and a front elevation of one of several contact devices, shown detached from the sub-assembly of Figures 3, 4 and 5;

Figure 8 is a plan view of one of the two half parts of the connector device of Figure 1 showing a two-conductor cord structure related thereto;

Figure 9 is a transverse sectional view as seen along the line 9—9 of Figure 1;

Figure 10 is a perspective view of a modified form of device;

Figure 11 is a central vertical sectional view, as seen along the line 11—11 of Figure 10;

Figure 12 is a bottom plan view, as seen along the line 12—12 of Figure 11;

Figure 13 is a plan view, as seen along the line 13—13 of Figure 11, and

Figure 14 is an exploded perspective of two casing-like counterparts.

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

Referring first to Figure 1, let it be assumed that a flexible insulated conductor such as a lamp cord, for example, indicated at 20 and of any suitable or usual construction requires an extension as by the cord 21 which may be of a construction like the cord 20; the cords 20 and 21, having therein by way of illustration conductors 22—23 and 24—25, respectively, are to be joined together and the electrical conductors electrically connected to extend the circuit. The conductors are usually of stranded copper wire. In Figure 1 the two insulated conductor structures 20 and 21 are shown connected together by way of an illustrative form of my connecting device.

The connecting device is preferably made up of two substantially similar halves indicated at A and B in Figure 9 and in outer contour the two halves are generally semi-cylindrical so that when joined together as they appear in Figures 1 and 9, the connecting device approximates a circular cross-section or, if desired, it may approximate an oval cross-section like the cross-section of flexible cord conductors as now in use.

Furthermore, the parts of the connecting devices are, because of certain features of my invention, capable of embodiment in such small form that the cross-section, like that of Figure 9, for example, is approximately only twice the cross-section of the flexible cord conductor with which it is to be associated.

Preferably each half portion A, B (Figure 9) comprises two parts; thus portion A comprises an outer casing part or shell **26**, preferably of sheet metal, and an inner part **27** later described, and half portion B comprises an outer shell **28** comparable to shell **26** and an inner part **29** which is preferably identical to the part **27**. Of parts **27** and **29**, therefore, it will suffice to describe in detail only one of them, for example, part **29**.

Referring, then, to Figures 3, 4 and 5, in which part **29** is shown, the latter is made of a suitable insulating material and preferably of a material having a certain amount of resiliency, such as vulcanized rubber, preferably compounded to have suitable flexibility and resiliency after vulcanization. It is accordingly preferably molded and vulcanized in the form shown in these figures.

Thus, it has a transverse cross-section that is generally semi-circular (see Figure 5), having, however, end portions **30**, **31** (Figures 3 and 4) that are curved or tapered off toward the plane of the flat face **32** and having an intermediate external groove **33** preferably of substantial extent in the direction of the axis of the half cylinder which the part **29** approximates.

The part **29** is shaped or molded to provide, in the otherwise flat face **32**, end channels **34** and **35** which, in cross-section, preferably approximate half the cross-section of the insulated conductor, such as cord **20** or **21** of Figure 1, and which are joined together by two narrow channels **36** and **37** which are formed or separated from each other by a central barrier **38** that has a central enlargement **39**, as is better shown in Figure 3; the enlargement **39**, generally rectangular when viewed in plan, as in Figure 3, is positioned substantially centrally of the face **32** and through its midpoint and hence through the midpoint of the device **29** is a hole **40** preferably enlarged or countersunk at its lower end (Figures 4 and 5). The part **29**, of which the part **27** is preferably a duplication, thus to simplify manufacture, will thus be seen to be of a configuration lending itself to ease and inexpensiveness of manufacture. When made of rubber of the character above described, it has flexibility and resiliency.

In the two channels **36**, **37** are positioned contact members **41** and **42**, made preferably of a suitable springy sheet metal, such as phosphor bronze. They are of preferably identical conformation, as are the two contact members **43** and **44** that are related to the part **27** (Figure 9).

In Figures 6 and 7 one of these contact members, such as member **41**, is shown. It has a central or base portion **41ª** and upwardly bent wire-engaging portions **41ᵇ**, **41ᶜ**, preferably and illustratively hook-shaped, as is better shown in Figure 6. The central base portion **41ª** is cut out as at **41ᵉ** and is thus given a shape to fit it snugly in one of the channels, such as channel **36** (Figure 3) to one side of the central barrier member **38**, the laterally projecting portion of the part **39** taking into the cut-out or recessed portion **41ᵉ** of the contact member, thereby to interlock the latter with the part **29** against movement of the contact member lengthwise of its channel, the base portion **41ª** resting against the bottom of the channel **36**. If desired, the contact member may be additionally secured to the member **29** by any suitable means but by appropriately proportioning the two parts, the resiliency of the part **29** may be made sufficient to grip the contact member along its edges to hold it in place. Also, I may, if desired, interpose, before inserting the contact member in its channel, a suitable cement, preferably a cement of the type employed to bond rubber and metals, between the base portion **41ª** and the bottom of the channel **36** to secure the contact member in place.

As shown in Figure 4, the conductor-engaging and illustratively hook-shaped parts **41ᵇ** and **41ᶜ** project upwardly out of the channel and preferably beyond the plane of the face **32**, and the part **29** and also its companion part **27** are each thus provided with two pairs of resilient upwardly projecting conductor-engaging parts, the two pairs in each part being separated electrically and mechanically by the central barrier **38**.

The intermediate or central external grooves **33** of the two parts **27** and **29** are of a length slightly in excess of the length of the alined contact members **41**, **42**, etc., and are of a depth preferably somewhat in excess of the thickness of the shells **26** and **28** (Figure 9), respectively received in the grooves of the parts **27** and **29**. As above noted, members **26** and **28** are of a suitable rigid material, preferably sheet metal, and their respective shapes and configurations are better shown in Figures 9 and 2 from which it will be seen that they are internally curved or shaped to correspond with the external curvature or shape of the grooves **33** in the two parts **27** and **29**, and as appears from Figure 1, they are of the same length in an axial direction as the length of these grooves.

Casing part or shell **26** is provided with a centrally positioned hole **45**, preferably countersunk as by pressing the peripheral metal downwardly, as better appears in Figure 9, and when casing part **26** is assembled to the rubber part **27**, preferably employing a suitable cement or other suitable means to aid in holding the two parts together, hole **45** is in registry with the hole **40** of the member **27**.

In a similar manner, the casing part **28** is provided with a central hole **46** that registers with the outer end of hole **40** in the member **29** when the two parts are interfitted and likewise preferably secured together as by a cement; hole **46** is threaded as shown in Figure 2 and for that purpose the peripheral metal is preferably pressed or drawn into a short tube-like form.

In Figure 8 is shown one of the half portions, such as the portion B above-mentioned, but in plan view, and showing how the wires or conductors of the cord conductor, such as conductor **20** of Figure 1, with the end of the latter, are related thereto. Thus, cord conductor **20** has the insulation removed from appropriate end lengths of the wires or conductors, usually stranded, **22** and **23**. The cord conductor **20**, which may have its insulation parted or separated as indicated at **20ª** in Figure 8, if desired, is then laid into the open-ended chanel **35** and its two bare conductors **22** and **23** are made to overlie the channels **36** and **37**, respectively, and interengaged, respectively, with the contact members **41**, **42**, preferably by causing each bare conductor to engage each of the hook-shaped parts **41ᵇ** and **41ᶜ** of its respective contact member but in the manner shown in Figure 8. Thereby, because these parts

41b and 41c are upwardly bent or somewhat upstanding, as in Figure 4, two end portions of the bared wire are made to underlie these upstanding conductor-engaging parts and an intermediate portion of the bare conductor is made to overlie the base portion 41a.

In a similar manner the bared wires of the other conductor, such as the member 21 of Figure 1, are related to the contact parts 43 and 44 of the half portion A of the connecting device, but by way of the end channel 34 in the part 27. The two half portions may now be assembled by placing the faces 32 thereof toward and against each other, whence a clamping screw 47 (Figures 9 and 1) is passed through the alined holes 40 and 45 in the half portion A, through the hole 40 in the part 29 of the portion B and threaded into the threaded hole 46 of the casing part 28, as shown in Figure 9.

In placing the two half portions with the respective conductors 20 and 21 related thereto together, contact members 41 and 42 of one half portion B (Figure 9) become juxtaposed respectively to contact portions 43 and 44 of the other half portion A, and as the two halves are drawn toward each other, the upstanding end conductor-engaging portions (Figures 4 and 7) of the contact members yield, and the contact members approach virtually a straightened-out or flattened condition. But bare conductors 22 and 24 (Figure 9) have portions of each interposed between the contact members 41 and 43 and in like manner bare conductors 23 and 25 have portions thereof that are interposed between the contact members 42 and 44. As the screw 47 is tightened up, these bare portions are tightly gripped and clamped as indicated in Figure 9, insuring a dependable and secure mechanical and electrical interconnection therebetween and thus dependably continuing the circuit from one insulated conductor, such as conductor 20 of Figure 1, to the other, such as conductor 21.

In this clamping action, and particularly where one or both of the parts 27 and 29 are made of resilient or yieldable material like rubber, the yieldable material becomes somewhat compressed, it being noted that, as is well shown in Figure 9, the shells or casing parts 26 and 28, are dimensioned so that the juxtaposed longitudinal edges thereof fall short of coming into contact with each other and thus give adequate range of movement of the casing parts 26 and 28 toward each other under the action of the screw 47 to insure not only the application of adequate clamping pressure upon the bare conductors but also a sufficient range of compression of the yieldable and elastic rubber; the latter continues to tend to expand or to return to normal configuration, and thus maintains the clamping pressure upon the clamped conductors and also maintains a continued and follow-up straining of the clamping screw 47 and its associated parts, particularly parts 26 and 28, so that unthreading or loosening up of the screw 47 is dependably guarded against.

Preferably, also, the slots of the contact members and into which slots the conductors are set as above described are so related that when the two half portions of the device are brought together, as above described, the two wire or conductor ends that are to be electrically interconnected become superimposed one upon the other; thus, in Figure 9, conductor 24 may overlie conductor 22 and conductor 25 may overlie conductor 23. This is preferable where the conductors are stranded in that thereby the clamping pressure flattens out the stranded conductors and virtually intermeshes the various strands thereof, thus bringing about a direct and large-area surface contact, contributing towa l low resistance interconnection.

Preferably, also, the above-described clamping action is supplemented by a snubbing action on the part of each of the upwardly projecting yieldable portions of the various contact members, such as 41b or 41c (Figures 4, 6 and 7). It will be noted that, as the bare conductor is related to the slots of the upstanding portions, such as the slots 41g and 41h (Figure 6), the slots present openings into which the conductor may be inserted that are of a width commensurate with the thickness of the conductor; however, as the two half parts are brought together as by the action of the screw 47 and related parts, thus straightening or flattening out the various contact members, the projecting portion of the contact member is made, as it is gradually bent toward straightened condition, to gradually diminish the effective width of the slot in the direction of the length of the conductor, thereby snubbing the latter and achieving a dependable mechanical anchorage. Also, and preferably, I employ two such yieldable upstanding conductor-engaging portions for each contact member (see Figures 4 and 7) and the action of the two, as they are bent toward straightened condition, may also be accompanied by a straightening out or tensioning of the part of the conductor that intervenes the two slots, thus contributing toward uniformity of distribution of holding action on the part of the snubbing devices and the intermediate clamping parts, so that these several snubbing and clamping actions are dependably maintained effective to contribute toward the ultimate anchorage of the conductor or conductors.

Preferably, also, the depth of these slots is so proportioned to the enlargement 39 of the barrier 38 (Figure 3) that tensioning of the intermediate portion of the bare conductor when under strain tends to cause the conductor to bottom in the slot. Also, and preferably, the inclination of the slot in at least one of the upstanding conductor-engaging parts, for example, the right-hand part of the contact members 41 and 42 of Figure 8, is in a direction to cause any initial or possible slippage of the conductor to effect bottoming of the latter in the slot and thus to aid in further anchoring the conductor.

The assembly of the two half portions will be seen to be a simple operation. As above noted, one half portion, like the part B of Figure 8, has related to it the cord conductor 20 which rests in the channel 35 thereof at one end, that portion of the cord conductor being taken into the corresponding open channel 25 of the other half portion A, the cord conductor thus acting, due to its preferred interfitting with these two open channels, to aline the two half portions and hold them against relative rotary displacement about the axis of the screw 47.

Also, it will be seen that the various channels, such as the channels 34, 35, 36 and 37 (Figure 3) of each of the two parts 27 and 29, open along their lengths in the face 32, become, when the parts 27 and 29 are placed face to face and drawn together, as above described, registered with each other, respectively, and closed. In one of these closed channels, formed by the registering channels 36, 36 of the two parts, two contact members 41 and 43 with their interposed bare conductors are snugly and, in fact, tightly enclosed and en-

cased and thus dependably isolated from the contact members 42 and 44 with their interposed conductors which in turn are in a similar manner dependably enclosed in the now closed channel made up of the registering channels 37, 37. The lengthwise expanse of the casing parts 26 and 28 is commensurate with the lengths of these now closed channels and thus closure thereof throughout their lengths is insured as well as uniform distribution of clamping pressure throughout their lengths and the lengths of the contact members. The open ended channels 34 and 34 of the two parts 27 and 29 likewise become registered and form an open ended and otherwise completely enclosed channel for accommodating the cord conductor 21, the cord 20 being in a similar manner accommodated in the open ended but otherwise closed channel formed by the channels 35 and 35 in the other end of the device. If desired the tapered end portions 30 and 31 may be proportioned yieldingly to grip the outer coverings or the unbroken insulation of the cord conductors and make a neat mechanical junction therewith.

Also, it will be noted that the parts 27 and 29, particularly where both are made of yieldable or semi-hard rubber, achieve under the compression brought about by the clamping screw 47 and the casing parts 26 and 28, a contraction or deformation of the above-mentioned closed channels, an action that aids not only in insuring good mechanical and electrical contact between the various engaged or contacting parts on each side of the central barrier 38 but also in maintaining such a dependable gripping of these parts that each multiple insulated conductor structure is dependably anchored mechanically.

The various features of my invention may be carried out in practice in other forms or embodiments and in Figures 10–14 one such other form is shown by way of illustration. Referring first to Figure 10, I have there shown a connecting device particularly adapted to interconnect conductors, the respective runs of which make an angle to one another such as a 90° angle. Such a condition is frequently met with in certain types of electrical appliances, particularly electric lamps with certain types of standards or bases; for example, the construction may have a usually upstanding tubular member 50 through which insulated conductors, frequently in the form of insulated single wire conductor, as at 51 and 52, extend upwardly into connection with the lamp socket and to which, usually inside or under a hollow base, a flexible cord conductor 53 is to be connected. In Figure 10 the connecting device for effecting such an interconnection appears in perspective and in Figure 11 it is shown in central vertical section. In the latter figure it will be seen that the device preferably comprises two half portions C and D.

Half portion C comprises an outer casing part 54 made of a rigid material, such as sheet metal, being shaped as is better shown in Figure 14. It is constructed to be easily stamped, having a flat disk-like portion 55 provided with a central hole 56 and with screw threaded holes 57 and 58, preferably alined on a diameter, screw holes being preferably formed like screw hole 46 of Figure 2. It has a depending peripheral flange 59 interrupted, however, as at 60, flat portion 55 being extended to the right, as at 55^a, throughout a peripheral extent equivalent to the gap 60 in the flange 59. In this casing part 54 is received a part 61 preferably made of rubber of the composition noted above in connection with the parts 27 and 29 of Figure 9, part 61 being preferably cemented to the casing part 54.

Rubber part 61 is shaped as shown in Figures 11 and 12, having a central hole 62 preferably provided with a bushing-like extension 63 (Figure 11) that is received in the hole 56 of the part 54, so that the insulated conductors 51, 52 may be brought therethrough, as shown in Figures 11 and 12, and respectively led into the curved or arcuate channels 63 and 64, which throughout their lengths are open in the face of the part 61 and shaped substantially as better shown in Figure 12, a bifurcated barrier 65 separating these open channels from each other and from the hole 62 excepting for an interruption in the barrier, as shown, to lead the conductors thereinto. At their right-hand ends the channels 63, 64 merge into a larger channel 66 which is formed in an extension of the part 61 that underlies the extension 55^a of the part 55.

In the channels 63 and 64 are set, and preferably secured in any suitable manner, as by a rubber cement, conductor-engaging or contact devices 67 and 68, respectively, being shaped as shown in Figure 12 and generally similar to the contact members of the device of Figures 1–9, in that each has a base portion, such as portion 67^a, and upwardly bent end parts, such as 67^b and 67^c, slotted or hook-shaped, as shown, for engagement with the bared conductors. The latter are interengaged therewith, through the slots or hook portions, as clearly appears from Figure 12. Furthermore, the contact devices, again preferably made of a springy metal, are shaped to interlock with the walls of their respective channels so as to preclude lengthwise relative movement therebetween; specifically, both channels and sheet metal contact members partake of similar curvatures, as shown, and these curvatures are sufficient to achieve this interlocking action. Part 61 also has holes 69 and 70 which register with the threaded holes 57 and 58, respectively, in the part 54.

The half portion D, shown in plan in Figure 13, comprises a casing-like counterpart 72 (Figure 14) which is generally similar to the part 54 excepting that it does not have the central hole 56 and excepting that its two holes 73 and 74 are countersunk to receive the heads of screws, as later described. In the casing part 72 is received a member 75 also preferably made of resilient or semi-hard rubber, being preferably secured thereto as by a cement. Member 75 is shaped and constructed to be substantially similar to the member 61 of Figure 12 excepting that it lacks the central hole 62. It accordingly has curved channels 76 and 77 open in its face and separated by a bifurcated barrier 78, channels 76 and 77 merging at their right-hand ends into a wider channel 79. Channels 76 and 77 have related thereto, in a manner now clear, conductor-engaging contact members 80 and 81, like those above-described. The part 75 has holes 82 and 83 therethrough in registry with the holes 73 and 74 of the casing part 72.

The cord conductor 53, after having its conductors 84 and 85 bared at their respective ends is laid in the open ended channel 79 and the two conductors led to each side of the barrier 78 where they are interengaged, in a manner now clear, with the contact members 80 and 81, as shown. The two half portions C and D, with their respective conductors related thereto, as above described, are now ready to be brought into face to face assembly, as shown in Figure 11,

whence screws 86, 87 are used to draw the two casing parts 52 and 72 together, and to compress the members 61 and 75, the channels in which become closed when the two are brought into face to face engagement. Also, the upwardly bent end portions of the respective conductor-engaging contact members contact with each other and yield under the action of the screws, the contact members virtually flattening out. Thus, contact members 68 and 80 are brought into juxtaposition but with intermediate portions of the conductors or wires 52 and 84 interposed therebetween, and in like manner contact members 67 and 81 become juxtaposed but with intermediate portions of the conductors 51 and 85 interposed therebetween. These respective intermediate portions thus become dependably clamped, the actions that take place being generally similar and analogous to those above described in connection with the construction of Figures 1–9. The flanges of the casing parts 54 and 72 are of such depth that they fall short of engagement with each other even after appropriate compression of the parts 61 and 75 where both of the latter are made of rubber, and thus adequate compression of the rubber may be brought about to achieve fully the actions and advantages which will now be fully clear in view of what is set forth above in connection with the structure of Figures 1–9.

If desired, the opposed extensions 55a of the parts 54 and 72 may contribute toward the clamping action, where the latter is utilized, of the opposed parts 75 and 61 (Figure 11) upon the cord conductor, as by appropriately proportioning the parts. Thus, appropriate resiliency or springiness of sheet metal may be employed or these extensions 55a may be bent inwardly toward each other to cause the uninterrupted covering of the cord conductor 53 to be dependably gripped.

Thus, it will be seen that there has been provided in this invention a construction in which a dependable mechanical and electrical anchorage or connection of conductors is achieved and, moreover, one in which the various objects hereinbefore set forth, together with many thoroughly practical advantages, are successfully attained. The construction is of thoroughly dependable action, may be embodied in small, compact form, is of long-lasting action, is unbreakable, and, moreover, is dependably protective of the conductor structure or structures which enter or leave it. It is thus also well adapted to meet the varying conditions of hard practical use.

In my co-pending application Serial No. 140,100, filed May 1, 1937, I have disclosed an electrical connecting device having certain subject matter in common with the devices disclosed in my present application; it is in my said co-pending application that I make claim to such common subject matter.

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, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. An electrical connection means, comprising, in combination, two clamping parts of rigid material having means for drawing and holding them together, having respectively seated thereagainst two members made of a yieldable insulating material, said members having open channels therein facing toward each other for the reception therein of conductors that are to be connected together, the channels of said two members having seated therein and facing toward each other contact members, and conductors extending into said channels for interconnection, said conductors passing, and being gripped, between said contact members as said drawing means draw said two parts together to compress the yieldable material of said two insulating members seated therein and thereby to constrict said channels and to cause the latter closely to envelope said contact members and interposed conductors.

2. An electrical connection means, comprising, in combination, two clamping parts having respectively seated thereagainst two members made of a resilient insulating material having faces adapted to be brought into contact with each other, said members having a conductor-receiving channel closed by the assembly of said members in said face to face contact, said channel having therein contact means, a conductor extending into said channel and into engagement with said contact means, and means for holding said contact means and conductor in engagement and against movement relative to said two resilient members, said holding means comprising means, for drawing said two clamping parts toward each other to compress said two members and thereby to constrict said closed channel into gripping relation to said contact means and conductor and to clamp said conductor against said contact means.

3. A construction as claimed in claim 2 in which said two clamping parts are concave and together approximate a cylindrical cross-section and in which said two members of resilient material are received within the concavities of said two clamping parts, said channel of said two members being open-ended at the respective ends thereof, said conductor extending through one of said open ends into said channel and into engagement with said contact means, and another conductor extending through the other of said open ends into said channel and into engagement with said contact means, whereby, upon compression of said two resilient insulating members, the constriction of said closed channel effects gripping of both of said conductors and said contact means.

4. A construction as claimed in claim 2 in which said two clamping parts are generally cup-like in shape, at least one of them having an aperture therein, and the member of resilient material seated in the said one clamping part being substantially conformed to the latter and having its channel extended to said aperture, said conductor being brought to said contact means by way of said aperture and said extended channel.

5. A construction as claimed in claim 2 in which said two clamping parts are generally cup-like in shape, with their peripheries respectively juxtaposed, at least one of said cup-like clamping parts having a peripheral recess or aperture and the members of resilient material being respectively conformed thereto and seated therein and having the said channel thereof extended to said aperture, said conductor extending to said contact means by way of said aperture and said extended channel.

6. A construction as claimed in claim 2 in which said two clamping parts are generally cup-like in shape, with their peripheries respectively

juxtaposed, said two clamping parts having opposed peripheral portions cut away to form an aperture and the said resilient members respectively received in said two parts having their channel extended to said aperture, said conductor extending to said contact means by way of said aperture and said extended channel.

7. A construction as claimed in claim 2 in which said two clamping parts have juxtaposed concave end portions presenting an end opening and said two members of resilient material received therein being extended beyond said two clamping parts and out of said end opening, the channel therein being open ended in said extended portions of said two members and said conductor extending to said contact means by way of said open-ended extended portion of said two resilient members.

8. A construction as claimed in claim 2 in which said two clamping parts have juxtaposed concave end portions at both ends thereof, thereby presenting two end openings, said two members of resilient material being extended at both ends out of and beyond said end openings and said channel therein being open ended in said extended portions of said two members.

9. An electrical connection means comprising, in combination, two parts of insulating material shaped to provide, when assembled to each other, two spaced openings for the passage through each of an insulated conductor, the conductors of which are to be electrically connected, an insulated conductor passing through each of said openings and having the conductor thereof bared, thereby presenting inwardly of said two insulating parts two bared conductor ends, said two parts carrying respectively two contact members, said contact members each having conductor-engaging means for temporarily holding a conductor and each of said means having engaged therewith one of said bared conductors, said contact members becoming juxtaposed to each other when said two parts with said conductors respectively held thereto by the respective contact members thereof are assembled to each other, said conductor-engaging means of each contact member being yieldable under pressure, and means for pressing and holding said two insulating parts together with said contact members juxtaposed to each other and to effect yielding of said conductor-engaging means thereof to cause the holding action of the latter to become substantially permanent, and to cause the contact members and said conductors to be clamped into electrical interengagement, whereby the conductors of said two insulated conductors are mechanically and electrically connected.

10. A construction as claimed in claim 9 in which at least one of said two contact members is of sheet metal and has its conductor-engaging means formed by a portion of sheet metal bent out of the plane of the remainder thereof, said portion having a recess therein into which the conductor assembled thereto extends, and being bendable in order to yield under the pressure exerted by said two insulating parts, whereby, upon bending of said sheet metal portion, the conductor is snubbed and additionally anchored as said two parts are drawn together.

11. A construction as claimed in claim 9 in which at least one of said contact members is of sheet metal elongated in the direction of extent of the bared conductor related thereto, and has its conductor-engaging means comprised by a plurality of recesses therein through which the conductor passes and is thereby alternately presented to the two sides of said elongated sheet metal and becomes interleaved therewith and thereby snubbed, as well as clamped against the companion element, under the pressure exerted by said two insulating parts.

12. A construction as claimed in claim 9 in which at least one of said contact members is of sheet metal elongated in the direction of extent of the bared conductor related thereto, and has its conductor-engaging means comprising two end portions bent out of the plane of the intermediate portion thereof, the conductor related thereto overlying said intermediate portion, said end portions having recesses through which the conductor passes to bring other portions thereof to the other side of said contact member, whereby the conductor is snubbed at said end portions of the contact member and at said intermediate portion is clamped against the other of said two contact members.

13. An electrical connection means, comprising, in combination, two clamping parts having respectively seated therein members made of a resilient insulating material having faces adapted to be brought into contact with each other, said members having a conductor-receiving channel closed by the assembly of said members in said face to face contact excepting at spaced portions of said assembled members whereby said closed channel is open ended for the reception of at least two insulated conductors that are to be electrically connected, an insulated conductor extending into said closed channel through each open end thereof and having a portion of the insulation removed at its end so as to bare its conductor, said channel having therein conductor-engaging means spaced from said open end for engaging the bared conductors of said insulated conductors, and means for drawing said two clamping parts toward each other to compress said two members at said spaced portions about and against the insulation of said insulated conductors that extend therebetween, thereby to grip bodily said insulated conductors where they enter said channel.

14. An electrical connection means comprising, in combination, two clamping parts of rigid material having respectively assembled thereto two members made of insulating material, the material of at least one of said members being resilient, said two members having faces adapted to be brought into contact with each other when said clamping parts are assembled together and having a conductor-receiving channel closed by the assembly of said members in said face to face contact, said closed channel being open ended at adjacent ends of said two members for the entry and positioning in said channel of the respective ends of insulated conductors, two insulated conductors having their end portions entered into and positioned in said channel and having their conductors bared at the extreme inner ends thereof, conductor-engaging means spaced from said open end for engaging the bared conductors of said conductors, and means for drawing said clamping parts toward each other to compress said member of resilient material against the other and thereby to contract said channel about and against the insulation of said two insulated conductors that are entered into and positioned in said channel, and thereby clamp and hold the insulation of said insulated conductors against movement outwardly of said open ended channel.

15. An electrical connection means comprising, in combination, two members of insulating material having faces brought into face to face engagement upon assembly of said two members, there being a channel-like recess in the face of at least one of said members, said recess being closed upon assembly of said two members, the structure formed by the assembly of said two members having two spaced open-ended channels connected to said recess, an insulated conductor extending into each of said open-ended channels and having an end portion of its conductor bared and extended into said recess, whereby there are two bared conductors in the latter, one of said two insulating members being made of a resilient material whereby, upon compression thereof, the cross-sectional area of said recess is diminished, conductor-engaging means in said recess yieldable under pressure and having said two bared conductors engaged thereby, and means for holding said two members in assembled relation and with said resilient member under a sufficient compression to diminish the cross-sectional area of said recess sufficiently to exert a continuous pressure upon said conductors and conductor-engaging means whereby said two conductors are electrically and mechanically connected.

16. A construction as claimed in claim 15 in which both of said insulating members are of resilient material and are under compression, said holding means comprising two parts of rigid material each substantially encompassing one of said resilient insulating members, together with means for holding said two encompassing parts against separation and with said two resilient members under compression.

17. An electrical connection means comprising a two-part device for connecting two wire conductors, said means comprising two members having adjacent faces brought into juxtaposition when said two members are assembled, each of said members carrying and exposed at said face thereof a bendable sheet metal contact plate having at least two parts which extend in different planes and at least one of said parts having a slot therein, a conductor extending along the contact plate of one of said members and in the slot thereof whereby one length of said conductor is exposed on one side of said plate and toward the member carrying the latter and another length is exposed on the other side of said plate and toward the other member, a conductor extending along the contact plate in the other of said two members and in the slot thereof whereby one length of said second conductor is exposed on one side of said plate and toward the member carrying the latter and another length is exposed on the other side of said plate, and means for drawing and holding said two members together and with said contact plates thereof juxtaposed to each other and with a force suitable to bend both of said contact plates and clamp the latter with said two conductors interrelated thereto as aforesaid, between said two members.

18. An electrical connection means comprising a two-part device for connecting two wire conductors, said means comprising two members having adjacent faces brought into juxtaposition when said two members are assembled, at least one of said members being made of a resilient insulating material, said members having in said adjacent faces recesses, at least one in each, which are complementary to each other, a connector element in one of said recesses with one of said conductors extending into the recess and into engagement with said element, whereby, upon said one conductor being engaged by said element, the latter and said conductor and the recessed member carrying said element form one part of said device, a sheet metal connector element in the other of said recesses and having a bendable portion and being shaped to have a conductor interleaved therewith and to substantially snub said conductor upon bending of said bendable portion, the other of said conductors extending into said last-mentioned recess and interleaved with said sheet metal connector element, whereby said sheet metal connector element and its associated conductor and the member carrying said element form the other part of said device and upon assembly of said two parts to bring said two faces together and said two recesses in substantial juxtaposition, said two connector elements with their respective conductors become juxtaposed to each other and substantially enclosed in a channel formed by said two complementary recesses, and means operating upon said two members for holding said two parts together with said resilient member under compression sufficient to bend said bendable portion of said sheet metal connector element and to clamp said connector elements and conductors engaged thereby together in said channel, the compression of said resilient member being sufficient to constrict the cross-sectional area of said channel.

19. A construction as claimed in claim 18 in which a wall of one of said recesses and the connector element therein have interengaging portions for anchoring the connector element against movement along the recess in response to a pull on the conductor engaged thereby to supplement the gripping action upon said connector element effected by the constriction of said channel under the compression of said resilient member.

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