March 26, 1940. H. A. DOUGLAS 2,194,824

ELECTRICAL CONNECTION MEANS

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Fig. 1

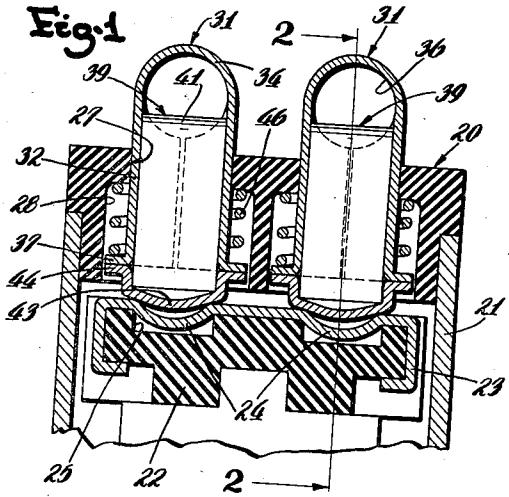


Fig. 2

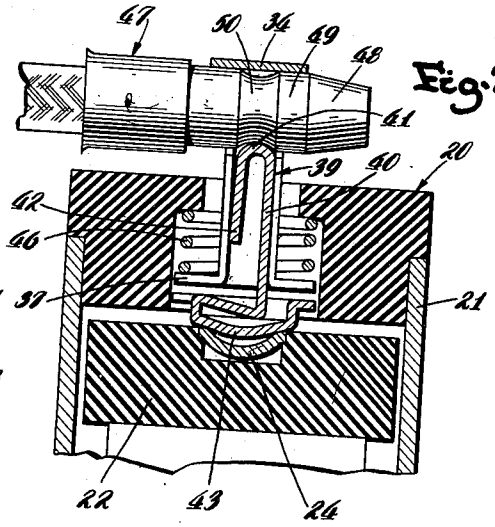


Fig. 3

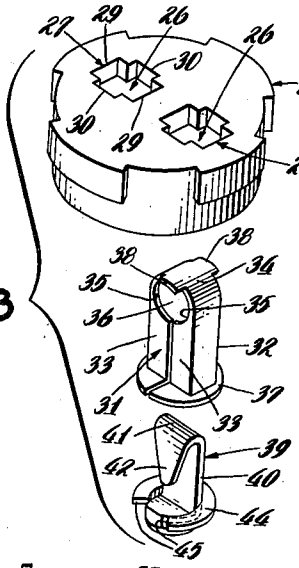


Fig. 5

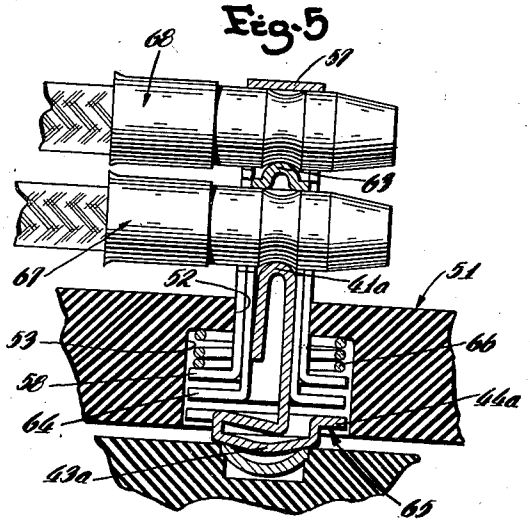
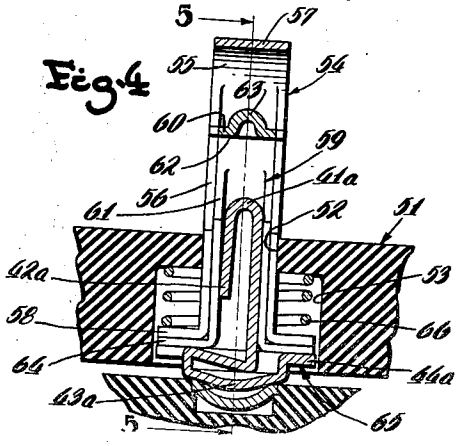


Fig. 4



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March 26, 1940. H. A. DOUGLAS 2,194,824

ELECTRICAL CONNECTION MEANS

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Fig-6

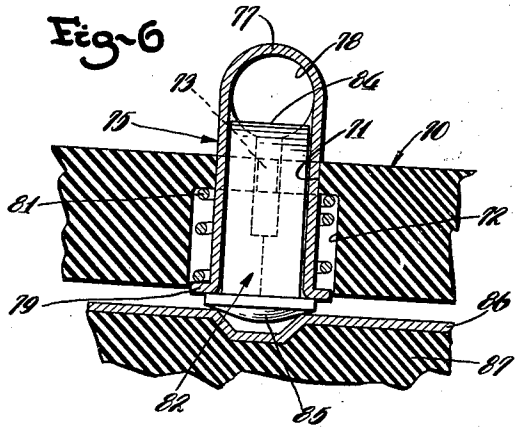


Fig-7

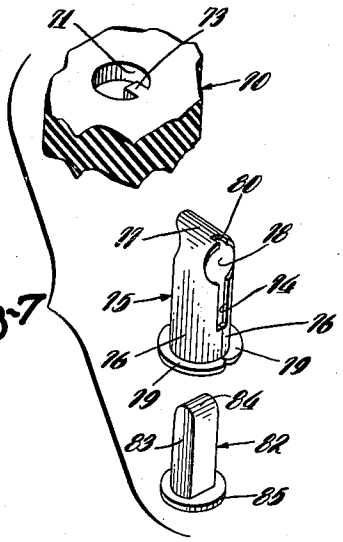


Fig-8

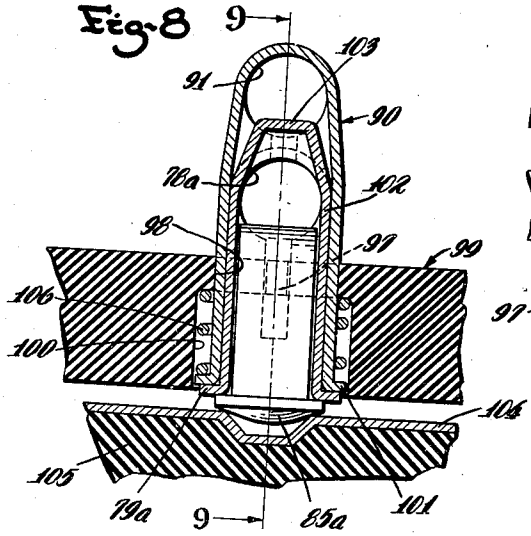


Fig-9

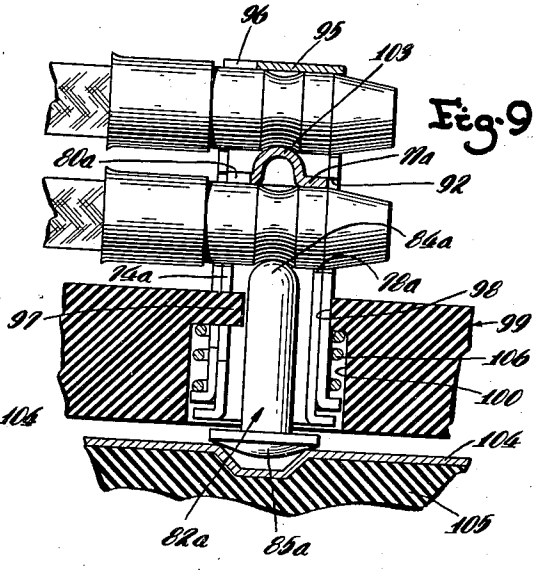
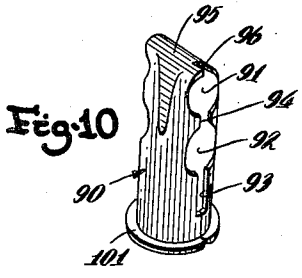


Fig-10



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March 26, 1940. H. A. DOUGLAS 2,194,824

ELECTRICAL CONNECTION MEANS

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Fig. 11

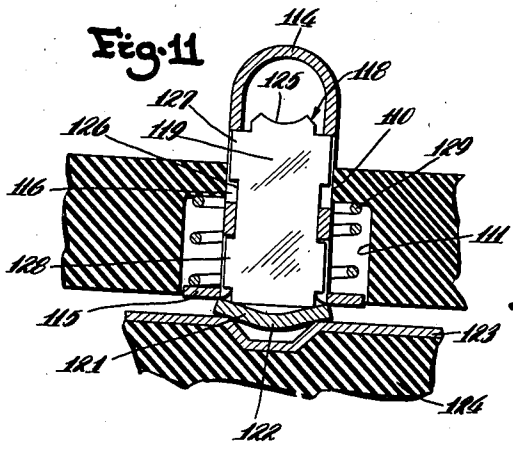


Fig. 12

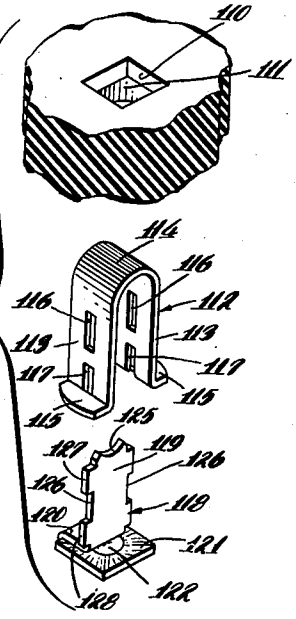


Fig. 13

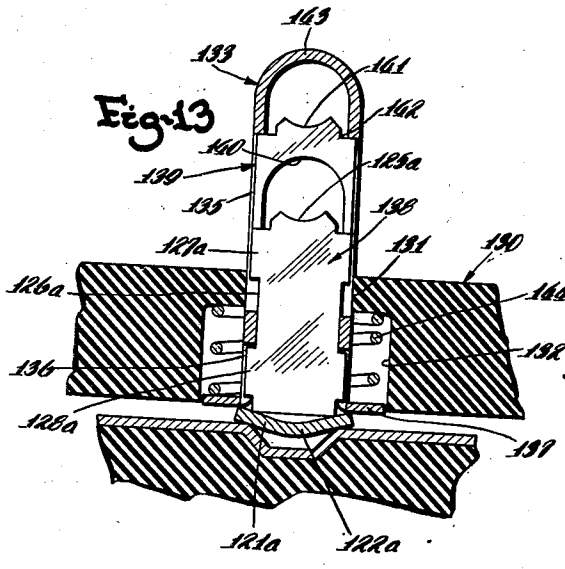


Fig. 14

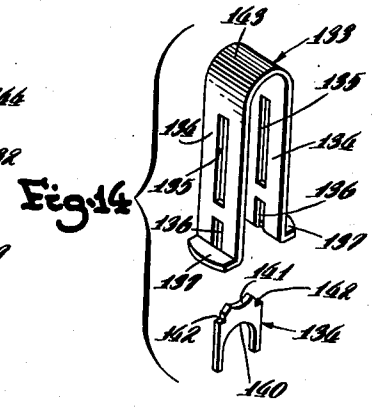
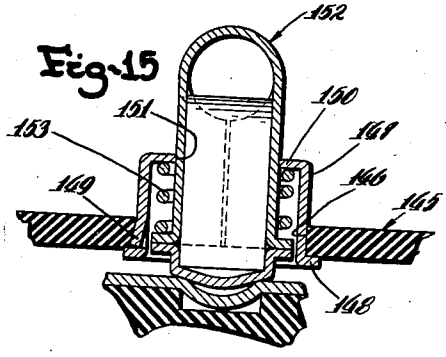


Fig. 15



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Patented Mar. 26, 1940 2,194,824

UNITED STATES PATENT OFFICE

2,194,824

ELECTRICAL CONNECTION MEANS

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Application December 10, 1936, Serial No. 115,076

18 Claims. (Cl. 200—166)

This invention relates to electrical connection means, particularly to connection means comprising a receptacle mounted on the supporting base of an electrical switch, and the principal object of this invention is to provide new and improved electrical connection means of this type. In the drawings accompanying this specification and forming a part of this application, there are shown several embodiments which the invention may assume, and in these drawings:

Figure 1 is a fragmentary sectional view illustrating an embodiment of the invention,

Figure 2 is a sectional view corresponding substantially to the line 2—2 of Figure 1, and showing, in addition, an electrical plug conductor assembled with the receptacle,

Figure 3 is a disassembled perspective view of some of the parts of the embodiment disclosed in Figures 1 and 2,

Figure 4 is a fragmentary sectional view illustrating a different embodiment of the invention,

Figure 5 is a sectional view corresponding generally to the line 5—5 of Figure 4, and showing, in addition, two plug conductors assembled with the receptacle,

Figure 6 is a fragmentary sectional view showing a different embodiment of the invention,

Figure 7 is a disassembled perspective view of some of the parts of the embodiment of Figure 6, these parts having been axially turned 180 degrees, to better illustrate their construction,

Figure 8 is a fragmentary sectional view of another embodiment of the invention,

Figure 9 is a section corresponding generally to the line 9—9 of Figure 8, and showing, in addition, two plug conductors assembled with the receptacle,

Figure 10 is a perspective view of a part shown in the embodiment disclosed in Figures 8 and 9, this part having been axially turned 180 degrees to better illustrate its construction,

Figure 11 is a fragmentary sectional view of another embodiment of the invention,

Figure 12 is a disassembled perspective view of some of the parts shown in Figure 11,

Figure 13 is a sectional view disclosing another embodiment of the invention,

Figure 14 is a disassembled perspective view of some of the parts shown in Figure 13, and

Figure 15 illustrates still another embodiment of the invention.

Referring particularly to Figures 1 through 3, the embodiment of the invention therein shown comprises a support member 20, preferably formed of insulating material, and in this instance being shown as forming a closure for the open end of a switch casing 21. An insulating block 22 is mounted for movement within the casing 21, and carries bridge means 23. The bridge means 23 is provided with depressed portions 24 accommodated in recesses 25 formed in the insulating block 22.

The support 20 is provided with a plurality of apertures 26, each aperture having a polygonal portion 27 leading to the exterior surface of the support 20, and a well portion 28, countersinking the polygonal portion 27 and leading to the interior surface of the support 20. As best shown in Figure 3, the polygonal portion 27 of each of the apertures 26 is preferably cruciform in outline, having oppositely disposed notched portions 29 and 30.

Receptacle means 31 may be mounted on the support 20, each receptacle means 31 comprising a sheet metal tubular body 32 preferably formed of complementary U-shaped parts 33, bent together to form the body 32. A generally flat portion integrally connects the parts 33, and provides a loop 34 when the parts 33 are bent to form the tubular body 32. The abutting walls of the U-shaped parts 33 are recessed, as shown at 35, these recesses cooperating with each other and with the loop 34 to provide an aperture 36. Formed at the open end of the body 32 is a generally circular foot 37, preferably formed by laterally extending generally semi-circular flanges formed integral with the U-shaped parts 33. Adjacent the aperture 36, the loop portion 34 is provided with projections 38 extending substantially parallel with respect to the axis of the aperture 36. The body 32 may be assembled with the support 20 by inserting the loop 34 through the aperture 26 from the interior surface of the support, the notches 30 providing clearance for the projections 38, and the notches 29 cooperating with the exterior margins of the body 32 to hold the body against rotation. In some instances the projections 38 may be omitted, in which case the notches 30 are also omitted, and the polygonal portion 27 is then preferably rectangular in outline.

A combined contact and detent member 39 is provided for cooperation with the body portion 32, the member 39 being preferably formed of a single piece of sheet metal, and comprises a wall 40, one extremity being bent back upon itself, to provide a rounded part 41, and a tapering finger 42. The lower extremity of the wall 40 is laterally folded upon itself to provide a dome-shaped contact head 43, and a generally cylindrical flange

44, the flange 44 being spaced from the contact head 43, and having its defining surfaces interrupted, as shown at 45. The member 39 is assembled with the tubular body 32, so that the wall 40 is substantially disposed within the tubular body, the rounded part 41 being adapted to cooperate with the aperture 36 and with a conductor terminal disposed in the aperture, and the finger portion 42 is constructed and arranged to frictionally engage the inner surface of the adjacent portion of the body 32.

As best shown in Figure 1, the foot 37 on the tubular body 32 generally overlies the flange 44 provided on the member 39, and the dome-shaped contact 43 is in abutting relation with the bridge 23 or, in some instances, with the top surface of the insulating block 22. Encircling the tubular body 32 is a spring 46, having its one end bearing against the bottom of the well 28 of the respective aperture 26, and has its other end bearing upon the adjacent surface of the foot 37 of the tubular body 32, the spring urging the foot 37 into abutment with the flange 44, and thereby urging the contact head 43 into engagement with either the bridge 23 or the top surface of the insulating block 22.

A conductor terminal 47 may be assembled with the receptacle 31, and as shown in Figure 2, the conductor terminal is preferably of the plug type, and is provided with a tapered nose 48, and a generally cylindrical portion 49, this latter portion being provided with an annular furrow 50. As shown in Figure 1, the rounded part 41 of the member 39 intersects the aperture 36, so that when the plug conductor 47 is inserted within the aperture 36, the tapered nose 48 engages the interior surface of the loop 34, and the adjacent surface of the rounded part 41 of the member 39, and further inserting movement of the plug conductor terminal 47 causes the tubular body 32 to move outwardly, or upwardly as viewed in Figures 1 and 2, at the same time bearing on the member 39 to hold this member in engagement with the bridge 23 or insulating block 22, and insertion is completed when the annular furrow 50 of the plug conductor 47 is brought into alignment with the rounded part 41 of the member 39, the spring 46 urging the tubular body inwardly so as to bring the furrow 50 into engagement with the bent-over portion 41, with generally a snap action. In this relation of parts, the foot 37 is spaced from the flange 44, as best shown in Figure 2. The projections 38 on the loop 34 provide greater contacting surface between the conductor terminal 47 and the body 32. Removal of the plug conductor 47 causes the surfaces of the furrow 50 to cam the body portion 32 outwardly to permit the cylindrical part 49 to pass.

From the foregoing it will be obvious that the member 39 provides both a detent means by reason of its rounded part 41, and also a contacting surface by reason of its dome-shaped contact head 43, the member 39 being relatively stationary, whereas the tubular body 32 is movable to change the location of the rounded part 41 with respect to the loop 38 so as to permit insertion or withdrawal of the plug conductor 47. When the insulating block 22 is shifted, the receptacle means 31 is moved bodily by the cam action between the contact head 43 and the adjacent surface of the depression 24.

Referring to Figures 4 and 5, the embodiment of the invention therein disclosed comprises a support 51 similar to the support 20, having an aperture provided with a polygonal portion 52 and a well portion 53, similar to the portions 27 and 28 hereinbefore described. A tubular body 54 is preferably formed in a manner somewhat similar to the tubular body 32, but in this instance the body 54 is provided with spaced apertures 55 and 56. The tubular body 54, as before, is provided with a loop portion 57, and a generally circular foot 58. Reciprocably mounted within the body 54 is a second tubular body 59, having a loop 60 and recesses 61, providing an aperture 62 generally aligned with the aperture 56 in the body 54. The loop 60 is provided with a protuberance 63 extending into the aperture 55 formed in the body 54, and the open end of the tubular body 59 is formed with a generally circular foot 64 which underlies the foot 58.

A combined detent and contact member 65 is mounted within the second tubular body 59, this member 65 being similar to the member 39 hereinbefore described, and like parts will be given like numbers supplemented by the subscript *a*. A spring 66 is disposed about the body 54, and interposed between the bottom of the well 53 and the foot 58 of the body 54. The spring 66 urges the feet 58 and 64, and the flange 44*a* to abutting relation, and also urges the contact head 43*a* into engagement with the bridge of the switching mechanism.

As best shown in Figure 5, this embodiment of the invention is designed to accommodate two plug conductor terminals 67, 68 similar to the terminal 47 shown in Figure 2. Insertion of the plug conductor terminal 67 into the generally aligned apertures 56 and 62 of the bodies 54 and 59, causes the tapered nose of the conductor terminal to bear against the inner surface of the loop 60 and the adjacent surface of the rounded part 41*a* of the member 65, causing the body 59 and the body 54 to move outwardly, or upwardly with reference to Figures 4 and 5, so that the cylindrical portions of the plug conductor terminal 67 may pass through the apertures 56 and 62 until the annular furrow is aligned with the rounded part 41*a*, whereupon the spring 66 urges the body 59 and the body 54 inwardly, or downwardly with reference to Figures 4 and 5 to hold the annular furrow with the bent-over portion 41*a*.

Assuming now that the plug conductor terminal 68 is to be inserted within the recess 55 of the body portion 54, the tapered nose of the conductor terminal 68 engages the inside surface of the loop 57 and the adjacent surface of the protuberance 63, and by cam action moves the body 54 outwardly, or upwardly with reference to Figures 4 and 5, and relative to the body 59, until the cylindrical portion of the conductor terminal 68 is permitted to pass, so that the annular furrow may be aligned with the protuberance 63, whereupon the spring 66 urges the body 54 inwardly to hold the annular furrow in engagement with the adjacent surface of the protuberance 63.

Referring to the embodiment of the invention disclosed in Figures 6 and 7, a support 70, similar to the support 20, is provided with a generally circular aperture 71 leading from the exterior surface of the support 70, and a well 72 countersinking the aperture 71 and leading to the interior surface of the support. As best shown in Figure 7, the aperture 71 is provided with an inwardly projecting tongue 73, adapted to be slidably received within a slot 74 formed in a tubular body 75. The body 75 is generally cylindrical, and is preferably formed of sheet metal, and comprises

generally semi-circular complementary halves 76 and an integral loop portion 77, one set of abutting margins of the complementary halves 76 being recessed to provide the slot 74, and being further recessed adjacent the loop 77 so as to cooperate with this loop to provide an aperture 78. Adjacent the open end of the body 75 the complementary halves 76 are provided with generally semi-circular flanges 79, these flanges cooperating to form a generally circular foot. The loop 77 may be notched as shown at 80 to provide clearance for the tongue 73 formed in the base 70. To assemble the body 75 with the support 70, the notches 80 and 74 of the body 75 are properly aligned with the tongue 73, and the body 75 is inserted through the aperture 71 from the interior surface, or lower surface referring to Figure 6, of the support 70, a spring 81 being first disposed about the body 75, and after final assembly, being interposed between the bottom of the well 72 and the adjacent surface of the foot formed by the semi-circular flanges 79.

Disposed within the tubular body 75 is a combined detent and contact member 82, preferably of solid metal construction, and having a body portion 83 rectangular in cross-section. The upper surface of the member 82 is rounded as shown at 84, and the lower end is laterally enlarged to provide a generally circular contact head 85 having a dome-shaped contacting surface, this latter being adapted to engage a bridge 86 or the adjacent surface of an insulating block 87, in much the same manner as described in Figures 1 through 3. As best suggested in Figure 6, the spring 81 urges the foot formed by the flanges 79 into engagement with the adjacent surface of the contact head 85, and in this position the rounded end 84 of the member 82 intersects part of the aperture 78. A plug conductor terminal, similar to the terminal 47 hereinbefore described, may be assembled with the body portion 75, in a manner similar to that described in the embodiment shown in Figures 1 through 3.

The embodiment of the invention disclosed in Figures 8 through 10 comprises an outer body 90, preferably formed of sheet metal in a manner somewhat similar to that described in connection with the tubular body 75, the body 90 in this instance having its abutting walls recessed to provide apertures 91 and 92, and one set of abutting walls is further recessed to provide a slot 93 extending from the lower aperture 92 toward the open end of the body 90, and a slot 94 extending between the apertures 91 and 92. The loop portion 95 is slotted as shown at 96 to provide for clearance of a tongue 97 formed in the margins of an aperture 98 in the support 99. As before, the aperture 98 is countersunk by a well 100 leading to the interior surface of the support 99.

Received within the body 90 is a second body 102 which is similar to the body 75 described in connection with the embodiments disclosed in Figures 6 and 7, and like parts will be given like numbers supplemented by the subscript *a*. As before, the body 102 is provided with a slot 74*a*, for slidably receiving the tongue 97, and a slot 80*a* is formed in the loop portion 77*a*. In this particular instance the loop portion 77*a* is provided with a protuberance 103 which is adapted to extend into the area defined by the aperture 91 of the body 90. The aperture 78*a* of the body 102 is arranged to be in general alignment with the lower aperture 92 of the body 90. The body 102 is provided with a generally circular foot formed by the semi-circular flanges 79*a*, and this foot is adapted to underlie the foot 101 formed on the body 90.

A member 82*a* is slidably received within the body 102, and is in all respects similar to the member 82, hereinbefore described. The member 82*a* is provided with a rounded detent portion 84*a*, and a contact head 85*a* having a dome-shaped contacting surface which is adapted to abut with a bridge 104 or the adjacent surface of an insulating block 105. A spring 106 is interposed between the bottom of the well 100 and the adjacent surface of the generally circular foot 101.

Plug conductor terminals, similar to the plug conductor terminal hereinbefore described, may be inserted into either the aperture 91, or the generally aligned apertures 92 and 78a, insertion and assembly of the plug conductor terminals being performed in a manner similar to that described in connection with the embodiments shown in Figures 4 and 5.

The embodiment of the invention disclosed in Figures 11 and 12 comprises a support similar to the support 20, the support being provided with a rectangular aperture 110, countersunk by a well 111. A body 112, preferably of inverted U-shape, and formed of a single piece of sheet metal, is reciprocably mounted in the aperture 110, and cooperates with the margins of this aperture, so that the body 112 is held against axial rotation. The body 112 is provided with legs 113 which are connected by an integral loop portion 114, and the free end of each leg 113 is provided with a laterally bent foot 115. The legs 113 are provided with aligned slots 116 and 117, the slots 116 extending intermediate the extremities of the legs 113, and the slots 117 extending from the extremities of the legs 113 to a point short of the slots 116.

A combined detent and contact member 118 is mounted within the body 112, and is preferably formed of a single piece of sheet metal, having a generally plane wall 119, the lower end of which is provided with a lateral extension 120. The lateral extension 120 is integral with a contact head 121 underlying the extension 120, and the contact head 121 is provided with a dome-shaped contacting surface 122 adapted to engage with a bridge 123 or the adjacent surface of an insulating block 124. The upper extremity, referring to Figures 11 and 12, of the wall 119 is provided with an arcuate recess 125, and the side margins of the wall 119 are notched as shown at 126 to form projections 127 and 128. When the member 118 is assembled with the body 112, the projections 127 are slidably received in the slots 116, and the projections 128 are slidably received in the slots 117, as best shown in Figure 11. The surface of the arcuate recess 125 cooperates with the inner surface of the loop 114 to provide an aperture, the size of which may be yieldably varied. The feet 115 formed on the body 112 overlie the adjacent surface of the contact head 121, and a spring 129 is interposed between the bottom of the well 111 and the adjacent surfaces of the feet 115, the spring 129 normally functioning to hold the feet 115 in abutment with the contact head 121, and the dome-shaped part of the contact head 121 in engagement with the bridge 123 or the adjacent surface of the insulating block 124.

A plug conductor terminal, similar to the plug conductor terminal 47 hereinbefore described, may be inserted within the aperture provided by the loop 114 and the adjacent margin of the

recess 125, inserting movement of the plug conductor terminal causing its tapered nose to engage the interior surface of the recess 125, to cam the body 112 outwardly, or upwardly with reference to Figure 11, to provide for passage of the cylindrical portion of the plug conductor terminal, and inserting movement is continued until the annular furrow is brought into alignment with the margin of the arcuate recess 125, whereupon the spring 129 urges the body 112 inwardly so that the interior surface of the loop 114 acts on the cylindrical surface of the plug conductor terminal to hold the annular furrow in engagement with the surface of the arcuate recess 125.

Referring to Figures 13 and 14, the embodiment of the invention therein disclosed comprises a support 130 having an aperture 131 and a well 132, similar to the aperture 110 and well 111 hereinbefore described. A body 133 is formed similar to the body 112, but in this instance the legs 134 of the body 133 are of a greater extent than the legs of the body 112. The legs 134 are provided with oppositely disposed slots 135 and 136, and the free end of each leg 134 is provided with a laterally extending foot 137. A combined detent and contact member 138 is assembled with the body 133, this member 138 being in all respects similar to the member 118 hereinbefore described, and like parts will be designated by like numerals supplemented by the subscript *a*.

An additional detent member 139 is also provided, this detent member being formed of a plane piece of sheet metal, and has an elongated arcuate recess 140 in its lower margin, and a rather shallow arcuate recess 141 in its upper margin, and the upper margin of the detent member 139 is also notched, as shown at 142. The parts may be assembled as suggested in Figure 13, the member 138 having its projections 128*a* slidably received within the slots 136, and its projections 127*a* slidably received within the slots 135. It will be noticed that the slots 135 are considerably longer than the projections 127*a*, so that the side margins of the detent member 139 may also be received within the slots 135, the lower margin of the detent member 139 resting on the upper margin of the member 138, and the margin of the recess 125*a* cooperates with the arcuate recess 140 to provide an aperture, and the arcuate recess 141 cooperates with the loop 143 of the body 133 to provide a second aperture. A spring 144 is interposed between the bottom of the well 132 and the adjacent surfaces of the feet 137, so as to normally urge the feet 137 into engagement with the contact head 121*a*. Plug conductor terminals, similar to the plug conductor terminal 47 hereinbefore described may be inserted within either one of the apertures in a manner that will be obvious.

Referring to Figure 15, the embodiment of the invention therein disclosed comprises a relatively thin support 145, preferably formed of insulating material, and provided with an aperture 146. A cup-shaped member 147, preferably formed of sheet metal, is secured to the support 145 in inverted relation, the open extremity of the cup-shaped member 147 being laterally bent to provide a flange 148 adapted to abut the inner, or lower surface referring to Figure 15, of the support 145, and the peripheral surface of the cup-shaped member 147 adjacent the flange 148 being of a size to substantially engage the margin of the aperture 146. The cup-shaped member 147 may be secured to the support 145 by striking outwardly portions of the member 147 as shown at 149. The closure wall 150 of the cup-shaped element 147 is provided with an aperture 151 for the reception of a receptacle, which may take the form of any of the receptacles hereinbefore described, in this particular instance a receptacle 152 being shown, which receptacle is similar to the receptacle 31 described in the embodiment disclosed in Figures 1 through 3. It will be appreciated that the cup-shaped member 147 provides a well portion for a spring 153 which encircles the receptacle 152, and with this construction the support need not be as thick as the supports hereinbefore described.

It will be apparent to those skilled in the art that I have accomplished at least the principal object of my invention, and it also will be apparent to those skilled in the art that the embodiments herein described may be variously changed and modified, without departing from the spirit of the invention, and that the invention is capable of uses and has advantages not herein specifically described; hence it will be appreciated that the herein disclosed embodiments are illustrative only, and that my invention is not limited thereto.

I claim:

1. A contact terminal, comprising: a tubular body, having an aperture at one end for receiving a conductor terminal, said body at its other end having a laterally extending abutment; a member, so constructed and arranged that said body and said member are in relatively movable relation, said member having a detent portion disposed interiorly of said tubular body for cooperation with said body aperture, and having also a contacting surface disposed exteriorly of said tubular body, said exteriorly disposed part having a laterally extending abutment engageable with said body abutment; and resilient means, constructed and arranged to urge said abutments to engagement.

2. Receptacle means, comprising: an outer movable body, having a recess for receiving a conductor terminal; and an inner stationary member, having a portion intersecting the outline of said body recess; resilient means, constructed and arranged to yieldably oppose movement of said body; said body and said member being so constructed and arranged that inserting movement of a conductor terminal of predetermined size within said body recess moves said body relative to said member against the urging force of said resilient means to cause said recess to clear said member portion so that the conductor terminal may be disposed within said recess.

3. Receptacle means, comprising: a first body, having spaced recesses for receiving conductor terminals; a second body, having a recess generally aligned with one of said spaced recesses, and having also detent means cooperable with the other of said recesses for holding a conductor terminal in said other recess; a member, having a portion cooperable with said generally aligned recesses, for holding a conductor terminal in said generally aligned recesses; said first and said second bodies being constructed and arranged for relative movement with respect to said member and with respect to each other; and resilient means, constructed and arranged to yieldably oppose movement of said first and said second bodies.

4. In combination: a support, having an aperture; a body, mounted for sliding movement

through said aperture, having a recess for receiving a conductor terminal; a member, relatively immovable with respect to said support, having a portion constructed and arranged to cooperate with said body recess, and a conductor terminal within said recess; and resilient means, constructed and arranged to press a conductor terminal in said body recess against the portion of said member.

5. In combination: a support, having an aperture; a body, mounted for sliding movement through said aperture, having a recess for receiving a conductor terminal; means, in part carried by said support and in part carried by said body, constructed and arranged to hold said body against turning with respect to said support; a member, relatively immovable with respect to said support, having a portion constructed and arranged to cooperate with said body recess, and a conductor terminal within said recess; and resilient means, constructed and arranged to press a conductor terminal in said body recess against the portion of said member.

6. In combination: a support, having an aperture, the marginal surface of which is provided with a projection; a body mounted for sliding movement through said aperture, having a recess for receiving a conductor terminal; and being formed with a slot constructed and arranged to receive said projection, to hold said body against turning with respect to said support, yet permit sliding movement of said body through said support aperture; a member, relatively immovable with respect to said support, having a portion constructed and arranged to cooperate with said body recess, and a conductor terminal within said recess; and resilient means, constructed and arranged to press a conductor terminal in said body recess against the portion of said member.

7. In combination: a support, having an aperture; a tubular body mounted for sliding movement through said aperture, and having a recess for receiving a conductor terminal; a member, disposed within said body, and constructed and arranged to be relatively immovable with respect to said support, said member having a portion constructed and arranged to cooperate with said body recess, and a conductor terminal within said recess; and resilient means, constructed and arranged to press a conductor terminal in said body recess against the portion of said member.

8. In combination: a support, having an aperture; a body, formed of a single piece of sheet-metal bent to provide a loop for receiving a conductor terminal and to provide also a tubular portion, said body being mounted for sliding movement through said aperture; a member, disposed within said tubular portion, and constructed and arranged to be relatively immovable with respect to said support, said member having a portion constructed and arranged to cooperate with said loop, and a conductor terminal within said loop; and resilient means, constructed and arranged to press a conductor terminal in said loop against the portion of said member.

9. In combination: a support, having an aperture; a body slidably mounted in said aperture, and having a recess for receiving a conductor terminal disposed at one surface of said support, and an abutment adjacent the opposite surface of said support; a member, relatively immovable with respect to said support, having one extremity in position to engage a conductor terminal disposed within said body recess, and an opposite extremity provided with an abutment engageable with said body abutment; and resilient means, constructed and arranged to yieldably hold said abutments in engaging relation.

10. In combination: a planer element, having an aperture, and having a well countersinking said aperture; a body, mounted for sliding movement through said aperture, having a recess for receiving a conductor terminal; a member, relatively immovable with respect to said element, having a portion constructed and arranged to cooperate with said body recess, and a conductor terminal within said recess; and resilient means, having one end bearing against a part of said body, and its other end bearing against the bottom of said well, for pressing a conductor terminal in said body recess against the portion of said member.

11. In combination: a support, having an aperture; a first tubular body, mounted for sliding movement through said aperture, and having spaced-apart apertures; a second tubular body, slidably disposed within said first body, having an aperture adapted to align with one of said spaced-apart apertures, to receive a conductor terminal, and having also a portion engageable with a conductor terminal disposed in the other of said spaced-apart apertures; a member, relatively immovable with respect to said support, disposed within said second tubular body, and having a portion engageable with a conductor terminal receivable within said one aperture and the aperture in said second body when these apertures are in aligned relation; and resilient means, constructed and arranged to press the conductor terminal in the aligned apertures against the portion of said member, and also to press the conductor terminal in the other of said spaced-apart apertures against the portion of said second body.

12. In combination with an electric switch, having an apertured base and a switching element, a body, mounted for sliding movement through said base aperture, and having a recess for receiving a conductor terminal; a member, having one end bearing against said switching element, and its other end in position to cooperate with the body recess and a conductor terminal within said body recess; and resilient means, interposed between said base and a portion of said body, constructed and arranged to press said one end of said member against said switching element, and to press a conductor terminal in said body recess against said other end of said member.

13. In combination with an electric switch, having an apertured support and a switching element, a tubular body, mounted for sliding movement through said support aperture, and having a recess at one surface of said support for receiving a conductor terminal, and a flange at the opposite surface of said support; a member, having one end within said body in position to engage a conductor terminal disposed within said body recess, and its opposite end bearing against said switching member, said opposite end being provided with a flange engageable with said body flange; and spring means disposed about said body, interposed between said body flange and said opposite surface of said support, constructed and arranged to urge said body flange to engagement with said member flange.

14. A switch including in combination, a housing for switching mechanism including a bridge

member, a plurality of spring pressed contacts including terminal receptacles associated with said contacts carried by said housing, said contacts being cooperable with said bridge member and provided with extensions cooperating with said receptacles whereby to directly engage and resiliently retain terminals placed in said receptacles.

15. A switch including in combination, a housing for switching mechanism including a bridge member, and contact means carried by said housing, said contact means including in combination an elongated body provided with a terminal receiving seat, a spring operatively related to said body, a movable member operatively related to said body and provided with a contact at one extremity adapted to be pressed into engagement with said bridge member by said spring, and a detent at the other extremity adapted to resiliently retain a terminal placed in said seat.

16. A switch including in combination, a housing having switching mechanism including a bridge member, a carrier of insulating material supported on said casing and provided with contact means, said contact means including in combination, a tubular body provided with a terminal receiving aperture, a spring surrounding said tubular body, an insert arranged within said tubular body and provided with a contact at one extremity adapted to be pressed into engagement with said bridge member by said spring, and a detent at the other extremity adapted to resiliently retain a terminal arranged in said aperture through the agency of said spring.

17. A switch including in combination, a housing for switching mechanism including a bridge member, a plurality of contacts carried by said housing, at least one of said contacts being spring pressed and having a terminal receptacle associated therewith, said contacts being cooperable with said bridge member, said spring pressed contact being provided with an extension cooperating with said receptacle whereby to directly engage and resiliently retain a terminal placed in said receptacle.

18. A switch including in combination, a housing for switching mechanism including a bridge member, and contact means carried by said housing, at least one of said contact means including in combination an elongated body provided with a terminal receiving seat, a movable member operatively related to said body and provided with a contact at one extremity for engagement with said bridge member, a detent at the other extremity adapted to retain a terminal in said seat, and resilient means for normally maintaining said body and said movable member in a certain relation.

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