

Dec. 16, 1952

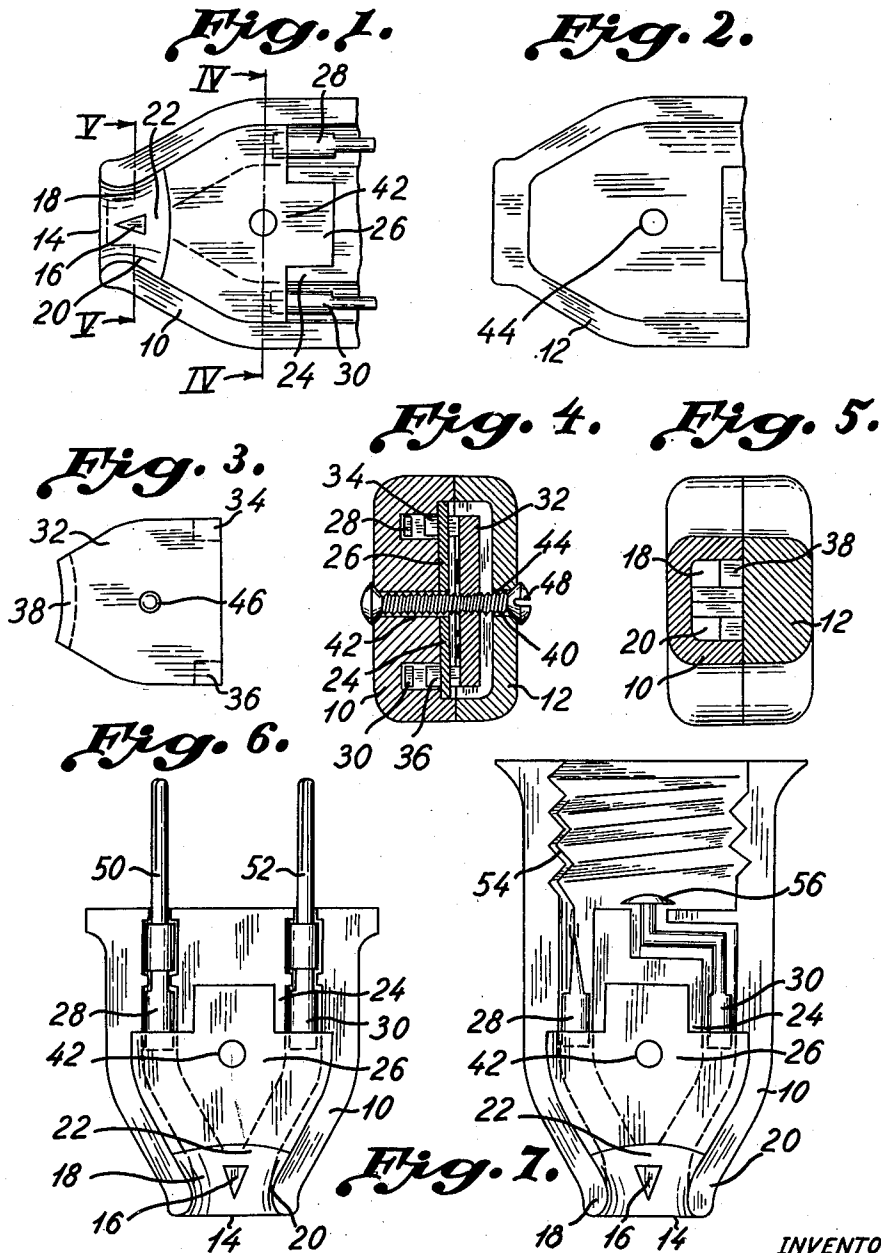
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CORD CONNECTION AND STRAIN RELIEF

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Fig. 8.

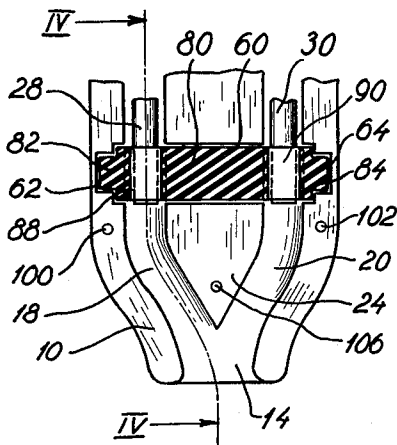


Fig. 9.

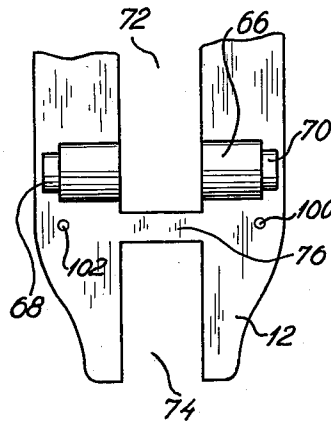


Fig. 11.

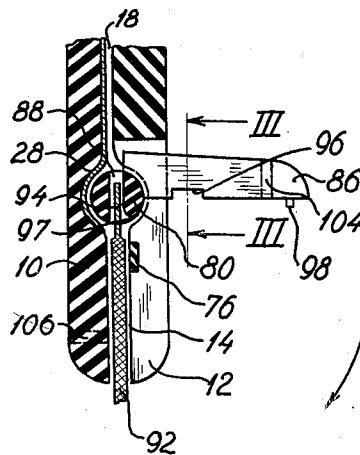


Fig. 10.

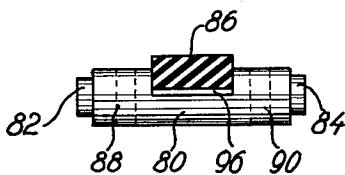
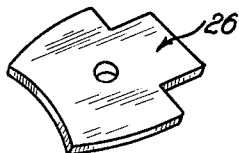


Fig. 14.



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Fig. 12.

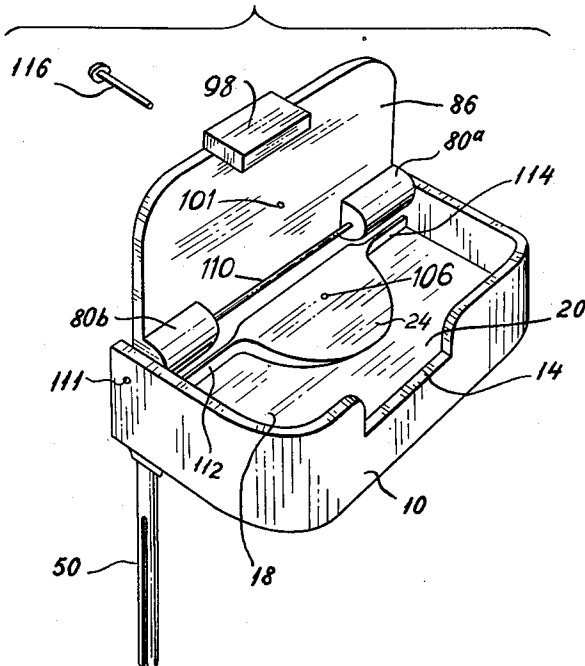
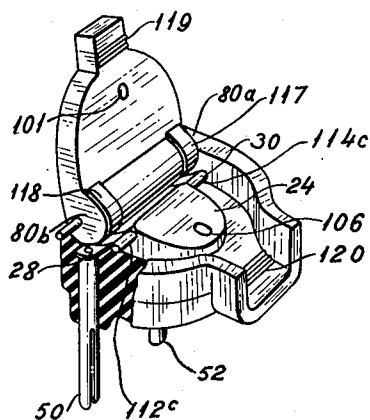


Fig. 13.



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CORD CONNECTION AND STRAIN RELIEF

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In Denmark March 7, 1947

1 Claim. (Cl. 173—361)

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The present invention relates to the connection of electric cables with electric accessories such as plugs, lamp-holders, wall sockets and any other kind of electric accessories.

It is the main object of the invention to provide an assembly for such uses in which the cables can be connected in a very easy manner and very rapidly and at the same time provide an exceedingly safe connection including a safe holding of the wire at the input end.

Further objects and advantages of the invention will appear from the following specification.

The invention will be explained in detail in connection with the drawing in which

Fig. 1 shows the one half part of an accessory according to the invention, with the clamping member removed,

Fig. 2 shows the other half part of the accessory,

Fig. 3 shows the clamping member used by the embodiment shown in Fig. 1,

Fig. 4 is a section along the line IV—IV in Fig. 1,

Fig. 5 is a section along the line V—V in Fig. 1,

Fig. 6 shows a complete accessory in form of a plug provided with a detail shown in Figs. 1-5,

Fig. 7 shows a corresponding accessory in the form of a lampholder,

Fig. 8 shows one half of another embodiment with the clamping member in the input position for the wires,

Fig. 9 shows the other half from the inside,

Fig. 10 is a side view of the clamping member, partly in section after the line III—III in Fig. 11,

Fig. 11 is a section along the line IV—IV in Fig. 8,

Fig. 12 is a perspective view of a further embodiment of the invention,

Fig. 13 is a perspective view of still another embodiment, and

Fig. 14 is a perspective detail view of the insulating plate shown in Figs. 1, 4, 6 and 7.

In Fig. 1 is shown one half part 10 and in Fig. 2 another half part 12. The half part 10 of the housing in Fig. 1 has an input-opening 14 for the ends of a pair of electric wires and by means of a wedged-formed wall 16, the opening is separated in two canals 18 and 20. The wall 16 only extends a very short distance into the housing and behind the wall 16 there is a groove 22, behind which is found a wall 24, which is getting broader in transverse direction away from the opening so that the canals 18 and 20 are lying on each side of the intermediate wall 24, the bottom and sides of the canals being formed in the walls

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of the housing 10. By means of a depressed insulating plate 26, see also Fig. 4, a ceiling is formed in the canals 18 and 20. At the bottom of these canals are provided metallic strips 28 and 30 which are electrically connected with the poles of the accessory not shown in Fig. 1. The plate 26 has cut away parts so that the metallic strips 28 and 30 in Fig. 1 are accessible from above.

The other half part 12 of the housing is provided with a recess extending over the whole area occupied by the canals 18 and 20 and the middle wall 24 in Fig. 1, but not extending in direction of the input-opening, at which the part 12 is closed.

Between the two parts 10 and 12 of the housing, which are assembled, as shown, the clamping member 32 shown in Fig. 3 is arranged. This clamping member is formed as a plate and has three legs 34, 36, 38 of which the legs 34 and 36 are adapted to extend down in the canals 18 and 20 at the poles, where the metallic strips 28 and 30 are arranged and the leg 38 is adapted to extend down in the canals between the plate 26 and the wall 16.

The two half parts are, as shown in Fig. 4, assembled by means of a screw 40, which can rotate freely in openings 42 and 44 in the two half parts of the housing, but which is connected with the clamping member 32 by internal screw-threads in a hole 46 therein. At one end the screw 40 is provided with a head 48 and at the other end it is rivetted, so that the two half parts of the housing cannot be separated.

From the above specification, see also Fig. 4, it will be understood, that by rotating the screw 40 at the head 48 the clamping member 32 will be moved in direction towards and away from the metallic strips 28 and 30 and thereby locking or releasing a pair of wires, the uninsulated ends of which are put in through the canals 18 and 20 and simultaneously the leg 38 of the clamping member will lock the wires in the neighborhood of the input-opening and thereby relieves from pull actions.

In Fig. 8 the half part of the accessory, which also within the scope of the invention can be a plug, a lampholder or any other accessory, is denoted by 10 and in Fig. 9 the other half part is shown at 12.

The part 10 has an input-opening 14 which by means of a wedged-formed intermediate wall a short distance from the opening is separated in two canals 18 and 20, the bottoms and sides of which are formed by the outer walls of the

housing, while the ceiling in the canals where they are situated between the wall 24 and the sides of the housing is formed by the other half part 12 of the housing. Above the input-opening and at the beginning of the canals the ceiling is formed by the clamping member, cfr. the following specification. Behind the wall 24 is provided a recess formed as the half part of a cylinder and also extending into the canals, see Fig. 11, and in the bottom of this recess metallic strips 28 and 30 are arranged, said metallic strips being electrically connected with the poles not shown.

The recess 60 is extending transversely over the accessory to the outer walls of the canals and at both ends of the recess there are smaller recesses 62 and 64, also of half-cylindrical form and with smaller diameter than the recess 60. Correspondingly the other half part 12 of the housing is provided with a recess 66 which at its ends is provided with other recesses 68 and 70 of smaller diameter.

The inside of the half part 10 of the accessory is plane, but the half part 12 is provided with a longitudinal recess 72, 74, separating the part 12 in two half parts which are connected by a narrow part 76 which is also thinner than the remaining part of 12, see Fig. 11.

When the two half parts of the accessory are assembled the cylinder-formed recesses 60, 66 and the end-recesses 62, 68 and 64, 70 will form bearings for a clamping member 80 provided with a cylinder-formed part which at the ends has pins 82, 84 with smaller diameter than the clamping member, which substantially corresponds to the diameter of the cylinder 60, 66. The pins will correspond to the smaller cavities in the housing.

Furthermore the clamping member is provided with a plate-formed part 86, see Figs. 10 and 11, and in the cylindrical part are provided holes 88 and 90 of such a diameter and so arranged that they form extensions of the canals 18 and 20, see Figs. 8 and 11. The plate-formed part 86 is arranged substantially at a right angle to a plane through the holes 88 and 90, see Fig. 11.

It will be understood from Fig. 11, that the wires 92 the uninsulated ends 94 of which are put in through the canals 18 and 20 and in the holes 88 and 90 will be clamped and simultaneously brought into electric connection with the metallic strips 28, 30 by turning the clamping member 80, 86 in direction of the arrow shown in Fig. 11. To prevent breaking or other damaging of the uninsulated wire ends one side of the holes can at 97, as indicated in Fig. 11, be rounded and the metallic strips can be resilient.

From Fig. 11 it will further be understood that the plate-formed part 86 of the clamped member in closed position will be cover for the remaining part of the unit, because it fills the recess 72, 74 in the part 12. The underside of the part 86 has a recess 96 to make space for the bridge 76 which connects the two side parts of the part 12. Furthermore the clamping member at the upper side of the plate-formed part has a projecting part 98, which in closed position co-operates with the end of the wires in the opening 14 in order to secure the wires here.

The two parts 10 and 12 of the unit are held together by means of rivets or screws arranged in holes 100 and 102, and the plate-formed part of the clamping member is in the clamping position secured by means of a screw which is inserted through a hole 104 and a screw-threaded hole 106 in the part 10.

The embodiment shown in Fig. 12 only differs from that shown in Figs. 8-11 thereby that the clamping member 86 is forming the whole part of the accessory and is not borne between two parts connected with each other. The half part 10 has, as in the other embodiments an outwardly extending edge, but this is higher than the intermediate wall 24. In Fig. 12 the clamping member 86 is borne by means of a shaft 110 inserted through holes 111 in the part 10 and there is provided a cam denoted by 80 which is separated in two parts 80a and 80b.

Furthermore transverse walls 112 and 114 are arranged in front of the parts 80a and 80b in the canals 18 and 20 and in this case it is not necessary to provide holes in the cylindrical parts 80a and 80b. The transverse walls 112 and 114 will further act to clamp and hold the ends of the wires which when the clamping member 86 is swung downwardly will be bent just in front of the clamping point and thereby be safely locked. In Fig. 12 there is shown a screw 116 for holding the two parts together.

The arrangement described above can be used in connection with practically all kinds of electric accessories, for instance as shown in Fig. 6 in connection with the plug, the legs 50 and 52 of which at their rear ends are directly connected with the metallic strips 28 and 30 or, as shown in Fig. 7, in electric lampholders, in which a screw-thread 54 and a bottom screw 56 respectively are connected with each of the metallic strips.

The parts 112 and 114 on each side of the insulating central piece 24 in Fig. 12 are preferably formed of conductive material. These may be continuations of the strips 28 and 30 or may be spaced slightly therefrom. In either case, it is desirable to form the surfaces of the parts 80a and 80b of conductive material as shown in Fig. 13. In the instances where the parts 112 and 114 are conductive, but spaced from the strips 28 and 30, the conductive surface on the parts 80a and 80b will bridge the spaces and form portions of the conductive paths along the leads 28-50 and 30-52. In the case shown in Fig. 13 where the portions 112c and 114c are continuations of the strips 28 and 30, the metallic surfaces 117 and 118 act to insure the effective provision of a conductive path.

In Fig. 13, also, there are illustrated serrations 119 and 120 to firmly clamp the electrical cord, the wire ends of which are clamped by the cam surfaces against the lead-portions 112c and 114c.

It will be understood that even when the drawing only shows a plug and a lampholder as samples the application of the invention is not limited thereto and that the invention can be applied by practically all sorts of electric accessories such as wall-sockets etc.

I claim:

A cable connection and strain relief comprising an insulating housing having on the interior a surface for supporting said cable, interior poles within said housing for the connection with the cable wires, said housing having adjacent said surface an input aperture for said cable, an insulating clamping member hinged to said housing about a pivot and forming a cover for said surface in said housing and being movable about the pivot axis to and from an active covering position, said surface extending substantially parallel to said axis, cam-surfaces associated with said clamping member opposite the poles, said poles terminating in faces disposed longitudinally

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dinally of said pivot axis, and said cam-surfaces being with said member movable about said axis, to press the wires of said cable into contact engagement with said faces of said poles, and a projecting part formed on said clamping member and protruding from the outermost portion thereof opposite relative to said axis and disposed adjacent said surface to clamp therewith said cable, and being movable about said axis at right angle to said surface for cable release.

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