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DETACHABLE ELECTRICAL CONNECTOR UNIT

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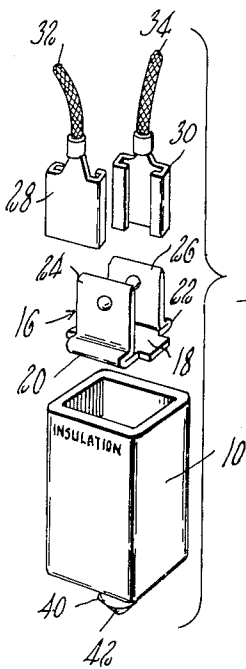


Fig. 1.

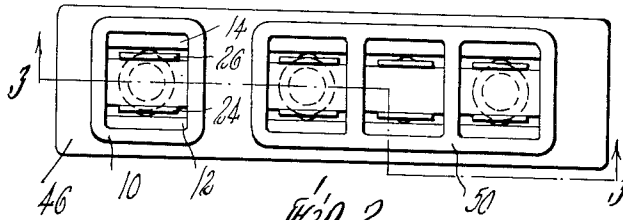


Fig. 2.

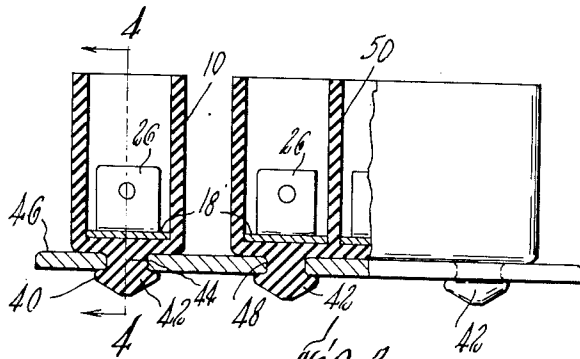


Fig. 3.

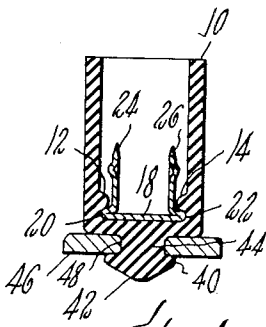


Fig. 4.

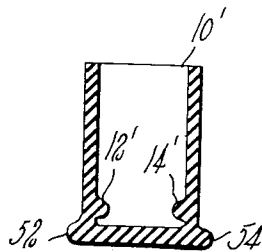


Fig. 5.

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DETACHABLE ELECTRICAL CONNECTOR UNIT

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1 Claim. (Cl. 339—125)

This invention relates to an electrical connector unit for use in automobiles, electric appliances or other structures containing electric wiring. In such cases it is often desirable to connect together two wires in such a way that the wires can readily be disconnected later. It is also often desirable that the connection be mechanically supported or secured to prevent the slack of the two wires from getting tangled with other wires or mechanical parts. According to the present invention, a connector unit is provided which can readily be mounted on a thin partition or bulkhead by first drilling a hole of suitable size through the partition. The unit comprises a hollow hood or shield of insulating material such as soft rubber with a knob or button integral therewith which can be forced through a suitable hole in a partition to support the shield. Within the hollow of the shield is a metal conductor including two connector members which may be simple plane tongues to join with complementary connector members attached to the wires which are to be connected. When these are joined within the shield, the two wires are thus electrically connected and the connections are not only supported by the partition but are also insulated by the shield to prevent accidental contact with other conductors which may be in the vicinity.

An embodiment of the invention is illustrated on the drawing, of which—

Figure 1 is an exploded perspective view of a connector unit embodying the invention, and complementary connector members adapted to be joined therewith;

Figure 2 is a plan view of a single and a multiple unit;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is a section on the line 4—4 of Figure 3; and

Figure 5 is a sectional view of a slightly modified form of shield.

The connector unit comprises a hollow hood or shield of insulating material and a metal conductor mounted therein. The shield is a tubular member 10 open at one end closed at the other. The tube may have any desired shape, the sample illustrated in Figure 1 having a square cross-section. Within the tube 10 near the closed end are two ribs 12 and 14 extending transversely on two opposite walls of the tube. A conductor member 16 is mounted within the shield. The conductor may be made of sheet metal cut and bent to shape. As shown, it has a plane transverse portion 18 adapted to engage against the closed end of the shield. On two opposite sides of the transverse portion 18 are wings which are sharply bent back on themselves to form ribs 20 and 22 which engage under the ribs 12 and 14 respectively to hold the conductor in place in the shield. The end portions of the wings are bent up to form tongues 24 and 26 in spaced parallel planes, these tongues being connector members adapted to join with complementary connector members 28 and 30 attached to wires 32 and 34. When the members 28 and

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30 are joined respectively to the tongues 24 and 26, the wires 32 and 34 are effectively connected electrically but can be readily disconnected when desired. Furthermore, the connection is surrounded and protected by the shield 10.

It is usually desirable to have a connection of this kind mechanically supported to keep it out of the way of other objects in the vicinity. According to the invention, provision is made for mounting the connection on a partition wall or bulkhead without the use of any separate fittings or accessories. For this purpose the shield is provided at its closed end with laterally projecting elements of resilient deformable material such as soft vulcanized rubber which can be squeezed through a preformed aperture in the partition wall so as to engage on the other face of the partition and hold the connector unit in place. These deformable laterally projecting elements may be portions of the rim 40 of a soft rubber button 42 which is integrally joined to the closed end of the shield by a neck 44 of smaller diameter than the rim. As indicated in Figures 3 and 4, the partition wall 46 should be provided with apertures 48 having diameters equal to that of the neck 44.

If desired, a multiple shield 50 may be provided as indicated in Figures 2 and 3, the shield therein shown having three units with two buttons 42, but these numbers may be varied.

A modified 10' is illustrated in Figure 5, this shield being the same as the shield 10 hereinbefore described except that instead of a button 42, this shield has two transverse exterior ribs 52 and 54 at the closed end. These ribs are the laterally projecting, deformable elements to be squeezed through an aperture of suitable size and shape in a partition wall or the like. The shield is provided with interior ribs 12' and 14' similar to the corresponding ribs in the shield 10 and for the same purpose.

I claim:

An electrical connector unit comprising a tubular shield member of square cross-section closed at one end, said shield having at said closed end transversely projecting elements of resilient deformable material adapted to be squeezed through an aperture in a partition so as to engage on the other side of the partition, said shield having a transverse rib on the inner faces of two opposite sides thereof near the closed end thereof, and a conductor of sheet metal bent to modified U shape with a transverse portion adapted to engage the inner face of the closed end of the shield and two spaced parallel portions forming connector members spaced from the walls of said shield and adapted to join with complementary connector members thrust into the open end of the shield, said conductor having two short portions bent back against said transverse portion forming ribs engaging respectively under the inner ribs of the shield to hold the conductor in place within the shield.

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