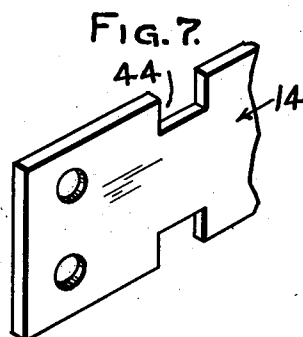
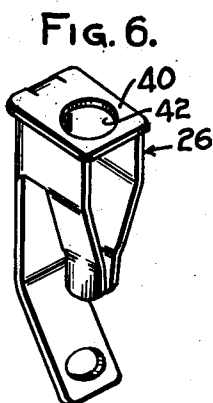
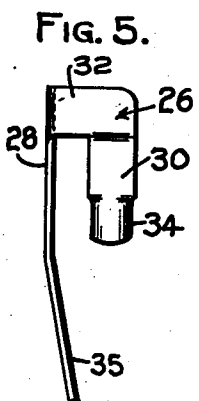
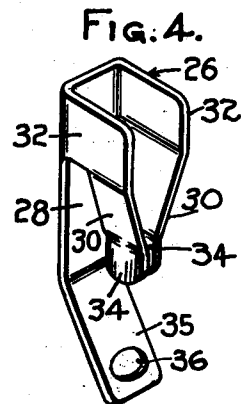
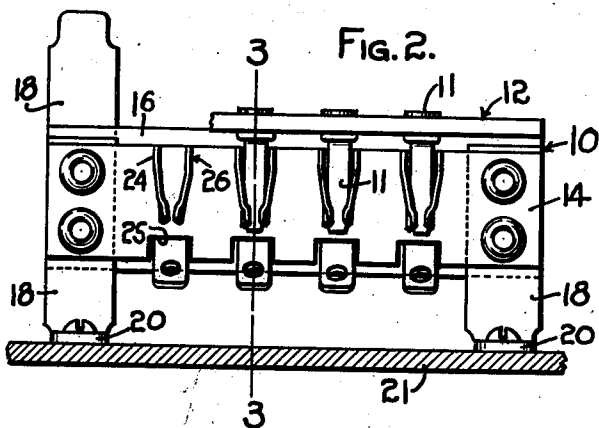
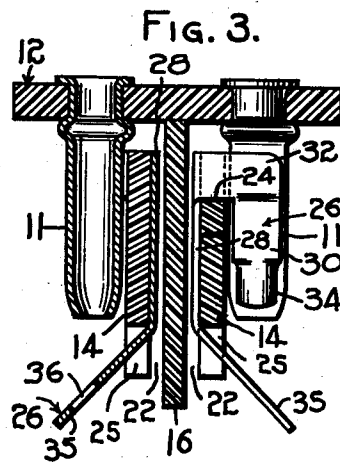
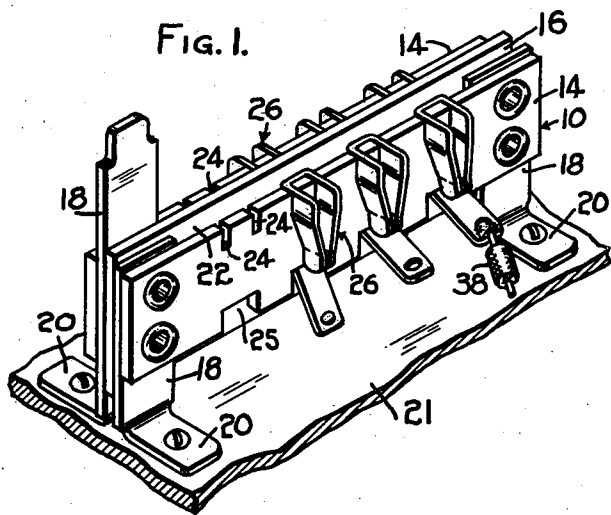


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ELECTRICAL CONNECTOR

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ELECTRICAL CONNECTOR

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This invention relates generally to multiple jack and plug electrical connectors and has particular reference to an improved jack member for such assemblies.

Multiple jack and plug connectors are used in installations where it is necessary to provide a convenient means for connecting and disconnecting a plurality of electrical circuits, and such connectors comprise generally a plug member having a plurality of contact prongs disposed thereon, and a cooperating jack member having individual jacks to receive the contact prongs. The jack connectors are usually provided with two rows of jacks, mounted on parallel support plates, between which is disposed a separating plate. The jacks are ordinarily attached to the support plates either by rivets or by tabs extending from the jack through the support plate.

This type of construction has a number of disadvantages, since to assemble the jacks on the supporting plate, it is usually necessary to have access to both sides of the plate, to enable the rivets or tabs to be secured thereto. Consequently the supporting plates cannot be assembled with the separating plates until after the jacks have been assembled, and once assembled, it is difficult or impossible to replace a defective jack. Thus if one jack becomes damaged, either during assembly or in service, it is frequently necessary to replace the entire jack assembly.

The object of the invention is to provide a multiple jack connector assembly having a plurality of jacks which are individually removable from the assembly.

A further object of the invention is to provide a jack connector assembly in which plug-receiving jacks are disposed in snapping engagement with an insulating support plate.

A still further object of the invention is to provide a jack connector member having a base and a resilient leg extending therefrom which is adapted to be assembled between a pair of insulating plates and to snap into engagement with one of the plates.

A still further object of the invention is to provide a jack connector member having a plug-receiving means mounted on a base and disposed in spaced relation thereto to receive a section of an insulating support plate therebetween, in which the base is provided with resilient means for engaging the lower edge of the plate.

Other objects of the invention will, in part, be obvious, and will, in part, appear hereinafter.

For a fuller understanding of the nature and objects of the invention, reference should be

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had to the following detailed description, taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a perspective view of a multiple jack connector assembly embodying the features of the invention;

Fig. 2 is a view in elevation, partly in section, of the connector assembly of Fig. 1, and a cooperating multiple plug member;

Fig. 3 is a view partly in section taken on line 3-3 of Fig. 2;

Fig. 4 is a perspective view of a jack member embodying the features of the invention;

Fig. 5 is a view in elevation of the jack member of Fig. 4;

Fig. 6 is a perspective view of a jack member having modifications within the scope of the invention; and

Fig. 7 is a perspective view of a modified form of supporting plate for mounting the jacks.

Referring to the drawing, there is illustrated a multiple jack connector assembly 10 which is adapted to engage the plugs 11 of a multiple plug connector 12, for completing a number of electrical circuits.

The jack assembly 10 comprises a pair of insulating jack support plates 14, and a separating back plate 16 disposed therebetween. The plates 14 and 16 are mounted on supporting members 18, which are provided with feet 20, for attachment to a panel 21. The members 18 are mounted between the back plate 16 and the jack-supporting plates 14 to provide a space 22 therebetween. Each supporting plate 14 is provided with a number of notched-out recesses 24 on the upper edge and corresponding recesses 25 on the lower edge to receive a jack member 26 as will be hereinafter described.

The jack member 26 comprises a base 28 and a pair of resilient contact members 30 attached to the upper portion of the base by supporting arms 32. The members 30 are provided with concave contact surfaces 34 at the lower end thereof which are disposed to engage and make electrical contact with a plug 11. The contact members 30 are spaced apart from the base 28 by the arms 32 a predetermined distance to receive a section of the support plate 14 therebetween. A tail portion 35 is attached to the lower portion of the base 28, for a purpose which will be hereinafter described. In the preferred embodiment an opening 36 is provided in the end of the tail 35 for attaching an electrical lead 38.

To assemble the connector, the back plate and support plates are assembled with the support-

ing members as illustrated. The individual jacks may then be assembled on the supporting plate by inserting the resilient tail and base member of the jack downwardly through the space 22, so that the supporting arms 32 rest in the recesses 24, with the contact member 30 disposed on the outer side of the supporting plate 14. To retain the jack in the assembled position, the tail 35 is then bent outwardly into the corresponding recess 25 in the lower edge of the plate.

It has been found that the jack assembly operation may be speeded up by providing jacks having pre-bent resilient tail portions, as illustrated in Figs. 4 and 5. In this case insertion of the tail and base into the space 22 between the plates 14 and 16 causes compression of the tail toward the plane of the base. When the base is fully inserted between the plates, so that the arms 32 rest in the respective recesses 24, the tail 35 will snap outwardly into the corresponding recess 25 to retain the jack in the assembled position. If desired, the tail may thereafter be bent further outwardly for attaching an electrical lead 38.

Referring to Fig. 6, there is illustrated a modified form of jack member 26. In this embodiment, a cover plate 40, having a plug receiving opening 42 disposed therein, is mounted above the plug engaging contact members 30. The cover plate 40 serves to guide the plugs 11 into the jacks, and provides a more rigid assembly.

As illustrated in Fig. 7, the supporting plate 14 may be provided with notches as shown at 44, rather than individual slots, to receive the supporting arms 32. The notches 44 are sufficiently wide to receive the arms 32 therein, to prevent lateral movement of the jack on the supporting plate.

Since certain obvious changes may be made in the device without departing from the scope of the invention, all matter contained herein should be interpreted in an illustrative and not in a limiting sense.

I claim:

1. A multiple jack and plug assembly, comprising an insulating back plate and an insulating jack support plate assembled in spaced relation thereto, said support plate having notched portions in the edge thereof, and a plurality of plug-receiving jacks assembled with the plates, each jack comprising a flat base adapted to be assembled between the plates, a pair of supporting arms extending outwardly from the upper portion of the base, a pair of plug-receiving contact members depending from the supporting arms, said contact members being spaced later-

ally from the base and receiving a section of the support plate therebetween, said supporting arms being disposed to rest in the notched portion of the supporting plate, an a tail portion attached to the lower portion of the base, said tail being disposed at an angle to the plane of the base immediately below the supporting plate, to engage another edge of the plate and retain the jack in assembled relation with the plate.

2. A multiple jack and plug assembly, comprising an insulating back plate, an insulating jack support plate assembled on the back plate in spaced relation thereto, said support plate having a notched portion in the upper edge, and at least one plug-receiving jack assembled with the plates, said jack comprising a base adapted to be assembled between the plates, plug engaging means spaced laterally from the base and receiving a section of the supporting plate therebetween, means connecting the upper portion of the base with the plug receiving means, said connecting means being shaped and arranged to seat within said notch and a tail portion attached to the lower portion of the base, said tail extending below the support plate and being disposed at an angle to the plane of the base to engage the lower edge of the plate to retain the jack in assembly with the plates.

3. A multiple jack and plug assembly, comprising an insulating jack support plate, and at least one plug-receiving jack assembled with the plate, said jack comprising a base adapted to be disposed on one side of said plate, plug-engaging means spaced laterally from the base and receiving a section of the support plate therebetween, means disposed on the upper portion of the base connecting the base and the plug-engaging means, said connecting means engaging an edge of the support plate, and a tail portion attached to the base member below said plug-engaging means for engaging another edge of the support plate.

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