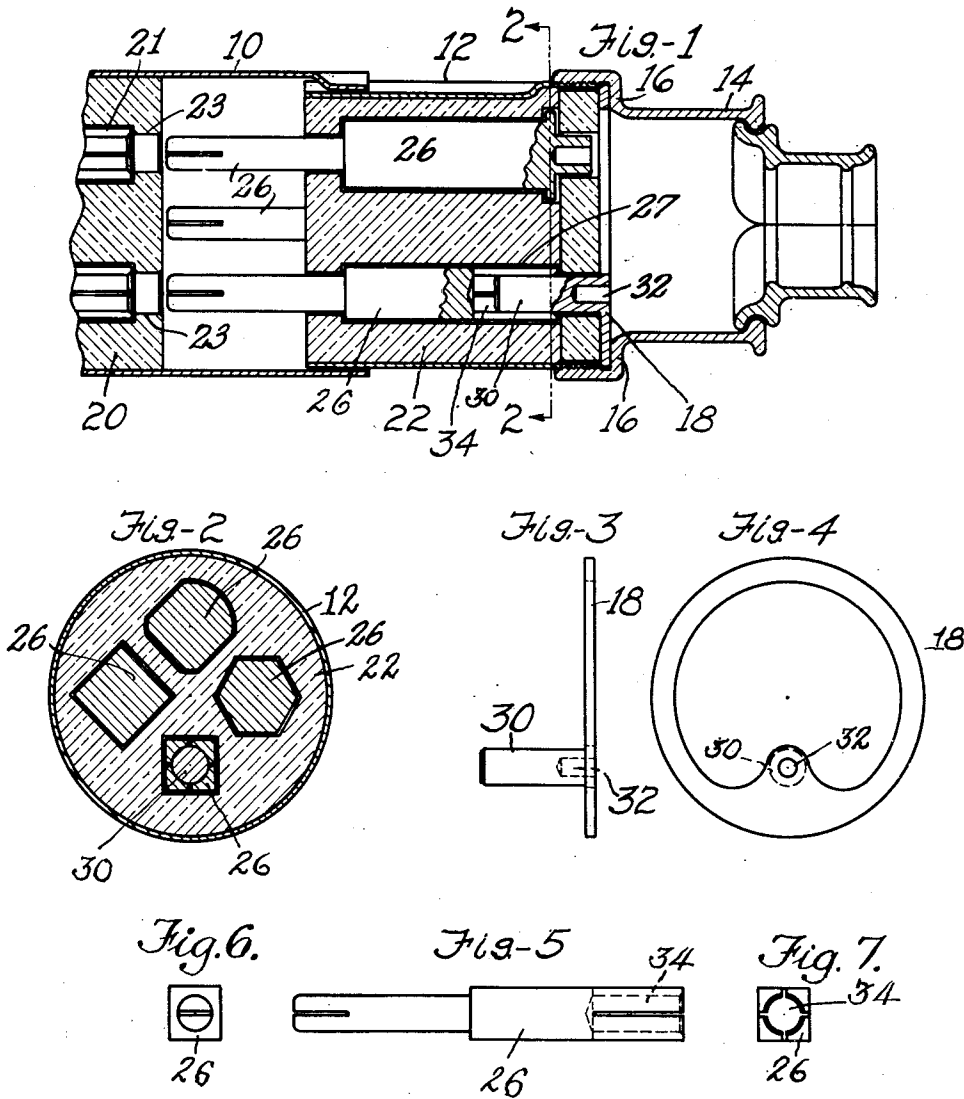


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ELECTRICAL CONNECTION
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ELECTRICAL CONNECTION

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This invention relates to an electrical connection.

The invention has for an object to provide a novel and improved electrical connection having a metal casing and provision for grounding the casing in a novel and improved manner.

A further object of the invention is to provide a novel and improved electrical connection of the plug and receptacle type in which provision is made for grounding the metal casing of the connection in a novel, simple and economical manner.

A still further object of the invention is to provide a novel and improved grounding member for use in an electrical connection of the plug and socket type for grounding the metal casing of the connection.

With these objects in view and such others as may hereinafter appear, the invention consists in the electrical connector, in the grounding member, and in the various structures, arrangements and combinations of parts hereinafter described and particularly defined in the claims at the end of this specification.

In the drawing illustrating the preferred embodiment of the invention, Fig. 1 is a vertical longitudinal section through a sufficient portion of an electrical connector embodying the invention to enable the same to be understood; Fig. 2 is a cross-sectional view on the line 2—2 of Fig. 1; Fig. 3 is a side elevation of the preferred form of grounding member; Fig. 4 is a rear view of the same; Fig. 5 is a detail in side elevation illustrating the preferred form of ground contact member; and Figs. 6 and 7, elevations of the opposite ends of the contact member shown in Fig. 5.

In general, the invention comprises an electrical connector of the plug and socket type, and particularly a multi-pole connector adapted for use in a multi-pole electrical system, such as a two, three, or four-wire system, and in commercial form the plug and receptacle members of the connector are each provided with a metal casing within which the contact members of the connector are operatively supported within insulating members positioned within the metal casings. In order to ground the metal casings of the plug and receptacle members of the connection, provision is made in the preferred embodiment of the present invention for clamping a metal grounding member between component parts of the metal casing of each member, and the grounding member may and preferably will have provision for electrical connection with the

ground contact member, so that in the use of the electrical connection the ground lead may be secured to the grounding member and a ground connection made to the ground contact through the grounding member, and in this manner a positive, durable and efficient ground connection may be made between the metal casing and the ground lead.

Referring now to the drawing, which as above stated illustrates the plug member and a portion of the receptacle member of a multi-pole plug and receptacle connector embodying the invention, 10, 12 represent metallic casings, herein shown as comprising tubular sleeves, having their outer ends threaded and upon which the usual form of end members, one of which is shown at 14, are screwed. The end members 14 are each provided with a shoulder 16 which is utilized in accordance with the present invention for clamping a grounding member 18 between it and the end of the metallic sleeves 10, 12, upon which the particular end member is screwed. The sleeves 10, 12 have insulating members 20, 22, operatively supported therein and the female contact members 21 are mounted in elongated holes 23 in the insulating member 20 while the male contact members 26 are mounted in similar holes 27 in the insulating member 22. As shown in Fig. 2 the contact members are made of different shape in section and are arranged to fit into different and correspondingly shaped sockets in their insulating mountings for the purpose of insuring the reception of the proper contact member in the proper socket and in predetermined relation to each other, so that when the members of the electrical connector are brought together the proper male contact will fit into the proper female contact.

One pair of the contact members 21, 26 comprises the ground contact, and in order to ground the metallic casings 10, 12, provision is made for connecting the casings 10, 12 with the ground contact members 21, 26, and, as above stated, a metal grounding member, preferably a ring 18, is clamped between each shoulder 16 of each end member 14 and the end of the sleeves 12 or 10, respectively, of the plug or receptacle member of the connector. As herein shown, the grounding member is provided with a boss 30 having a socket 32 for the reception of the grounding lead, not shown, to permit the same to be soldered to the grounding member 18, and the boss 30 is shaped to fit within a socket 34 formed in the end of the ground contact member 26, so that during the assembly of the component parts of

the plug or receptacle members of the connector, the grounding member 18 is electrically connected through the boss 30 with the ground contact member 26 within the insulator 22 and the member 26 is grounded through the usual lead received within the socket 32 and soldered to the grounding member 18. The grounding member 18 itself is clamped between the component parts of the metal casing of either the plug or receptacle members of the connector, establishing an efficient connection between the metallic casing and the grounding member.

While the preferred embodiment of the invention has been herein illustrated and described, it is to be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:—

1. An electrical connection comprising a metallic casing composed of a plurality of component members, an insulating member supported within the casing, a plurality of contact members mounted in the insulating member, one of which comprises a ground contact, a metallic grounding member clamped between component members of said casing to be electrically connected therewith and having provision for electrical connection to the ground contact to effect grounding of the casing.

2. In an electrical connection, a metallic casing comprising a plurality of component members, an insulating member supported within the casing, a plurality of contact members supported in the insulating member, one of which comprises a ground, a metallic grounding ring clamped between the component members of the metallic casing and provided with a boss adapted to fit into the ground contact to effectively ground the casing.

3. In an electrical connection, a metallic casing comprising a plurality of component members, an insulating member supported within the casing, a plurality of contact members supported in the insulating member, one of which comprises a ground, a metallic grounding ring clamped between the component members of the metallic

casing and provided with a boss adapted to fit into the ground contact to effectively ground the casing, said metallic grounding ring being provided with a socket for the reception of a ground lead.

4. In an electrical connection, in combination, a metallic casing comprising a metallic sleeve having one end threaded and a metallic end member provided with a shoulder screwed upon the threaded portion of said sleeve, an insulating member supported within the sleeve, a plurality of contact members supported within the insulating member, one of said contact members comprising a ground contact, a metallic grounding member clamped between the end of said sleeve and said shoulder having provision for electrical connection to the ground contact when the end member is screwed in operative position upon said sleeve.

5. In an electrical connection, in combination, a metallic casing comprising a metallic sleeve having one end threaded and a metallic end member provided with a shoulder screwed upon the threaded portion of said sleeve, an insulating member supported within the sleeve, a plurality of contact members supported within the insulating member, one of said contact members comprising a ground contact provided with a socket, a metallic grounding member clamped between the end of said sleeve and said shoulder of the end member and itself provided with a boss adapted to fit in a socket in said ground contact.

6. In an electrical connection, a casing, an insulating member within said casing having an opening extended through it, a grounding contact member having one end thereof in said opening and removed from the adjacent end of said insulating member, and a grounding member separate from said casing and having a conducting member projecting from the inner surface thereof into the opening in said insulating member to engage the grounding contact member within the said insulating member and having an opening extended from the outer surface of the grounding member into said conducting member.

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