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(54) **Hooded electrical connector**

(57) A one-piece, hooded, electrically conductive female contact (10) which has a first end (12) and a second end (14) arrayed along a longitudinal axis (16). The first end (12) is formed to provide a substantially cylindrical tube (18) having a male contact pin receiving area (20) and three circumferentially arrayed, equidistantly spaced contact beams (22) having dual supports (24) and (26), extending into the male contact pin receiving area (20). A first of the supports, e.g., (24), is fixed and

formed integrally with the first end (12) and a second of the supports, e.g., (26), is a sliding support and extends within tube (18) toward the second end (14). The beams (22) are formed to provide electrical connection with an inserted male contact pin and each has an apex (28) formed substantially centrally along the length of the beams and extending inwardly toward the longitudinal axis (16).

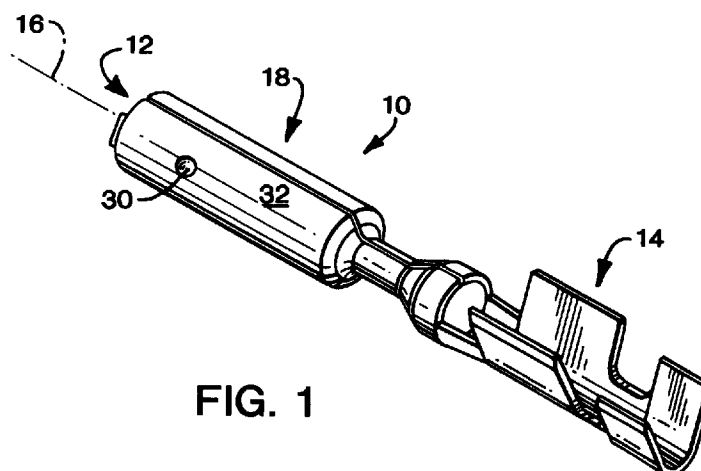


FIG. 1

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Description

TECHNICAL FIELD

This invention relates to electrical contacts and more particularly to such contacts formed for containment in an insulating housing.

BACKGROUND ART

Prior electrical contacts tend to be large and bulky and difficult to employ. The contacting tines, which can be single, or double as shown in U.S. Pat. No. 3,178,669, are exposed during manufacture and subject to bending and subsequent misalignment.

DISCLOSURE OF THE INVENTION

It is, therefore, a object of this invention to obviate the disadvantages of the prior art.

It is another object of the invention to enhance electrical contacts.

These objects are accomplished, in one aspect of the invention, by the provision of a hooded, female electrically conductive contact which is formed to be positioned in a cavity of an electrically insulating housing. Each of the contacts comprises a first end and a second end arrayed along a longitudinal axis with the first end being formed to provide a substantially cylindrical tube having a male contact pin receiving area, and three circumferentially arrayed, equidistantly spaced contact beams having dual support extending into the male contact pin receiving area. A first of the supports is fixed and formed integrally with the first end and a second of the supports is a sliding support which extends within the tube toward the second end. The beams are formed to provide electrical connection with an inserted male contact pin and each has an apex formed substantially centrally along the length of the beams and extends inwardly toward the longitudinal axis.

This construction offers protection for the beams during assembly and also allows close spacing of adjacent contacts, thus reducing the size and bulk of the connector.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of an electrical contact in accordance with an aspect of the invention;
Fig. 2 is an elevational view, partially in section, of the contact of Fig. 1;
Fig. 3 is an elevational view of additional features of the contact of Fig. 1; and
Fig. 4 is a plan view of a blank for fabricating the contact of Fig. 1.

BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and appended claims taken in conjunction with the above-described drawings.

Referring now to the drawings with greater particularity, there is shown in Fig. 1 a hooded, electrically conductive female contact 10 which comprises a first end 12 and a second end 14 arrayed along a longitudinal axis 16. The first end 12 is formed to provide a substantially cylindrical tube 18 having a male contact pin receiving area 20 and three circumferentially arrayed, equidistantly spaced contact beams 22 (only two beams being shown in Fig. 2) having dual supports 24 and 26, extending into the male contact pin receiving area 20. A first of the supports, e.g., 24, is fixed and formed integrally with the first end 12 and a second of the supports, e.g., 26, is a sliding support and extends within tube 18 toward the second end 14. The beams 22 are formed to provide electrical connection with an inserted male contact pin and each has an apex 28 formed substantially centrally along the length of the beams and extending inwardly toward the longitudinal axis 16.

Each beam 22 has associated therewith an overstress preventing feature 30 formed into the outside surface 32 of the male contact pin receiving area 20. In the embodiment shown, the overstress preventing feature is an inwardly projecting, semi-spherical dimple.

The overstress preventing features 30 are located substantially under each of the apexes 28.

The second end 14 is formed to receive a wire and can include crimping means 32 or other wire-holding structure.

Referring now to Fig. 4, there is shown a blank 34 out of which the contact 10 is fabricated. Blank 34 includes slots 36 which aid in forming the contact. The contact 10 is fabricated from blank 34 by properly forming the each of the beams 22 with the appropriate apex 28 and sliding support 26; bending the beams 22 backward, i.e., towards the second end 14; and then rolling the blank to form the hooded electrical contact 10.

This single piece construction for a hooded contact provides many advantages over the prior art. It is easily constructed and economical and provides great protection for the beams, preventing them from easily being deformed by the insertion of the male pin. The three point contact provided by the equidistantly spaced beams gives an additional contact point over two beam structures and gives multiple plane support.

Additionally, the formation of the contact 10 from the blank 34 allows for the use of virtually any base material to be employed as well as permitting any form of plating that may be desired.

While there has been shown and described what is at present considered to be the preferred embodiment of the invention, it will be apparent to those skilled in the

art that various changes and modifications can be made herein without departing from the scope of the invention as defined by the appended claims.

Claims

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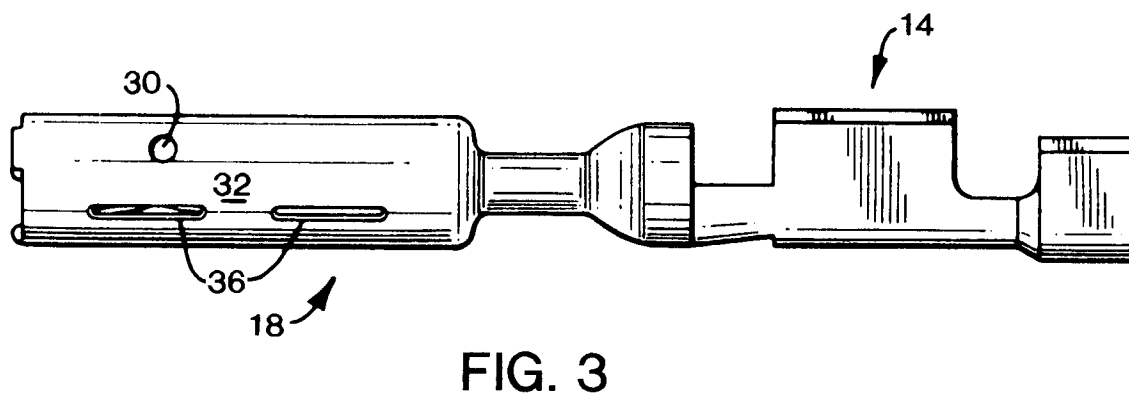
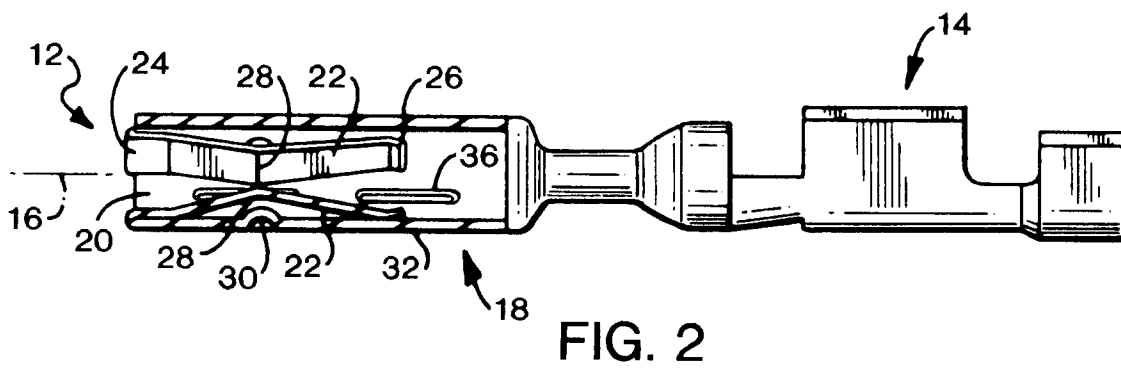
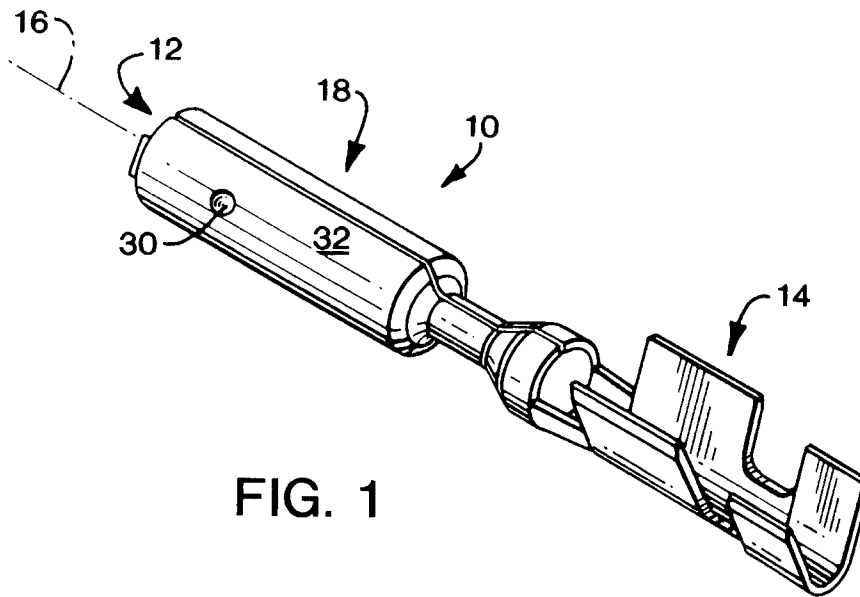
1. A hooded, electrically conductive female contact comprising: a first end and a second end arrayed along a longitudinal axis, said first end being formed to provide a substantially cylindrical tube having a male contact pin receiving area, and three circumferentially arrayed, equidistantly spaced contact beams having dual support extending into said male contact pin receiving area, a first of said supports being fixed and formed integrally with said first end and a second of said supports being a sliding support and extending within said tube toward said second end, said beams being formed to provide electrical connection with an inserted male contact pin and each having an apex formed substantially centrally along the length of said beams and extending inwardly toward said longitudinal axis. 10 15 20
2. The contact of Claim 1 wherein each beam has associated therewith an overstress preventing feature formed into the outside surface of said male contact pin receiving area. 25
3. The contact of Claim 2 wherein each of said overstress preventing features are located substantially under each of said apexes. 30
4. The contact of Claim 3 wherein said second end is formed to receive a wire. 35

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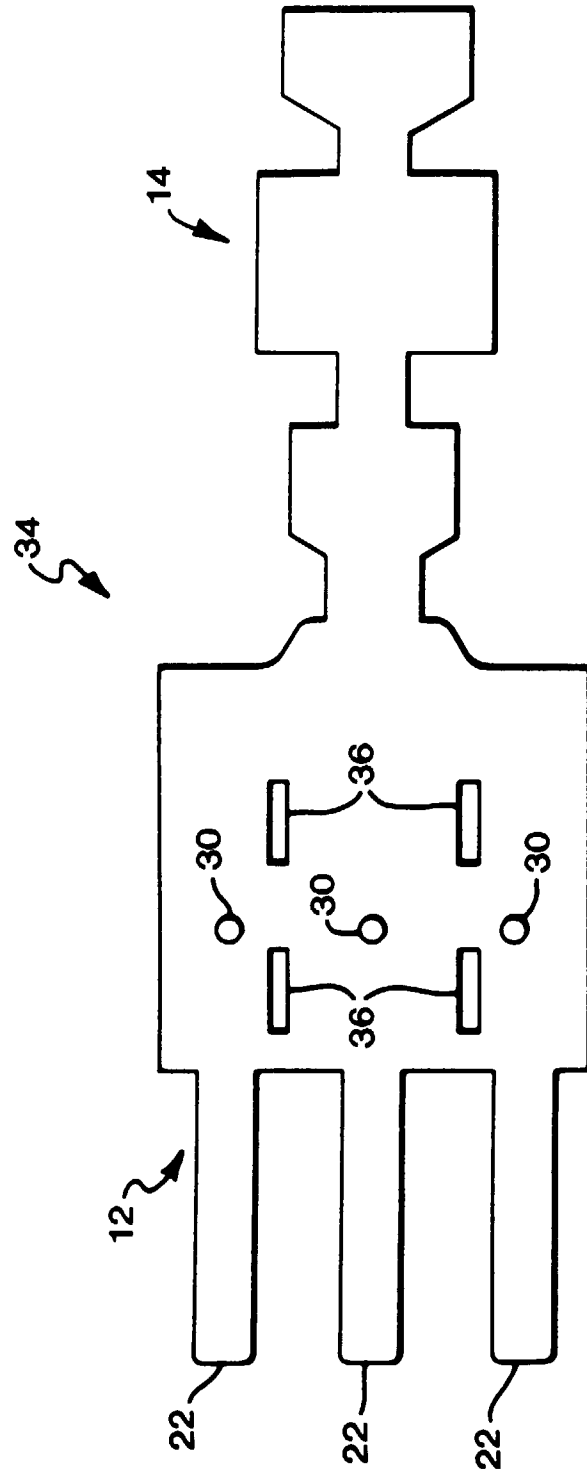


FIG. 4