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DEVICE FOR CONNECTION OF CABLES BY MEANS OF PLUGS AND SOCKETS

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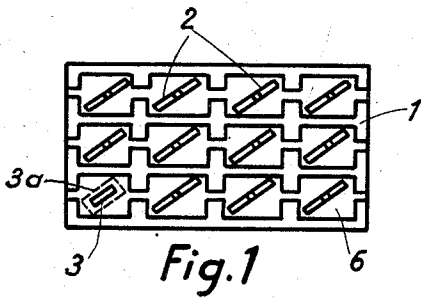


Fig. 1

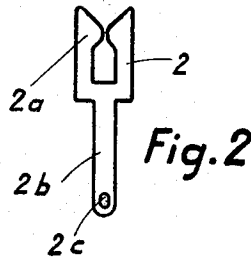


Fig. 2

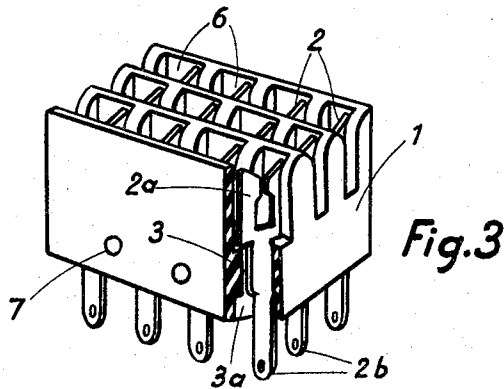


Fig. 3

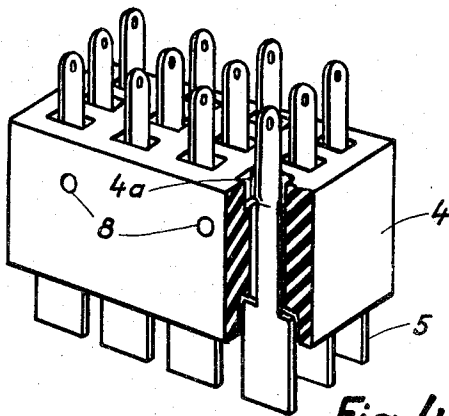


Fig. 4



Fig. 5

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## UNITED STATES PATENT OFFICE

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DEVICE FOR CONNECTION OF CABLES BY  
MEANS OF PLUGS AND SOCKETS

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1 Claim. (Cl. 339—192)

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The present invention relates to a device for connection of two multi-conductor cables by means of a plug and a socket and relates to the construction of the socket. When the contact pins of the plug are to be brought into contact with the contact arms of the socket it is necessary that the contact pins be received between each of two elastic prongs of the socket. This is achieved according to the invention through a very simple means, and therefore the socket becomes considerably cheaper in manufacture than sockets known up to now and suitable for large scale production. The socket according to the present invention consists of a block made of insulating material and provided with a rectangular hole extending through the block and a contact element stamped from sheet metal for each conductor in one of said cables. These contact elements each have a rather broad claw-shaped part with two points directed inwardly for guiding and receiving a plane contact prong on the plug and a rather narrow elongated part, which is inserted from the front face and twisted so that it holds the contact element in said hole of the block, and which is shaped for soldering of said conductors. The claw-shaped part is twisted about the longitudinal center line of the contact element to an angle with the plane of said plane contact prong. The hole terminates towards the front face in the bottom of a recess in the block, which recess encloses the claw-shaped part of the contact element, leaving space for spring action of the legs on said claw-shaped part.

The invention is illustrated by the accompanying drawings wherein:

Fig. 1 is an under plan view showing the front face of the socket;

Fig. 2 is a side elevation view of one of the contact elements;

Fig. 3 is an isometric view showing the socket in inverted position and partly broken away to fully show one of the contact elements;

Fig. 4 is an isometric view showing the plug; and

Fig. 5 is a side elevation view showing one of the prongs of the plug.

Referring now to Fig. 1, this figure shows the socket as seen from the front face, which receives the plug. The socket is principally comprised by a block 1 made of plastic material and having in this case 12 quadrangular recesses 6. In each recess there is a rectangular hole 3 extending from the bottom of the recess to back face of the block. There is a contact element

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2 in each recess, one of these elements being shown in Fig. 2. Each contact element 2 is stamped out of a plane metal sheet and consists of a rather broad part 2a, which is stamped out in wedge shape to a point and slotted to form a claw, and a narrow part 2b being provided with a soldering lug 2c. The narrow part of the contact piece is inserted through the rectangular recess 6 and through the rectangular hole 3 extending therefrom in the block 1 and twisted outside the block on the rear face of the latter, so that it is held in the block. The contact element 2 is positioned diagonally in the quadrangular recess 6 and is thus perpendicular to the contact prongs 5 of the plug, as shown in Figs. 3 and 4. In Fig. 3 one corner of the block 1 is cut away so that the position of the contact element 2 is shown.

Fig. 4 shows a plug intended to be inserted into the socket according to Fig. 2. The contact prongs 5, one of which is shown in Fig. 5, are mounted in a block 4 in the same manner as the contact elements 2 are mounted in the block 1. The protruding part of the soldering end of the contact prong is twisted so that the prong is retained in the block.

The socket, as well as the plug, has small recesses in the rear face of the block at the ends of the rectangular holes to provide for the soldering lugs. These recesses 3a in the block 1 and 4a in the block 4, respectively, are provided for concealing the twisted ends on the contact elements 2 and the contact prongs 5, respectively.

When the plug according to Fig. 4 is inserted into the socket according to Fig. 3 the prongs 5 are guided into the claw-shaped part 2a of the contact elements 2 and the legs of the claws on the claw-shaped part are spread apart. The recesses 6 in the block 1 are spacious enough to permit this spreading apart of the legs.

For fastening of the blocks 1 and 4 there are provided holes 7 and 8, respectively, for securing screws.

We claim:

1. A multi-polar socket for the connection of two multi-conductor cables in cooperation with a multi-pronged plug having a quadrangular face and planar plug prongs extending therefrom and positioned parallel to the long dimension of the quadrangular face, said socket being of insulating material and of parallelepiped shape and having a front face adapted to abut the multi-pronged plug and a back face at which the conductors of one of the multi-conductor cables are received, and recesses of rectangular shape corre-

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sponding in number to the conductors in the cables extending from the front face part way through the socket and holes extending from the bottoms of the respective recesses to the back face, and a contact element positioned in each of said recesses, said contact elements each being comprised by a planar body positioned diagonally of the recess and parallel to a diagonal of the front face of the socket and including two parallel arms yieldingly facing each other and of lesser overall width than the diagonal dimension of the recess and terminating in tapered ends for guiding a prong on the multi-polar plug and having opposed abutting inwardly projecting extensions adjacent the tapered ends for receiving said prong, and said contact elements each having a narrow centrally formed extension positioned in the hole between the bottom of the recess and the back face of the socket with the outer end of

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said extension beyond the said hole being bent out of alignment with the central portion within the hole, whereby the contact element is retained in position in the socket and a lug is formed for connection thereto of one of the conductors from the last mentioned cable.

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