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ELECTRICAL SOCKETS

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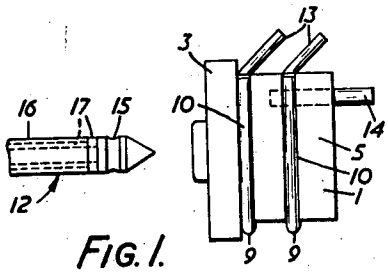


FIG. 1.

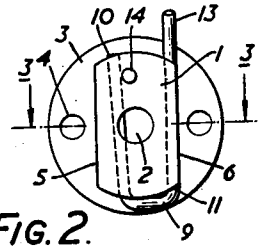


FIG. 2.

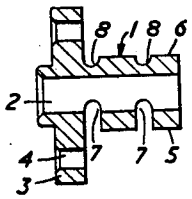


FIG. 3.

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ELECTRICAL SOCKETS

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This invention relates to electrical sockets.

The present invention provides an electrical socket comprising a body of insulating material having a plug receiving bore and an electrical contact formed from a length of resilient wire bent to provide opposed arms extending over oppositely disposed sides of the body, each arm being located in a groove in the respective side, at least one of the grooves communicating with the plug receiving bore to enable the contact to be engaged by an inserted plug.

The resilient contact may be of U-shape and assembled by aligning the free ends of the arms with the grooves and sliding the contact over the body of the socket.

The free end of at least one of the arms may be bent in such a manner that when the contact is assembled the bent end extends laterally of the adjacent end of the groove to retain the contact in assembly.

The socket may have a secondary contact which is normally engaged by an arm of one of the resilient contacts but is separated therefrom by the plug, when inserted, displacing the said arm. The secondary contact may comprise a rod like member, for example wire, extending parallel to the plug receiving bore and across one of the grooves so as to be normally engaged by the arm of the resilient contact in that groove. The rod contact may have one end projecting from one end of the socket to form a wiring tailpiece.

The body of the socket may be a molding of synthetic plastic material and in this case the secondary contact may comprise a metal rod or strip of wire which is a force fit in a bore in the molding or is embedded in the body during the molding operation.

Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawing of which:

FIG. 1 is a side view of an electrical socket according to one embodiment together with a suitable plug shown in section,

FIG. 2 is an end view of the socket as seen from the right of FIG. 1,

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 2 of the body of the socket.

With reference to the accompanying drawing, FIGS. 1 to 3 show an electrical socket comprising a body 1 molded from insulating synthetic plastic material and having an axially extending plug receiving bore 2 of circular cross-section. At one end of the body is an integral laterally projecting disc-like flange 3 with holes 4 for receiving rivets or other means such as bolts or screws for securing the socket to a support. The body has two flat side faces 5, 6, each of which has a pair of parallel grooves 7, 8, extending perpendicularly to the axis of the bore 2. Each groove 7 in the face 5 is in register with a groove 8 in the other face 6 and the grooves 7 in the face 5 open into the plug receiving bore 2. The grooves 7 are inclined to the face 5 and to the grooves 8.

Two electrical contacts 9 are provided each formed from a resilient length of wire bent into a U-shape. Each contact 9 has one arm 10 of the U located in a groove 7 in the face 5 and the other arm 11 of the U in the opposite groove 8 in the other face 6. The arms 10 in the grooves 7 which open into the bore 2 extend transversely across the adjacent side of the said bore 2 so as to be engaged by the plug 12 when the latter is inserted. The free end 13 of the arm 11 of each of the contacts 9 is bent at an acute angle so as to extend over the adjacent end of the groove 8 to retain the contact 9 in assembly with the body 1.

A secondary contact 14 formed as a short metallic rod or strip of wire is located in the body 1 so that it extends parallel to the axis of the body 1 and projects across one of the grooves 7 which is in communication with the bore 2. The rod contact 14 includes an end which projects from the end of the body 1 remote from the flange 3, this end serving as a wiring terminal. It will be seen that the secondary contact 14 is located so as to engage only one of the pair of contacts 9.

The resilient contacts 9 are readily assembled with the body 1 by slightly spreading the arms 10, 11 of the U-shape to align the free ends with the grooves 7, 8 on the opposed flat sides 5, 6 of the socket body 1, and pressure is then applied to the base of the U to slide the contacts 9 over the flat sides 5, 6 so that the arms 10, 11 slide in the grooves 7, 8. When fully assembled, the bent end 13 of each arm 11 will snap over the end of the groove 8 and serve to retain the contact 9 in assembly. The contacts 9 are accordingly easily and rapidly assembled and no separate fastening means is necessary.

When no plug is assembled with the socket, the arm 10 of one of the contacts 9 is resiliently in contact with the portion of the secondary contact 14 projecting across the groove 7. Thus if each of the U-shaped contacts 9 and the secondary contact 14 is connected with a separate external electrical circuit, the circuits connected to the secondary contact 14 and to the contact 7 engaged with the secondary contact 14 are connected to one another.

The plug 12 which is the usual type of electrical plug used with such a socket includes axially spaced contact portions 15, 16 insulated from each other by a sleeve 17, each axial portion 15, 16 being connectable with a different electrical circuit. When the plug 12 is inserted into the socket, each axial portion 15, 16 resiliently engages an arm 10 of a contact 9, forcing the arm 10 slightly outwardly. The arm 10 of the contact 9 previously engaged with the secondary contact 14 being thus separated from the secondary contact 14.

Due to the resiliency of the U-shaped contacts 9, when the plug 12 is withdrawn from the socket, the arms 10 of the contacts 9 return to their original positions and the one arm 7 again engages with the secondary contact 14.

I claim:

1. An electrical socket comprising a body of insulating material having a plug receiving bore and an electrical contact formed from a single length of resilient wire bent to provide opposed arms extending over oppositely disposed sides of the body, each arm being located in a groove in opposed outer sides of said body, one of the grooves communicating with the plug receiving bore and one arm of the contact in said one groove intersecting the bore to enable the said one arm to be engaged by an inserted plug, a secondary contact secured to the body, said

secondary contact normally engaging the said one arm of the resilient contact, said secondary contact being in the form of a rod-like member extending parallel to the plug receiving bore in the body and extending adjacent to and across the groove which communicates with said bore.

2. An electrical socket comprising, in combination, a body member of insulating material having a plug receiving bore, said body member having a groove extending from an outer surface into intersecting relation to said plug receiving bore, a bent resilient contact having opposed arms assembled to said body member, one of said arms being located in said groove and intersecting said plug receiving bore, the other arm being located in spaced relation to said bore and co-operating with said body member to hold the first mentioned one arm in proper assembly with said body member and a secondary contact assembled with said body member and normally engaging

the said one arm of the resilient contact and said one arm being movable out of engagement with said secondary contact when a plug member is inserted into said plug receiving bore.

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