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CORRUGATED STRIP CONNECTOR

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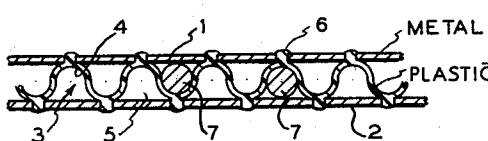


Fig. 1

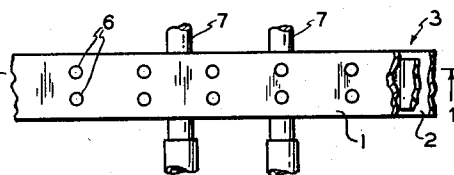


Fig. 2

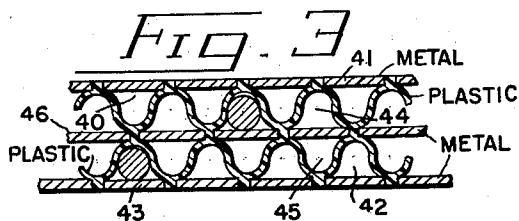


Fig. 3

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1

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1 Claim. (Cl. 339—61)

The present invention relates generally to electrical connectors, and more particularly to low cost electrical connectors in which a plurality of wire ends may be inter connected, at will, by insertion of the wire ends into the connector.

It has long been a problem, in "breadboard" wiring of electronic assemblies, to provide flexibility of operation, and to dispense with soldered joints, to the end that wiring might be rapidly accomplished, and that changes in wiring might be expeditiously made. Desiderata for a connector which might answer the problem are (1) low cost (2) long life (3) ability firmly to interconnect a large number of wires in response to mere insertion of the wire ends into the connector (4) ease of securing the connector at any point and in any desired orientation on a solid backer member. Connectors presently available do not generally comply with all the above desiderata.

In accordance with the present invention, an elongated strip of thin metal is secured at points disposed along its length to a similar strip of resilient plastic material. One of the strips may be corrugated or slotted, providing alternate ridges and furrows, while the other strip may remain flat. The ridges may represent the points at which the strips adjoin and are secured together. The furrows may have a depth just adequate to permit force fit of wire ends or leads, which are then maintained in secure relation by the resilience of the plastic strip, and are electrically interconnected by the metal strip.

Modifications of the simple connector above described may be resorted to, in which a strip of corrugated metal is sandwiched between two flat plastic strips, or in which a strip of corrugated plastic is sandwiched between two flat metal strips, and further variants are contemplated and are hereinafter described.

The strip connectors so formed may readily be tacked, or screwed down to a board as by wood screws, at any position thereon, and in any orientation, without special preparation of the board, suitable apertures being provided in the strips for this purpose. Connectors in accordance with the invention may be manufactured in long strips, from which connector elements desired length may be cut by the user, by means of metal cutting shears.

It is, accordingly, a broad object of the present invention to provide a novel multiple wire solderless connector.

It is a further object of the invention to provide a connector which may be readily secured, as by tacks, to a backer plate, of wood, fiber-board, or the like.

It is another object of the present invention to provide a strip connector which may be fabricated of any desired length, thus to accommodate any desired number of wire ends simultaneously, and which lends itself to reduction in length in response to a simple cutting operation.

A further object of the present invention resides in the provision of a multiple lead connector fabricated of at least one strip of metal and at least one strip of resili-

2

ent plastic, at least one of the strips being corrugated, and all the strips conjoined in parallel plane relation.

The above and still further objects, features and advantages of the present invention will become apparent upon consideration of the following detailed description of one specific embodiment thereof, especially when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a view in cross section taken longitudinally of a multiple lead connector arranged in accordance with the present invention, taken on the line 1—1 of Figure 2;

Figure 2 is a view in plan of the connector of Figure 1; and

Figure 3 is a view in section, taken longitudinally, of a modification of the connector of Figures 1 and 2.

Referring now more particularly to Figures 1 and 2 of the accompanying drawings, the reference numeral 1 denotes a flat thin strip of metal, and 2 a similar parallel strip of metal, such as copper, brass, aluminum, or the like. Sandwiched between the strips 1 and 2 is a sheet of corrugated or slotted resilient plastic, having ridges 4 and furrows 5. The metal plates 1 and 2 are provided with apertures 6, located in coincidence with the ridges 4, or some of these. In fabricating the connectors the plastic, selected to soften when hot, is heated sufficiently to cause material of the ridges 4 to flow through the slots 6, thereby securing the elements of the assembly together firmly when the plastic cools. Clearly, if desired, the strips 1 and 2 may be secured together otherwise than as shown, as by rivets, or the like, or may be unsecured except by a device, such as a tack or wood screw, which secures the unit to a wood panel. Wire ends, or leads, 7 may be inserted into the furrows 5. The height of the several furrows is selected to accept the leads or wire ends 7 on force fit, by forcing the sides of the corrugations apart, and/or forcing the strips 1 and 2 slightly.

In the system of Figure 3 the structure of Figure 1 is duplicated, in superposition, to provide a larger number of possible connection points, for a given length of connector strip.

In this connection, it will be noted that the structure of Figures 1 and 2 provides two relatively insulated connector assemblies or sets of lead apertures, since leads in contact with strip 1 are insulated from those in contact with the strip 2. In the structure of Figure 3, on the other hand, four sets of apertures are provided. One set, 40, is in contact with metallic strip 41, and one set, 42, is in contact with metallic strip 43, and these are insulated from each other. Two sets of apertures 44, 45 are available to the metallic strip 46, one above it and one below it, and these latter apertures are electrically insulated from the other two sets of apertures, 40 and 42.

Further modification of the species of the invention above described, and illustrated in the accompanying drawings, may be devised, without departing from the true spirit of the invention, as defined in the appended claim. In particular, the several strips may be corrugated on one side only, or provided with lateral slots on one side only.

While I have described and illustrated several specific examples of the present invention it will be clear that variations of the specific details of construction may be resorted to without departing from the true spirit of the invention as defined in the appended claim.

What I claim is:

A flat strip multiple lead connector, comprising three thin elongated strips of material lying in stacked relation, the outer of said strips being metallic and substan-

tially plane, and the intermediate one of said strips consisting of resilient insulating material having transversely extending corrugations along its entire length, means securing all said strips in conjoint and relatively fixed parallel plane relation along the entire lengths of all said strips, said last means including integral formations on the resilient strip at each of its corrugations, entering apertures in the adjacent metal strip for securing them together.

5

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