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1,962,487

ELECTRICAL CONNECTER BLOCK

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Fig. 1

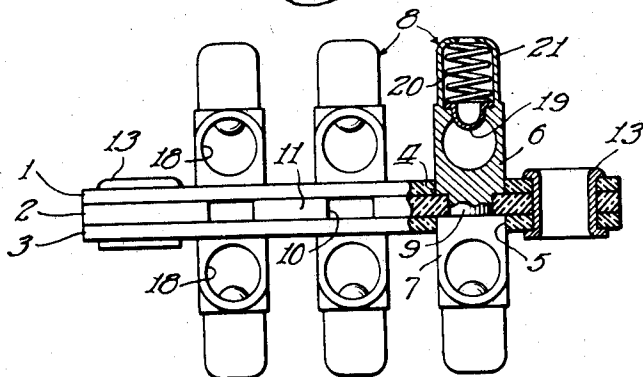


Fig. 2

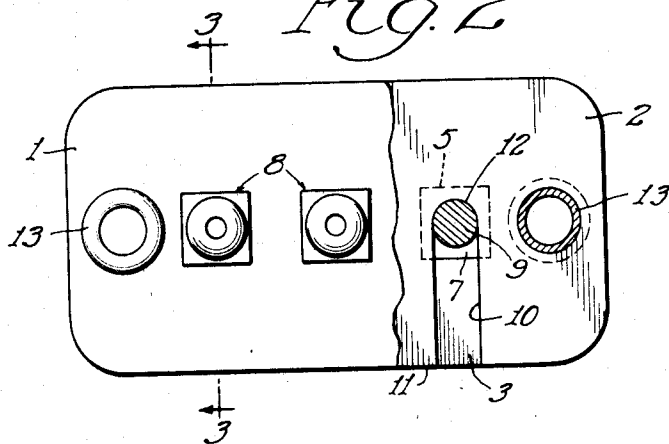
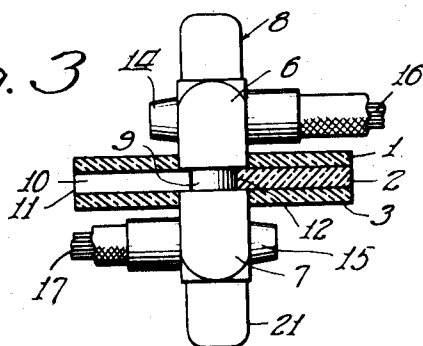


Fig. 3



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UNITED STATES PATENT OFFICE

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ELECTRICAL CONNECTER BLOCK

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4 Claims. (Cl. 173-324)

This invention relates to electrical connector blocks and is adapted for use on motors, automobiles, radios, meters and the like.

Among other objects the invention aims to provide a simple and economical insulating connector block upon which may be readily mounted a plurality of metallic connectors, each insulated from the other, and each keyed to the block, so as to become in effect an integral part thereof, and each affording an electrical connection between two current conducting wires, for example.

The invention will be explained by reference to the accompanying drawing showing an illustrative embodiment thereof and in which—

Figure 1 is a side elevation of my improved connector block, parts being broken away and shown in section for clearness of description;

Figure 2 is a plan view of the structure of Figure 1 with parts broken away; and

Figure 3 is a section taken on the line 3-3 of Figure 2, parts being shown in elevation and showing the use of the block as a circuit continuing means between current conducting wires.

The illustrative connector block comprises a plurality of insulating laminations, in this instance, the three laminations 1, 2 and 3, the laminations 1 and 3 constituting the outer surface of the block and the lamination 2 constituting an intermediate portion of the block.

The outer laminations 1 and 3 are here provided with a series of apertures therethrough such as the square apertures 4 in the lamination 1 and the square apertures 5 in the lamination 3. When the laminations 4 and 5 of each series are in register, as they are readily adapted to be placed, they receive snugly therethrough the square body portions 6 and 7 of metallic connectors 8. The body portions 6 and 7 of each connector are shown integral being joined together by a restricted central portion 9 which, in this instance, is cylindrical.

The intermediate lamination 2 has a series of restricted apertures therein adapted to register with the apertures 4 and 5 and to receive therein the restricted portions 9 of the connectors 8 to key the connector to the block as presently described.

In the illustrative construction, the lamination 2 has a series of slots 10 therein which have their outer ends opening into an edge 11 of the lamination 2. The inner ends of the slots 10 are desirably arcuate as at 12. These slots 10 are shown of a width substantially the diameter of

the restricted portion 9 of the connectors 8 and the radius of the arc 12 is substantially the radius of the portions 9. Furthermore, the arc 12 is adapted to be concentric with the restricted portions 9 when the laminations 1, 2 and 3 are secured together as next described.

The connectors and the laminations may be assembled to form in effect an integral connector block by causing the square body portions 6 and 7 of the connectors 8 to be received in the square apertures 4 and 5, respectively, of the laminations 1 and 3, then slipping the lamination 2 between the laminations 1 and 3 so that the restricted portions 9 of the connectors 8 pass through the slots 10 and into the inner ends of the slots to be concentric with the arcs 12.

Next the laminations, which are coterminous, as clearly shown in the drawing, may be secured together for example by the hollow metallic rivets 13 which pass through all three of the laminations and are clinched upon the outer laminations 1 and 3. The connector block may be mounted, if desired, upon any suitable support (not shown) by fastening means which may conveniently pass through the hollow rivets 13.

Thus when secured together, as just described, the connectors 8 are keyed to the connector block by the intermediate lamination 2 and the entire assembly becomes in effect an integral structure.

Each connector 8 may include terminal receiving sockets for metallic plugs such as 14 and 15 which constitute the terminals of current conducting wires 16 and 17, respectively. Such sockets are provided by the cylindrical bores 18 in each of the body portions 6 and 7 and the plugs may be yieldingly retained therein by the detents 19 which are pressed into the bores by the coil springs 20 housed in a spring chamber 21 here shown integral with each of the body portions 6 and 7 and the interiors of which communicate with the bores 18. Thus each of the connectors 8 provides an insulated circuit continuing device between two current conducting wires. Obviously, by pulling firmly upon the wires they may be separated from the connectors 8.

Having described an embodiment of my invention, I claim:

1. An electrical connector block comprising a plurality of at least three insulating laminations, an integral metallic connector having a plurality of enlarged portions and an intermediate restricted portion, the two outer of said

laminations having registering apertures therein receiving the larger portions of the connectors therethrough, said laminations including an intermediate lamination having a restricted aperture therethrough registering with the first mentioned apertures and receiving therethrough the restricted portion of the connector, said restricted aperture communicating with a slot of a width sufficient to pass therethrough the restricted portion of the connector and opening into a margin of said intermediate lamination, and means securing the laminations together, whereby the connector is clamped to the block.

2. The structure of claim 1 wherein the enlarged portions of the connector are of square cross-section and the apertures in the outer laminations are also of square cross-section snugly receiving the enlarged portions of the connector, and the restricted portion of the connector is cylindrical and the restricted aperture in the intermediate lamination is formed by the inner end of the said slot which is of a width snugly receiving the cylindrical restricted portion of the connector, said slot terminating at its inner end in an arc of substantially the radius of the said cylindrical portion and concentric therewith.

3. An electrical connector block comprising three separable insulating coterminous laminations, the two outer of said laminations having a

series of two registering apertures, a plurality of metallic connectors each having an enlarged portion and an intermediate restricted portion, the enlarged portions of each connector being snugly received in the two registering apertures in the outer laminations and the intermediate lamination having a plurality of slots each opening into a margin of the intermediate lamination and terminating in register with the apertures in the outer laminations but restricted with respect thereto and of sufficient width to snugly receive the restricted portion of the connectors therein, and means for permanently securing the laminations together.

4. An electrical connector block comprising a plurality of laminations secured together, registering apertures in certain of said laminations for the reception of larger portions of a metallic electrical connector and an intermediate lamination having a restricted aperture therethrough in register with the first mentioned apertures for the reception of a restricted portion of the connector whereby the connector and block are keyed together, wherein the restricted aperture in the intermediate lamination is in communication with a slot opening into a margin of said lamination whereby the restricted portion of the connector may be passed through said slot and into said restricted aperture.

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