

Oct. 21, 1969

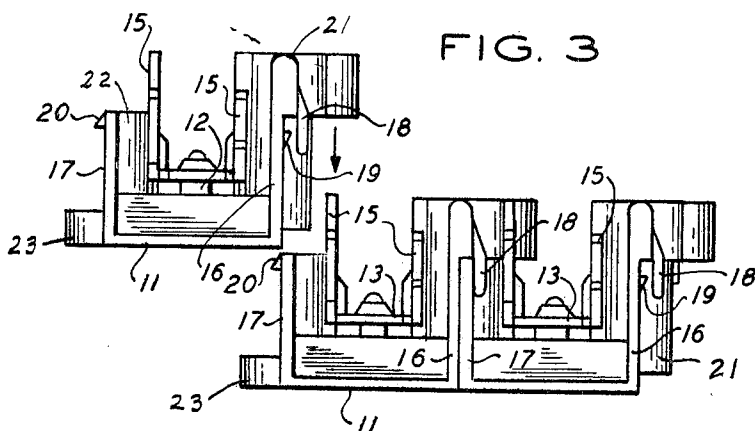
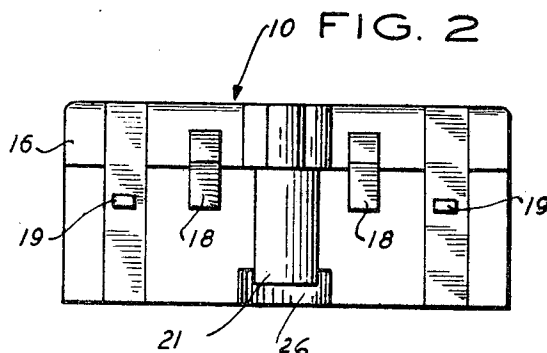
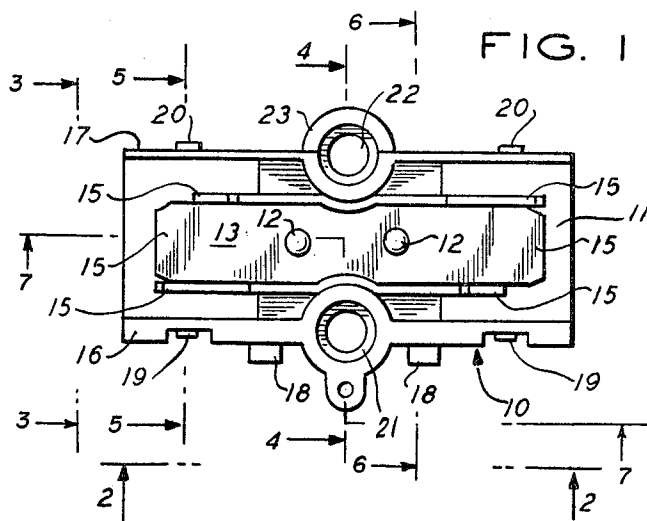
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3,474,397

MODULAR TERMINAL BLOCK

Filed June 19, 1967

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

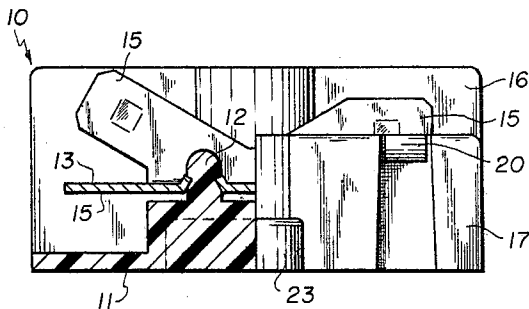
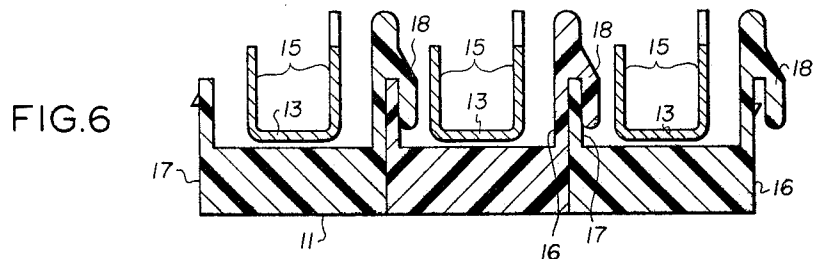
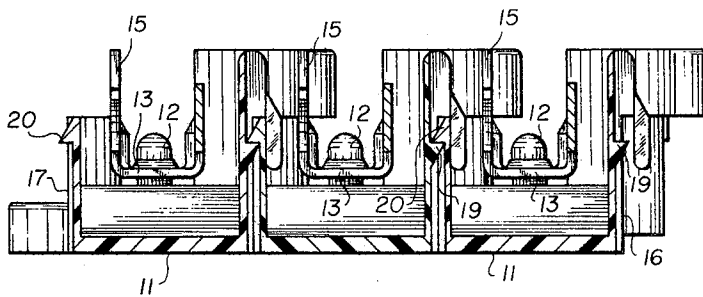
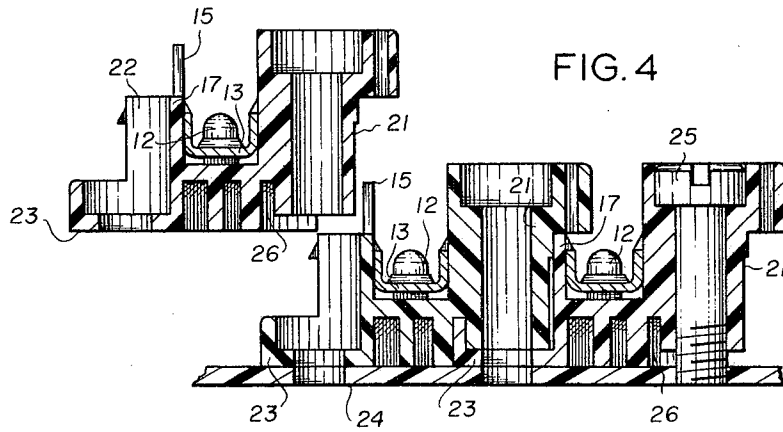


FIG. 7

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1

3,474,397

MODULAR TERMINAL BLOCK

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10 Claims

ABSTRACT OF THE DISCLOSURE

This invention relates to a terminal block which may be made in modular block units adapted to be snapped to assembly with like blocks in increments desired, without use of auxiliary or external members or procedures, such as riveting and bolting of the parts.

MODULAR TERMINAL BLOCK

This invention relates to a modular terminal block which may be made as a standard block for snap-lock assembly into automatic interlocking registry with like blocks, forming an essentially unitary construction therewith without use of auxiliary fasteners such as rivets, screws or the like. Loss of conductivity due to vibration is eliminated, intimate contact being assured for maintenance of conductivity.

A further object of the invention is to provide a modular block with cam and ledge means for automatic locking interengagement on assembly of the parts.

The module block of the invention is so constructed that, when assembled with like blocks, it will automatically interfit in vibration proof relation, in the unit multiples desired, formed in a rapid and simple fashion, without the necessity for use of tools or separate connector parts.

The units or blocks on assembly, intermesh, and are mutually reinforcing. The blocks are so constructed as to enable the user to apply them to apparatus at precisely the points desired.

The drawings, illustrating procedures and devices useful in carrying out the invention, and the description below, are exemplary only of the invention, which shall be deemed to cover all other devices and procedures coming within the scope and purview of the appended claims.

In the drawings, wherein similar reference characters indicate like parts:

FIG. 1 is a top plan view of a terminal block embodying the invention,

FIG. 2 is a side elevational view thereof, taken at line 2—2 of FIG. 1,

FIG. 3 is an end elevational view of two assembled terminal block modules embodying the invention, and a third about to be assembled therewith, taken at the position indicated by line 3—3 of FIG. 1,

FIG. 4 is a transverse sectional view, through the centers of the (FIG. 3 modules), at the position indicated at line 4—4 of FIG. 1,

FIG. 5 is a transverse sectional view, taken at the line 5—5 position of FIG. 1, of the three modules of FIG. 4 when assembled, and

FIG. 6 is a transverse sectional view thereof, taken at the position corresponding with line 6—6 of FIG. 1, and

FIG. 7 is a longitudinal sectional view of the FIG. 1 module block taken at the line 7—7 of FIG. 1.

As shown in the drawings, the terminal block 10 of the invention (FIG. 1) may be molded or otherwise formed, preferably of dielectric material, such as nylon or other suitable plastic or other material, to define a base member or portion 11 with means such as pins 12 formed thereon (FIGS. 7, 1) so that a terminal connector plate 13, provided with suitable apertures for re-

2

ception of the pins, may be assembled onto the pins or otherwise secured to base member 11, prior to or during the molding procedure, or at any other time, to securely lock the connector plate 13 to the base member 11. Pins 12 may be cold-headed or otherwise attached so as to expand and form a tight seal to prevent their removal. The connector plate 13 may be formed with a plurality of male tabs 15 extending therefrom (FIGS. 1 and 7) for connection of terminals, cables, or the like, therewith. One male tab 15 on each side of each terminal block 10 is (FIG. 7) parallel to the terminal connector plate 13 while a second male tab 15 on each side of each terminal block 10 is at some acute angle, for example, a 45 degree angle, to the terminal connector plate 13; this prevents the shorting of non-insulated terminals placed on adjacent male tabs. A third male tab 15, on each side of each terminal block 10, is perpendicular to the first male tab 15 and offset therefrom (FIG. 3). Block 10 is further provided with means 18 for registration with like terminal blocks 10 (FIG. 3) on assembly of blocks 10 (FIG. 5). Said registration means may comprise L-shaped fingers 18 secured (FIG. 6) to or formed with the first wall 16 of the block, and adapted for overlapping registration engagement with the second wall (17) of a terminal block 10 (FIG. 3). The second wall 17 is formed of less height than the first wall 16 and said walls are also provided with complementary interlatching means comprising stud 19 preferably downwardly, inwardly tapered (FIG. 3), formed on said first wall 16 and stud 20 on the second wall 17, complementarily upwardly tapered. Thus, on registration positioning of the first wall 16 (FIG. 3) onto second wall 17, the stud 19 on the first wall 16 will ride or cam over stud 20 of second wall 17 and when the flat ledge portions of the studs register stud 19 will snap beneath and interlock with the stud 20, and thereby register and interlock the blocks 10 with a pronounced snap.

The first and second walls 16 and 17, respectively, may further be provided with complementarily formed recessed and projecting portions for interfitting and self-aligning relationship on assembly of the blocks 10. For example (FIGS. 3 and 4) first wall 16 may have formed thereon a tubular or other projection 21 for reception in complementarily formed recess 22 in the second wall 17 on assembly of the parts as above noted. The second wall 17 may be provided with flanged open boss 23 so that on assembly of the parts, the tubular projection 21 may be positioned in the recess 22 and within the flanged open boss 23 (FIG. 4) registered therewith. Base member 11 of block 10 may have a semi-circular recess 26 to partially receive boss 23 on assembly of blocks (FIG. 4).

Upon assembly as described, the parts effectively interlock and are essentially unitarily and integrally united, to form a terminal block of the number of modular blocks 10, selected by the user, assembly being achieved in a rapid and completely accurate fashion.

The terminal blocks may be secured to any surface, such as noted at 24 (FIG. 4), by the use of fasteners 25, of any desired type passing through the tubular projections 21 at such spaced intervals as desired, providing the user with a maximum of selectivity and choice in that regard.

I claim:

1. A modular terminal block for assembly with such blocks, comprising a base portion and first and second walls upstanding on said block, complementary means on said walls for interfitting registration on positioning the second wall of the block onto the first wall of another such block, for latching said blocks together, a terminal connector plate positioned in said block, said plate having one male tab on each side of the block parallel to the

3

terminal connector plate, and a second male tab on each side of said block at an acute angle to the plate.

2. A modular terminal block, as defined in claim 1, wherein said terminal connector plate further comprises a third male tab on each side of said block perpendicular to said terminal connector plate and spaced apart from said first and second male tabs.

3. A modular terminal block, as defined in claim 1, wherein each of said first and second male tabs has a detent adjacent the ends thereof to retain electrical terminals placed upon said first and second male tabs.

4. A modular terminal block, as defined in claim 2, wherein each of said first, second and third male tabs has a detent adjacent the ends thereof to retain electrical terminals placed upon said first, second and third male tabs.

5. A modular terminal block, as defined in claim 1, wherein said terminal connector plate is permanently coupled to said base portion.

6. A modular terminal block, as defined in claim 1, further comprising: finger means extending downwardly from the first wall for registration positioning over the second wall of a block to be assembled thereto.

7. A modular terminal block, as defined in claim 1, wherein said interfitting registration means on said walls comprises studs with complementary cam surfaces thereon formed for interlatching snap engagement on assembly of two blocks.

4

8. A modular terminal block, as defined in claim 7, wherein said complementary cam surfaces are oppositely tapered.

9. A modular terminal block, as defined in claim 1, further comprising first and second flanged open bosses, one associated with each of said first and second side walls whereby a fastening device may be passed through said first and second bosses to mount said block to a mounting surface.

10. A modular terminal block, as defined in claim 9, wherein said first and second bosses are complementary whereby the assembly of two blocks places the first boss of one block in complementary relationship to the second boss of a second block to receive said fastening device through both of said bosses.

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