April 2, 1957 D. C. POTTER 2,787,773

TERMINAL BLOCK

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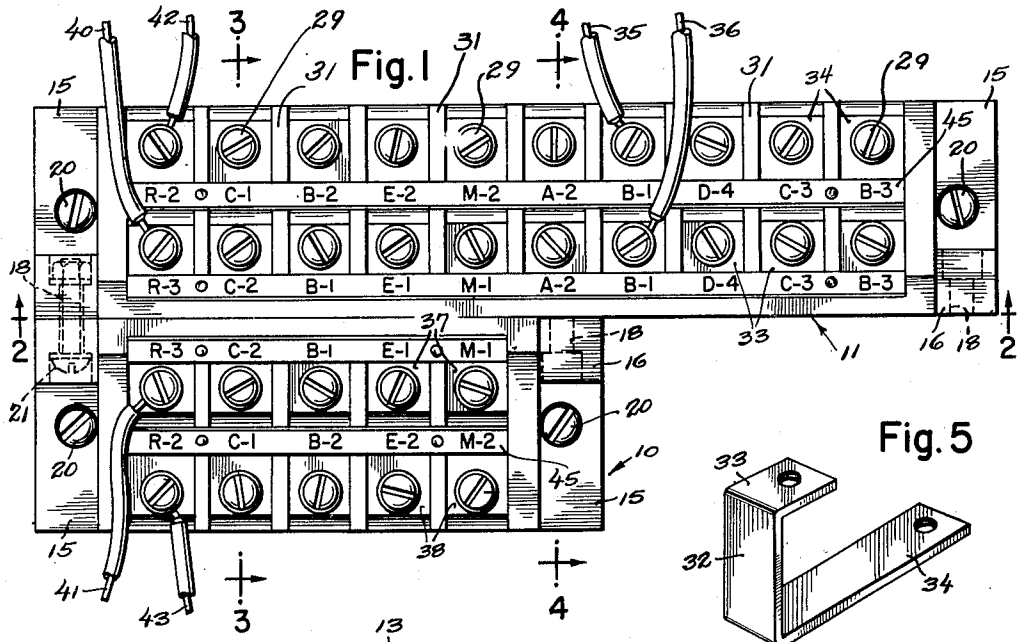


Fig. 1

Fig. 5

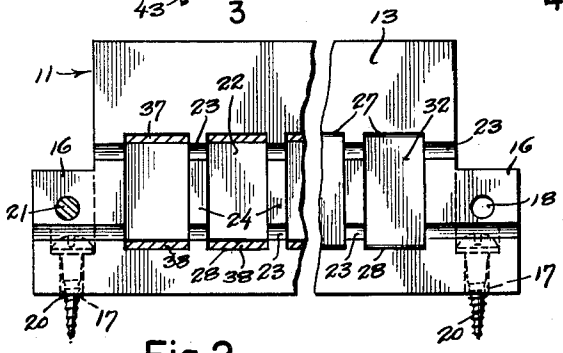


Fig. 2

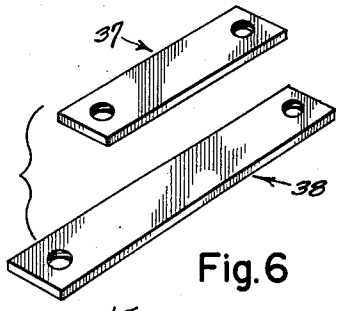


Fig. 6

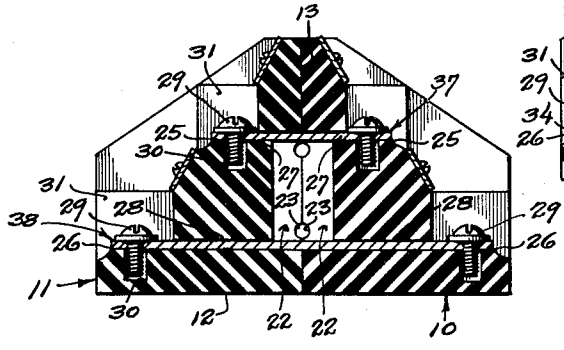


Fig. 3

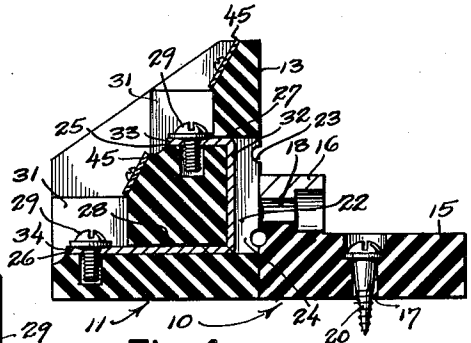


Fig. 4

INVENTOR.
Donald C. Potter
BY Parmelee & Reed
attys

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TERMINAL BLOCK

Donald C. Potter, Everett, Wash.

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8 Claims. (Cl. 339—198)

This invention relates to terminal blocks for use in electric wiring, and for its general objects aims to provide a block of unusually simple design which can be produced inexpensively and which efficiently performs its intended function.

A further important object is to devise a terminal block having wide adaptability in that the same can be conveniently mounted in locations which have been troublesome with previously existing terminal blocks.

As a further particular object the invention aims to provide a terminal block composed of a plurality of complementing sections which admit of being used either singly or back-to-back one in conjunction with another and wherein the back-to-back components, for any given length, are identical and thus preclude the necessity for right and left hand molds as well as obviating any need for stocking of right and left hand blocks.

With the foregoing ends in view the invention consists in the novel construction, adaptation and combination of parts as will be hereinafter described and claimed.

In the accompanying drawing:

Figure 1 is a top plan view of a terminal block installation using block sections constructed to embody the preferred teachings of the present invention, with wires shown attached to several of the terminals.

Fig. 2 is a view on line 2—2 of Fig. 1 to show one of the block sections in rear elevation.

Figs. 3 and 4 are transverse vertical sectional views on lines 3—3 and 4—4, respectively, of Fig. 1.

Fig. 5 is a perspective view portraying a return type bus bar employed in those instances in which the terminal block is made up from only a single block section or a plurality of in-line block sections as portrayed in Fig. 4; and

Fig. 6 is a view portraying in perspective two straight type bus bars employed in those instances in which the terminal block is made up from block sections placed in back-to-back relation as portrayed in Fig. 3.

According to the present invention there are provided a plurality of block sections adapted to be used singly or in multiples, and these sections are by preferance made in only two lengths, one being a 5-circuit section, designated generally by the numeral 10 and the other a 10-circuit section, designated generally by 11. Sections accommodating a greater or a lesser number of circuits could, if desired, perforce be provided. All block sections of a corresponding length are identical.

The block sections are molded to shape from any suitable insulating material as, for example, fibreboard, Bakelite or the like, and have somewhat the shape of a right angled triangle when viewed in end elevation, with the base and the vertical leg of the figure serving as the bottom 12 and rear wall 13, respectively, of the block section. At each end of the block section there is provided a wing extension having an angular shape when viewed from the end, and piercing the horizontal leg 15 and the vertical leg 16 which each of these wing

extensions provide is a vertical hole 17 and a horizontal hole 18, respectively, accommodating a mounting screw 20 in the instance of the hole 17 and a nutted clamping bolt 21 in the instance of the hole 18. Between such wings the rear wall of the block section presents rectangular recesses 22 located more or less centrally of the height at equidistantly spaced intervals of the length. There is provided one such recess for each of the several circuits, five or ten as the case may be, for which the block section is designed. Designated by 23 are upper and lower series of aligned half-circle grooves let into the partitions 24 which separate said recesses one from another and from the side edges of the block section.

In transverse alignment with each of the several back-wall recesses 22 the front wall of the block section is stepped to produce an upper and a lower offset 25 and 26, respectively, disposed in approximate horizontal alignment with the upper and the lower limit, respectively, of the related rear-wall recess, and disposed flush with the offsets and extending as prolongations therefrom to the rear-wall recesses there are provided upper and lower slots 27 and 28, respectively. The offsets furnish seats for the vertically tapped extremities of bus bars, and binding screws 29 threaded in these tapped openings are accommodated by cavities 30 formed in the body of the block section. Each seat is separated from the next adjacent seat in the row by upstanding partitions 31.

The block sections of the present terminal block may be used singly or they may be used in multiple, and when used in multiple the sections may be applied either end-to-end or back-to-back, the single or end-to-end multiple usage being usually confined to those installations in which the available space is quite narrow or where the space to be occupied lies in the angle defined between two meeting walls so that both the bottom surface and the back surface of the terminal block each bear against a wall. In such installations the bus bar shown in Fig. 5, hereinafter termed a return bus bar, is employed. This bus bar is somewhat suggestive of a yoke with a cross-arm 32 connecting parallel side branches 33 and 34, and is so shaped and dimensioned that the cross-arm fits within the recess 22 and the two branches 33 and 34 extend through the slots and position their extremities on the seats 25 and 26 with the tapped openings registering with the cavities 30. Two lead wires of a single said circuit such as I denote by 35 and 36 in Fig. 1 are connected by the binding screws to these exposed bus bar extremities. For those installations which more especially lend themselves to a back-to-back association of two block sections, the same are secured one to the other by the clamping bolts 21 and the straight bus bars are provided in two lengths, with the shorter bar 37 being arranged to extend from the upper seat 25 of one block section through communicating slots 27—27 to the upper seat 25 of the other block section, and with the longer bar 38 being arranged to extend from the lower seat 26 of one block section through communicating slots 28—28 to the lower seat 26 of the other block section. Two sets of two lead wires for respective electric circuits are, for this type of installation, designated in Fig. 1 by 40—41 and 42—43. The function of the notches 23 is to afford ventilation openings for the box cavities produced by the recesses 22 when two such recesses are brought into registration.

Marking strips 45 are or may be provided to facilitate the identification of the binding posts.

It is thought that the invention and the manner of its usage will have been clearly understood from the foregoing detailed description of my now-preferred illustrated embodiment. Changes in the details of construction will

suggest themselves and I accordingly intend that no limitations be implied and that the hereto annexed claims be given the broadest interpretation which the employed language fairly permits.

What I claim is:

1. In a terminal block, a unitary stepped body provided in its front wall with an upper and a lower longitudinal series of exposed shelves having each series occupying a respective step of the body and with each shelf in the upper series being transversely aligned with a related shelf in the lower series and having slots extending parallel with one another rearwardly from each pair of related shelves and each exposed to the rear of the body, and a respective U-shaped bus bar for each pair of related shelves, the bus bars presenting tapped openings in each extremity and being so dimensioned that the side branches of the U closely fit the parallel slots and seat the tapped extremities upon the related shelves.

2. The block of claim 1 in which the shelves each present a cavity disposed normal to the shelf and accommodating the projecting end of a binding screw threaded in the tapped extremity of an applied bus bar.

3. In a terminal block, a unitary block body provided in its front wall with an upper and a lower longitudinal series of exposed shelves separated one from another shelf in each series by upstanding partitions and with each shelf in the upper series being transversely aligned with a related shelf in the lower series, the body having slots extending rearwardly from each pair of related shelves each exposed to the rear of the body, and a respective U-shaped bus bar for each pair of related shelves, the bus bars presenting tapped openings in each extremity and being so dimensioned that the side branches of the U extend in close-fitting engagement through the slots to the shelves and seat the tapped extremities upon the related shelves.

4. In a terminal block, a block body provided in its front wall with an upper and a lower longitudinal series of exposed shelves separated one from another shelf in each series by upstanding partitions and with each shelf in the upper series being transversely aligned with a related shelf in the lower series, the body having slots extending rearwardly from each pair of related shelves each exposed to the rear of the body, and a respective U-shaped bus bar for each pair of related shelves, the bus bars presenting tapped openings in each extremity and being so dimensioned that the side branches of the U extend in close-fitting engagement through the slots to the shelves and seat the tapped extremities upon the related shelves, the shelves each presenting a cavity in the floor thereof accommodating the projecting end of a binding screw threaded in the tapped extremity of an applied bus bar.

5. In a terminal block, a unitary block body provided in its front wall with an upper and a lower longitudinal series of exposed shelves with each shelf in the upper series being transversely aligned with a related shelf in the lower series, having the back face recessed to provide, for each of said pairs of related upper and lower shelves, a let-in cavity exposed to the rear, and having parallel slots for each of said pairs of related shelves connecting the shelves with the related cavities, and a respective U-shaped bus bar for each pair of related shelves, the bus bars presenting tapped openings in each extremity and being so dimensioned that the cross-arm of the U occupies the cavity and the side branches of the U extend in close-fitting engagement through the slots and seat the tapped extremities upon the related shelves.

6. A terminal block comprising, in combination: a pair of identical block bodies having their back faces recessed to provide equidistantly spaced separated cavities exposed to the rear, provided in the front wall with a respective upper and lower shelf transversely aligned with each of said cavities, and having parallel slots connecting the shelves with the related back cavities, means securing said blocks in back-to-back relation with the back cavities in registration, and straight bus bars extending through said communicating slots from the shelves of one to the shelves of the other of said back-to-back block bodies, the applied bus bars presenting tapped openings in each extremity exposed for the application of binding screws.

7. The terminal block of claim 6 in which a cavity is recessed into the floor of each shelf to accommodate the projecting end of an applied binding screw and lock the related bus bar against endwise displacement.

8. The terminal block of claim 6 in which partitions separating the back cavities one from another and from the side edges of the block bodies are grooved in a direction longitudinally of the body to provide ventilation openings for the back cavities of the terminal block.

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