Aug. 26, 1958 A. C. DEMURJIAN 2,849,699

MOLDED TERMINAL BLOCK

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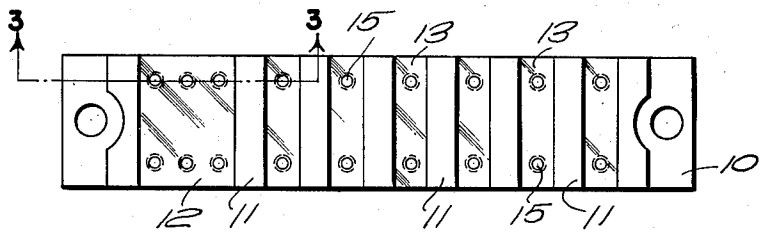


FIG. 1

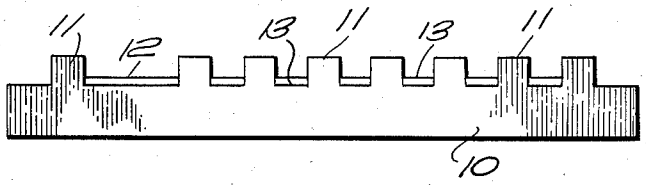


FIG. 2

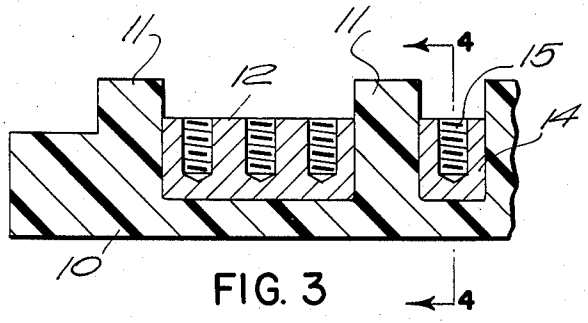


FIG. 3

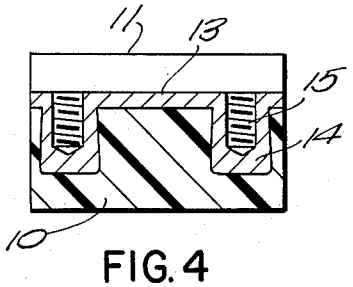


FIG. 4

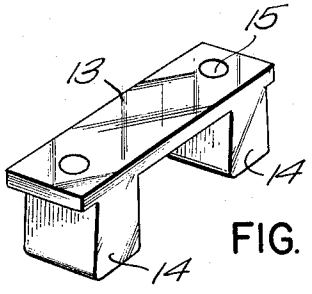


FIG. 5

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MOLDED TERMINAL BLOCK

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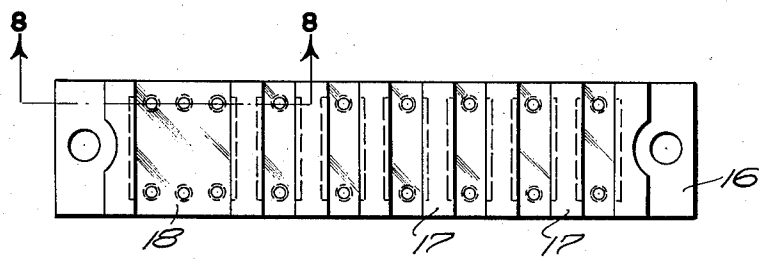


FIG. 6

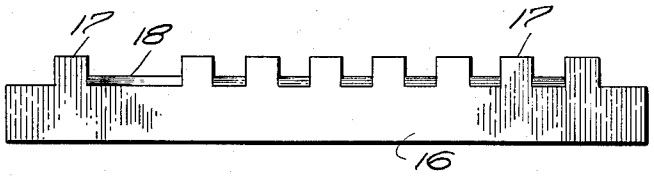


FIG. 7

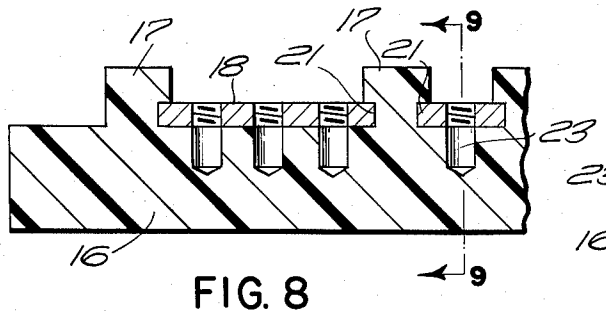


FIG. 8

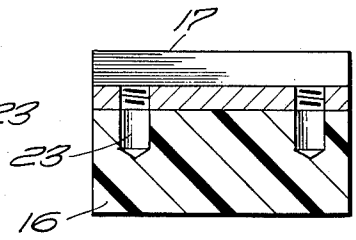


FIG. 9

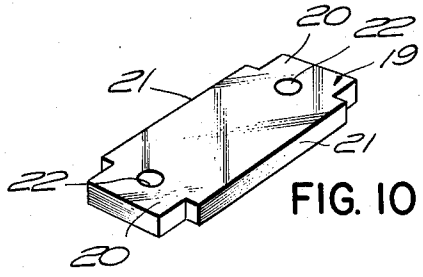


FIG. 10

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2,849,699

MOLDED TERMINAL BLOCK

Ashod Charles Demurjian, Cranston, R. I.

Application May 11, 1954, Serial No. 428,921

1 Claim. (Cl. 339—198)

My present invention relates to the electrical art and more particularly to a molded terminal block.

The principal object of the present invention is to provide a strip terminal block in which the bus bar connections are assembled during the molding operation thus eliminating subsequent manual assembly operations.

Another object of the present invention is to provide a molded terminal block which does not require additional insulation when mounting on a panel board.

A further object of the present invention is to provide a molded terminal block in which the bus bar strips are anchored in place without the use of screws.

Another object of the present invention is to provide a molded terminal block which requires no further assembly operations after molding.

Another object of the present invention is to provide a molded terminal block which can be put into direct use in a circuit without the necessity of slow hand assemblies.

A further object of the present invention is to provide a molded terminal block which is simple in construction and easy and economical to manufacture and assemble.

With the above and other objects and advantageous features in view, my invention consists of a novel arrangement of parts, more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more particularly defined in the appended claim.

In the drawings:

Fig. 1 is a plan view of a molded terminal block embodying my invention.

Fig. 2 is a side elevation thereof.

Fig. 3 is an enlarged section taken on line 3—3 on Fig. 1.

Fig. 4 is a section taken on line 4—4 on Fig. 3.

Fig. 5 is an enlarged perspective view of the bus bar insert.

Fig. 6 is a plan view of an alternate form of terminal block.

Fig. 7 is a side elevation thereof.

Fig. 8 is an enlarged section taken on line 8—8 on Fig. 6.

Fig. 9 is a section taken on line 9—9 on Fig. 8.

Fig. 10 is an enlarged perspective view of the bus bar insert.

In complicated electric and electronic circuits the voltage will vary to different parts of the circuit. This applies to instruments such as electronic brains and other types of computing machines. In distributing the current, a molded terminal block is provided in the form of an elongated strip of molded dielectric material having a plurality of connecting bus bars separated by integral barriers to prevent arcing. A particular voltage line is connected to one end of a bus bar and the lead connected to the other end. In the conventional form each bus bar is locked to the block by a central screw or

bolt extending through an opening in the rear. As a result, when the terminal block is mounted on a panel board, a strip of insulating material must be placed behind it to prevent arcing. The terminal blocks are molded in plastic and sold to the electrical manufacturer who then must assemble the block with the bus bars. It has been found that the labor involved during this assembly is much more than the cost of the block and takes a considerable amount of time.

The present invention is designed to provide a molded terminal block which requires no assembly and no separate insulating strip. This is accomplished by so designing the block and the bus bar that the bus bar can be anchored to the block during the molding operation. This eliminates the bolt openings and provides the block with a solid dielectric back which can be mounted directly on a panel board. The time consuming and costly manual assembly operations are completely eliminated.

Referring more in detail to the drawings illustrating my invention, Figs. 1 to 5 inclusive illustrate one form of terminal block embodying my invention. In this form the block base **10** is molded in an elongated rectangular strip having a plurality of spaced integral barriers **11** extending transversely across the top in parallel relation. For different requirements the base **10** may be made in varying widths and lengths. To insure proper insulation the base will range from ⅜″ to ½″ thick and each barrier **11** is approximately ¼″ thick and a ¼″ in height.

In some installations several leads may be taken from a single voltage line. In such cases one or more of the barriers **11** can be eliminated and the bus bar at that point can be of multiple width. For example, in the form shown in Fig. 1, one of the barriers **11** has been eliminated adjacent the left end to form a portion **12** having approximately three times the width of the normal spacing between the bus bars.

Referring to Fig. 5, each bus bar comprises a rectangular metal plate **13** of the length and width to fit into the space between the barriers **11**. Each plate **13** is provided adjacent each end with an integral depending rectangular portion **14**. A threaded opening **15** extends through the plate **13** into each portion **14**. This is designed to hold the binding posts to which the electrical connections are made at each end of the bus bar.

In molding the terminal block, it is essential that the bus bars **13** become firmly anchored in the base **10**. Each bus bar **13** is therefore stamped, drawn, or die cast so that each portion **14** is slightly wider at the bottom end than at the top. For example, to provide the proper threaded opening **15**, the upper end of the portions **14** should be 3/16″ in width and the lower end should be 7/32″ in width. Thus, when the bus bars **13** are positioned in the mold and molded into the base **10** they will become firmly anchored as shown in Figs. 3 and 4 and cannot thereafter be removed or fall out. The wider lower end of the portions **14** lock the bus bar in place.

With the above construction the assembly operation takes place in the mold and the completed item is thus delivered ready for use.

In the form shown in Figs. 6 to 10 inclusive a different type of anchoring means is provided for holding the bus bar in the molded strip. In this form the base **16** is provided with the integral barriers **17** identical with the form shown in Fig. 1. Here again a barrier can be omitted to form a wider section **18**. However, in this form the bus bar, shown in Fig. 10 comprises a flat plate **19** of slightly greater thickness than the plate **13** used in Fig. 1. The end portions of the plate **19** are of sufficient width, as at **20** to fit between adjacent bar-

riers. However, the body portion is provided along each side edge with lateral extensions **21** which are adapted to extend into the lower portion of each barrier **17** as shown in Fig. 8 and in dotted lines in Fig. 1.

Each bus bar **19** is provided with assembly openings **22** and during the molding operation insert pins may be provided to extend these openings into the base **16** as at **23**. After the molding operation the openings **22** must be threaded. This form therefore requires a separate threading operation.

I have thus provided a molded terminal block in which the bus bar connections are molded into the block to become permanently anchored therein. The back of the block is therefore solid and requires no further insulation. Virtually all of the manual assembly work has been eliminated. In the bolted form vibrations tend to loosen the bus bars. In the present invention the bus bars cannot be loosened or removed.

The molded terminal block of the present invention is therefore much more economical to manufacture and assemble and results in a much better product. Other advantages of the present invention will be readily apparent to a person skilled in the art.

I claim:

A molded terminal block comprising a base of molded dielectric material in the form of an elongated rectangular block, a plurality of integral rectangular barrier strips extending transversely across the top of said base in spaced parallel relation, a plurality of conducting bus bar plates mounted on said base between said barrier strips and extending transversely across the width of said base, said plates each having a threaded opening adjacent each end, and means integral with said plates for anchoring said plates to said base, said means including integral rectangular blocks extending downwardly adjacent each end of said plates beneath the plate openings and extending into said base, said threaded openings extending into said blocks, the lower end of each block being wider than the upper end in a direction parallel to said plate.

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