

March 27, 1956

A. D. VERGILIO ET AL

2,740,001

TERMINAL BLOCK COVER

Filed July 19, 1952

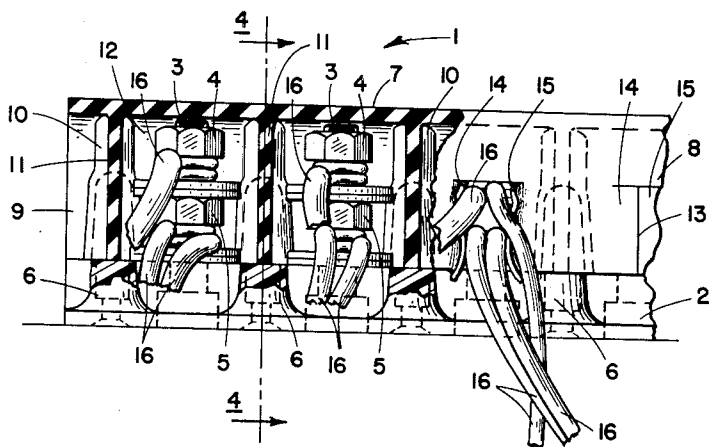


FIG. 1

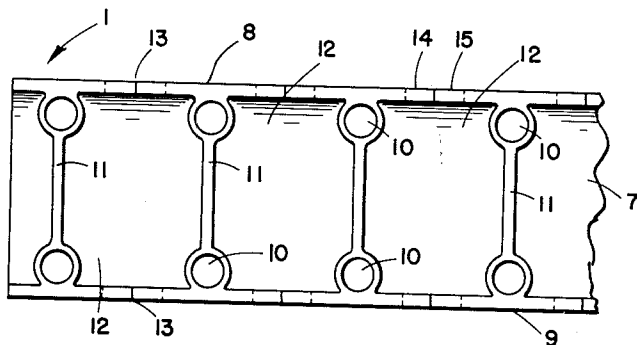


FIG. 2

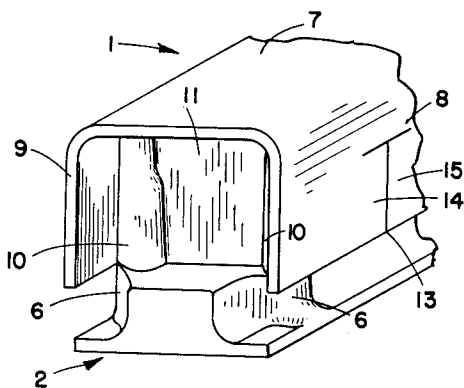


FIG. 3

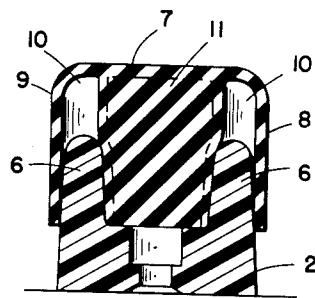


FIG. 4

INVENTOR.
ARTHUR D. VERGILIO
VICTOR N. MC LAUGHLIN
BY BENJAMIN F. VARNEY

William L. Lane
ATTORNEY

1

2,740,001

TERMINAL BLOCK COVER

Arthur D. Vergilio, Wilmington, Victor N. McLaughlin, Hermosa Beach, and Benjamin F. Varney, Los Angeles, Calif., assignors to North American Aviation, Inc.

Application July 19, 1952, Serial No. 299,812

6 Claims. (Cl. 174—138)

This invention pertains to a cover and more particularly to an improved cover for a terminal block.

Conventional terminal block covers are normally made of a rigid plastic material adapted to clip over the edges of the elongated terminal block. The sides of these covers at the location of the terminal studs are slotted for permitting access to the studs. Several disadvantages have resulted from the use of these covers. The tabs formed by the sides between the access slots are easily broken. Furthermore, the foreign particles may freely enter the interior of the cover, particularly where a slot has no wires passing through it. Once foreign particles enter the normal terminal block cover they may freely pass throughout its length and in many cases will short-circuit the wires or studs.

It is therefore an object of this invention to provide a terminal cover overcoming the disadvantages outlined above.

Another object of this invention is to provide a terminal cover that is flexible and non-breakable.

A further object of this invention is to provide a terminal cover having normally closed apertures for providing access to the interior of the cover yet preventing admission of foreign particles.

Still another object of this invention is to provide a terminal cover that will isolate each terminal stud in a separate chamber.

A still further object of this invention is to provide a terminal cover that is a good insulator.

An additional object of this invention is to provide a terminal cover having a simplified, secure means of attachment to the terminal block requiring no special tools.

These and other objects will become apparent from the following detailed description taken in connection with the accompanying drawings in which,

Fig. 1 is a side elevation, partially in section, of the cover associated with a terminal block,

Fig. 2 is a bottom plan view of the cover,

Fig. 3 is a perspective view of the cover associated with a terminal block, and

Fig. 4 is a sectional view taken along line 4—4 of Fig. 1.

Terminal cover 1 of this invention is adapted to be associated with a terminal block 2 of the type normally used in aircraft and other installations where a plurality of connectors are required. Such a terminal block includes a number of terminal studs 3 attached thereto in spaced relationship as best seen in Fig. 1. Nuts 4 and 5, threadably received on the terminal studs, secure the studs to the terminal block and wires to the studs as desired.

Also included with terminal block 2 are a plurality of spaced projecting portions 6. These extend from either side of the terminal block and are disposed between the locations of the terminal studs. These projections are normally tapered slightly as shown and serve to guide and separate wires which are attached to the studs. The terminal block, including the projecting portions, is normally of a plastic material while the studs are, of course, of metal.

2

Cover 1 of this invention is a continuous one-piece member of a flexible, resilient, insulating material. Normally the cover is made of molded synthetic rubber to be resistant to oil and other fluids. The cover is of a substantially U-shaped cross section having top wall 7 and substantially parallel side walls 8 and 9. Receptacle portions 10 included with the cover, are normally substantially cylindrical, and correspond in location to projections 6. Laterally spaced partitions 11 span sides 8 and 9 between receptacle portions 10. The walls and partitions of the cover thus form a plurality of separate chambers 12.

The cover is adapted to overlie the terminal block as best shown in Figs. 1, 3 and 4. Receptacle portions 10 receive projections 6 of the terminal block and may be slightly distended by the projecting portions. The receptacles thus tightly grip the projections by frictional engagement and serve to retain the cover on the terminal block. Installation of the cover is simplified by this type of connection between the cover and the block. No auxiliary clips or projecting portions are necessary. The cover is firmly secured to the terminal block, yet may be removed at will without difficulty. Even though many wires are associated with the terminal block they will not accidentally force the cover off the terminal block. No tools are required to install the cover on the terminal block. The free outer edges of walls 8 and 9 extend downwardly toward the base of the terminal block as shown, effectively closing chambers 12. In the preferred embodiment partitions 11 contact the base of the terminal block, but it is not necessary in all cases that they extend downwardly that far. Terminal studs 3 are received within chambers 12 and each stud is isolated within its own chamber. Partitions 11 also serve to increase the stability of the cover and prevent the side walls from separating.

It is necessary to provide access to chambers 12 to permit entry of wires connected to the terminal studs. To accomplish this at least one side wall of each chamber has a T-shaped slit 13 therein with the base of the T at the free outer edge of the wall. Such an aperture will be normally closed with its edges contiguous. However, the edges may be distended to form flaps 14 and 15 thus enlarging the apertures and permitting access to the interior of the chambers. Wires 16 may thus be admitted to the interior of the chambers. By being T-shaped and elongated these slits will allow any necessary number of wires to pass into the chambers. In some cases it will be necessary to connect more wires 16 to a stud within a chamber than in other cases. In certain other instances it will be unnecessary to have any wires extending through at least part of the T-shaped openings, in which event those slits will remain closed and the chambers sealed off. Admission of foreign particles to the interior of the cover is thus prevented. Flaps 14 and 15, being of resilient material, tend to form themselves around the wires entering the chambers and thus further reduce the likelihood of admission of foreign particles even when the flaps are open to permit access of wires to the studs. Flaps 14 and 15 will also accommodate wires of various diameters to be attached to a single stud. Opening 13 may be, if desired, a single elongated aperture in which case flaps 14 and 15 would distend and form themselves around the wires in substantially the same manner as previously described. Other modifications of the exact shape of aperture 13 are possible within the scope of the invention.

It is apparent that there is thereby provided a flexible, non-breakable, insulating terminal cover that is easily attached to the terminal block, that will permit access of varying numbers of wires to the terminal studs, and which will preclude entrance of foreign particles and reduce the danger of short-circuiting within the interior of the terminal cover. It should also be observed that if repairs to

the terminal block are necessary the corresponding portion only of this terminal block cover need be removed.

The foregoing detailed description is to be clearly understood as by way of illustration only and is not to be taken by way of limitation, the spirit and scope of this invention being limited only by the appended claims.

We claim:

1. A cover for a terminal block having a plurality of projecting portions and a plurality of terminal studs, said cover comprising a continuous flexible resilient member having a substantially U-shaped cross section and adapted to receive said terminal studs therein, said member having receptacle portions adapted to receive said projecting portions said receptacle portions being dimensioned whereby said projecting portions distend said flexible member whereby said cover is frictionally secured to said terminal block, said U-shaped portion having normally closed distensible aperture means corresponding in location to said terminal studs for permitting entry of wires into said U-shaped member and having laterally spaced partitions spanning said U-shaped member between said terminal studs thereby forming a separate chamber for each stud.

2. A cover for a terminal block having a plurality of projecting portions and a plurality of terminal studs, said cover comprising an elongated continuous flexible member having a top wall and two laterally spaced substantially parallel side walls, said member including receptacle portions adapted to receive said projecting portions said receptacle portions being dimensioned whereby when said projecting portions are so received and flexible member around said receptacle portions is distended for frictionally securing said member to said terminal block, a plurality of spaced partitions spanning said side walls thereby isolating each terminal stud in a separate chamber, said side walls including elongated aperture means at locations corresponding to said studs with the edges of said aperture means normally contiguous yet distensible for permitting access to said studs.

3. In combination with a terminal block having a plurality of projecting portions and terminal studs associated therewith, a cover comprising an elongated resilient member, said member having a top wall and two substantially parallel side walls, a plurality of partition walls spanning said side walls, a plurality of substantially cylindrical receptacles associated with said walls, said member being adapted to overlie said terminal block with said projections received in said receptacles, said receptacles having a diameter whereby when said projections are received therein said flexible member around said receptacles is distended whereby said member is frictionally secured to said terminal block, the free edges of said walls being dimensioned to engage said block when said projecting portions are so received in said receptacles in engagement therewith, said walls thereby cooperating with said terminal block to form a plurality of normally closed chambers having said terminal studs therein, said side walls

having normally closed distensible apertures therethrough for permitting access to said chambers.

4. A device as recited in claim 3 wherein said side walls have T-shaped slits therein with the base thereof extending from the free edges of said walls for thereby forming said distensible apertures.

5. A cover for a terminal block having projecting portions, said cover comprising a continuous hollow flexible member adapted to overlie said block, said member having receptacle means therein for receiving said projecting portions, said receptacle means being dimensioned whereby when said projecting portions are so received said flexible member around said receptacle means is distended whereby said member frictionally adheres to said terminal block, said member including wall portions for cooperating with said terminal block to form a plurality of chambers, said wall portions having normally closed distensible apertures for providing admission to said chambers.

6. A cover for a terminal block having an elongated base with aligned spaced terminal studs extending therefrom, and projecting members integral with said base transversely spaced on either side of said studs, said device comprising an elongated continuous member of flexible distensible material having a top wall and two substantially parallel side walls extending therefrom to define a substantially U-shaped cross section, said side walls being spaced apart a greater amount than the spacing of said projecting members for thereby providing a means to receive said base, whereby said terminal studs are received between said side walls; spaced transversely extending partitions interconnecting said side walls and said top wall thereby to provide a plurality of separate chambers, said partitions being spaced apart a distance such that a single terminal stud is received in each chamber so formed, said partitions being dimensioned to extend to said base when said side walls so receive the same, said side walls having normally closed distensible aperture means therethrough at locations intermediate of said partitions for providing access to said chambers; and receptacle means integral with said walls and partitions for receiving said projecting members of said base member, said receptacle means being dimensioned to be distended by said projecting members when the same are received thereby, for frictionally engaging the same and retaining said device on said base.

References Cited in the file of this patent

UNITED STATES PATENTS

1,366,298	Teitelbaum	June 18, 1921
1,667,617	Zelt	Apr. 24, 1928
1,866,881	Dennis et al.	July 12, 1932
2,431,999	Engelhardt	Dec. 2, 1947
2,636,065	Fiske	Apr. 21, 1953

FOREIGN PATENTS

218,348	Great Britain	July 13, 1924
---------	---------------	---------------