

[54] **TERMINAL BLOCK FOR SLOT CONNECTION OF INSULATED CONDUCTORS**

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[58] Field of Search.....339/198, 95, 96, 97, 98, 99, 339/250, 257

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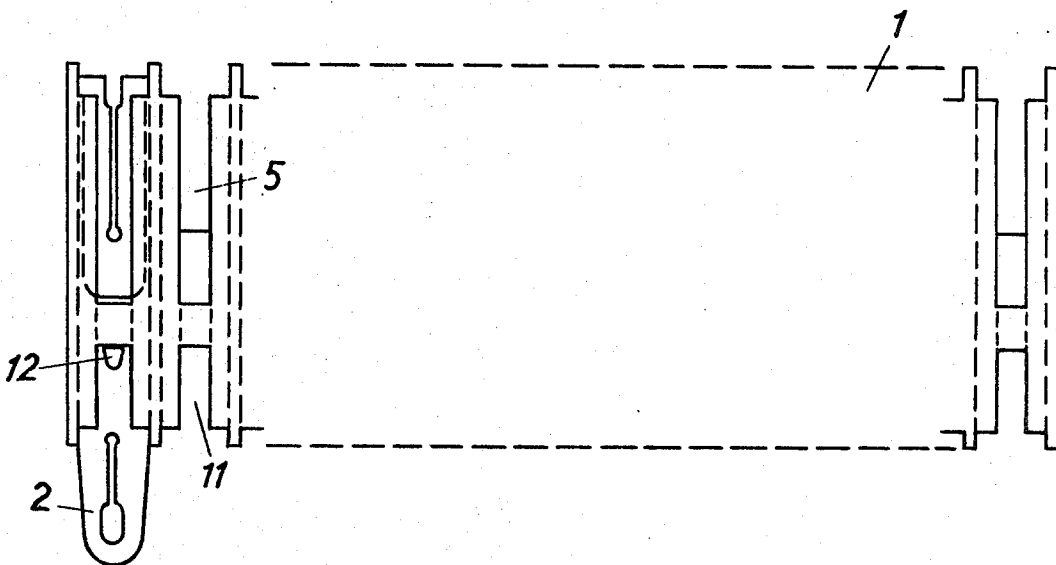
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[57] **ABSTRACT**

A terminal block for slot connection of insulated conductors, in particular for telecommunication lines, compresses a number of terminals fixed in a flat-shaped holder. Each terminal is bent 180° around a transverse line dividing the terminal into a longer and a shorter part, the longer part being inserted in a through passage of the holder and the shorter part in blind recess. The insulated conductor is connected to a terminal of the terminal block by pressing it into a pair of slots which are running parallelly from a hole in the bent end of the terminal towards the ends of each of the parts. In order to prevent the terminal from sliding in its recesses there is provided an embossed stop in the longer part which stop snaps against a bottom edge of a cut-out in the holder when the terminal has been inserted in the holder.

4 Claims, 10 Drawing Figures



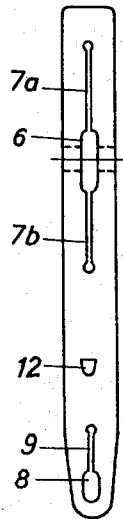
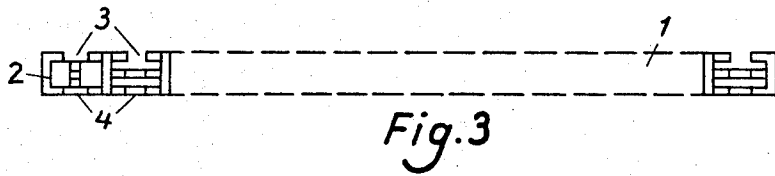
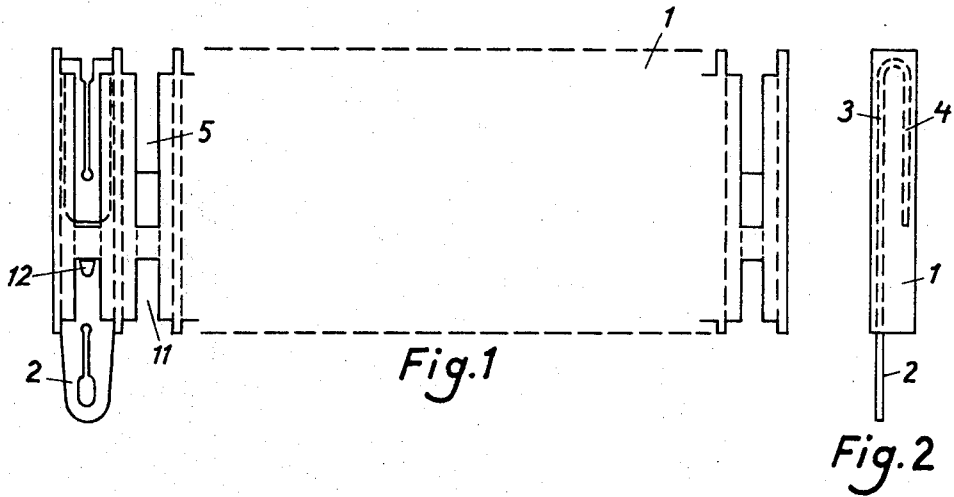


Fig. 4

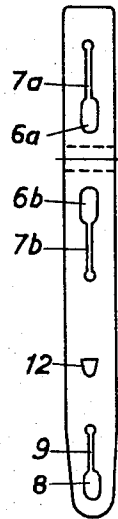


Fig. 5

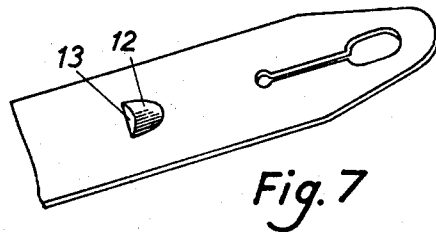


Fig. 7

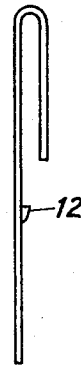


Fig. 6

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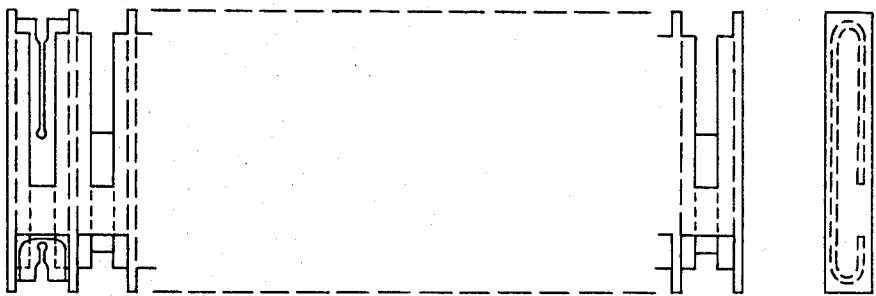


Fig. 8

Fig. 9

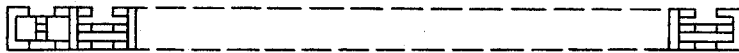


Fig. 10

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TERMINAL BLOCK FOR SLOT CONNECTION OF INSULATED CONDUCTORS

This invention relates to a terminal block for slot connection of insulated conductors comprising a number of terminals fixed in a holder. Previously known are terminal blocks, for example for telephone cables, which are designed in such a way that the conductors of the cables can be connected without first removing the insulation and without the use of tightening screws. For this purpose the terminals are provided with a slot extending from a hole, the diameter of the hole being somewhat larger than the diameter of the insulated conductor and the width of the slot being somewhat narrower than the diameter of a bared conductor. The connection is carried out by threading the conductor through the hole and forcing it down into the slot whereby the edges cut through the insulation. In this way two contact surfaces are obtained and the conductor is retained. The disadvantage of a terminal of this kind is, among other things, that the diameter of the bared conductor varies somewhat, thus causing difficulties in getting the proper width of the slot and the conductor firmly retained. Furthermore the terminal cannot be made too thin or it will affect the mechanical stability. An object of this invention is to provide a terminal block having terminals made for slot connection, which give better contacts and are less sensitive to variations of the conductor diameters than is the case of earlier constructions and this new terminal furthermore gives lower costs of material. The characteristics of the invention are evident from the appended claims.

The invention will be described more fully with reference to the accompanying drawing in which:

FIGS. 1-3 show a terminal block according to the invention seen from the front, from the side and from above respectively;

FIGS. 4 and 5 show two different embodiments of the terminals being included in the terminal block according to the invention before the bending;

FIG. 6 shows the same terminal from an edge bent ready for use;

FIG. 7 shows in perspective the lower part of the terminal and

FIGS. 8-10 show a modified form of a terminal block according to the invention in a front view, a side view and in a top view respectively.

In the FIGS. 1-3, 1 indicates a holder which suitably can be moulded in one piece from an insulating material. The holder is intended for mounting a number of terminals 2, of which, for the sake of simplicity, only one is shown. The holder is for each terminal provided with two T-shaped recesses 3 and 4 located opposite each other, the recess 3 running through the holder while the recess 4 is blind, i.e., running only a part way into the holder. According to the example the recesses are designed in the form of grooves but they can as well be designed as cavities in their whole length or part of it. In said recesses the terminals, for example designed according to FIG. 4, can be fixed after being bent 180° along a transverse line dividing an oblong hole 6 which is placed unsymmetrically, into two equally large parts, and then being inserted with their longer and shorter bent parts respectively into the recesses 3 and 4 respectively. In order to decrease the risk of leaking currents between the different terminals these can be separated

by ribs 10. According to FIG. 4 the lower part of the terminal is designed in the known manner with a slot 9 extending from a hole 8 for slot connection of conductors from the lower part of the terminal block. The terminal 2 is further provided with two slots 7a and 7b extending from the hole 6. At the upper part of the terminal the holder is provided with a cutting-out 5 passing through the wall between the recesses 3 and 4. The conductors are then connected to the upper part of the terminals by forcing them down into the slots 7a, 7b via the hole 6. In this way the edges of the slots cut through the insulation of the conductor and four electric contact surfaces are formed. Consequently, a considerably greater electric reliability will be obtained than in earlier used constructions and furthermore the mechanical strength is of course improved, in spite of the fact that the terminal can be made considerably much thinner than in earlier constructions. In order to improve still more the reliability it is furthermore suitable that the widths of the two slots 7a, 7b are somewhat different, so that a good contact is obtained even if the diameter of the conductor is varying somewhat, which generally is the case in the practice.

In FIG. 5 a further embodiment of the terminal 2 is shown. Thus the slots 7a and 7b are extending from two separate holes 6a and 6b which after bending will be located opposite each other. In this way a greater mechanical strength of the terminal will be obtained which in certain cases can be desirable even if the conductor then has to be threaded.

In order to prevent the terminal from sliding in its recess, for example upon removing an earlier connected conductor, and thus no longer taking the right position in the holder, the terminal, as is apparent from the FIGS. 4, 5, 6 and 7 can suitably in its lower part be provided with an embossed stop 12 having a surface which is rising in the direction from the end of the longer part of the terminal in order to facilitate the inserting of it into the holder which is made possible by the resilient construction of the holder. As it appears from FIG. 1 the stop rests against the bottom edge of a cutting-out 11 in the lower part of the holder when the terminal has been fixed in the holder. By terminating said surface of the stop by a surface 13 being approximately perpendicular to the terminal and placing this at a suitable distance from the bending axis of it the approximately perpendicular surface will snap into the bottom edge of the cutting-out 11 when the terminal has been inserted in its place in its recesses 3 and 4.

The FIGS. 8-10 show a modified form of the terminal block according to the invention, in a front view, in a side view and in a top view respectively. The terminals are placed in their position and are bent one more time 180°. The terminals can suitably be modified relatively to the examples shown in the FIGS. 4-6 so that, for example, the form of the hole and the holes respectively in the two ends of the terminal is identical. A terminal block according to the last mentioned example has, of course, not as long leakage current paths between the terminals as the preceding one but for the use indoors the insulation resistance is in normal cases satisfactory.

I claim:

1. A terminal block assemblage comprising: a flat shaped terminal holder of insulating material, said ter-

minal holder being provided with a plurality of pairs of oppositely facing terminal recesses which are separated by insulating material, a first recess of each pair passing completely through said terminal holder to provide a through channel, the second recess of each pair extending only part way through said terminal holder to provide a blind channel, and cut-outs provided in said terminal holder at a first edge thereof and opposite corresponding portions of said recesses whereby portions of said channels are exposed; and a plurality of terminals, each associated with a different one of the pairs of terminal recesses, each of said terminals comprising a flat strip of conductive material bent at least 180° at a bend line perpendicular to the longitudinal axis of the strip to provide a longer leg and a shorter leg, said shorter leg being disposed in said second recess, said longer leg being disposed in said first recess with the end thereof extending beyond a second edge of said terminal holder, the portion of said strip adjacent the bend line being adjacent said first edge of said terminal holder and said cut-outs, an opening means in each of said legs in the region of the bend line and slots in said

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legs, said slots having a width narrower than said opening means and communicating therewith whereby a conductor can be connected to a terminal by being passed via said cut-outs through said opening means and pressed down into said slots.

2. The terminal block assemblage of claim 1 wherein the slots of each of said terminals are opposite each other and have different widths.

3. The terminal block assemblage of claim 1 wherein further cut-outs are provided at said second edge of said terminal holder for exposing a portion of each of said first recesses, and wherein said longer legs are provided with ramplike bosses for providing removal stops against the associated further cut-outs after a terminal has been inserted in a pair of recesses.

4. The terminal block assemblage of claim 1 wherein each of said longer legs is bent back along another bend line perpendicular to said longitudinal axis and is provided with a further opening means in the region of said bend line for accepting a conductor.

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