

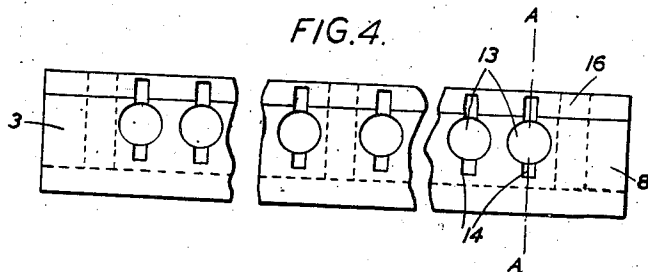
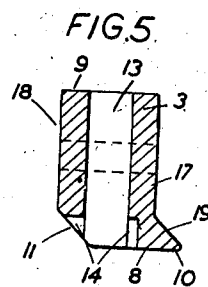
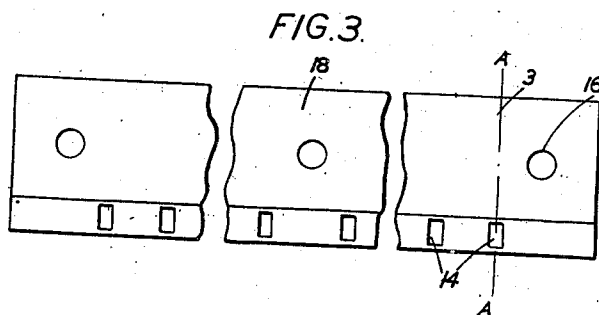
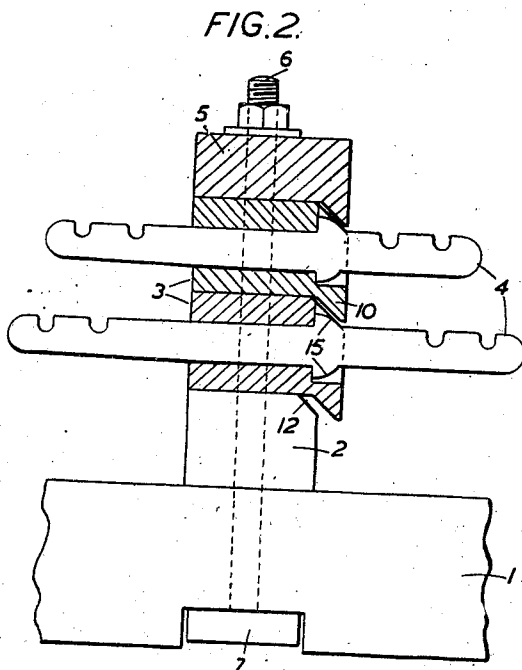
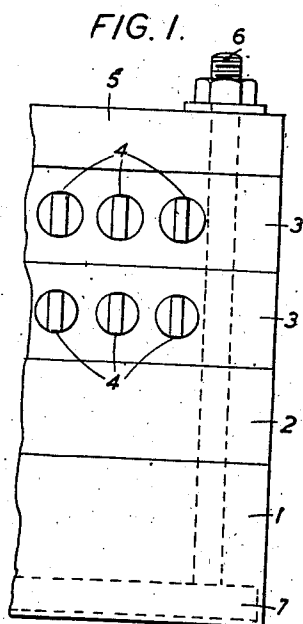
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TERMINAL ASSEMBLY FOR ELECTRIC CIRCUITS

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TERMINAL ASSEMBLY FOR ELECTRIC CIRCUITS

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2 Claims. (Cl. 173—324)

The present invention relates to terminal assemblies for electric circuits and in particular to improvements in the construction of such assemblies.

In electric circuits and apparatus employed in the communication art, assemblies of large numbers of closely arranged terminals are commonly used for convenience in wiring and arranging circuits. The necessity for combining compactness, flexibility, and cheapness of construction, raises a number of problems in design and arrangements hitherto used have failed to meet all the requirements in a completely satisfactory way.

For example, it is well known to mount rows of metal terminal punchings in holes in strips of insulating material (frequently ebonite or other similar rubber product). It is necessary that the terminals should be fixed so that they cannot be easily removed during subsequent assembly and soldering operations, and to avoid complicated interlocking arrangements involving a lot of different piece-parts, it has been customary to fix the terminal punchings by forcing them into (usually) circular holes drilled in the ebonite strips. This requires an elaborate assembly fixture, and close control of the dimensions of the terminals and holes and is not satisfactory, since the terminals are liable to come out later on, owing to the softening of the ebonite by heating from the soldering iron.

It is the object of the present invention to provide a terminal assembly which can employ terminal punchings of the same type as those previously used, and in which the difficulties experienced in meeting the requirements are avoided by means of a cheap and flexible arrangement.

According to the invention, there is provided an insulating strip for loosely holding a plurality of electrical terminal punchings, the strip being formed so that when a plurality of such strips are piled in contact, each strip locks in position the terminals carried by one of the adjacent strips in such manner that they are not removable.

More specifically the invention may comprise an insulating strip for loosely holding electrical terminal punchings, provided with two substantially parallel longitudinally extending faces, one of which faces has formed thereon along one longitudinal edge a projecting ledge having a surface inclined to the said face, the corresponding edge of the other face being formed to provide clearance for the said inclined surface.

According to another aspect the invention comprises an electrical terminal punching assembly

comprising a plurality of similar insulating strips piled in contact, each being adapted to hold loosely a plurality of terminal punchings and being so formed that each strip locks in position the terminals carried by one of the adjacent strips in such manner that they are not removable.

The invention will be explained with reference to the accompanying drawing, in which:

Fig. 1 shows part of the rear elevation of a terminal strip assembly according to the invention;

Fig. 2 shows a side view, partly in section, of the assembly of Fig. 1;

Fig. 3 shows a plan view of a terminal strip according to the invention.

Fig. 4 shows a front elevation of the terminal strip; and

Fig. 5 shows a section at the lines A—A of Figs. 3 and 4.

Referring to Figs. 1 and 2, the terminal assembly according to the invention comprises a base 1 of any suitable material having on the upper surface a rectangular packing strip 2. Piled on this strip are any number of insulating strips 3 (two only are shown) each carrying any number of terminal punchings 4 arranged side by side. The pile is surmounted by a capping strip 5 which may be the same as the strips 3, but will preferably be unprovided with any terminal drillings. The whole assembly is fixed by a suitable number of screwed rods 6 and nuts (one only being shown), which may be secured at the lower ends to a plate 7 assembled in a recess or channel in the base 1, or they may have separate hexagonal or screw-driver heads, or the like.

One of the insulating strips 3 is shown in detail in Figs. 3, 4 and 5. The section seen in Fig. 5 is mainly rectangular. The strip has two parallel longitudinally extending faces 17 and 18, and faces 8 and 9 at right angles thereto. The lower face 8 terminates in a projecting ledge 10 which runs longitudinally along the strip, and which has a flat surface 19 inclined to the face 17.

The opposite edge of the strip is chamfered or otherwise reduced at 11 forming a surface roughly parallel to the surface 19, so that when the strips are piled up as shown in Fig. 2, the chamfer on each strip provides clearance for the ledge 10 of the strip next above. Similarly, if necessary, the packing strip 2 may be chamfered as shown at 12. It will be evident that the capping strip 5 need not have this chamfer.

The strip 3 is provided with a number of circular holes 13, the face 8 being recessed with a rectangular slot or key-way 14 at the mouth of each hole. The diameter of the holes 13 should

preferably be such that the thermal punchings 4 can be easily inserted therein without any force, the shoulders 15 of each terminal entering the keyway 14, thus holding the terminal upright and preventing it from twisting.

It will be seen that when the terminals 4 are inserted in the holes 13 in the manner described, and when the strips are piled up as shown in Fig. 2, the shoulders 15 of each terminal are imprisoned between the key-way and the downturned ledge 10 of the strip next above, the upper row of terminals being held in position by the capping strip 5. It will be evident therefore, that while the terminals can actually be quite loosely held so that no special fixture is required for putting them in place, they cannot be removed during any subsequent operation.

The holes 16 shown in Figs. 3, 4 and 5 are provided to clear the fixing screws 6.

The design of the strips 3 is adapted for moulding, so that they may be manufactured from phenol condensation products and the like in the well known way. These materials are not liable to be appreciably softened by the heat of soldering.

As many strips 3 fitted with terminals as desired may be piled up in the manner indicated, and it can be easily arranged so that a given assembly may be added to at any later time without disturbing seriously the strips already wired.

It will be noted that the necessary locking of the terminals is accomplished by the use of only two different piece-parts (3 and 5), and these can be reduced to one only if another strip 3 is used instead of 5.

It will be understood that the terminals 4 have been shown in Fig. 2 as having different lengths. This is purely a matter of convenience; and as regards the present invention, the terminals can

have any desired lengths. Terminals formed with shoulders 15 as shown are well known in the art.

Furthermore, the holes 13 are shown cylindrical, because this is a convenient shape for manufacture. They could however be any other shape, for example, they could be rectangular slots having cross-sections sufficiently large to allow the terminals to be easily inserted. In such a case, the key-ways 14 would not be necessary.

What is claimed is:

1. In a mounting for electric terminals, a plurality of strips of insulating material, each having two substantially parallel longitudinally extending faces and a ledge projecting from a longitudinal edge of one face, the corresponding edge of the other face being cut away to provide clearance for the ledge of an adjacent strip, a hole through each of said strips intermediate said faces, said hole having an enlarged portion forming a shoulder, terminals within said holes and projecting from each strip and removable therefrom, a shoulder on each terminal adapted to fit against the shoulder formed by the enlarged portion of said hole and to extend into the cut-away portion, and means for holding together said strips with the ledge of each overlying the cut-away edge of the adjacent strip and the shoulders of terminals in that strip and obstructing the removal of the terminals therefrom.

2. The mounting according to claim 1, and in which the shoulder of each terminal is at one side thereof and the enlarged portion of the hole through each strip is shaped to fit said terminal shoulder, whereby said terminal is held in a hole of its strip against rotation but is free to move longitudinally.

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