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REMOVABLE INSULATING BASE FOR A METALLIC
JUNCTION BLOCK FOR CABLES
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FIG. 1

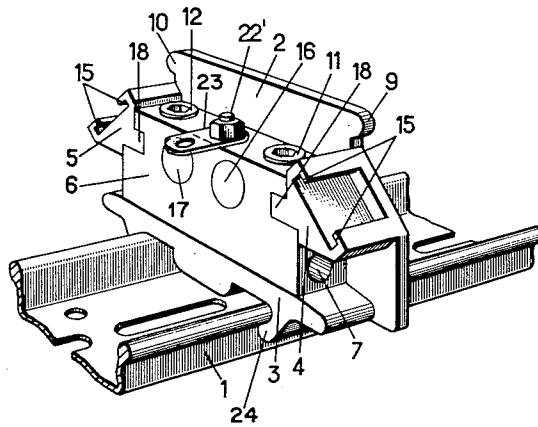
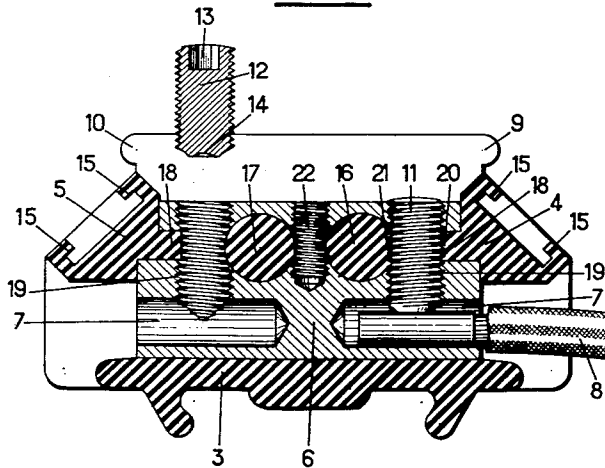


FIG. 2



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REMOVABLE INSULATING BASE FOR A METALLIC JUNCTION BLOCK FOR CABLES

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In my U.S. Patent No. 2,983,897, I have shown how it is possible to mount metallic junction blocks provided with wire-holding clamps on bases provided with a central terminal and adapted to be snapped onto a common support in the form of a rail, insulating partitions being interposed between adjacent bases to avoid any undesired electrical contact between the metallic junction blocks mounted on adjacent bases.

In my copending U.S. patent application S.N. 59,967, I also described bases made of an insulating material having a central terminal and provided with a vertical partition insuring insulation between the terminals on adjacent bases, and carrying projections to which a cover could be attached.

The present invention relates to a base made of a molded insulating material which may be a superpolyamide of the nylon type, such as the material sold in France under the trademark "Rilson." This may be snapped onto a common support in the form of a rail, said base likewise comprising a thin vertical plate serving as an intercalary partition between adjacent bases, and projections onto which a cover can be snapped, said base being adapted to receive a metallic junction block provided with two wire clamps, this new base being characterized by the fact that the metallic junction block is held transversely between three members made of molded insulating material projecting out from said thin vertical plate the lower member serving to enable the base to be snapped onto the common support, and the two upper members each being provided with grooves for holding an indicating label.

Another characteristic of the present invention relates to the means for immobilizing the metallic junction block against longitudinal movement with respect to its base. This immobilization is assured by means of the same members which serve to bring pressure against the ends of the cables, or to attach shunts connecting the metallic blocks carried by adjacent bases.

The metallic block carries for this purpose, in addition to the two bores through which the ends of the cables pass and the three tapped holes which cooperate respectively either with the clamping screws or the shunt attaching screw, two circular bores which receive two cylindrical insulating plugs which are parallel to the common supporting rail, and of the same length as the three aforesaid projections, the diameter and position of these plugs being so chosen that when the clamping screws are tightened, the threads of these screws cut a passage through the somewhat elastic insulating material of which the cylindrical plugs are made.

It may also comprise two grooves which cooperate with tongues on the two upper members, which serve as label holders, these grooves being so positioned that the clamping screws cut into the insulating material of these two upper members.

In the same way, the screws for connecting a shunt should also make a passageway for themselves by tapping the insulating material of said two cylindrical plugs.

It is easy to understand that when the two screws are screwed down to grip the ends of the cables, they are at the same time frictionally gripped by the somewhat elastic insulating material through which they pass, whether

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this material is that of the label holders or that of said cylindrical buttons.

This frictional gripping prevents the screws from working loose when subjected to vibrations, and at the same time insures that the metallic block is immobilized with respect to the insulating base so as to prevent movement in a longitudinal direction parallel to the common supporting rail.

When a shunt is attached, the shunt screw likewise serves two purposes, i.e., it cooperates in the immobilization of the metallic block against longitudinal movement with respect to its base, and it also attaches a shunt connecting the metallic junction blocks carried by two adjacent bases, the contact with the somewhat elastic insulating material of the two cylindrical plugs serving to restrain any turning of the shunt attaching screw.

Other characteristics of the present invention will be better understood from a reading of the following description of one embodiment of a base made of insulating material which carries a metallic junction block. This description is given purely by way of example, without limiting the scope of the invention to the details thereof, and is illustrated by the accompanying drawing in which:

FIG. 1 is a perspective view showing a base made of insulating material in accordance with the present invention, equipped with a metallic junction block; and

FIG. 2 is a central transverse cross-section taken through the axes of the screws for clamping the cables.

As shown on FIG. 1, the terminal support mounted on the common rails 1 comprises a thin portion 2 which serves as an intermediate partition between adjacent blocks, a base 3 provided with depending projections 24 adapted to snap onto said rail, and two side members 4 and 5 which serve both as a label holder and as means for holding the metallic junction block against transverse movement.

The block 6 comprises two bores 7 in its lower part, only one of which bores is visible on FIG. 1. The bare ends of the cables 8 which are to be connected to the block 6 extend into these bores.

The upper part of the thin plate 2 is provided with two protuberances 9 and 10 designed to cooperate with mating snap attaching means on a protective cover for a group of contiguous blocks.

The screws 11 and 12 which serve to exert a pressure on the metallic ferrules of cables 8 are preferably of the type having a head in the form of a hexagonal socket, as shown in particular at 13 on FIG. 2. They also preferably comprise at their lower ends a small central hollow 14, instead of ending in a point, so that these screws bear on the metallic ferrules of the cables 8, along a circular line of contact.

The members 4 and 5 are provided with grooves 15 for holding labels.

Besides the members 4 and 5, the block 6 is held in place by means of two cylindrical plugs 16 and 17 of a length equal to the thickness of the metallic junction block. These plugs are seated in bores provided for this purpose in the junction block 6.

As shown in cross-section on FIG. 2, the members 4 and 5 each comprise an inwardly extending portion, such as the tongue 18, which projects into the bore in the metallic junction block 6.

The screw 12 is shown in FIG. 2 before its introduction into the tapped hole 19 in the metallic junction block 6, so that it is easy to understand that this screw 12 can be tightened down on the end of a cable only after abrading a path for itself through the insulating material of one of the tongues 18 and the cylindrical plug 17.

The screw 11, which is shown in its lower position, has acted as a tap and extended the tapping 19 in the junction block 6 to parts 4 and 16 as shown at 20 and 21.

It will be readily understood that by reason of the elasticity of the plastic insulating material used to make the base for the block, the screw 11 after being tightened down on the bare end of a cable 8, is prevented from loosening by its frictional engagement with the insulating material in the portions 20 and 21 of the tongue 18 of the member 4 and the cylindrical plug 16, respectively.

Moreover, the penetration of the screws 11 and 12 into the insulating material of the tongues 18 and plugs 16 and 17 also insures that the junction block 6 is prevented from moving longitudinally with respect to its support and kept in contact with the portion 2 of this support which serves as an intercalary partition.

There is a tapped hole 22 in the center of the block 6 into which a screw may be inserted in order to attach a shunt 23 which may connect two adjacent junction blocks 6. This insures an adequate electrical contact between the two blocks, which would not be the case if one simply so positioned the intercalary plates 2 so as to permit contact between two adjacent metallic junction blocks.

When a shunt screw such as shown at 22' in FIG. 1 is screwed in, this screw cuts itself a path in the insulating material forming the cylindrical plugs 16 and 17, acting as a tap, and is frictionally held in position in which it immobilizes the shunt, in the same manner as the clamping screws bearing on the bare ends of the cables 8.

Once screwed in, the shunt screws help to prevent longitudinal movement of the blocks 6 on their bases.

It is clear that the arrangement of the label holding means 4 and 5 may be different and that the tongue 18 may be replaced by a projecting shoulder extending, for example, to the upper part of the block 6.

The position of the tongue shown on FIG. 2 has been adopted because of the greater solidity with which it permits the metallic blocks 6 to be made.

It will be readily understood that the particular embodiment which has been described may be altered as to detail, improved, or added to, and that certain elements thereof may be replaced by their mechanical equivalents, without thereby departing from the spirit of the invention as defined by the following claims.

What I claim is:

1. In combination, a metallic junction block of the type provided with sockets for receiving the ends of con-

ductors and threaded passageways intersecting said sockets, said passageways being adapted to receive screws for clamping the ends of said conductors to said block, and an insulating support for said block, said support being made of a resilient insulating material and comprising a vertical plate dimensioned to shield one side of said block and a plurality of projections extending from one side of said plate, said junction block being provided with openings mating with and receiving said projections, the peripheries of said openings intersecting the peripheries of said threaded passageways, so that when screws are screwed into said passageways, the threads thereon cut into said projections and the resilient material thereof frictionally grips said screws, so as to resist withdrawal of either said screws or said projections from said block.

2. A junction block and support as claimed in claim 1 in which said projections comprise two cylindrical plugs and two label carriers positioned at opposite ends of said plate, said label carriers each comprising a tongue seated in one of the mating openings in said block.

3. A junction block and support as claimed in claim 2 in which said block comprises an additional threaded passageway adapted to receive a screw for connecting a shunt, said additional passageway being positioned intermediate the passageways intersecting said sockets and the periphery of two of said openings intersecting the periphery of said additional passageway as well as that of a threaded passageway intersecting a socket, so that the projections in said last mentioned openings are squeezed between the screws in said additional passageway and in the passageways intersecting the socket.

4. A junction block and support as claimed in claim 1 in which said support comprises at least one projection constituting snap attaching means adapted to snap said support onto a rail adapted to carry a plurality of such supports.

5. A junction block and support as claimed in claim 4 in which said support comprises at least one additional projection extending upwardly from said plate and constituting snap attaching means adapted to snap said support into a cover for a plurality of said supports.

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