

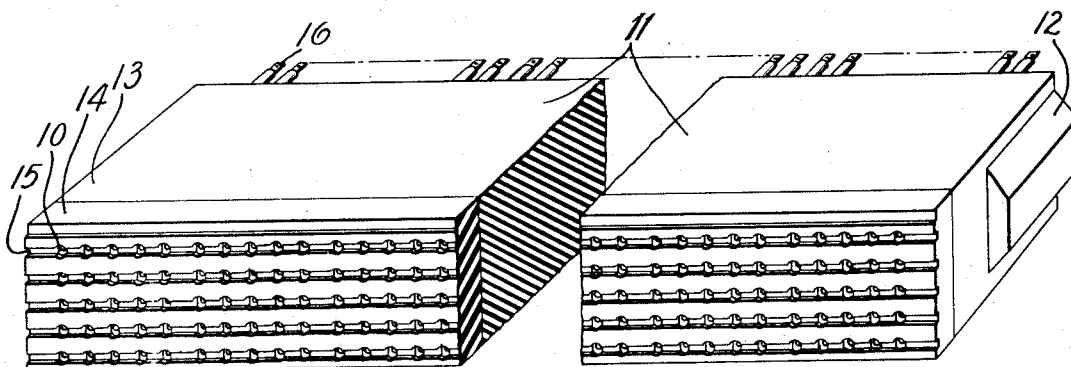
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INSULATING MATERIAL

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INSULATING MATERIAL

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This invention relates to insulating materials and particularly to insulating materials which permit the grouping together of a large number of terminals in a minimum amount of space.

In many instances, for example, in terminal strips such as the test strip disclosed by U. S. Patent 1,423,930 granted to Bruce Friele on July 25, 1922, it is desirable to group together a large number of terminals in a minimum amount of space. Under such conditions the material employed for supporting these terminals should possess good mechanical and insulating properties so that a maximum number of terminals may be mounted in a minimum amount of space. This material should also permit the soldering of the terminals which are embedded therein to suitable conducting wires without the material being unduly affected by the heat which accompanies such soldering operations. In general phenol plastics, for example, bakelite resins, have been found satisfactory but it is generally recognized that materials of this class are weak in respect to their arcing characteristics, that is, when an arc is once established between two electrodes mounted in a phenol plastic, due either to a mechanical opening of the gap between the electrodes or to a flash-over caused by conducting debris between the electrodes, the arc is maintained for a sufficient length of time so as to leave the material permanently conducting.

On the other hand certain other compounds such as cellulose acetate possess non-arcing characteristics consequently an arc which is once established between two electrodes mounted in such a compound is not maintained. Such compounds, however, due to their low melting points and poor mechanical properties cannot be used in place of the materials generally employed in the manufacture of terminal strips.

The terminal strip of the present invention comprises a combination of a plastic compound and a non-arcing material combined in such a way that only the advantageous qualities of each are utilized. In general this is accomplished by applying a

thin layer of a non-arcing compound such as cellulose acetate over a base of phenol plastic compound such as bakelite, the bakelite giving the necessary mechanical and insulating properties to the strip so that a maximum number of terminals may be mounted in a minimum amount of space. The bakelite base also permits the soldering of the terminals to suitable conducting wires without the base being unduly affected by the heat which accompanies such soldering operations. The thin layer of cellulose acetate prevents an arc which has been established between two electrodes from being maintained. In accordance with the preferred form of this invention the strip is made by combining the compounds in a single molding operation. In another form the strip is made by molding the bakelite base first and then adding the layer of cellulose acetate by a second molding operation or the two strips may be molded separately and then joined together by any suitable means, for example, by screws or pins.

A clearer understanding of this invention may be had by reference to the accompanying drawing which shows the invention in its preferred form.

A suitable number of terminals 10 are arranged so as to form a number of horizontal and vertical rows. A mass of insulating material is then molded about the terminals to form a block 11 having shoulders 12, which serve to support the block 11 between the vertical stiles of a switchboard frame. This block of insulating material comprises a rear portion 13 preferably of a phenol plastic compound such as bakelite and a front portion 14 of a non-arcing material such as cellulose acetate. The two portions 13 and 14 are preferably joined together in a single molding operation but it is to be understood that the bakelite portion may be molded first and the layer of cellulose acetate added by a second molding operation or the two portions may be molded separately and joined together in any suitable manner, for example, by screws.

The terminals 10 are exposed at the front of the block 11 so that an electrical contact

may be made between the tip of an operator's plug and any one of such terminals. For the purpose of making it more convenient to find any one of the terminals 10 with an operator's plug, grooves 15 are cut in the face of the block 11 crossing the face of the terminals 10. In this way the operator after locating the horizontal row in which the line terminal is located may guide the testing plug along the proper one of the horizontal grooves 15 until the desired terminal has been located. The grooves 15, however, are of less depth than the thickness of the outer layer of cellulose acetate. The terminals 10 protrude beyond the rear of block 11 terminating in flat portions 16 to which the proper electrical connections may be made. The base 13 of the phenol plastic compound gives the necessary mechanical and insulating properties to the strip 11 so that a maximum number of terminals 10 may be mounted in a minimum amount of space. The phenol plastic base also permits the soldering of the terminals 10 to the conducting wires without the block 11 being unduly affected by the heat which accompanies such soldering operations. Since the depth of grooves 15 is less than the thickness of the front layer of cellulose acetate 14, an arc which has been once established between any two of the terminals 10 is prevented from being maintained.

What is claimed is:

1. A terminal strip comprising a base portion of a phenol plastic compound and a surface portion of cellulose acetate molded integral therewith.
2. In a terminal strip a plurality of terminals, and means for holding said terminals in spaced relation, said means comprising a rear portion of a phenol plastic compound and a front portion of cellulose acetate.
3. In a terminal strip, a plurality of terminals, and a mounting for supporting said terminals in spaced relation, said mounting comprising a front portion of cellulose acetate and a rear portion of a phenol plastic compound molded integral therewith.
4. In a terminal strip a plurality of terminals, and a mounting for supporting said terminals in spaced relation, in a plurality of horizontal rows, said mounting comprising a rear portion of a phenol plastic compound and a front portion of a non-arcng material molded integral therewith and having grooves cut in the face of said front portion and passing through the end of each terminal in each horizontal row, the thickness of said front portion being greater than the depth of said grooves.
5. In a terminal strip a plurality of terminals, and a mounting for supporting said terminals in spaced relation in a plurality of horizontal rows, said mounting comprising a rear portion of a phenol plastic compound and a front portion of cellulose acetate and having grooves cut in the face of said front portion and passing through the end of each terminal in each horizontal row, the thickness of said front portions being greater than the depth of said grooves.

In witness whereof, I hereunto subscribe my name this 24th day of September, 1929.

ROBERT BURNS.

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