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METHOD OF MAKING INSULATING COVERS FOR BUS BARS

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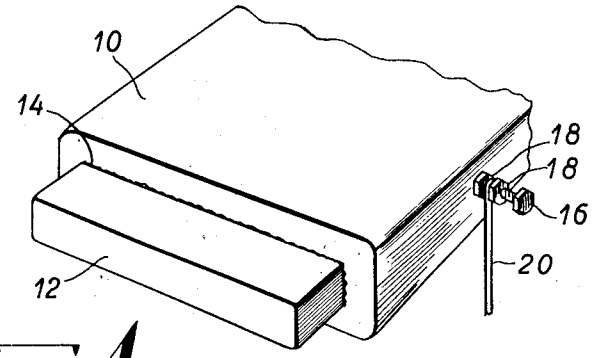


Fig. 1.

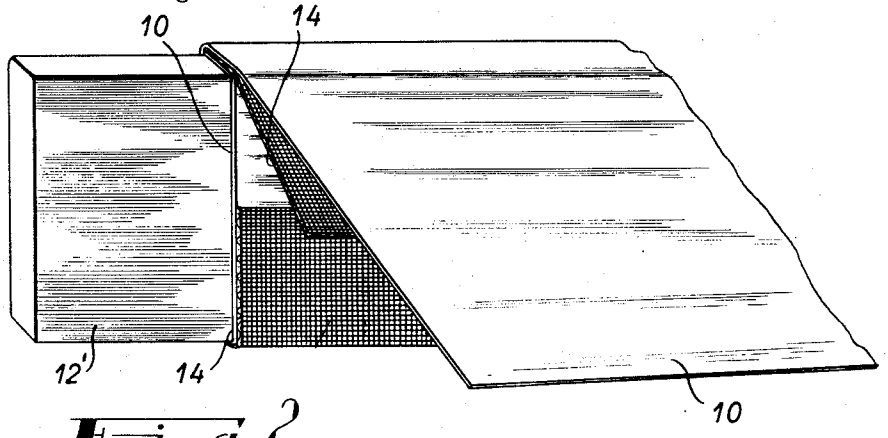


Fig. 2.

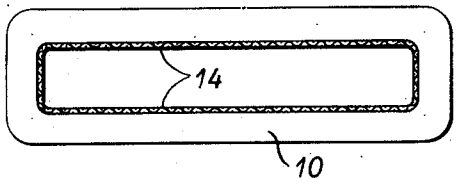


Fig. 3.

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METHOD OF MAKING INSULATING COVERS FOR BUS BARS

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Original application October 2, 1945, Serial No. 619,782. Divided and this application July 29, 1947, Serial No. 764,361

3 Claims. (Cl. 154—2.27)

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This invention relates to an improvement in the method of making insulating covers for bus bars having metalized inner surfaces for contact with conductors or bars such as shown in my application, Serial No. 619,782, filed October 2, 1945, now Patent No. 2,439,859, of which this application is a division.

One of the objects of my invention is to provide a bus bar covering for eliminating the corona effect produced between the bus bar and its covering, due to the minute air gap between the covering and the bus bar, which corona produces carbon tracks on the surface of the insulating cover and in time causes insulation failure.

Another object of my invention is to provide a bus bar cover having a lining of copper or any other conducting metal, which can be grounded through a proper resistor to avoid the formation of a corona.

Another object of my invention is to provide a conducting lining which will be in contact with multitudinous places over the face of the bus bar and at the same time be perfectly anchored throughout its entire area to the covering.

Another object of my invention is the provision of a method by which such covers can be made at a low cost and of the proper shape to be slipped on a bus bar, or a bar for conducting a high voltage current.

Having now described, in a general way, the nature and purpose of this invention, I will proceed for illustrative purposes, to a description of a preferred embodiment thereof, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a conductor bar having an insulating covering, in accordance with my invention;

Figure 2 is a perspective view of a portion of a mandrel, showing the method of winding a covering thereon; and

Figure 3 is an end view of a completed cover.

In Figure 1, the covering is designated by the reference character 10, on a conductor bar 12, and 14 designates the metal lining, embedded in the cover and contacting with the conductor bar 12.

In the form shown the conducting lining is formed of copper screening, and the covering is formed as hereinafter described.

The reference character 16 designates a screw threaded through the lining and into contact with the metal lining, and connected to the screw between nuts 18, 18, is a grounded wire 20 having a resistor of the proper capacity therein, to prevent the formation of a corona between the conductor and the covering.

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The metal lining is preferably formed of copper screening, although any other metal conducting screening, pierced, or perforated sheet may be used for the lining.

The covering is formed by supporting a mandrel 12' the shape of the conducting bar 12 for winding strip material, then winding a turn or two of dielectric material 10 thereon, and then wrapping in the metal sheet 14 to produce an overlapping layer of the metal lining and then continuing the winding of dielectric material 10, until the required thickness of insulating wall is built up.

After the covering on the bar or mandrel has been built up, the mandrel is removed from the winding supports, and is then placed in a proper mold for compressing the dielectric material and after curing the cover is removed from the mandrel.

As the metal of the liner is harder or more dense than the dielectric material, portions thereof will cut through the dielectric material and will be exposed on the inner surface and will be in direct contact with the face of a bar over which it is slipped.

The cover may be made in different lengths and may be sawed into various lengths to cover the portions of bars to be insulated, and may then be drilled and tapped for a grounding screw or the lining may be grounded in any desired manner.

Any type of dielectric material which requires molding after wrapping may be used, but I preferably use a paper or fabric impregnated with a synthetic resin having insulating capacity, as, for example, a phenol formaldehyde type resin, and which may be applied by wrapping and then formed in a mold under heat and pressure.

What I claim and desire to protect by Letters Patent is:

1. The method of producing covers for conductor bars having a metalized lining for intimate contact with the surface thereof, comprising providing a mandrel whose cross-sectional contour and area is the same as the contour and cross-sectional area of the bars to be covered, then winding a turn of foraminous sheet conducting metal on the mandrel to form the lining, then winding a plurality of turns of sheet insulating material on the foraminous sheet conducting metal to form a cover of the desired wall thickness and density, then pressing the covering about the mandrel while in a non-expansible

space with sufficient pressure to press the foraminous sheet metal into intimate contact with the mandrel to form the metalized lining and to force insulating material into the foramina in the sheet conducting metal to anchor the metalized lining in the insulating material, and then removing the cover from the mandrel.

2. The method of producing covers for conductor bars having a metalized lining for intimate contact with the surface thereof, comprising providing a mandrel whose cross-sectional contour and area is the same as the contour and cross-sectional area of the bars to be covered, then winding a turn of copper screening on the mandrel to form the lining, then winding a plurality of turns of sheet insulating material on the copper screening to form a cover of the desired wall thickness and density, then pressing the covering about the mandrel while in a non-expansible space with sufficient pressure to press the screening into intimate contact with the mandrel to form the metalized lining and to force insulating material into the foramina in copper screening to anchor the metalized lining in the insulating material and then removing the covers from the mandrel.

3. The method of producing covers for conductor bars having a metalized lining for intimate contact with the surface thereof, comprising providing a mandrel whose cross-sectional contour and area is the same as the contour and cross-sectional area of the bars to be covered, then winding a turn of sheet insulating material, then winding a turn of copper screening on the

mandrel to form the lining, then winding a plurality of turns of sheet insulating material on the copper screening to form a cover of the desired wall thickness and density, then pressing the covering about the mandrel while in a non-expansible space with sufficient pressure to press portions of the screening through the sheet insulating material on the mandrel and into intimate contact with the mandrel and to press other portions of the screening into the insulating material to anchor the metalized lining in the insuluating material, and then removing the cover from the mandrel.

GEORGE J. MULLER.

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