Feb. 25, 1941. E. FREYDBERG 2,232,846

IDENTIFYING STRIP FOR USE IN CONNECTION WITH INSULATED ELECTRICAL CONDUCTORS

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Fig 1

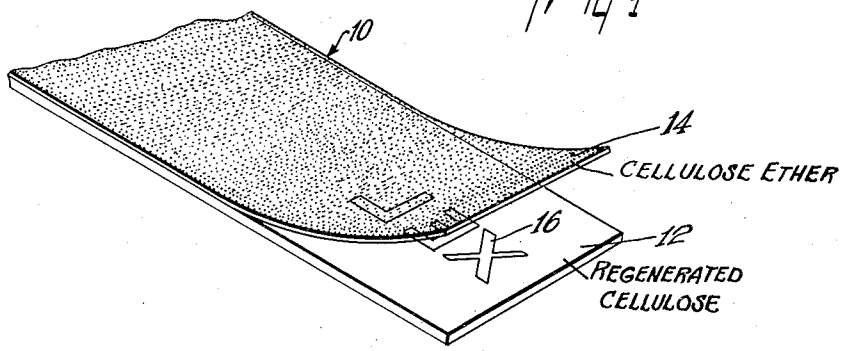
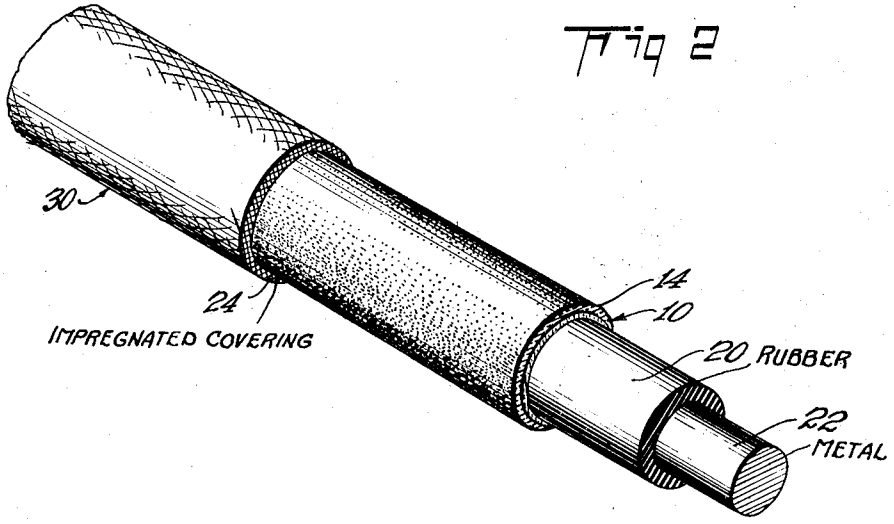


Fig 2



INVENTOR.

Eli Freydberg

BY

Brown & Jones

ATTORNEYS

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IDENTIFYING STRIP FOR USE IN CONNECTION WITH INSULATED ELECTRICAL CONDUCTORS

Eli Freydberg, New York, N. Y., assignor to Freydberg Bros., Inc., New York, N. Y., a corporation of New York

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4 Claims. (Cl. 174—112)

This invention relates to a new and improved identifying strip for use in connection with an insulated electrical conductor.

An object of the invention is to provide a suitable identifying strip comprising cellulosic material, and more specifically regenerated cellulose, such as Cellophane coated with a cellulose ether, such as ethyl cellulose.

Further objects of the invention are to provide such a strip bearing suitably identified indicia, to provide a strip of the character described which may be employed outside the rubber insulation and beneath the saturated cotton thread coating of the standard insulated electrical conductor; to provide such a strip which is adapted to withstand temperatures such as those used in saturating the cotton coating of the conductor; and to provide such a strip which is stronger and more heat-resistant than sheets or films of Cellophane.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature of the invention, reference should be had to the accompanying drawing, in which:

Figure 1 represents diagrammatically and in perspective a composite sheet or strip embodying the invention; and

Fig. 2 represents an insulated conductor with such a sheet or strip being incorporated in the coating of the metallic core thereof.

Attempts to provide identifying strips of indicia-bearing Cellophane, or regenerated cellulose, in connection with commercial insulated electric conductors, have heretofore been unsatisfactory, for if the rubber insulating coating of the metallic core of the conductor is covered with a Cellophane strip bearing suitable identifying indicia, and if the strip is then covered with a suitable cotton thread coating which is subsequently treated, as by a hot saturant, the treatment of the cotton thread coating destroys the Cellophane strip, which is not adapted to withstand the temperatures commercially employed. The identification properties of the Cellophane strip are lost; it crumbles and becomes of substantially no benefit to the assemblage.

The present invention contemplates the provision of a composite strip comprising a thin sheet or film of Cellophane, for example a sheet or film approximately .0009 of an inch in thickness, which is provided with a coating on its outer or exposed surface of a cellulose ether, and more specifically a coating of ethyl cellulose. This coating may be approximately .0003 of an inch in thickness, giving to the entire composite sheet a thickness slightly in excess of one mil.

Such a sheet is shown diagrammatically in Fig. 1, where the composite sheet **10** comprises a regenerated cellulose film **12** to which a thin film of ethyl cellulose **14** is suitably bonded.

To provide identification, the Cellophane strip **12** may bear indicia, such for example as the letters **16**, printed preferably upon that face of the sheet to which the ethyl cellulose coating is subsequently applied. If the ethyl cellulose coating is then provided with a pigment, indicated by the stippling in Fig. 1, the effect is of a two-color printing process, and many desired combinations of colors, printing, designs, etc., may be employed to provide a vast number of different identifying indicia.

Such a composite sheet possesses much greater resistance to heat, and more particularly to the temperatures used ordinarily in treating the cotton thread coating of the conductror with a hot saturant, than does a strip of Cellophane. The composite sheet, for example, will withstand temperatures in the neighborhood of 350° F. without deterioration.

The composite sheet is preferably wrapped or folded around the rubber insulation **20**, which surrounds the metallic core **22** of the electrical conductor **30**, shown for example in Fig. 2, and the sheet or film **10** is preferably so positioned around the rubber insulation that the ethyl cellulose coating **14** is on the outer surface of the sheet. The cotton covering **24** is then applied and the conductor may be subjected to the standard hot saturation process without fear of destroying the layer **10** as an identification. The composite layer maintains its form, its color properties and its other physical properties as a strip bearing identifying indicia, even after being heated in the manner described.

It will of course be understood that the identifying layer may be employed anywhere in the coating of the electrical conductor intermediate the outer cotton thread coating and the central metallic core.

It is further to be understood that while Cellophane and ethyl cellulose have been described as the preferred materials for use in the manufacture of the identifying strip, the strip may

comprise any cellulose ester coated with any compatible cellulose ether.

Since certain changes in carrying out the above process, and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An insulated electrical conductor comprising a metallic core, an outer covering entirely impregnated with a saturant, and an identification strip positioned intermediate said outer covering and said metallic core and comprising a printed sheet of regenerated cellulose, and with a coating on its outer surface of ethyl cellulose of such thickness as to protect said regenerated cellulose from deterioration at temperatures of approximately 300° F.

2. An insulated electrical conductor comprising a metallic core, an insulation layer surrounding said core, an outer covering entirely impregnated with a saturant, and an identification strip positioned intermediate said outer covering and said insulation layer and comprising a printed sheet of regenerated cellulose, and with a coating on its outer surface of ethyl cellulose of such thickness as to protect said regenerated cellulose from deterioration at temperatures of approximately 300° F.

3. An insulated electrical conductor comprising a metallic core, an outer covering entirely impregnated with a saturant, and an identification strip positioned intermediate said outer covering and said metallic core and comprising a sheet of regenerated cellulose bearing identifying indicia, with a coating on its outer surface of ethyl cellulose of such thickness as to protect said regenerated cellulose from deterioration at temperatures of approximately 300° F.

4. An insulated electrical conductor comprising a metallic core, an outer covering entirely impregnated with a saturant, and an identification strip positioned intermediate said outer covering and said metallic core and comprising a sheet of regenerated cellulose having a thickness of approximately .0009 of an inch, and with a coating on its outer surface of ethyl cellulose having a thickness of about 0.0003 inch.

ELI FREYDBERG.