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MANUFACTURE OF ELECTRIC CABLES

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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In order that it may be possible thus to cool the core and inner portions of the cable it is preferred to provide the cable with a tube through which a cooling medium may be passed. This tube may conveniently be of copper and in close contact with the conductors forming the core. For instance stranded conductors may be laid up round a central conducting tube which thus itself acts as part of the core. Again the whole core may in some instances form the tube or be constituted by it. When the tube is surrounded by the stranded conductors forming the core, the cross sectional area of the bore of the tube may be say 20% of the total cross sectional area of the conductors.

In the accompanying drawings, Figures 1 and 2 are respectively an elevation and a cross section of one construction of electric cable according to this invention, and Figures 3 and 4 are similar views of an alternative construction of cable also according to this invention.

Each of these constructions is given by way of example only. In both examples three-phase cables are shown but obviously the invention may be applied to other cables.

In Figures 1 and 2 the conducting core is formed partly by a tube A, preferably of copper, and partly by stranded conductors B laid up round the tube A in close contact with it. The insulation C surrounding each conducting core is preferably of paper or some insulating material which, after being wound round the core in some well-known way, is impregnated in the manner usual in such cables. The outer insulation D and covering E may be of any known form and do not in themselves form part of the present invention.

In the example shown in Figures 3 and 4 the conducting core consists solely of the tube A'. After each of the cables formed by the core A B or A' and the insulation C has been made it is dried and placed in the usual way in an impregnating vessel where for a sufficient time and under suitable conditions the insulation is impregnated with some “oil” or composition which when heated to the requisite temperature is sufficiently liquid to penetrate the paper insulation.

When the cooling stage of the impregnat-
ing process is to be commenced any convenient cooling medium is passed through the tube A or A'. Such medium may if desired be an insulating liquid. This however is not essential for no passage of the cooling medium into the insulation of the cable is possible and it is convenient to use refrigerated brine.

It is to be understood that it is not essential for the carrying out of this invention that the whole cooling of the cable shall proceed from the inside. In some impregnating processes the cooling of the insulating composition is hastened by causing a cooling medium to be circulated through tubes immersed in the composition and such a method may be used in conjunction with the present invention, the effect being to cool the cable partly from inside and to modify or reverse the temperature gradient between the inside and outside of the cable.

What I claim as my invention and desire to secure by Letters Patent is:

A method of impregnating the insulation of an electric cable in which after the impregnating process has proceeded for a sufficient time the core or conductor is cooled by means of a cooling medium, such for example as refrigerated brine passed through the interior of the cable.

In testimony whereof I have signed my name to this specification.

PHILIP VASSAR HUNTER.