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C. A. PARSONS ET AL

STRANDED CABLE

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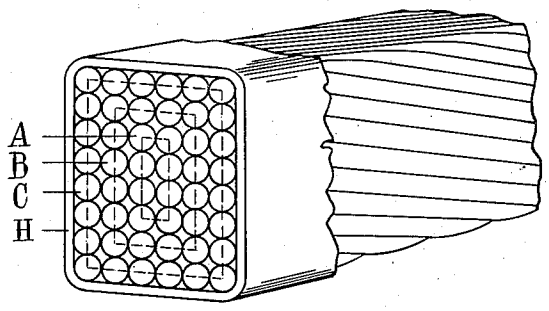

Fig. 1.

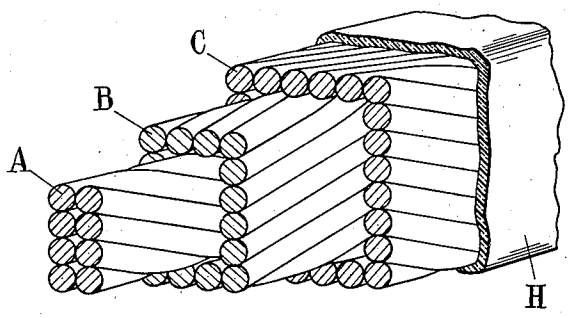

Fig. 2.

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UNITED STATES PATENT OFFICE.

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STRANDED CABLE.

Application filed May 1, 1922, Serial No. 557,677, and in Great Britain May 17, 1921.

The present invention relates to helically stranded cables, that is to say, cables which are built up of a number of successive layers of wire of comparatively small section.

While a cable of circular cross section is often of use, as for example in armature construction, it is frequently necessary in order, for instance, to build up a conductor to occupy a slot of a shape such as is frequently employed in dynamo-electric machinery to modify the oval cable so that both ends of the cable section are provided with square corners, that is to say, the cable is of rectangular section.

Hitherto, in order to make a cable of such a shape it has been necessary first to construct a round or oval cable and then to deform it to the rectangular shape required. The crushing of the cable is undesirable, as in this operation the insulation on the individual wires is damaged and short circuits develop. These short circuits are harmful where the cable is fitted in dynamo-electric machines, as they cause serious overheating and also reduce the efficiency of the plant.

The object of the present invention is to provide an improved method of manufacturing cables of rectangular section which shall not involve any process of deformation and which will, therefore, result in cables free from the above-mentioned disadvantages.

The invention consists in the improved cables hereinafter described and particularly pointed out in the claims.

Referring to the accompanying drawings:—

Figure 1 is a diagrammatic perspective view of a conductor showing at the left-hand end the arrangement of strands, while

Figure 2 is a similar view showing the helical laying of successive series of strands.

This cable is built up of three layers, A, B, C, the centre lines of which are indicated respectively by dotted lines. The inner layer, A, comprises eight strands, the intermediate layer, B, sixteen and the outer layer, C, twenty-four strands. The increment in the number of strands per layer is thus seen to be eight.

Owing to the helical laying of the superimposed series of strands, cross sections taken through the cable will show progressively varying configurations of strands; at recurrent intervals, however, depending on the lay and the number of strands, the configuration of the strands will be rectangular as seen in cross section for any particular series.

The cable in the drawing is shown as covered by a lapping of tape, H.

It will be seen that by the construction described we are enabled to produce a cable the section of which has four square corners, that is to say, the cable is of rectangular section, and it is found that with the increments per layer specified the wires in each layer can be easily laid in situ i. e., in the final position desired without subsequent distortion, without any tendency to over-riding and will remain in the correct position without disturbing their neighbours either of the same or adjacent layers.

Having now described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. A method of manufacturing a flat-surfaced stranded electric conductor of rectangular cross-section which consists in helically laying in situ a basic series of strands in a two-line rectangular formation as seen in cross-section at recurrent intervals lengthwise of the conductor and helically laying in situ on said basic series a succession of rectangularly-disposed series of strands, each series being one-strand thick and having eight more strands than the subjacent series.

2. A flat-surfaced electric conductor of rectangular cross-section, comprising a basic series of helically-laid strands in a two-line rectangular formation as seen in cross-sections taken at certain equidistant points along the length of said conductor and superimposed on said basic series a plurality of series of strands helically laid along the sides of a succession of rectangles, each series of said plurality being one-strand thick and having eight more strands than the subjacent series.

3. A method of manufacturing a flat-surfaced multi-strand conductor of rectangular

cross-section, which consists in providing as a core a body substantially rectangular in cross-section and having transverse dimensions equal respectively to those of an integral number of conductor strands and helically laying in situ on said core a succession of rectangularly-disposed layers of juxtaposed strands each one strand thick, the number of strands in said successive layers increasing by eight strands per layer.

In testimony whereof we have signed our names to this specification.

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