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STEEL-ALUMINUM CABLE

Filed June 15, 1931

Fig. 1.

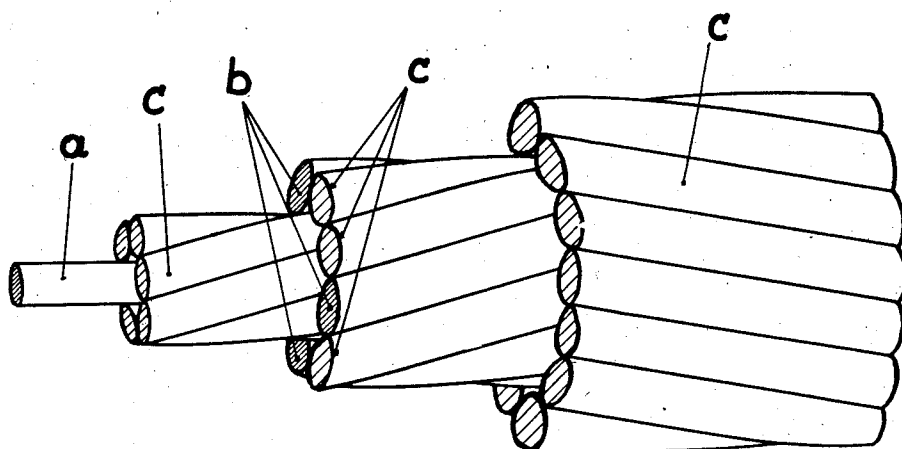
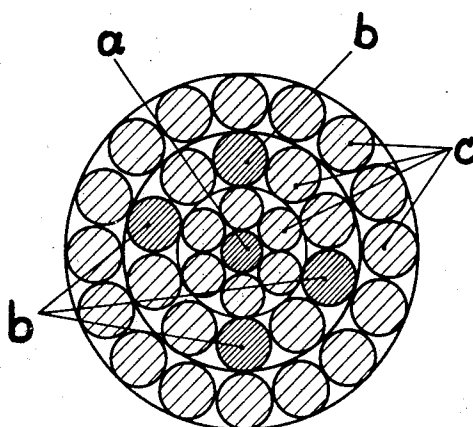


Fig. 2.



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STEEL ALUMINIUM CABLE

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It has already been proposed to make wire cables, the individual wires of which consist of the same material, free from twist by equalizing the oppositely directed turning moments of the different layers of wires. The steps proposed to this end, viz: adjusting the cross-sections of the wires and the laying lengths, require a construction differing from the usual method of formation, which cannot be applied to the manufacture of steel aluminium cables. For on the one hand, the laying length cannot be increased above a certain amount without affecting the safety, and, on the other hand, with steel aluminium cables the ratio of the cross-sections of the aluminium and steel wires is limited to a fixed value, for which about 6:1 is found to be the most favorable. If, with such steel aluminium cables, it were desired to equalize the oppositely directed turning moments in the different layers of wires, by adjusting the laying lengths, these would deviate still further from the ordinary values which have been found admissible. For example, in order to make a certain steel aluminium cable free from twist by choosing the laying lengths, the layer of steel wires and the layer of aluminium wires above it had to be wound in the same direction with a laying length of 8 times the diameter of the cable, and the outer layer of aluminium wires with a laying length of 14 times the diameter of the cable in the opposite direction. This construction, however, is disadvantageous as regards loading capacity because in consequence of the short laying lengths of the inner layers of wires these are insufficiently stressed and the outer aluminium wires with long laying length may be over loaded.

The present invention relates to a step in the manufacture of stranded steel-aluminium, electrical cables, which makes it possible completely to equalize the oppositely directed turning moments of the different layers of wires without departing from the above mentioned favorable ratio of cross section of the steel and aluminium wires of 6:1 or having to choose laying lengths different from the normal (11 to 14 times the diameter of the cable), and by which, moreover, an

overloading of the outer wires at the expense of the wires in the inner layers is avoided. With this object in view the steel wires are not arranged as hitherto in the middle of the cable but are distributed over the whole cross-section partly in the middle of the cable and partly in layers together with the aluminium wires.

The accompanying drawing illustrates by way of example a form of a steel-aluminium cable which is made free from twist in such a manner. Fig. 1 shows an elevation and Fig. 2 a cross-section.

Of the necessary steel wires (closely shaded in cross-section), one is employed as the core wire *a* and the others *b* are arranged in the next layer between the aluminium wires *c*. The innermost and the middle layers are laid in the same direction and the outer layer in the opposite direction.

What I claim is:

A stranded steel aluminium, electrical cable made free from twist by equalizing the oppositely directed turning moments of the layers of wires with a ratio of cross-section of aluminium to steel of about 6:1 and laying lengths about 11-14 times the diameter of the cable, in which the steel wires are disposed over the whole cross-section of the cable, partly in the middle of the cable and partly in layers together with the aluminium wires.

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

REINHOLD BAUM.