Aug. 22, 1933. C. R. BOGGS 1,923,859

ELECTRIC CORD AND CABLE

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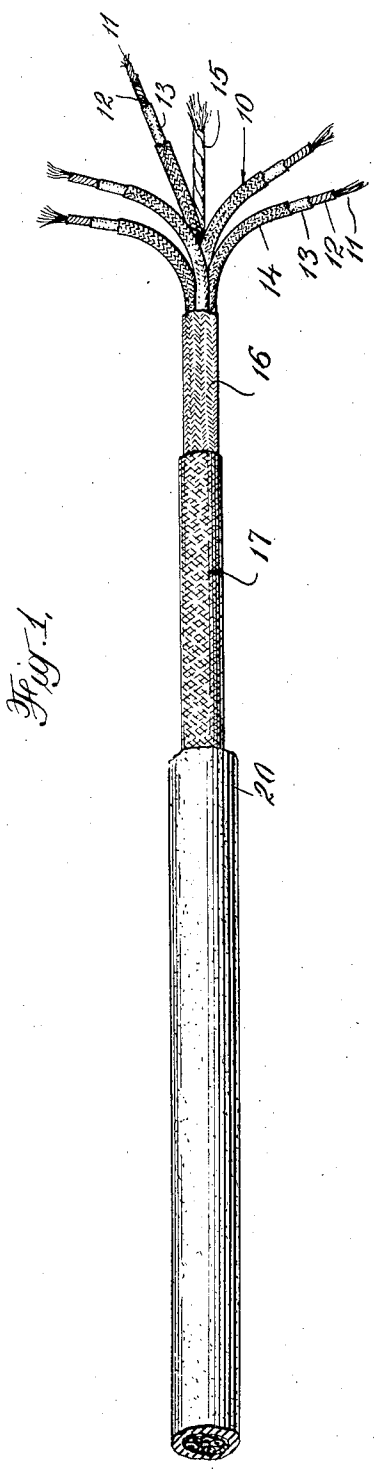


Fig. 1.

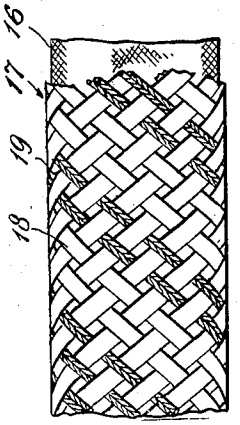


Fig. 3

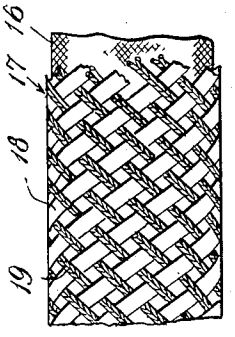


Fig. 2.

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ELECTRIC CORD AND CABLE

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2 Claims. (Cl. 173—81)

This invention relates to conductor cables of the shielded type and is concerned more particularly with the provision of such a cable which is more flexible, lighter in weight and cheaper to make than similar cables as heretofore constructed.

The novel cable is particularly useful in connection with apparatus for taking talking motion pictures, the cable being readily handled by reason of its lightness and flexibility and including shielding which prevents disturbances in the circuits through it.

In the accompanying drawing, Fig. 1 is a fragment of the new cable with parts broken away;

Fig. 2 is a view on an enlarged scale illustrating the shielding layer, and

Fig. 3 is a view similar to Fig. 2 showing a modified form of shielding.

The improved cable comprises generally an insulated conductor or group of conductors covered by a layer or wrapping of insulating material, a wrapping of shielding material, and an outer protective casing of insulating material. In the drawing the cable is shown as composed of five conductors though any greater or less number may be employed.

Each conductor 10 comprises a multiplicity of fine conducting strands 11 encased in a layer of fibrous strands 12, such as cotton. Over the fibrous insulating layer is applied a layer of rubber 13 which is encased in a wrapping 14 of cotton threads, preferably braided to form a sleeve.

The several individual conductors, in this case five, are laid on a jute strand or core 15 which serves to fill the center of the cable, support the conductors and anchor them against displacement. The conductors with the core are encased in a wrapping of fibrous material, preferably a braided cotton sleeve 16, and over this sleeve is laid the shielding layer.

This shield includes thin flat metallic strips 17, commonly known as tinsel and made preferably of copper, tinned if desired. These strips may be laid in place in different ways to give greater or less shielding effects. Different types of shield are illustrated in Figs. 2 and 3.

In Fig. 2, the shielding layer is shown as made up of a plurality of strips of tinsel 18 wrapped helically around the conductors, a serve of cotton strands 19 being wrapped around the cable with the opposite lay and interwoven with the tinsel strips. The tinsel gives the shielding effect and the individual tinsel strips are held in place by the cotton strands.

The shield of Fig. 3 has a group of tinsel strips 18 wrapped helically about the body of the cable with one lay, and another group of strips and cotton strands wrapped with the opposite lay and interwoven with the strips of the first group. As shown the second group consists of pairs of tinsel strips and pairs of cotton strands arranged in alternation.

The substitution of the strands of cotton for the metallic strips reduces the effectiveness of the shield but at the same time lessens the cost and weight of the cable and increases its flexibility. The particular construction employed in the shield will vary according to the use to which the cable is to be put.

To complete the cable, there is applied over the shielding layer 18 a heavy layer of rubber 20 which forms a protective insulating casing.

I am aware that it has been proposed heretofore to shield cables against external electrical disturbances but in the cables with which I am familiar the shielding material used has taken the form of strips each made up of a plurality of fine round metal strands. A shielding layer made of such strips makes the cable relatively stiff, heavy and unwieldy. The thin flat strips of metal which I employ produce a shield much lighter and more flexible than the strand type, and the new cable is substantially cheaper than the old type since there is a large saving in the amount of metal used in the shield. This saving is effected because the amount of metal in a tinsel strip is not substantially greater than that in one of the round metal strands which have heretofore been combined in groups of four or more to produce a strip for shielding purposes. A shield made of thin tinsel strips in accordance with this invention makes possible the production of a better cable at substantially less cost than those heretofore manufactured and this result is obtained without in any way impairing the effectiveness of the shield.

What I claim:

1. A cable comprising an insulated conductor, a metallic shield about the conductor which includes a group of flat metallic strips wound helically around the conductor with one lay, another group of flat metallic strips wound helically around the conductor with the opposite lay, strands of cotton wound parallel to the strips of one group, each strip and strand passing alternately under and over the strips which they cross, and a protective insulating layer over the shield.

2. A cable comprising an insulated conductor, a metallic shield about the conductor which includes a group of flat metallic strips wound helically around the conductor with one lay, a plurality of strands of cotton wound helically around the conductor with the opposite lay, each strip and strand passing alternately over and under the strips which they cross, and a protective insulating layer over the shield.

CHARLES R. BOGGS.