Jan. 24, 1939. E. D. BENT 2,144,868

APPARATUS FOR MAKING INSULATED ELECTRICAL CONDUCTORS

Filed Feb. 21, 1935

FIG. 1.

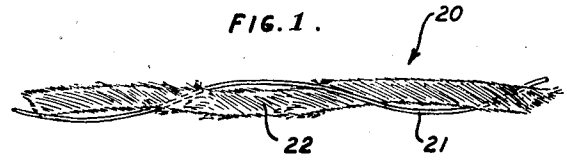


FIG. 2.

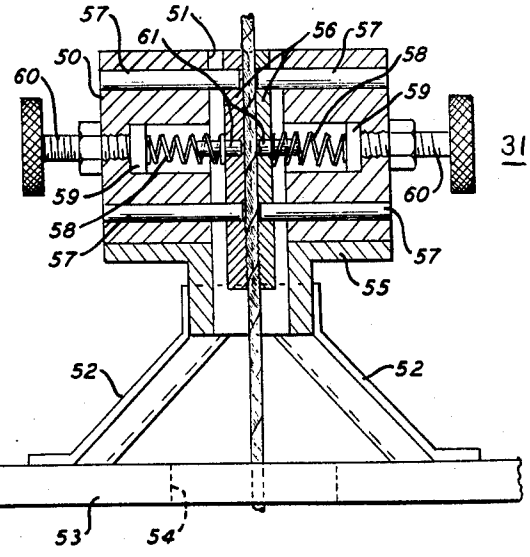
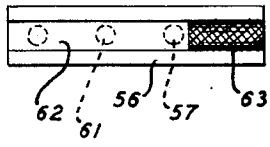


FIG. 3.



INVENTOR
E. D. BENT

BY
E. R. Nowlan
ATTORNEY

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APPARATUS FOR MAKING INSULATED ELECTRICAL CONDUCTORS

Edgar D. Bent, Montreal, Quebec, Canada, assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

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2 Claims. (Cl. 173—244)

This invention relates to apparatus for making insulated electrical conductors provided with insulation which is both electrically and thermally insulating and more particularly to an apparatus for compacting such insulation material upon conductor strands.

Asbestos fibres have been used to make thermally and electrically insulating sheathing for conductor strands in the form of yarns and other strands and have often given difficulty in the handling of the asbestos during application and in the varying quality and resistance of the coating after being applied because of the weak interlocking power of asbestos fibres and the low tensile strength of the fibres in themselves.

One object of the present invention is to provide an improved apparatus for making an asbestos insulated conductor in which the asbestos layer of the coating is of relatively uniform character throughout and has a comparatively compact, smooth and dense surface.

With the above and other objects in view, one embodiment of the invention may be in an apparatus for making insulated conductors which includes means to tease up and polish down in one operation the exterior surface of an outer sheath of fibrous material on an electrical conductor, such means comprising a polishing member having a roughened portion and a smooth portion to be applied to the sheath successively.

Other objects and features of the invention will appear from the following detailed description of one embodiment thereof taken in connection with the accompanying drawing in which like reference numerals are appended to identical parts in the several figures and in which

Fig. 1 is a broken, enlarged view of a compound strand of textile thread and asbestos roving;

Fig. 2 is an enlarged view in central longitudinal section of a combined teasing and polishing device, and

Fig. 3 is a detached face view of one of the blades thereof.

In the embodiment of the invention herein disclosed there is presented an apparatus for teasing up and polishing down the exterior surface of an outer sheath of fibrous material on a conductor strand. Such a sheath may be of any fibrous material applied in any suitable manner, but the invention is particularly applicable to a specific type of asbestos sheathed wire. Fig. 1 shows a compound sheathing strand 20 in which a relatively bulky and loosely twisted roving or strand 22 of intertwisted asbestos fibres has a relatively slender and tightly twisted strand or thread 21 of spun cotton or like, twisted about the asbestos. Strands such as 20 may be served or braided on a conductor strand to a both electrically and thermally insulating sheath. A conductor having such a sheath may often be materially improved in appearance and quality by having its outer surface smoothed, evened and compacted by teasing up and polishing down the fibres of its outer surface.

A suitable device for doing this and embodying the present invention is disclosed in Figs. 2 and 3.

As there shown, a block 50 having an axial perforation or bore 51 is mounted by a base 55 and struts or legs 52 on a rotary support 53 supported and driven in any approved fashion not shown and provided with an axial aperture 54, the strand being operated on passing axially through the aperture 54 and the bore 51. A pair of complementary, coacting polisher blades 56 is positioned loosely in the bore, each supported on a pair of pins 57, 57 rigidly mounted in the blade and slidable in corresponding transverse bores in the block 52. The two blades are pressed yieldingly together by two compression springs 58, 58, each bearing at one end against the rear face of one of the blades and at the other against a stop 59 which is adjustable as shown by means of a thumb screw 60 mounted in the block 52. Guide pins 61 for the spring may also be provided. The inner or working face of each blade has a longitudinal groove 62 transversely arcuately curved the bottom of which bears against a strand being polished. That portion of each working face of the blades which first comes into contact with the strand is knurled or serrately grooved or otherwise roughened, as by sand blasting, as shown at 63 in Fig. 3. It has been found that a fairly sharp cross knurling as shown is satisfactorily effective to tease up and comb out the surface of an asbestos sheathed wire such as described above to prepare it for being smoothed down by the polishing action of the smooth portions of the blades. If this roughening and teasing is not performed, a satisfactory result may be obtained for some purposes where uniformity of diameter along the strand is not important, but where as in many cases it is necessary to achieve relatively great uniformity, this teasing renders it possible as the roughening breaks up minor knots and tangles in the asbestos fibres and lays the fibres on the surface in combed alignment ready for the actual compacting and polishing by the smooth portions.

The embodiments of the invention herein dis-

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closed are illustrative only and may be widely and variously modified and departed from without departing from the scope and spirit of the invention as pointed out in and limited only by the appended claims.

What is claimed is:

1. In an apparatus for making an insulated electrical conductor having a sheath of asbestos fibre, means to tease the surface of the sheath and means to compact and polish the teased surface comprising a polishing member having a roughened portion and a smooth portion to be applied to the sheath successively.

2. In an apparatus for making an insulated electrical conductor having a sheath of asbestos fibre, means to tease the surface of the sheath and means to compact and polish the teased surface comprising a pair of coacting polishing members each having a roughened portion and smooth portion to be applied to the sheath successively.

EDGAR D. BENT.

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