Oct. 27, 1931. O. A. FREDERICKSON 1,829,512

BUSHING FOR ARMORED CABLE

Filed Aug. 2, 1930

FIG.1.

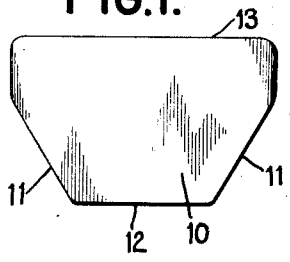


FIG.2.

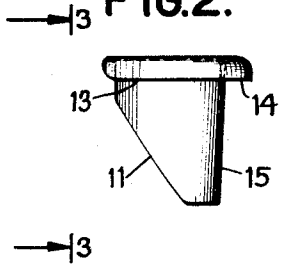


FIG.3.

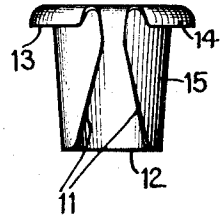


FIG.5.

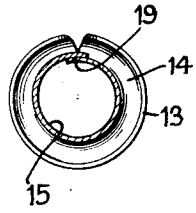


FIG.4.

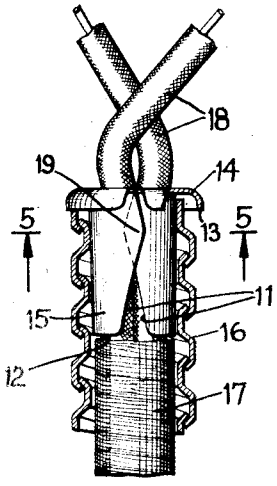


FIG.6.

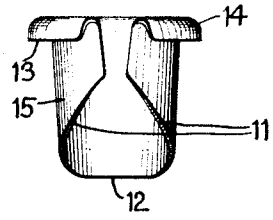
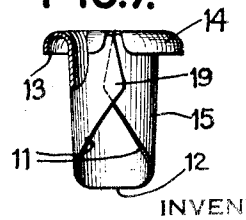


FIG.7.



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Patented Oct. 27, 1931 1,829,512

UNITED STATES PATENT OFFICE

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BUSHING FOR ARMORED CABLE

Application filed August 2, 1930. Serial No. 472,654.

This invention relates to improvements in insulating bushings and more particularly relates to bushings of the general type shown and described in my Patent No. 1,687,013.

In the foregoing patent a bushing was provided of insulating material, which bushing was adapted to be inserted in the end of a piece of armored cable to serve as an insulation and protection for the wires emerging from the cable and to prevent their being damaged by sharp ends of the armor.

The present invention is related to improvements and details of constructions of such bushings to the general end that the bushings may be more readily inserted in the cable and to the further end that steps of manufacture of the bushings may be simplified.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims and shown in the drawings, which by way of illustration show what I now consider to be a preferred embodiment of the invention.

In the drawings:

Figure 1 shows a blank from which the bushing is made before it is formed up into shape;

Figure 2 shows an edge view of the completed bushing after fabrication;

Fig. 3 is another view of the completed bushing shown in Fig. 2, this view being taken substantially as indicated by the arrows marked 3 in Fig. 2;

Fig. 4 shows the bushing of Fig. 2 and 3 inserted in an end of a piece of armored cable carrying the usual insulated wires;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4 with the armored cable omitted;

Figs. 6 and 7 are views similar to Figs. 3 and 4 of slightly modified form of bushing made from a blank which has a configuration slightly modified with respect to the blank shown in Fig. 1; Fig. 6 shows the bushing in open relation like Fig. 3; and Fig. 7 shows the bushing collapsed and compressed and in the form which it will assume when placed in the armor of a cable.

In more detail in the drawings in Fig. 1, 10 is the blank which may be made of fibre or other suitable insulating material. As shown the blank is provided with tapered portions 11—11 with a bottom portion 12 which is substantially straight and with a top edge portion 13. The proportions of these parts can be modified as will be hereinafter described.

Fig. 2 shows the next step in the formation of the bushing. The upper edge 13 is formed over as indicated at 14, to provide a curled over lip portion and the lower part of the blank is folded around to form a split tubular shank portion generally designated 15 in Figs. 2 and 3. The next step in the fabrication is to dip the same in some impregnating material preferably paraffine wax or the like. This makes the bushing more waterproof and gives it better insulating properties than before. The wax also provides a smooth surface upon the bushing which facilitates its insertion into an armored cable. It will be noted that the shank portion of the bushing shown in Fig. 3 is slightly tapered. This tapered configuration of the shank and the slopes of the edges 11—11 of the blank provide a bushing having a configuration which is more readily insertable in the end of the armored cable than the bushing shown in my previous Patent No. 1,687,013, in which the bushing was formed from a rectangular shaped blank and without having the sloping portions 11—11. The flat portion 12 at the bottom of the blank facilitates the fabrication of the bushing and does not seriously detract from the insertion of the bushing into the armored cable inasmuch as this portion 12 forms a sort of a curved shoe to wedge the wires to one side of the cable and facilitates forcing the bushing to home position.

Fig. 4 shows the bushing in position in an armored cable having a metallic armor 16, paper wrapping 17 and insulated conductors 18. In this figure it will be noted that the bushing is collapsed so that the portions of the shank of the bushing overlap as indicated at 19. The curled over lip portion 14 abuts over the end of the armor as shown.

In Figs. 6 and 7 there is shown a bushing having a slightly different configuration which is provided for by slightly increasing

the slope and length of the sloping end portions 11—11 and slightly decreasing the length of the bottom edge 12 of the blank shown in Fig. 1.

All of the various forms of bushing provide the tapering shank portion 15 with edge portions which overlap as indicated at 19 when the bushings are inserted in the cable. The edges 11—11 slope down from the point of overlap and provide clearance at one side of the lower part of the bushing so that the introduction of the bushing in the cable is facilitated. As shown the straight bottom edge 12 facilitates the manufacture of the bushing and it will be appreciated that the length of this bottom portion may be varied as desired.

I claim:

1. An insulating bushing for an armored cable provided with a curled over lip portion, a tapered split shank portion and sloping edge portions which extend to a flat bottom part of the bushing and provide clearance at one side of the bushing shank for a part of its length for facilitating the introduction of the bushing into an armored cable.

2. An insulating bushing for an armored cable provided with a curled over lip portion, a tapered split shank portion having portions overlapping to provide for complete coverage of the wires adjacent the lip and at a point near the end of the armor, said overlapping portions inwardly of the overlapping point diverging and extending to a relatively flat bottom edge of the bushing for the purpose described.

3. An armored cable bushing formed of insulating material of fibrous character shaped into form to provide a split tubular shank portion with edge portions in part over overlapping when the bushing is inserted in a cable, said bushing also having tapering edge portions extending down to a straight bottom portion for the purpose described.

In testimony whereof I hereto affix my signature.

OTTO A. FREDERICKSON.