July 9, 1946. S. M. MARTIN 2,403,816

CORD AND METHOD OF MAKING CORD

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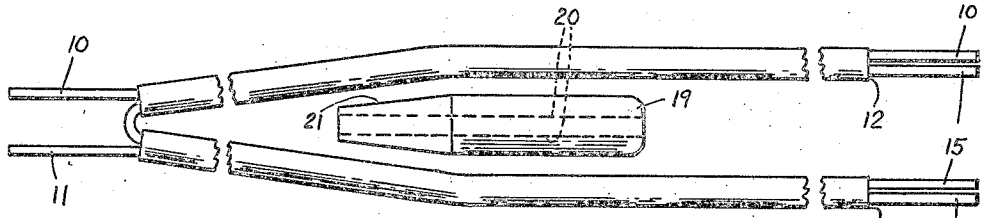


FIG. 1

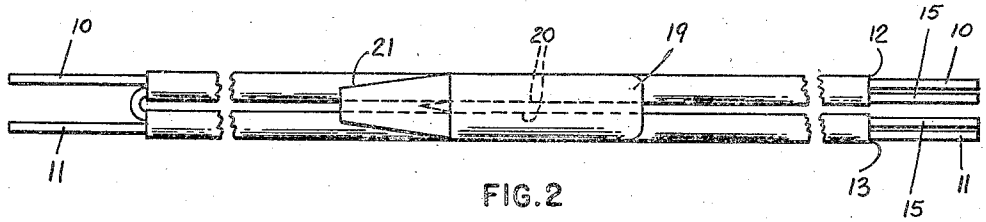


FIG. 2

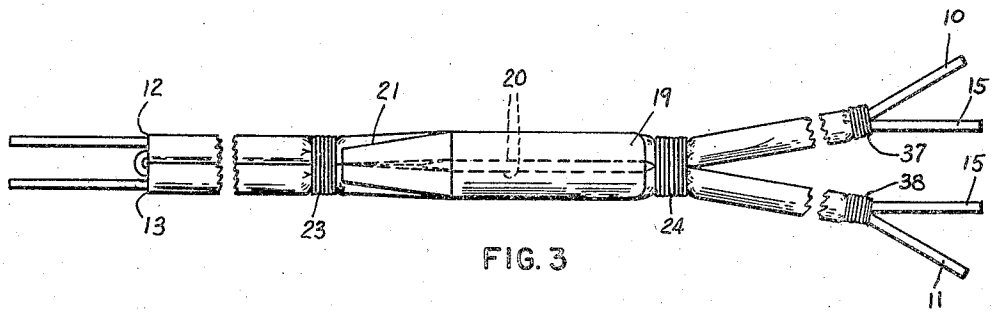


FIG. 3

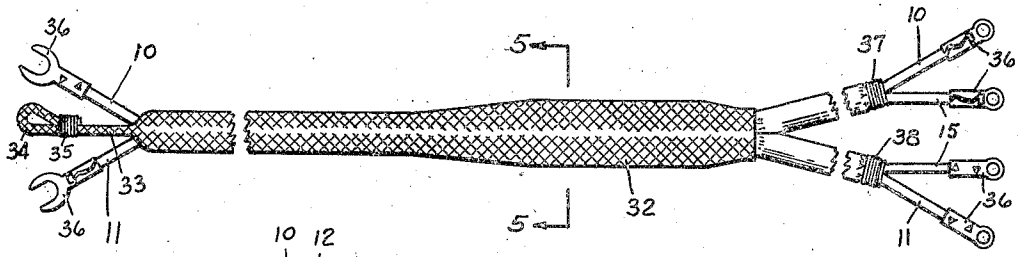


FIG. 4

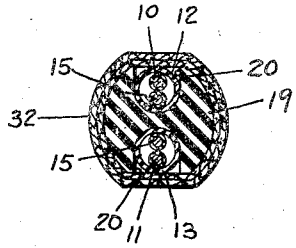


FIG. 5

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CORD AND METHOD OF MAKING CORD

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6 Claims. (Cl. 174—113)

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This invention relates to cords and methods of making cords, and has for its object the provisions of new and improved cords and new and improved methods of making cords.

A method embodying the invention comprises bending a single insulated conductor into the form of a V, positioning a second insulated conductor along the portion of the first-mentioned conductor which forms one arm of the V, positioning a third insulated conductor along the portion of the first-mentioned conductor forming the other arm of the V, and securing together the central portions of the three conductors to form a Y.

A complete understanding of the invention may be obtained from the following detailed description of one embodiment thereof, when read in conjunction with the appended drawing, in which:

Fig. 1 is a plan view of a plurality of components of a Y-type cord embodying the invention during an early stage of the process of making such cords;

Fig. 2 is a plan view of the cord during a more advanced stage of the manufacture thereof;

Fig. 3 is a plan view of the cord in a further completed stage of its manufacture;

Fig. 4 is a plan view of the completed cord, and

Fig. 5 is an enlarged vertical sectional view of the cord taken on the line 5—5 of Fig. 4.

In accordance with one method embodying the invention, an end of an individually insulated conductor 15 (Fig. 1) is doubled back upon the other end thereof to position it substantially in the shape of a V. An insulated conductor 10 is placed along one end portion of the conductor 15 and a third insulated conductor 11 is placed along the other end portions of the conductor 15.

A tube 12 (Fig. 1) composed of a suitable thermoplastic insulating and weatherproofing material then is slid over the conductor 10 and the portion of the conductor 15 adjacent thereto. The insulating and weatherproofing material may be composed of one of the polymerized vinyl compounds, such as are sold under the trade names of "Koroseal" and "Vinylite." A second tube 13 identical with the tube 12 then is placed over the conductor 11 and the portion of the conductor 15 positioned along the conductor 11.

A block 19 (Figs. 1 and 5) composed of a suitable insulating, resinous material such as one of the phenolic resins, has a pair of grooves 20—20 of a depth greater than the diameter of the tubes 12 and 13 formed therein and has formed thereon a tapered end 21. The intermediate portions of

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the tubes 12 and 13 are placed in the grooves 20—20, as shown in Fig. 2, and the tubes are firmly secured together at each end of the block 19 by lashings 23 and 24 to secure the block 19 therebetween.

A textile covering 32 (Figs. 4 and 5) is then braided from the lashing 24 over the block 19 to the lashing 23, whereupon the braiding is reversed and continued back over the block 19, the lashing 24, the tubes 12 and 13, and is finally terminated in a hollow, braided tube 33 (Fig. 4). The tube 33 is doubled to form a looped portion 34 and is secured in that position by a whipping 35. The looped portion 34 serves as a fastening element for the cord.

A plurality of solderless tips 36—36 then may be attached by methods well known in the art to the ends of the insulated conductors 10, 11 and 15. A pair of whippings 37 and 38 then are served around the ends of the tubes 12 and 13, respectively, to hold the ends of the tubes in close contact with the conductors 10, 11 and 15 and prevent those conductors from being spread at the end portions of the tubes.

The block 19 serves as a sturdy support for a clip (not shown) or other securing means and protects from wear the portions of the tubes 12 and 13 placed in the grooves 20—20. The lashings 23 and 24 prevent the tubes 12 and 13 from being pulled apart during use of the Y-type cords formed by the method described hereinabove.

Y-type cords made by the above described method have only continuous conductors included therein, and, since no splices are included in such cords, the time and cost of making such cords are very low, and the cords are uniformly high in quality.

What is claimed is:

1. A Y-type cord, which comprises an insulated conductor doubled back upon itself, a second insulated conductor extending along one of the doubled-back portions of the first-mentioned conductor, a third insulated conductor extending along the other of the doubled-back portions of the first-mentioned conductor, a preformed tube of weatherproofing material surrounding the second conductor and the portion of the first-mentioned conductor extending therealong, a second preformed tube of weatherproofing material surrounding the third conductor and the portion of the first-mentioned conductor extending therealong, and means for securing the tubes together at points intermediate of the ends thereof.

2. A Y-type cord, which comprises an insulated conductor doubled back upon itself, a second in-

sulated conductor placed along one of the doubled-back portions of the first-mentioned conductor, a third insulated conductor placed along the other of the doubled-back portions of the first-mentioned conductor, a pair of preformed tubes of a thermoplastic material, one of said tubes serving to surround the second conductor and the doubled-back portion of the first-mentioned conductor extending therealong, the other of said tubes serving to surround the third conductor and the doubled-back portion of the first-mentioned conductor extending therealong, a non-conducting block having grooves formed therein, and means for securing the central portions of the tubes within the grooves.

3. A Y-type cord, which comprises an insulated conductor doubled back upon itself, a second insulated conductor placed along one of the doubled-back portions of the first-mentioned conductor, a third insulated conductor placed along the other of the doubled-back portions of the first-mentioned conductor, a preformed weatherproofing tube enclosing the second conductor and the doubled-back portion of the first-mentioned conductor extending therealong, a second preformed weatherproofing tube enclosing the third conductor and the other portion of the first-mentioned conductor extending therealong, a non-conducting block having a pair of grooves of a depth greater than the diameter of the tubes formed in opposite sides thereof, and means for securing the tubes together at both ends of the block to secure the tubes in said grooves.

4. A Y-type cord, which comprises an insulated conductor doubled back upon itself, a second insulated conductor extending along a doubled-back portion of the first-mentioned conductor, a third insulated conductor extending along the other of the doubled-back portions of the first-mentioned conductor, a pair of tubes composed of polymerized vinyl compound, one of said tubes enclosing one doubled-back portion of the first-mentioned conductor and the conductor extending therealong, the other of said tubes enclosing the other doubled-back portion of the first-mentioned conductor and the conductor extending

therealong, an elongated and tapered filler body having a pair of grooves formed along the opposite sides thereof and composed of phenolic resin, a pair of lashings disposed at opposite ends of the body for securing the tubes together and in said grooves, a braided textile covering formed over the body and the portions of the tubes extending from one end thereof and terminating in a hollow braided portion, and a whipping for securing said hollow braided portion in the form of a loop.

5. The method of forming Y-type cords, which comprises bending an insulated conductor into the shape of a V, placing the conductor along a pair of individually insulated conductors with the last-mentioned conductors extending along the portions of the first-mentioned conductor forming the arms of the V, enclosing one arm of the V and the conductor extending therealong in a preformed cover of weatherproofing material, enclosing the other arm of the V and the conductor extending therealong in a second preformed cover of weatherproofing material, securing the central portions of the covers together, and securing a non-conducting filler plug to the central portions of the covers.

6. The method of forming Y-type cords, which comprises bending an insulated conductor into the shape of a V, placing a pair of individually insulated conductors along the portions of the first-mentioned conductor forming the arms of the V, enclosing one arm of the V and the conductor extending therealong in a preformed tubular cover of weatherproofing material, enclosing the other arm of the V and the conductor extending therealong in a second preformed tubular cover of weatherproofing material, placing the intermediate portions of the covers into a pair of grooves formed in opposite sides of a non-conducting block, securing the covers together at each end of the block, braiding a textile covering over the block, one end of each cover extending therefrom and beyond said end to form a braided tube, doubling the braided tube upon itself, and lashing the doubled portions of the hollow braided tube to form a loop.

SAMUEL M. MARTIN.