April 1, 1952 J. T. KANE 2,591,550

STRAND HANDLING TOOL

Filed Aug. 26, 1948

FIG. 1

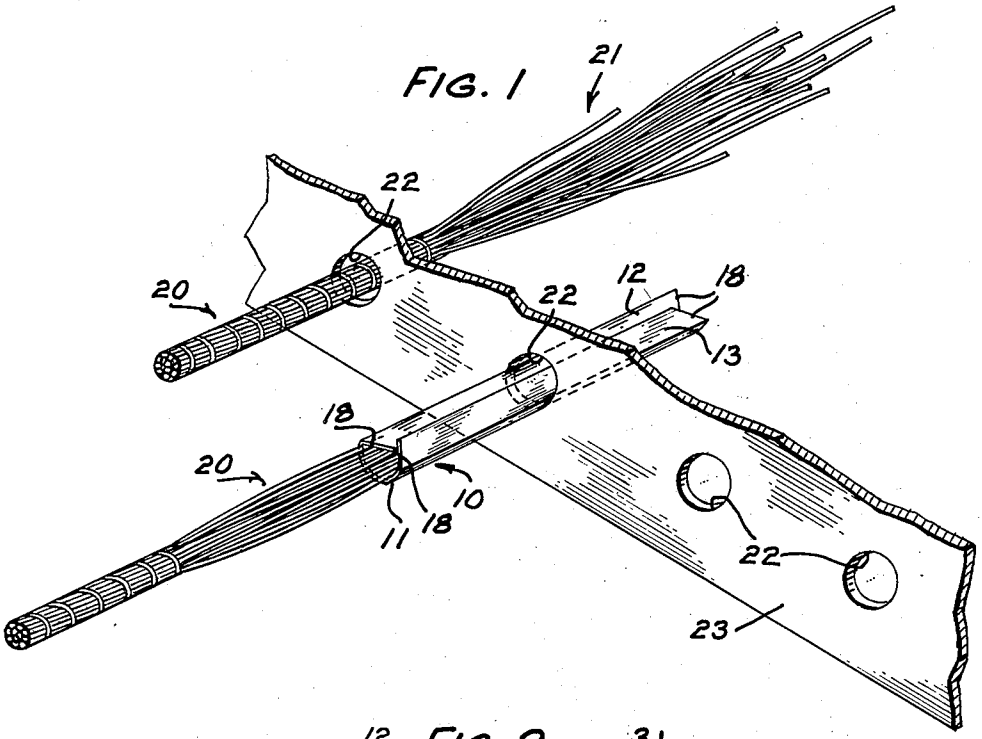


FIG. 2

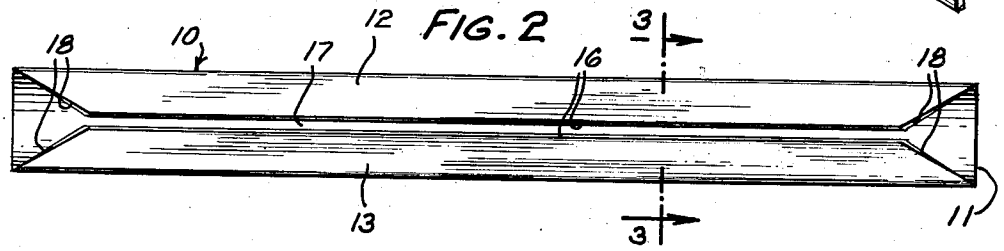


FIG. 4

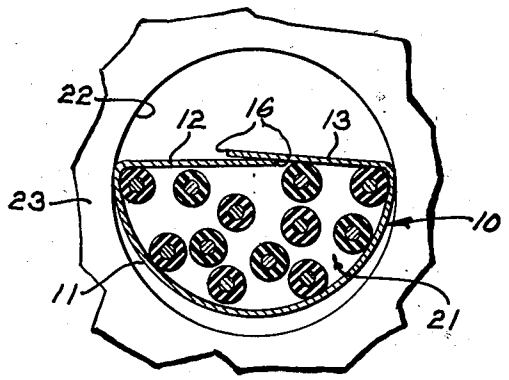
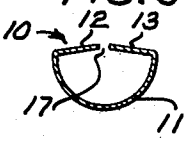


FIG. 3



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STRAND HANDLING TOOL

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2 Claims. (Cl. 175—376)

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This invention relates to strand handling tools and more particularly to a tool for feeding or threading a plurality of loose cords or wires of unequal lengths through an aperture.

An object of this invention is the provision of a simple and practical tool for efficiently feeding or threading a plurality of cords or wires through an aperture.

In accordance with the above object, the present invention, in one embodiment thereof, as applied to the handling and threading of a cable end comprising a group of loose cords or wires of unequal lengths simultaneously through an aperture in a panel, comprises a contractile tube-like one-piece member or shell of spring steel or resilient plastic having flat normally spaced-apart wall portions disposed at a slight angle, one to the other, with their adjacent spaced longitudinal edges rounded, the spaced wall portions being integrally united to opposite sides of a substantially semi-circular body. The adjacent rounded edges of the wall portions at each end are similarly cut away and slanted outwardly to meet the junctures of the wall portions with the ends of the semi-circular body. Thus, the loose ends of a cable having a diameter suitable for handling by the the tool may be longitudinally aligned with the space between the rounded edges of the wall portions and pressed into the hollow of the semi-circular body by a relative longitudinal sliding movement between the tool and cable and the loose ends of the cable will be entered and confined within the semi-circular body. The tool may then be compressed or contracted, inserted and advanced through the aperture in the panel, thus simultaneously threading the group of loose wires of unequal lengths through the aperture, whereupon the tool is withdrawn from the loose wire ends.

Other objects and advantages of the invention will be apparent from the following detailed description taken in conjunction with the accompanying drawing, in which

Fig. 1 is a perspective view illustrating fragmentarily an apertured panel having the end of a cable threaded through one of its apertures and illustrating the loose ends of another cable being threaded through a second aperture by a tool embodying the features of the invention;

Fig. 2 is an enlarged plan view of the tool shown in Fig. 1;

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2; and

Fig. 4 is a view on an enlarged scale showing the tool contracted and supporting a plurality

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of loose end lengths of a cable after the tool has been entered into an aperture of a panel.

As shown in the drawing, referring particularly to Figs. 2 and 3, the numeral 10 represents, in general, a contractile tool embodying the features of the invention, which tool is formed from a single blank of annealed spring steel of a suitable thickness, hardened to a spring temper after forming. The formed tool comprises a main body portion 11 of substantially semi-circular configuration having a diameter suitable for the particular diameter of the cable or cables being handled and the aperture into which the tool is to be inserted. At opposite sides, the body portion 11 terminates in flat wall portions 12 and 13 having their longitudinal free edges rounded, as indicated at 16. A space 17 is provided between the rounded edges 16 of the flat wall portions 12 and 13 of the tool when the tool is not under stress for the purpose of entering the loose end lengths of a cable within the hollow of the tool. The width of the space 17 and the length of the tool will vary with the diameter of the cable or cables to be handled and the length of the loose end lengths thereof. After the cable end lengths are within the tool, the space 17 between the flat wall portions 12 and 13 permits the tool to be contracted to confine the cable end lengths therein while the tool is in use. In the present embodiment of the tool, the wall portions 12 and 13 are slightly inclined one to the other to more readily permit the contraction of the tool. At their ends, the rounded wall edges 16 are cut away and slanted outwardly at 18 to meet the junctures of the wall portions 12 and 13 with the ends of the semi-circular body 11 thus providing guiding surfaces for directing the loose ends of the wires into the space 17. This similar guiding arrangement at each end of the tool facilitates its use since either end may be used to guide the wire ends into the space 17.

In the drawing, the tool 10 has been shown as applied to the handling of a bound cable end 20 having a group, indicated in general at 21, of loose unequal end lengths of cords or wires which are to be fed or threaded through an aperture 22 of a panel 23, the loose end lengths of the wires being finally connected to their respective terminals (not shown) which may be mounted on the panel 23 or on apparatus (not shown) located adjacent the inner surface of the panel. The tool 10 for the above-mentioned application is used in the following manner: With one hand the operator holds the tool 10 with the spaced flat wall portions 12 and 13 uppermost, the tool not

being contracted to close the space 17. In his other hand the operator grasps the end of the cable 20, with his index finger pressing slightly on the group 21 of wires adjacent their inner portions, where they join the bound cable, and longitudinally aligns the loose wires with the space 17 between the wall portions 12 and 13 with the free ends of the wires extending beyond the outwardly slanted edge portions 18 of the wall portions 12 and 13. While the tool 10 and the cable 20 with the loose wire end lengths 21 are thus held, they are relatively moved in a longitudinal direction and pressed together, thus causing the entire group of loose wires to be entered into the hollow of the semi-circular body portion 11 of the tool. Thereafter, the contractile tool 10 is compressed and contracted sufficiently to cause the rounded edges 16 of the flat wall portions 12 and 13 to overlap and thus close the space 17 therebetween and confine the loose wire end lengths therein. In its normal expanded condition the major transverse dimension of the tool is appreciably greater than the diameter of the aperture 22 in the panel 23; but, upon contraction, as above described, its transverse dimension is such that it may be readily inserted into the aperture 22. The tool 10, while thus contracted with the loose wire end lengths 21 confined therein, is inserted in an aperture 22 of the panel 23 until the shortest length of wire of the group 21 has been completely passed through the aperture; and, upon release, the tool will expand slightly to the condition shown in Fig. 4. Thereafter, the tool is drawn longitudinally away from the panel 23 in the same direction used in inserting it in the aperture 22 thereof, while holding the cable 20. The loose wire end lengths 21 of the cable 20 have now been simultaneously passed through a panel aperture 22 and appear as shown in the upper portion of Fig. 1.

It will also be apparent that the loose ends of, for example, two cables, may be simultaneously entered and confined in the tool and threaded into a panel aperture 22 providing the tool is suitably dimensioned relative to the diameter of the cables and the aperture. The tool is also applicable to the insertion of the loose ends of a second cable in an aperture where the loose ends of a first cable have already been threaded through the same aperture.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. A tool for threading a cable end composed of loose end lengths of wires through an aperture in a panel comprising a one-piece spring steel hollow shell having throughout its length normally spaced-apart longitudinal flat wall portions having their free edges rounded and extending from opposite sides of a body portion, the ends of said wall portions being cut away and slanted inwardly from their junctures with said body portion, the body portion being adapted to receive therein loose end lengths of wires of a cable guided by said slanted end portions of said wall portions when drawn through the normal space between said wall portions, said wall portions adapted to overlap throughout their length upon a transverse contraction of said body portion to confine the loose end lengths of wires received therein and to reduce the major dimension of the tool to permit the threading thereof with the wires through an aperture in a panel.

2. A tool for temporarily confining and feeding a bundle of flared strands through an aperture comprising a semi-tubular elongated member having its sides terminating in spaced apart flat portions disposed at an angle to each other to provide an opening for receiving and confining the flared strands within the hollow of the member, said flat side portions being tapered inwardly at their ends to expedite the passing of the member through the aperture, and said member being resilient to contract when a compressing force is applied to completely close the opening to prevent escape of the confined strands in threading them through the aperture and the member springing open to normal position when the compressing force is released.

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