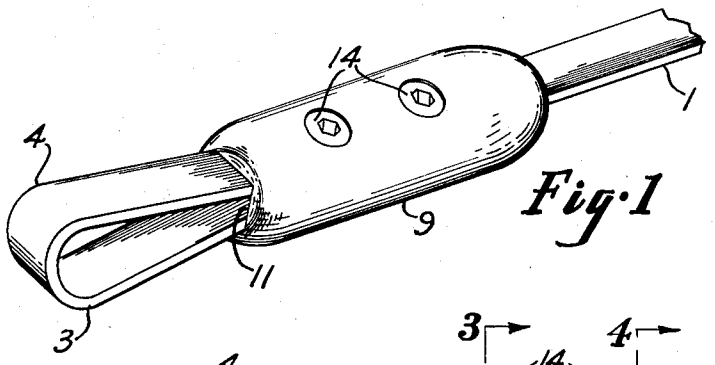
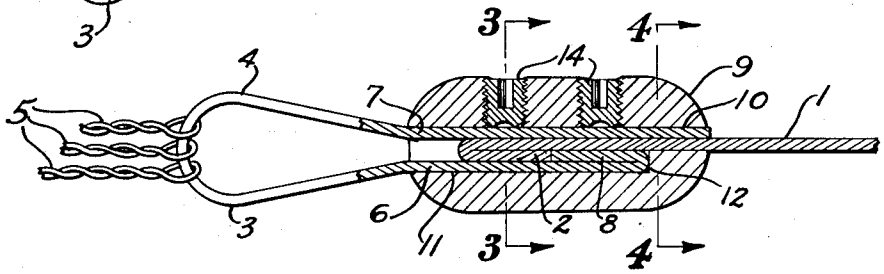
Dec. 20, 1955 R. A. BARTH 2,727,720

FISH TAPE BULB AND PULLING DEVICE

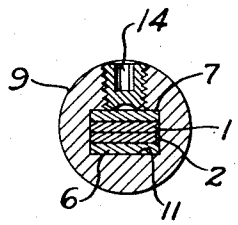
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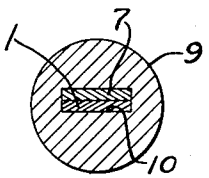
Fig·1



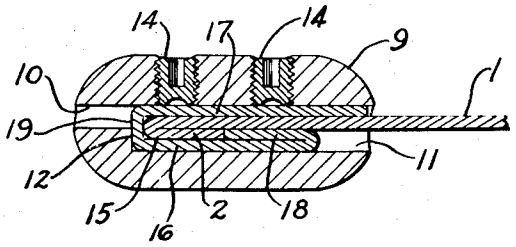
Fig·2



Fig·3



Fig·4



Fig·5

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FISH TAPE BULB AND PULLING DEVICE

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9 Claims. (Cl. 254—134.3)

The present invention relates generally as indicated to a fish tape bulb and pulling device and more particularly to a device which, when connected to the end of a fish tape (or so-called electrician's "snake"), constitutes a well-rounded head or "mouse" to facilitate the feeding of the tape through electrical conduits and the like, and which additionally serves as a coupling for securing a wire-pulling loop member to the end of the fish tape so that the latter may be pulled through conduits to pull therewith the electrical wires pig-tailed or otherwise fastened to said loop member.

It is one object of this invention to provide a simple and foolproof bulb and pulling device.

It is another object of this invention to provide an assembly which, when installed on the tape for the feeding operation, provides surfaces which are in endwise abutment with the tape so as to eliminate possibility of endwise slippage between the tape and said assembly.

It is another object of this invention to provide an assembly which, when installed on the tape for the pulling operation, likewise provides surfaces which are in endwise abutment with the tape so as to eliminate possibility of endwise slippage between the tape and said assembly.

Another object of this invention is to provide a device of the character indicated which is designed so that the clamping thereof to the fish tape is ineffective to mar the surface of the tape, thus avoiding creation of areas of high stress concentration so that pushing and pulling can be done without fear of breaking the tape.

Another object of this invention is to provide a device of the character indicated wherein the pulling and pushing loads are along the common central axis of the device and of the tape.

Other objects and advantages of the present invention will become apparent as the following description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail a certain illustrative embodiment of the invention, this being indicative, however, of but one of a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is a perspective view of a preferred embodiment of the invention showing a loop member coupled to the fish tape;

Fig. 2 is a cross-section view longitudinally through the device illustrated in Fig. 1;

Figs. 3 and 4 are transverse cross-section views taken substantially along the lines 3—3 and 4—4, Fig. 2; and

Fig. 5 is a longitudinal cross-section view showing the present invention as assembled on the fish tape for pushing of the latter through the electrical conduits and the like.

Referring now more specifically to the drawing, and first to Figs. 1–4 thereof, the fish tape **1** is of well known form such as 1/16 by 1/4" spring steel stock, for example,

having its end portion **2** doubled upon itself to provide a transverse end face through which pulling forces are exerted thereby on a loop member **3**, the latter being preferably fabricated from a length of fish tape to provide a loop portion **4** to which electrical conductors **5** may be pig-tailed as shown, and to provide spaced apart legs **6** and **7** which straddle the end portion of the fish tape **1**, the end portion **8** of one leg **6** being doubled upon itself to provide an end face which abuts the end face of the doubled portion **2** of the tape. Thus, so long as the loop member **3** straddles the tape **1** as shown in Fig. 2, endwise pull on the tape is transmitted directly to the loop member through the aforesaid abutting end faces.

For the purpose of clamping the legs **6** and **7** of said loop member **4** against the end portion of said tape **1**, there is provided a coupling **9** which has at one end a rectangular opening **10** to accommodate the thickness of the tape **1** and of one leg **7** of the loop member **3** and at the other end a rectangular opening **11** to accommodate four thicknesses of metal, namely, two of the tape **1** and two of the loop member **3**. Because these openings or passages are of different sizes, there is defined a shoulder **12** in said coupling **9** against which the doubled end portion **8** of the loop member **3** abuts; and thus, when the tape **1** and loop members **3** are pulled through an electrical conduit, the coupling **9** is held in fixed position without slipping with respect to the tape or the loop member.

Clamping is effected as by means of a set screw **14**, herein two screws being employed, operative to force the legs **6** and **7** of said loop member **3** into tight, frictional clamping engagement with the doubled end portion of the tape **1** therebetween. It is noted that the set screws **14** bear on the leg **7** of the loop member **3**, whereby no marring of the surface of the tape **1** occurs, and thus points of high stress concentration are not created thereon.

The coupling **9** is provided with well-rounded ends so as not to catch anywhere in the conduit and preferably is short enough and so well-rounded as to pass around bends or elbows in the conduit.

When it is desired to feed or push the fish tape **1** through an electrical conduit, the set screws **14** are loosened and the coupling **9** displaced toward the right as viewed in Fig. 2 with respect to the tape **1**, whereupon the loop member **3** may be laterally removed, followed by slipping off of the coupling from the tape. An intermediate U-shaped member **15** is then laterally positioned on the doubled end portion of the tape **1**, said U-shaped member having spaced apart legs **16** and **17** which straddle the end portion of the tape, and the end portion **18** of leg **16** is doubled upon itself as shown in Fig. 5. The coupling **9** is then turned end-for-end so that the leg-connecting portion **19** of said U-shaped member abuts the shoulder **12** in said coupling **9**; and when the parts are in this position, the set screws **14** may be turned to clamp the fish tape **1** between the legs **16** and **17** of said U-shaped member. Thus, when pushing force is applied on the tape **1**, the doubled end thereof will bear against the leg-connecting portion **19** of the U-shaped member, and in turn said portion **19** will bear against the shoulder **12** so that the coupling **9** will be moved in unison with the tape **1** without possibility of endwise slippage. The well-rounded ends of the coupling **9** again assure that the tape **1** will be smoothly guided through an electrical conduit, without catching. Thus, the coupling **9** constitutes a bulb or head or what is sometimes referred to in the art as a "mouse" for leading the tape **1** through a conduit.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any

of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. In combination, a fish tape, a member having portions straddling an end portion of said tape, and a coupling to receive and to clamp said member and tape thereon, said member and tape and said member and coupling respectively having endwise abutting surfaces effective to transmit endwise force on said tape through said member to said coupling.

2. In combination, a fish tape having an end portion doubled upon itself, a loop member also having an end portion thereof doubled upon itself, and a coupling clamping together said tape and member with their doubled end portions longitudinally overlapped and in endwise abutment and with said coupling in endwise abutment with said member whereby endwise pull on said tape correspondingly pulls said member therewith and, in turn, said member pulls said coupling therewith.

3. In combination, a fish tape, a U-shaped member straddling the end portion of said tape and providing an endwise abutment for said tape, and a coupling for receiving therein said member and the end portion of said tape straddled thereby, said coupling providing a shoulder against which said member abuts to transmit endwise push on said tape to said coupling.

4. A loop member to which electrical conductors and the like are adapted to be secured for pulling of the latter through conduits comprising spaced apart leg portions, one of which is doubled upon itself and adapted to be positioned in endwise abutment with a doubled end portion of a length of fish tape inserted and clamped between said leg portions.

5. A U-shaped member for use with fish tape and the like comprising spaced apart leg portions between which an end portion of the fish tape is adapted to be clamped, and a leg-connecting portion against which the end portion of the fish tape is adapted to be abutted.

6. A U-shaped member for use with fish tape and the like comprising spaced apart leg portions between which the doubled end portion of the fish tape is adapted to be clamped, and a leg-connecting portion against which the end portion of the fish tape is adapted to be abutted, one leg portion being doubled upon itself for endwise abutment with the doubled end portion of the fish tape.

7. In combination, a coupling member having a passage therethrough, such passage being smaller at one end than at the other end to thus define a shoulder between the ends, fish tape having an end thereof inserted into such one end of said coupling, a loop member having spaced-apart leg portions inserted into such other end of said coupling and straddling the inserted end of said tape, and a set screw threaded in said coupling clamping said tape between said leg portions, one of said leg portions abutting such shoulder in said coupling, and said loop member and tape having endwise abutting surfaces which effectively resist pulling apart thereof during pulling of the tape through a conduit with an electrical cable connected to said loop member.

8. The combination of claim 7 wherein the inserted ends of said tape and of one of said leg portions of said loop member are doubled upon themselves and are clamped in juxtaposed relation to provide such endwise abutting surfaces to resist pulling apart thereof.

9. In combination, a fish tape having an end portion doubled upon itself, a loop member having spaced-apart legs straddling the doubled end portion of said tape, one leg having its end inwardly doubled upon itself in juxtaposition to the doubled end portion of said tape, and means for clamping said tape between the legs of said loop member whereby the endwise abutting surfaces of the doubled end portions of said tape and said one leg effectively resist pulling apart of said tape and said loop member as when the tape is pulled through a conduit with an electrical cable connected to said loop member.

References Cited in the file of this patent

UNITED STATES PATENTS

721,411	Alexander	Feb. 24, 1903
2,310,844	Draeger	Feb. 9, 1943
2,495,667	Vizner	Jan. 24, 1950