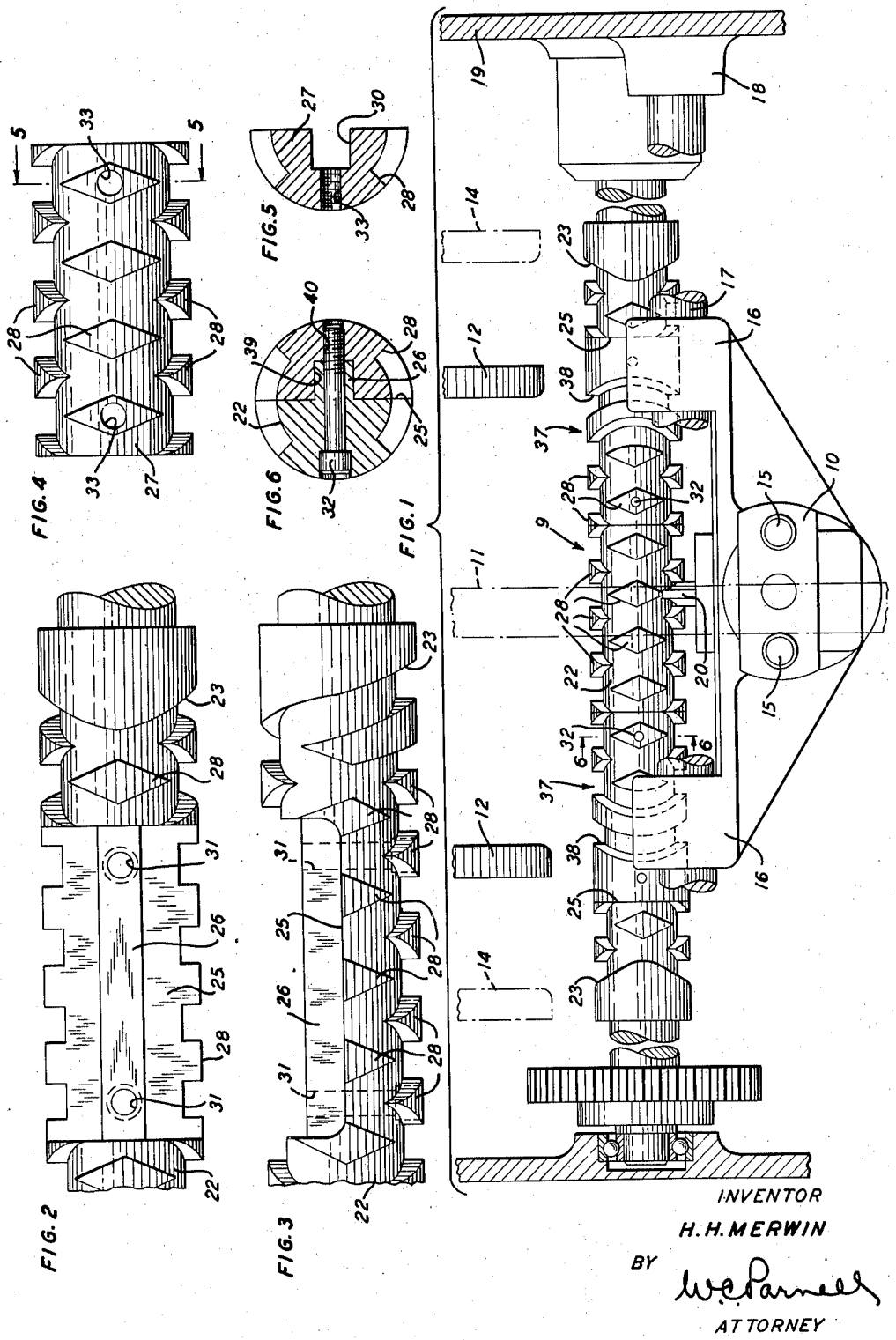
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DISTRIBUTOR SCREW

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DISTRIBUTOR SCREW

Harry H. Merwin, Rutherford, N. J., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

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This invention relates to distributor screws and more particularly to a double threaded distributor screw for reciprocating a distributor between variable limits.

The conventional type of double threaded distributor screw is employed in machines for distributing strands or cables on reels. These screws are constructed with reversing portions at their ends disposed fixed distances apart depending upon the width of the reel for which they are designed. Therefore, when a conventional type of double threaded screw is installed in a machine only reels of a given width may be employed as the distributor reciprocated by the screw will be moved between limits which cannot be varied.

An object of the invention is to provide a double threaded distributor screw which is simple in structure and capable of causing reciprocation of a distributor between variable limits.

With this and other objects in view, the invention comprises double threaded distributor screws having one or more cutaway portions intermediate the reversing ends to receive one or more inserts with reversing end member portions to vary the distance of travel of a distributor associated therewith. The cutaway portions in the body of the screw intersect follower guides at their midpoints and provide longitudinal ribs to receive inserts with follower guides throughout their limits to condition the screw for full length distribution or to receive inserts having reversing end portions to shorten the distance of movement of the distributor.

Other objects and advantages will be apparent from the following detailed description when considered in conjunction with the accompanying drawings, wherein

Fig. 1 is a fragmentary top plan view of a takeup mechanism of a cable stranding machine embodying the invention, namely the distributor screw;

Fig. 2 is an enlarged fragmentary top plan view of a portion of the distributor screw at one of the cutaway portions thereof;

Fig. 3 is a side elevational view of the structure shown in Fig. 2;

Fig. 4 is a top plan view of one of the inserts;

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4; and

Fig. 6 is an enlarged sectional view taken along the line 6—6 of Fig. 1.

The distributor screw indicated generally at 9 is to reciprocate a distributor element 10 between predetermined limits to distribute a cable or strand 11 on a takeup reel. The distributor screw

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is selectively variable to distribute strand material on reels of different sizes, only fragmentary portions of the heads of these reels are illustrated in Fig. 1, a smaller reel 12 being illustrated in solid lines and a larger reel 14 being illustrated in broken lines. The distributor element 10 carries rollers 15 between which the cable 11 advances longitudinally toward the reel upon which it is to be wound. Laterally extending apertured arms 16 of the distributor element 10 are supported for reciprocation on a rod 17, the ends of which are mounted in embossed portions 18, only one of which is shown in the drawing, these embossed portions being a part of the main frame 19 of the takeup unit or machine. A follower 20 is supported by the distributor element 10 and is allowed to rock between two given positions whereby it may follow spiral paths in either direction controlled by the distributor screw 9.

The distributor screw 9 is formed of a shaft-like member 22 having reversing end guides 23 disposed at spaced positions thereon and formed to receive the follower 20 travelling in one direction and to reverse the follower by rocking it into another position to cause it to reverse its direction of travel along the distributor screw. Cutaway portions 25 are formed in the member 22 at spaced positions between the end guides 23. These cutaway portions extend halfway through the member 22 with the exception of the central portions where longitudinal ribs 26 are formed. Inserts 27, only one of which is shown in Fig. 4 of the drawing are disposed in the cutaway portions 25 to complete the distributor screw for distributing the cable 11 on the larger reel 14. Double threaded follower guides 28 are formed at spaced positions on the member 22 and on the inserts 27 to complete the distributor screw for the large reel 14. The cutaway portions 25 and the inserts 27 are so arranged that the double threaded follower guides 28 of the member 22 which are intersected by the cutaway portions are completed by the partial double threaded follower guides 28 of the inserts 27. The partial follower guides, both of the member 22 and the inserts 27, are accurately lined by the ribs 26 entering grooves 30 in the inserts 27. Apertures 31 extend through two of the follower guides 28 adjacent each of the cutaway portions 25 and through the adjacent ribs 26 to receive screws 32 to secure the inserts 27 in place, the threaded ends of the screws extending into threaded apertures 33 of the inserts.

When it is desirable to condition the distributor screw to reduce the path of the distributor ele-

ment 10, the inserts 27 are removed from the cutaway portions 25 of the member 22 and inserts 37 are mounted in the cutaway portions in a similar manner. The inserts 37 are identical with the inserts 27 in every detail with the exception that the outer portions thereof are provided with reversing end guides 38 to cause reversing of the follower 20 at the ends of shorter reciprocatory movements necessary for the distribution of the cable 11 on the smaller reel 12. The inserts 38 are provided with longitudinal grooves 39 (Fig. 6) to receive their respective ribs 26 of the cutaway portions 25. Threaded apertures 40 are also provided for the screws 32 which may be employed in mounting either the inserts 27 or 37 in the cutaway portions.

The distributor screw 9 incorporated as a permanent element in a machine may be readily conditioned whereby the distributor element may be reciprocated in a given path between variable limits. The inserts 27 and 37 when singly selected to complete the distributor screw, determine the limits of movement of the distributor element, as it will travel on the rod 17, distances determined by the travel of the follower 20.

In the present embodiment of the invention, it has been illustrated that by the use of the inserts 27, the full length of the distributor screw functions in reciprocating the distributing element, a maximum distance. It has also been illustrated that by the use of the inserts 37, in place of the inserts 27, the path of the distributor element has been shortened. It would also be understood that any other selected arrangement of the inserts 27 and 37 may be employed, for example, one of the inserts 27 may be employed in the cutaway portion adjacent one end of the distributor screw and one of the inserts 37 employed in the cutaway portion adjacent the other end thereof. In this manner, an additional variation in the path of movement of the distributor element is provided.

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 distributor screw for a distributor element supported for reciprocation in a given path and carrying a rockable follower, the distributor screw comprising a shaft-like member mounted for rotation on an axis parallel with the said path and having a cutaway portion therein intermediate its ends, reversing end guides positioned given distances apart on the member to alternately receive the follower at each end of its reciprocatory movement and rock it into position for its reverse movement, an insert normally filling the cutaway portion of the member, double threaded screw guides for the follower disposed on the member and the insert between the end guides to guide the follower in its travel alternately in opposite directions, and means comprising a second insert to replace the first insert and having a reversing guide for the follower to shorten the path of the distributing element.

2. A distributor screw for a distributor element supported for reciprocation in a given path and carrying a rockable follower, the distributor screw comprising a shaft-like member mounted for rotation on an axis parallel with the said path and having reversing end guides positioned given distances apart on the member to alternately receive the follower at each end of its reciprocatory movement and rock it into position for its reverse movement, double threaded screw guides for the follower disposed on the member between the end guides to guide the follower in its travel alternately in opposite directions, the member having a cutaway portion therein intermediate the end guides and intersecting certain of the double threaded screw guides, an insert removably disposed in the cutaway portion and having whole and partial double threaded screw guides to cooperate with the whole and intersected screw guides to guide the follower in its travel alternately in opposite directions, and means comprising a second insert to replace the first insert and having a reversing guide for the follower to shorten the path of the distributing element.

3. A distributor screw for a distributor element supported for reciprocation in a given path and carrying a rockable follower, the distributor screw comprising a shaft-like member mounted for rotation on an axis parallel with the said path and having cutaway portions with locking ribs disposed at spaced positions intermediate its ends, reversing end guides positioned given distances apart on the member to alternately receive the follower at each end of its reciprocatory movement and rock it into position for its reverse movement, inserts having grooves therein to receive the locking ribs and fill the cutaway portions of the member, means to removably secure the inserts in their cutaway portions, double threaded screw guides for the follower disposed on the member and the inserts between the end guides to guide the follower in its travel alternately in opposite directions, and means comprising alternate inserts to replace the first inserts and having grooves to receive the locking flanges and reversing end guides for the follower to shorten the path of the distributor element.

HARRY H. MERWIN.

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