Aug. 22, 1950 E. D. HANSON 2,519,461

STRAND DISTRIBUTING APPARATUS

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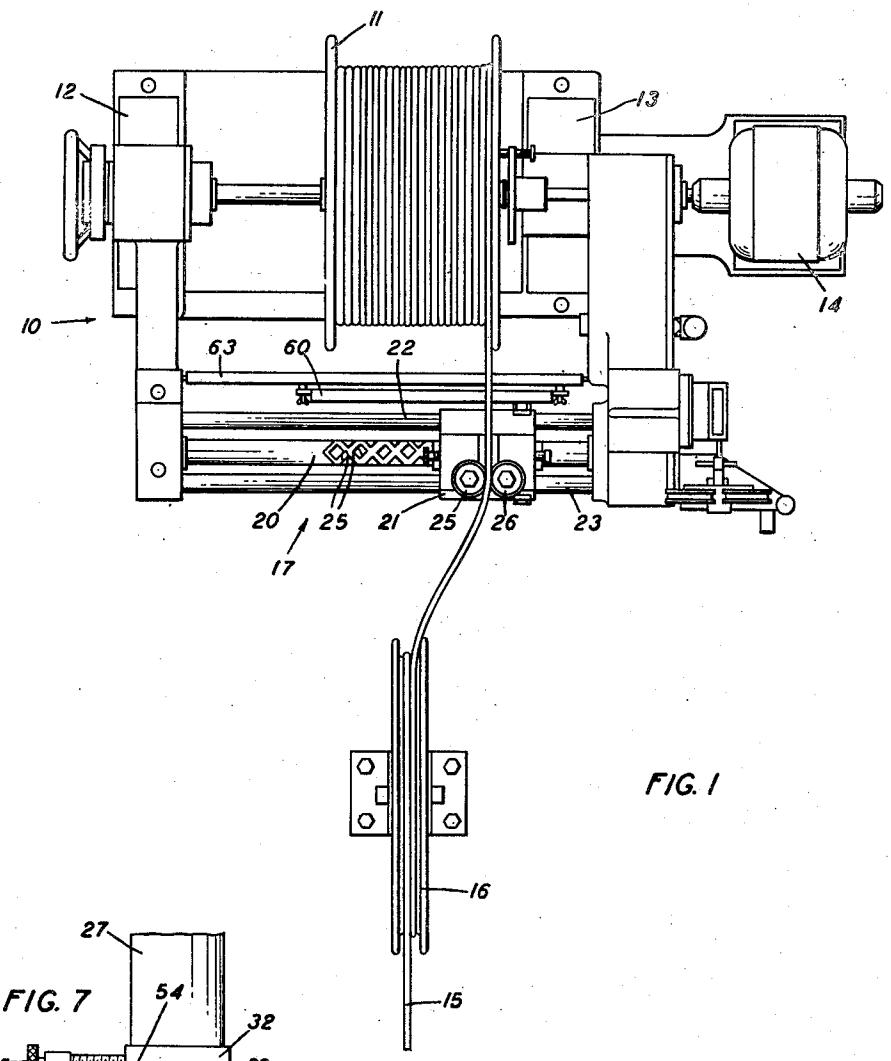
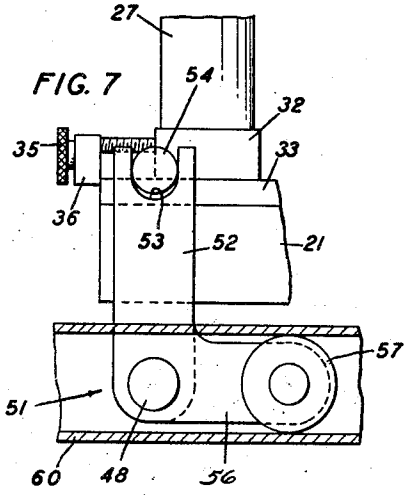


FIG. 1

FIG. 7

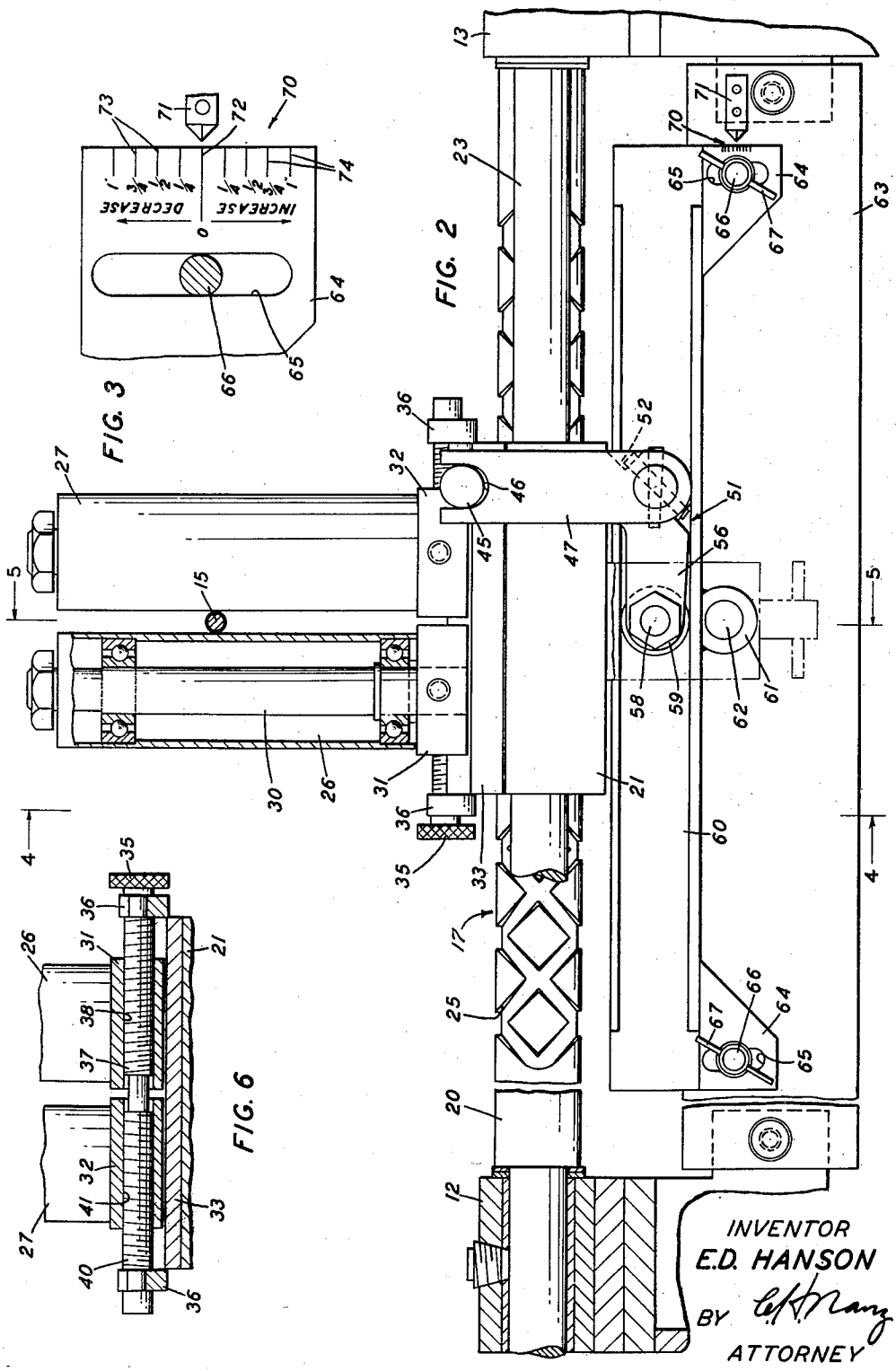


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STRAND DISTRIBUTING APPARATUS

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FIG. 5

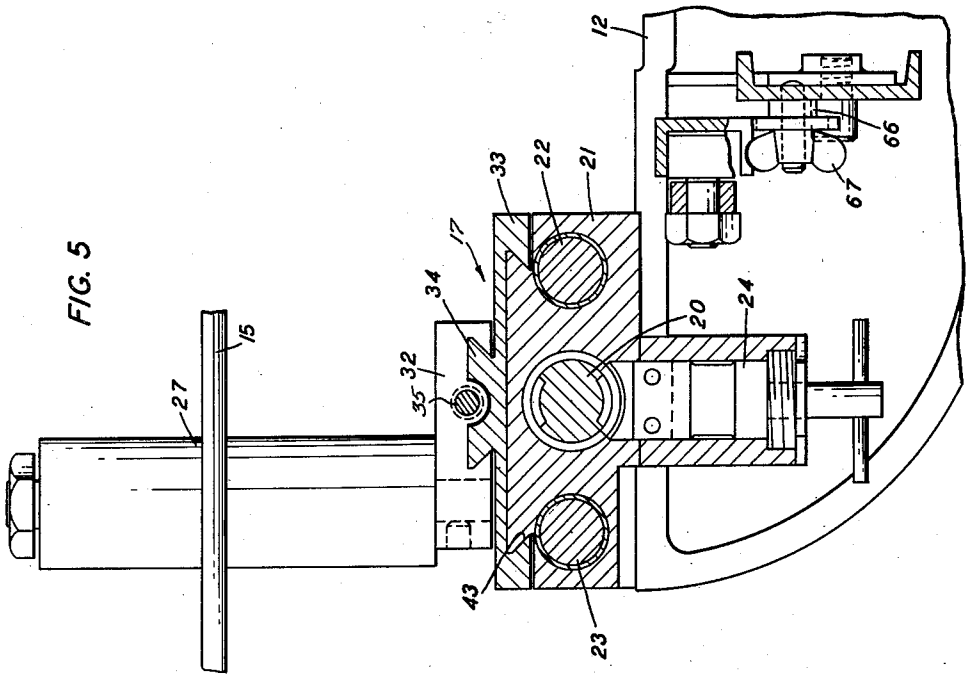
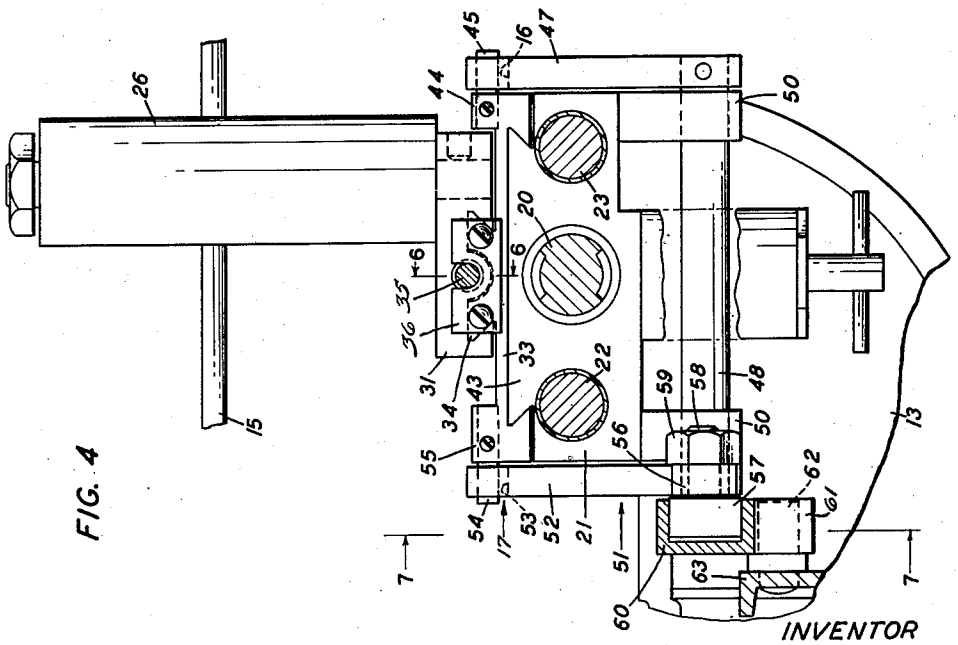


FIG. 4



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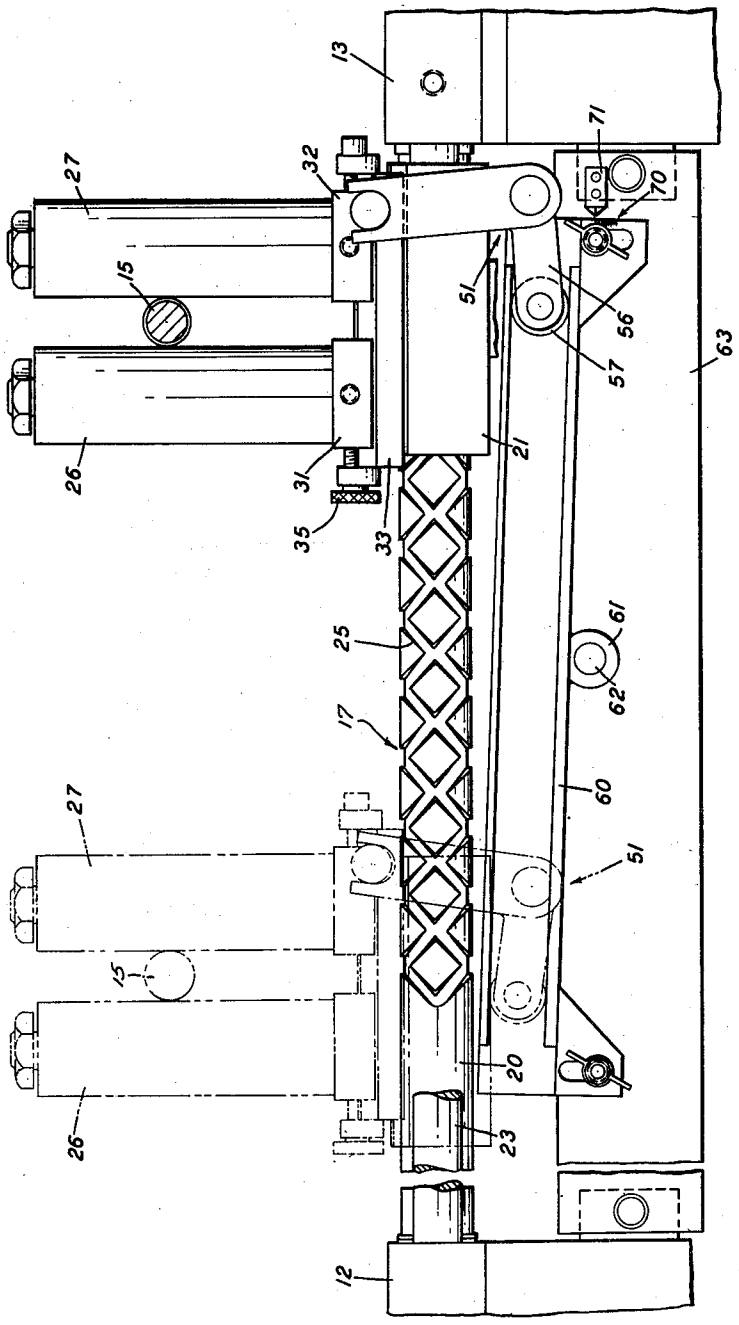


FIG. 8

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UNITED STATES PATENT OFFICE

2,519,461

STRAND DISTRIBUTING APPARATUS

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5 Claims. (Cl. 242—158)

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This invention relates to strand distributing apparatus, and more particularly to apparatus for adjusting the travel of a strand guiding means in accordance with the size of the strand being distributed on strand takeup machines.

In the manufacture of various types of strand materials, such as wires, cables and textile strands, there is usually provided suitable strand takeup machines by means of which the strand material is wound upon a suitable reel for storage or other purposes. Takeup machines in use at the present time employ various types of apparatus for distributing the strand back and forth across the winding surface of the takeup reel. In some cases the reel itself is moved laterally with respect to the delivery point of the strand being taken up thereby, while in others the strand itself is moved back and forth across the winding surface of the reel. In either case, this type of takeup machine is generally referred to as the traversing type in which there is provided a conventional traversing screw driven in timed relation with respect to the speed of the takeup reel. The traversing screw serves to reciprocate a slidably mounted nut adjacent to the winding surface of the takeup reel and means are provided on the nut for guiding the strand in which case reciprocation of the nut serves to distribute the strand evenly across the winding surface of the reel.

While such distributing apparatus is generally satisfactory, it possesses a very undesirable feature, in that the traversing screw is provided with a thread having a predetermined working length designed to distribute a certain size of strand on a certain size of takeup reel. This means that if it is desired to distribute a strand having a larger or smaller diameter on the same takeup reel or the same strand on a reel having a winding surface of different width, or any different combination of strand and reel, it is necessary to provide the distributing apparatus with a traversing screw having a thread whose working length would suit the new conditions. Obviously, it is desirable to provide such takeup machines with a type of strand distributing apparatus which possesses some degree of adjustability, whereby the distributing apparatus may be adjusted to accomplish the distribution of strands of various diameters on takeup reels having winding surfaces of various widths.

An object of the invention is to provide new and improved strand distributing apparatus.

Another object is to provide new and improved strand distributing apparatus for use with strand

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takeup machines, wherein the travel of a strand distributing element may be adjusted to suit the diameter of the strand being distributed or the size of the reel used in the takeup machine.

A further object of the invention is to provide new and improved strand distributing apparatus for use with strand takeup machines, in which the travel of strand guiding elements may be varied with respect to the uniform travel of a traversing nut carrying the strand guiding elements.

In accordance with a specific embodiment of the invention, there is provided an adjustable strand distributor for use with strand takeup machines, which comprises a traversing screw having a double screw thread engaged by a slidably mounted nut, whereby the nut is reciprocated adjacent to the winding surface of a takeup reel rotatably mounted in the takeup machine. Rotatable strand guiding members are positioned on a base slidably mounted on the nut. A pivotally mounted track is arranged to receive a roller fixed on one end of a crank pivotally mounted on the nut, the other end of said crank engaging a pin provided in a base supporting the strand guiding members. When the track is rotated to the right or to the left, the travel of the strand guiding members will be decreased or increased, respectively, with respect to the uniform travel of the nut being reciprocated by the traversing screw.

A clear understanding of the invention will be had from the following detailed description of a specific embodiment thereof, when read in conjunction with the appended drawings, in which:

Fig. 1 is a plan view of a conventional strand takeup machine having associated therewith a strand distributing apparatus comprising a specific embodiment of the invention;

Fig. 2 is an enlarged, front elevation of the strand distributing apparatus shown in Fig. 1;

Fig. 3 is an enlarged view of a portion of the apparatus shown in Fig. 2;

Fig. 4 is a vertical sectional view taken along line 3—3 of Fig. 2;

Fig. 5 is a vertical sectional view taken along line 4—4 of Fig. 2;

Fig. 6 is an enlarged, vertical sectional view taken along line 5—5 of Fig. 3;

Fig. 7 is a vertical sectional view taken along line 7—7 of Fig. 4, and

Fig. 8 is the same as Fig. 2 showing a portion of the apparatus in a differently adjusted position.

Referring now to the drawings, and more particularly to Fig. 1, there is shown a takeup ma-

chine 10 having a reel 11 rotatably mounted between a pair of spaced supports 12 and 13 forming a part of the takeup machine 10. The reel 11 is coupled to and driven by a suitable electric motor 14, whereby a filamentary strand 15, which may be wire, cable or textile material, being advanced at a constant linear speed by a suitable driven capstan 16, is wound upon the reel 11. In order to distribute the strand 15 evenly across the winding surface of the reel 11, there is provided a strand distributing apparatus 17 (Figs. 1 and 2) which consists of a conventional traversing screw 20 rotatably mounted between the spaced supports 12 and 13 and driven by the motor 14 in timed relation with respect to the rotation of the reel 11. A block-like nut 21 (Figs. 1, 2, 4 and 5) is slidably mounted on a pair of spaced guide rods 22 and 23 positioned between the supports 12 and 13, which guide rods are parallel with and horizontally aligned with the traversing screw 20. The nut 21 is provided with a follower 24 (Fig. 5) arranged to engage a conventional double thread 25 provided on the traversing screw 20, whereby when the screw is being driven by the motor 14, the nut 21 will be reciprocated by the thread adjacent to the winding surface of the reel 11. A pair of strand guiding rollers 26 and 27 are rotatably mounted on the nut 21 and are spaced thereon so as to have the strand 15 pass between the rollers as it advances from the capstan 16 to the takeup reel 11.

The double thread 25 (Figs. 1 and 2) provided on the traversing screw 20 has a fixed working length, which imparts a definite reciprocation to the nut 21, that is to say, the thread 25 is designed to distribute a given size of strand on a given size of takeup reel. Hence, if it were desired to use a reel having a slightly wider or narrower winding surface, or if it was desired to distribute a strand having a larger or smaller diameter, a separate traversing screw having a thread designed to suit each new condition would have to be provided in the distributing apparatus in order that the strand may be evenly distributed on the reel. The present invention provides for an adjustable strand distributing apparatus which enables a given strand takeup machine to take up various sizes of strands on takeup reels having slightly larger or smaller winding surfaces.

In order for the strand distributing apparatus to be capable of distributing strands of various diameters, the strand guiding members 26 and 27 (Fig. 2) must be adjustable so that the space between their peripheries can be adjusted to suit the size of strand to be advanced therebetween. The guide member 26 is rotatably mounted on a shaft 30 secured in an upright position on a base 31. The guide member 27 is rotatably mounted in a similar manner on a base 32. The bases 31 and 32 are slidably mounted on a support 33 by means of a dovetailed joint 34 provided between the bases 31 and 32 and the support 33. A thumb screw 35 (Figs. 2, 4, 5 and 6) is rotatably mounted in spaced bearings 36—36 secured on opposite sides of the support 33 having a body portion 37 thereof provided with a right hand thread which engages a similarly tapped bore 38 provided in the base 31 and a body portion 40 provided with a left hand thread which engages a similarly tapped bore 41 provided in the base 32.

When the thumb screw 35 is turned in a clockwise direction, as seen in Fig. 4, the bases 31 and 32, together with their respective guide members 26 and 27, will move away from each other, whereas when the thumb screw is turned in a counterclockwise direction, the guide members will move toward each other, equal movement being simultaneously imparted to each of the guide members in either instance. In this manner, by manipulating the thumb screw 35 in the proper direction, the guide members 26 and 27 may be positioned to accommodate strands of various diameters up to the limits of adjustability provided between the bases 31 and 32.

The support 33 on which the bases 31 and 32 are slidably positioned is in turn slidably positioned on the nut 21 by means of a dovetail joint 43 (Figs. 4 and 5) provided between the support 33 and the nut 21. From this arrangement of the support 33 on the nut 21, it is apparent that the strand guiding members 26 and 27 are movable laterally as a unit with respect to the nut 21. A boss 44 formed integrally with the support 33 at one end thereof, is provided with a bore in which a pin 45 is rigidly secured. The end of the pin 45 extending beyond the boss engages an open ended slot 46 formed in the end of a lever 47, which is pinned to a shaft 48 rotatably mounted in spaced bearingt 50—50 provided on the underside of the nut 21. A crank 51 (Figs. 2, 4, 7 and 8) is secured on the opposite end of the shaft 48 with an arm 52 thereof aligned with the arm 47. The arm 52 also is provided with a slot 53 which engages a pin 54 secured in a boss 55 formed on the support 33 and opposite the boss 44. The crank 51 also is provided with an arm 56 formed integrally with the arm 52 and positioned at 90° with respect thereto, and has an anti-friction roller bearing 57 secured on the free end thereof by means of a stud 58 and a nut 59.

An elongated track 60 (Fig. 2), having a channel-shaped cross section, has a bearing 61 centrally positioned on the underside thereof with respect to its ends, which bearing has a bore therein arranged to receive a post 62 secured to a support 63 mounted between the spaced supports 12 and 13. The post 62 is positioned on the support 63 so as to locate the track 60 centrally with respect to the working length of the double thread 25 provided on the traversing screw 20. An ear 64 is positioned on the underside of the track 60 at each end thereof, each ear being provided with an elongated aperture 65 arranged to receive the body portion of a stud 66 secured to the support 63. A wing nut 67 is threadedly mounted on each stud 66 and serves to clamp the track 60 to the support 63 in any desired position. A scale 70 (Figs. 2 and 3) is provided on the right hand ear 64 adjacent to a pointer 71 secured on the support 63. To position the track 60 (Fig. 2) in any desired position with respect to the horizontal reciprocating axis of the nut 21, the wing nuts 67—67 are loosened sufficiently to allow the track to be rotated about the post 62 (Fig. 8) until the desired position of the track is obtained, after which it may be clamped in that position by tightening the wing nuts 67—67.

Referring to Fig. 2 of the drawings, it will be noted that the track 60 is clamped to the support 63 in a horizontal position, that is, the central axis of the track is parallel with the reciprocating axis of the nut 21. When the track is in this position, and the nut is being reciprocated by the traversing screw 20, the crank 51 carried by the nut remains in the position shown in Fig. 2, as the nut travels back and forth. Since the

crank is not actuated during the travel of the nut, equal reciprocation of the strand guiding members 26 and 27 and the nut 21 is obtained. In other words, the distribution of the strand 15 is governed solely by the working length of the screw thread 25.

When it is necessary for the strand guiding members to have a shorter reciprocating stroke than that of the nut 21 the track is rotated clockwise a distance determined by the scale 70 and the pointer 71 (Fig. 8). When the track is so positioned, its longitudinal axis is not parallel with the reciprocating axis of the nut. As a result, the roller 57 affixed to the arm 56 of the crank travels along this inclined axis, which causes the crank to be actuated in a clockwise direction, as seen in Fig. 8, during the right hand half of the stroke of the nut and counterclockwise during the left hand half of the stroke of the nut. In other words, the left hand stroke and the right hand stroke of the strand distributing members are forshortened with respect to the corresponding strokes of the nut 21. To obtain a reciprocating stroke of the strand guiding members 26 and 27 greater than the stroke of the nut 21, the track 60 is rotated counterclockwise, which causes the reverse operation of the crank 51 as that which occurs when the track is rotated clockwise, thereby increasing the stroke of the strand guiding members.

The scale 70 and the pointer 71 are provided on the apparatus so that the track 60 may be set at an angle which will produce the stroke differential required between the nut 21 and the strand guiding members 26 and 27. The scale 70 (Fig. 3) consists of a central line 72 having the indicia 0 positioned adjacent to the inner end thereof. When the track is positioned so that the line 72 is directly opposite the pointer 71, the longitudinal axis of the track is parallel with the reciprocating axis of the nut, in which position no stroke differential occurs between the strand guiding members and the nut during the reciprocation thereof. With the track in this position the thread 25 of the traversing screw 20 controls the distribution of the strand 15. The scale 70 is also provided with lines 73—73 above the central line 72 and lines 74—74 below the line 72. The lines 73—73 and 74—74 have the indicia ¼, ½, ¾ and 1 positioned adjacent to the inner ends thereof, beginning at the central line and proceeding upward or downward as the case may be. The word "Decrease" may be imprinted adjacent to the lines 73—73 while the word "Increase" may be imprinted adjacent to the lines 74—74. The indicia ¼, ½, ¾ and 1 opposite the lines 73—73 of the "Decrease" portion of the scale 70 serve to indicate that when the track is positioned so that one of the lines 73—73 is aligned with the pointer 70, the indicia opposite the selected line 73 is the actual decrease in inches, in the stroke of the strand guiding members that the selected position of the track produces with respect to the uniform stroke of the nut. Likewise, the indicia ¼, ½, ¾ and 1 opposite the lines 74—74 of the "Increase" portion of the scale 70 indicate the actual increase, in inches, of the stroke of the strand guiding members that the selected position of the track produces with respect to the uniform stroke of the nut. Obviously, the track may be positioned so that the pointer 71 is aligned with any desired intermediate point between the lines 73—73 and 74—74 in order to obtain a required stroke differential between the strand guiding members and the nut.

When the track is rotated in a clockwise direction about the post 62 so that one of the lines 73—73 is directly opposite the pointer 71 the stroke of the strand guiding members with respect to the stroke of the nut will be decreased by the amount indicated opposite the selected line 73. To cause the stroke of the strand guiding members to be increased with respect to the stroke of the nut, the track 60 is rotated in a counterclockwise direction about the post 62 so that one of the lines 74—74 of the "Increase" side of the scale 70 is directly opposite the pointer 71. When the track is so positioned, the stroke of the strand guiding members with respect to the stroke of the nut will be increased by the amount indicated opposite the selected line 74. It is believed to be apparent that in order for the crank to make a uniform correction of the stroke of the strand guiding members, the roller 57 affixed to the end of the arm 56 must be vertically aligned with the center of the strand when the nut 21 is centrally positioned with respect to the working length of the thread. The overall design of the crank 51 depends on the length of the track required by a given traversing screw and the stroke differential required between the strand distributing members and the nut.

The above-described apparatus operates in the following manner:

A takeup reel, such as the reel 11 is mounted on the takeup machine 10 and centrally aligned with respect to the working limits of the nut 21, and the strand 15 is positioned between the guide members 26 and 27 and secured to the winding surface of the reel 11. Let it be assumed that the strand 15 and the takeup reel 11 are of such size that the length of the thread 25 of the screw 20 will effect an even distribution of the strand on the reel. Having this combination of strand and reel, the track 60 is positioned on the support 73 so that the central line 72 is aligned with the pointer 71, in which case longitudinal axis of the track is parallel with the axis of reciprocation of the nut. The motor 14 then is energized to drive the reel 11 and the traversing screw 20 in the proper direction and speed relationship with respect to each other. The nut 21 is reciprocated by the double thread 25 of the traversing screw 20, whereby the strand 15, positioned between the guiding members 26 and 27 is reciprocated therewith and is distributed evenly across the winding surface of the rotating takeup reel. Since the longitudinal axis of the track 60 is aligned horizontally with the axis of reciprocation of the nut, the crank 51 will remain in the position shown in Fig. 2 throughout the entire stroke of the nut, in which case the stroke of the strand guiding members is the same as that of the nut.

Let it now be assumed that it is desirable to have the traversing screw 20 of the distributing apparatus 17 distribute a larger diameter strand on the same size takeup reel, such as the takeup reel 11. Since the traversing screw 20 is provided with a thread 25 having a definite working length which imparts a fixed reciprocation to the nut 21, it is obviously necessary to shorten the travel of the strand guiding members 26 and 27 so that the larger strand will be distributed evenly across the winding surface of the takeup reel 11. The strand guiding members 26 and 27 may be separated sufficiently to allow a larger diameter

strand to pass therebetween by proper manipulation of the thumb screw 35. However, without further adjustment, the stroke of the strand guiding members 26 and 27 remains unchanged with respect to the stroke of the nut 21. To effect the required decreased travel of the strand guiding members 26 and 27 with respect to the fixed travel of the nut 21 on the thread 25, it is necessary to loosen the wing nuts 67—67 and rotate the track 60 in a clockwise direction about the post 62 until the particular line 73 of the scale 70 which will give the required stroke differential is aligned with the pointer 71.

Having positioned the track 60 in this manner and having installed the takeup reel 11 in the takeup machine 10, as described hereinabove, the motor is now energized, whereupon the nut 21 is reciprocated by the traversing screw 20. As the nut 21 travels back and forth between the ends of the thread 25, the roller 56 affixed to the end of the crank arm 55 also rides back and forth in the angularly positioned track 60. When the nut 21 travels to the right hand end of the thread 20, the track 60 which is engaged by the roller 56 of the crank 51 causes the crank to pivot in a counterclockwise direction about the bearings 50—50 in which the crank is rotatably mounted. As the result of this rotation of the crank 51, the support 33 which is movably positioned on the nut 21 and engaged by the slotted end of the crank arm 52 is urged to the left, in which case the strand guiding members 26 and 27 have not travelled to the right so far as the nut 21. When the nut 21 travels to the extreme left end of the thread 25 of the traversing screw 19, as illustrated by the broken line position of the nut and guiding members in Fig. 8 of the drawings, the crank 51 is pivoted about the bearings 50—50 of the nut in a clockwise direction so that the guiding members 26 and 27 have not travelled so far to the left as has the nut 21.

Since the track 60 is pivotally mounted at its center, the same degree of angularity of the track occurs on each side of its vertical axis and, therefore, the shortened travel of the strand guiding members 26 and 27 effected by the selected position, is the same for each half stroke of the nut. For example, if the track 60 is positioned so that the line 73 bearing the indicia ¼ is directly opposite the pointer 71, it is believed to be clear that the total travel of the strand guiding members 26 and 27 with respect to the travel of the nut 21 would be decreased ¼ inch. Obviously, the track may be adjusted so that the stroke of the strand guiding members with respect to the nut will be decreased by ½, ¾ or 1 inch to suit the particular strand to be distributed on a given takeup reel. In other words, the indicia positioned adjacent to their respective lines indicate in each case the stroke differential, in inches, between the stroke of strand guiding members with respect to the uniform stroke of the nut.

The distributing apparatus 17 is also adjustable to cause the stroke of the strand guiding members 26 and 27 to be greater than the stroke of the nut 21. Such adjustment is required when it is necessary to distribute a smaller diameter strand on the same takeup reel 11, or to distribute the same size strand on a reel having a wider winding surface. In any event, the particular combination of the strand size and reel size determines whether the track 60 must be adjusted in accordance with the "Decrease" or "Increase" sections of the scale 70. To accomplish this adjustment of the apparatus, the track 60 is rotated in a counterclockwise direction to position the track opposite to that shown in Fig. 8 on the drawings, so that one of the lines 74—74 now is directly opposite the pointer 71.

When the track 60 is so positioned and the nut 21 has travelled to the extreme right hand position, the inclined track causes the crank 51 to be rotated in a clockwise direction thereby advancing the members 26 and 27 further to the right. When the nut has travelled to the extreme left hand position on the traversing thread 25, the inclined track actuates the crank 51 in a counterclockwise direction and causes the strand guiding members to be advanced further to the left. In other words, when the track 60 is set in this position, it actuates the crank 51 in opposite directions to that described for its operation when inclined to the right, and the total stroke of the strand guiding members 26 and 27 is greater than the fixed stroke of the nut 21.

It is to be understood that the above-described apparatus for adjusting the stroke of strand guiding members with respect to the stroke of the reciprocating nut may be modified to accommodate various conditions arising from the required distribution of various sizes of strands on various sizes of reels without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. In a strand takeup mechanism having a double threaded traversing screw and nut uniformly reciprocated thereby, an adjustable strand distributor, which comprises a pair of spaced strand guiding members slidably positioned as a unit on the nut, means provided on the nut for imparting equal and opposite movement to the strand guiding members to fix the space between them to suit a strand being distributed, a crank pivotally mounted on the nut and having one end thereof engaging the movable strand guiding members and a roller mounted on the other end thereof, a track pivotally mounted centrally of the double thread of the traversing screw and arranged to engage the roller provided on the end of the crank, and means for selectively positioning the track with respect to the reciprocating axis of the nut to obtain a predetermined actuation of the crank when the nut is reciprocated, whereby when the track is pivoted in a clockwise direction the total stroke of the strand guiding members with respect to the stroke of the nut will be decreased and when the track is pivoted in a counterclockwise direction the total stroke of the strand guiding members with respect to the stroke of the nut will be increased and when the track is in an intermediate position the stroke of the strand guiding member will remain unchanged.

2. An adjustable strand distributor for use with strand takeup apparatus, which comprises a traversing screw, a slidably mounted nut engaged by the traversing screw and reciprocated thereby through a fixed stroke parallel to the winding surface of a takeup reel forming part of the takeup apparatus, a pair of adjustable strand guiding members slidably mounted on the nut as a unit to rotatably engage a strand to be distributed on the takeup reel, means provided on the nut for imparting equal and opposite movement to the strand guiding members to fix the space between them to suit the strand to be distributed, a crank pivotally mounted on the nut

for imparting lateral movement to said strand guiding members with respect to the nut, said crank having a roller fixed on one end thereof, and a track positioned adjacent to the traversing screw for engaging the roller provided on the end of the crank as the nut and crank are reciprocated by said traversing screw, said track being pivotally mounted centrally of the fixed stroke of the nut whereby it may be positioned with respect to the traversing screw to effect an equal stroke differential between the strand guiding members and the nut to each side of the center of the winding surface of the takeup reel on which the strand is being distributed.

3. An adjustable strand distributor for use with strand takeup apparatus, which comprises a traversing screw, a nut slidably mounted on the traversing screw and reciprocated thereby through a predetermined stroke parallel to the winding surface of a takeup reel forming part of the takeup apparatus, a pair of spaced strand guiding members arranged to rotatably engage a strand to be distributed on the reel, means provided on the nut for supporting said strand guiding members as a unit thereon in an axially movable relationship therewith, means provided on the supporting means for imparting equal and opposite movement to the strand guiding members to fix the space between them to suit the size of a strand to be guided thereby, a crank pivotally mounted on the nut for imparting axial movement to said strand guiding members as a unit, said crank having one end engaging the support carrying the strand guiding means and a roller mounted on the other end thereof, a track pivotally mounted centrally of the fixed stroke of the nut for engaging the roller provided on the end of the crank, and means for clamping the track in a position which will actuate the crank as the nut is reciprocated by said traversing screw and thereby impart equal lateral movement to the strand guiding members with respect to the nut at each side of the center of the winding surface of the takeup reel, whereby the stroke of the strand guiding members may be selectively varied with respect to the fixed stroke of the nut on the traversing screw.

4. An adjustable strand distributor for use with strand takeup apparatus, which comprises a traversing screw rotatably mounted between a pair of spaced supports, a slidably mounted nut uniformly reciprocated between predetermined limits by the traversing screw parallel to the winding surface of a takeup reel forming part of the takeup apparatus, a pair of spaced strand guiding members arranged to rotatably engage a strand to be distributed on said reel, means provided on the nut for supporting said strand guiding members as a unit on the nut in an axially movable relationship therewith, said movable supporting means serving to maintain the strand guiding means at right angles to the nut throughout the stroke of the nut, a crank pivotally mounted on the nut and having one end thereof engaging the means supporting the said strand guiding members, said crank having a roller fixed on the other end thereof, a track pivotally mounted centrally of the predetermined operating limits of the nut for engaging the roller provided on the crank, said track being adjustable with respect to the reciprocating axis of the nut to actuate the crank as the nut is reciprocated by said traversing screw and thereby impart axial movement to the support and the strand guiding members with respect to the nut, means positioned adjacent to one end of the track for indicating the relative position of the longitudinal axis of the track with respect to the reciprocating axis of the nut, and means for clamping the track to the apparatus in a desired position, whereby when said track is pivoted in a clockwise direction and clamped therein its longitudinal axis is such that the crank is actuated and causes the total stroke of the strand guiding members to be decreased with respect to the fixed stroke of the nut and vice versa when the track is pivoted counterclockwise.

5. An adjustable strand distributor for use with strand takeup apparatus, which comprises a traversing screw rotatably mounted between a pair of spaced supports, a slidably mounted nut reciprocated through a fixed stroke by the traversing screw parallel to the winding surface of a takeup reel forming part of the takeup apparatus, a pair of spaced strand guiding members arranged to rotatably engage a strand to be distributed on said reel, a base slidably positioned on the nut for supporting said strand guiding members as a unit in an axially movable relationship with the nut, said movable base serving to maintain the strand guiding members at right angles to the nut throughout the stroke of the nut, means provided on the base for imparting equal and opposite movement to the strand guiding members to fix the space between them to suit the size of the strand to be guided thereby, a crank pivotally mounted on the nut and having one end thereof engaging the support carrying the strand guiding means, said crank having a roller fixed on the other end thereof, a track mounted between the supports for engaging the roller provided on the crank as the nut is reciprocated by said traversing screw, said track being pivotally mounted centrally of the fixed stroke of the nut so that its longitudinal axis may be positioned obliquely with respect to the axis of the traversing screw, means for indicating the position of longitudinal axis of the track with respect to the reciprocating axis of the nut, and means for clamping the track in an oblique position which will actuate the crank and thereby impart equal lateral movement to the support carrying the strand guiding members on each side of the center winding surface of the takeup reel as the nut is reciprocated by the traversing screw, whereby the stroke of the strand guiding members may be selectively varied with respect to the uniform stroke of the nut on the traversing screw.

ESTYLE D. HANSON.

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