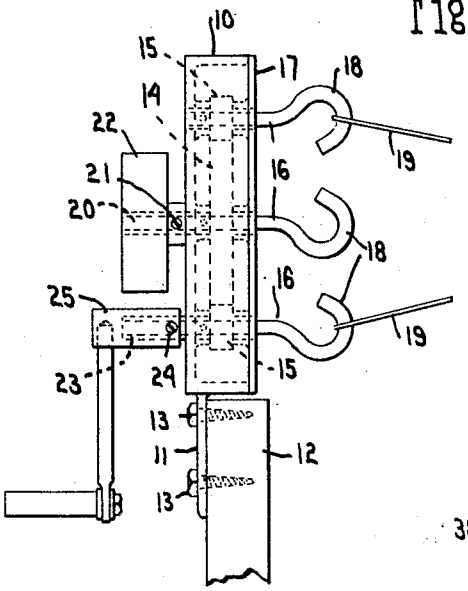
Dec. 6, 1927. 1,652,111

W. H. FULLINGTON

ROPE MAKING MACHINE

Filed Jan. 17, 1927

Fig. 1.



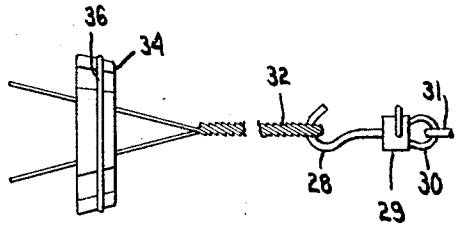
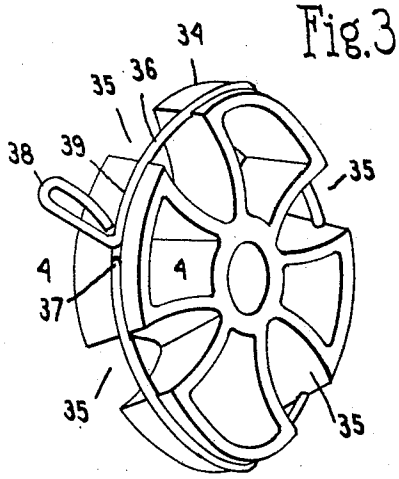


Fig. 3.



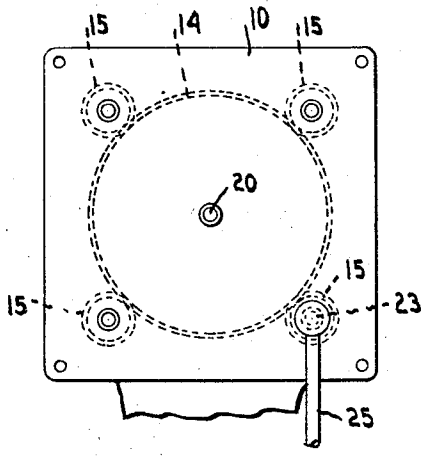
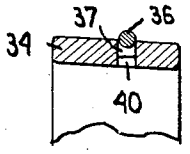


Fig. 2.

Fig. 4.



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Patented Dec. 6, 1927. 1,652,111

UNITED STATES PATENT OFFICE.

WILLIAM H. FULLINGTON, OF CLEVELAND, OHIO.

ROPE-MAKING MACHINE.

Application filed January 17, 1927. Serial No. 161,577.

This invention relates as indicated to rope making apparatus and has for its main object to provide an improved apparatus which combines several new and advantageous features of construction. My improved invention also contemplates the provision of a strand spreader which may be easily attached for use and has quickly detachable means for retaining the strands therein.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully and particularly pointed out in the claims; the annexed drawing and the following description setting forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a side elevation of the present novel apparatus in use;

Fig. 2 is a rear elevation of the twisting machine seen in Fig. 1;

Fig. 3 is a view in perspective of my improved strand spreader; and

Fig. 4 is a sectional view taken on line 4—4, Fig. 3.

The present illustrated embodiment of my invention relates to a rope making apparatus which is adapted for use by farmers or people in isolated districts where it is practically impossible to purchase certain types of ropes, such as hawser ropes. The apparatus consists of a casing 10 provided with an attaching flange 11, which may be readily attached to any mounting, as at 12, by bolts 13. The casing carries in its interior a centrally arranged spur gear 14 and several pinion gears 15, such latter members being circumferentially disposed around the gear 14. Pinned to the various gears 14 and 15 are stub shafts 16, which protrude beyond the front 17 of the casing and are formed into hooks 18, to which the strand 19, as seen in Fig. 1, are connected. These hooks function in the ordinary manner of devices of the present character and impart to the strands the desired twist.

As stated above, my rope making apparatus is designed for use in outlying districts where there may or may not be available a source of power. Therefore I provide means for driving the gears 14 and 15 by either manual or motive power. The shaft 16, secured to the larger gear 14, is projected rearwardly of the casing as at 20, to which may be attached, by set screw 21, a pulley 22. I also extend one of the other shafts 16, which is attached to one of the pinions 15, beyond the rear side of casing 10, as at 23. As seen in Fig. 1 there may be attached to this extension 23, by set screw 24, a hand operated crank 25, in which latter case the pulley 22 may be removed from the shaft extension 20. The mechanism just described presents certain advantageous features of construction which permit the selection of various driving speeds, i. e., the pulley 22 may be either mounted on the shaft extension 20 when it is desired to turn the hooks 18 at a very rapid rate of speed, or the same may be mounted on the extension 23, as when making a rope of large diameter. The same condition is prevalent in the use of the hand crank 25.

In the making of ropes, strands 19 are, as mentioned, attached at one end of the hooks 18 and at their other ends to a single rotatable hook 28. The hook 28 is rotatably mounted in a cylindrical member 29 provided at its rear in a hasp 30, which may be attached by any suitable means, such as hook 31, to a rigid mounting. As the hooks 18 are revolved by actuation of the gear 14 the several strands 19 are given the desired twist and when this twist continues to a certain point the several strands automatically wind together, as permitted by the rotation of hook 28, into the rope 32, seen in Fig. 1. It is customary in this type of apparatus to provide a strand spreading device having grooves in its periphery, into which are received the strands 19, a groove being provided for each such strand.

The spreader illustrated in Fig. 3 is of well-known general construction, consisting of an annular member 34 having a number of radial grooves 35 formed in its outer periphery. These grooves 35 are tapered to accommodate the angle incidental to the strands 19. In use it is customary to first mount the machine and the hook 28 in the desired position and to then arrange the strands 19 in winding position, after which time the spreader is inserted between such strands at a position adjacent the hook 28. It has been found in the use of the ordinary spreader that when making a rope of considerable length the strands are apt to whip out from the recesses 35 and thus dislocate the spreader.

My invention provides a new and improved means which is quickly detachable from the spreader and which is adapted to enclose the outer open end of grooves 35 when in place. Such means consist of an annular retaining ring 36 formed of suitable spring material and having one end 37 thereof bent rearwardly. The other end 38 of such ring is formed into an outward projection which may be engaged by the operator for the manipulation of the ring. On the outer surface of spreader 34 is formed a semi-circular groove 39, into which the ring 36 seats when in place. Also provided in the periphery of the spreader at one point is an aperture 40 which receives the inwardly projecting end 37 of the ring. In use the retaining ring is removed from the spreader while the latter is being attached in position to engage the several strands 19 and may be quickly assembled into position to close the outer open ends of grooves 35 by merely inserting the end 37 in hole 40 and snapping the remainder of the ring around the periphery of the spreader.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

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

1. In apparatus of the character described, the combination of a casing, a spur gear, a number of pinion gears driven thereby, shafts for mounting each of said gears in said casing, the forward ends of said shafts extending through the front side of the casing and having rope-twisting hooks formed thereon and the rear end of the shafts of the spur gear and one of the pinion gears extending through the other side of the casing, and driving means adapted to be interchangeably connected to either of said last mentioned shaft extensions.

2. In apparatus of the character described, the combination of a casing having a plurality of rotatable hooks adapted for attachment to one end of several rope strands and a single hook for connecting the other ends of said strands, a spreader comprising an annular member having radial grooves in its periphery for the reception of each of said strands, and a retaining ring removably secured to the periphery of said spreader adapted to close the open ends of said grooves.

3. A spreader comprising an annulus having a plurality of radially extending grooves formed in its outer periphery, a narrow groove of semi-circular cross-section formed in such outer periphery, and a split retaining ring adapted to be detachably secured in such narrow groove to enclose the open ends of said radial grooves.

Signed by me, this 12th day of January, 1927.

WILLIAM H. FULLINGTON.