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Patented Sept. 17, 1901.

H. RYDER.

MACHINE FOR MAKING MANILA ROPE.

(Application filed Mar. 30, 1901.)

(No Model.)

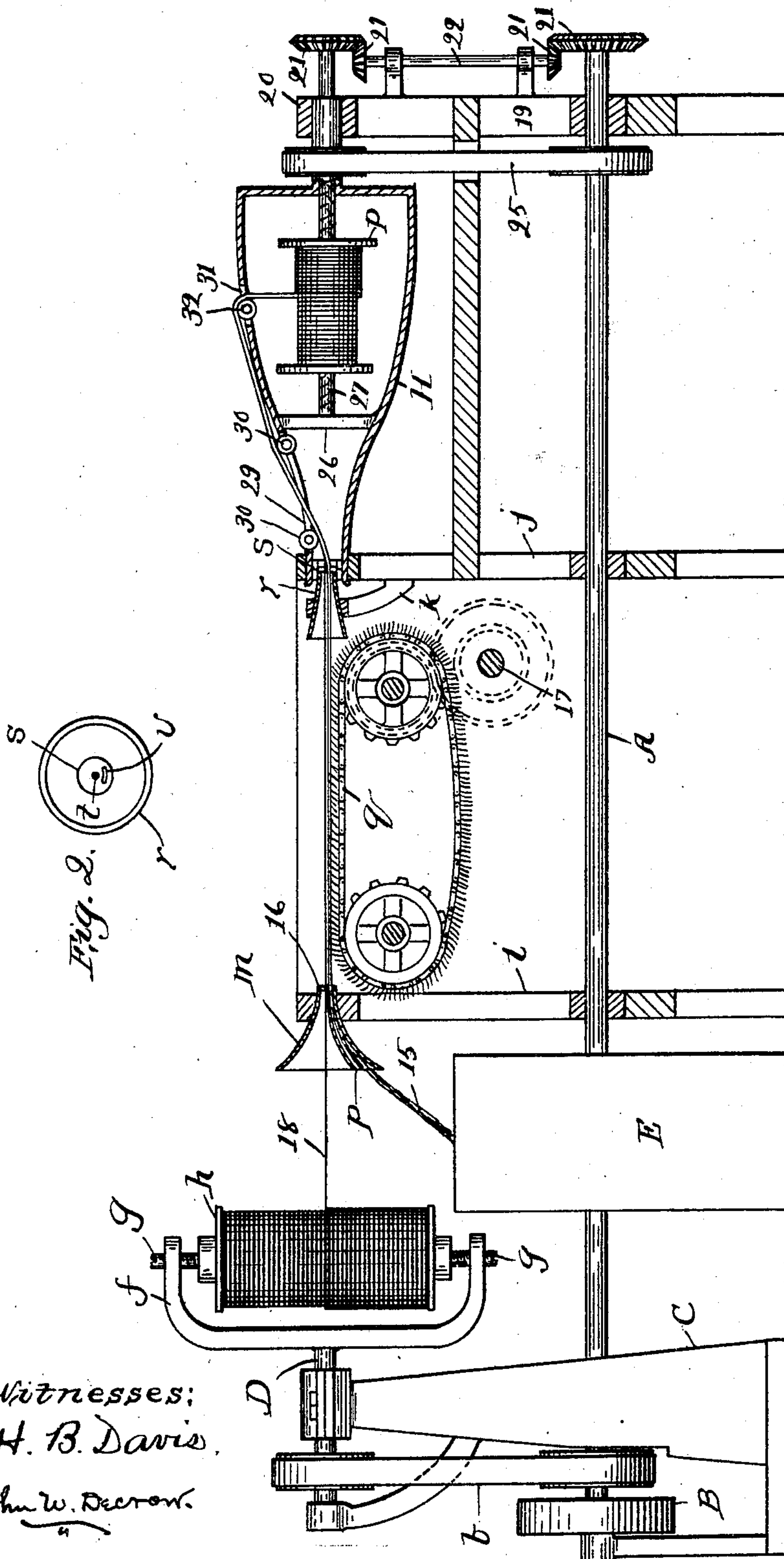


Fig. 1.

Fig. 2.

Witnesses:  
H. B. Davis,  
John W. Deaton.

Inventor:  
Henry Ryder,  
by O. M. Shaw,  
Att'y



# UNITED STATES PATENT OFFICE.

HENRY RYDER, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR MAKING MANILA ROPE.

SPECIFICATION forming part of Letters Patent No. 682,751, dated September 17, 1901.

Application filed March 30, 1901. Serial No. 53,581. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY RYDER, of Boston, county of Suffolk, and State of Massachusetts, have made certain new and useful  
5 Improvements in Machines for Making Manila Rope, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make  
10 and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation, parts being shown in section, of my improved rope-making machine; and Fig. 2, an end elevation of the nipper or regulator.

My invention is designed especially for making that class of Manila rope shown and described in my application for Letters Patent of the United States, Serial No. 31,338,  
20 filed September 27, 1900, in which the salient feature consists in the incorporation of a fine-gage metallic wire in each yarn as it is spun from the hemp.

35 A particular object of this invention is to incorporate a wire in such yarn in a normal or untwisted condition while the hemp is laid or spiraled around with the fibers of each sliver in parallelism, whereby each yarn  
30 is provided with an untwisted wire core entirely covered or inclosed by the hemp. These yarns may then be twisted or laid into the strands forming the completed rope by the ordinary processes.

35 The nature and operation of the improvement will be understood from the following explanation:

40 In the drawings, A represents the main shaft, mounted in a suitable frame and supports and driven by pulley B, connecting with suitable power source.

45 On a standard C is journaled a stub-shaft D, belted to the main shaft. On one end of the stub-shaft D is secured a U-shaped bracket *f*, in the arms of which is mounted a worm *g*. On this worm a reel *h*, of wire, is fitted to travel.

50 In the top of the upright *i* of the frame the leader *m* is mounted. This leader is bell-shaped, its mouth opening horizontally in line with the center of the wire-reel. In the lower portion of the leader is formed a groove

or passage *p*, extending from the mouth thereof and opening through its apex at 16. Through this passage the hemp-sliver 15  
55 from the hemp-tube E is directed on to the ordinary picker or carrier *q* of a spinning-machine. This picker consists of serrated clothing carried by jack-chains operating over sprockets and driven from a shaft 17. 60 This construction is common.

In a bracket *k* on upright *j* of the frame a bell-shaped regulator or nipper *r* is mounted in alinement with the leader *m*, toward which  
65 its mouth opens. This regulator is shown in detail in Fig. 2. Its nose *s* is closed centrally, and centrally therethrough there is an opening *t* for the wire 18. Just below this there is a horizontal laterally-elongated opening *v*, through which the carded or picked  
70 hemp is directed and by which the sliver is shaped.

H represents the flier of the spinner. It is substantially bottle-shaped in elevation and is disposed in horizontal position with its  
75 mouth journaled to rotate in the standard *j* and incloses the nose of the nipper or regulator *r*. The base of the flier is journaled in frame upright 19 at 20 and is driven by belt 25, connecting with the main shaft A. Through  
80 this journal 20 of the flier and journaled therein and in a brace 26 on the interior there is a screw or worm shaft 27, driven by gears 21 and an intermediate shaft 22, connecting with the main shaft A. On this worm a reel or  
85 spool P is fitted to travel and receives the completed yarn. In the neck of the flier there is a slot 29, in each end of which is mounted a guide-roll 30. In the side of the flier over the reel P is an opening 31, in which is jour-  
90 naled a guide-roll 32.

In the use of my improvement the sliver of hemp from the tube E is passed through the guide-opening *p* of the leader and out its nose. The wire 18 is passed also through said leader. 95 Thence both are carried over the picker and respectively threaded through this shaping-hole *v* and wire-opening *t* in the nose *s* of the nipper or regulator, thence upward and outward through the neck of the flier under the  
100 first roll 30 and over its companion, and thence outside said flier over roll 32 downward through slot 31 into the interior of said flier, when the ends of both wire and hemp sliver



are attached to the reel P. Power being applied to the main shaft the wire-reel shaft and the flier are rotated conjointly in the same direction and at the same rate of speed. By  
5 this means as the wire is delivered from its reel it is subjected to no torsional twist by the action of the flier. The hemp fed over the picker enters the shaping-slot *v* of the regulator *r* and is delivered therefrom with its  
10 fiber substantially parallel or in a ribbon-shaped sliver. The rapidly-rotating flier acting on this imparts a twist to the hemp which causes it to be spun or lain in substantially a spiral around the wire which, as described,  
15 is prevented from twisting by the rotation of its reel and thus forms an untwisted core for the yarn. It will be noted that the hemp fiber is delivered to the wire in an untwisted sliver, the wire being located centrally thereof, and the fiber is for the first time twisted  
20 after it and the wire leaves the nipper *r*. The yarn thus formed passes over the rolls 30 and 31 and is wound on the yarn-reel *p* in a manner that will be readily understood by those  
25 conversant with such matters. These compound yarns are now twisted together to form strands by the usual processes and these strands regularly laid up to form the completed rope which, as thus constructed, will  
30 be seen to comprise yarns each of which is

constructed of an untwisted wire covered by fiber symmetrically disposed and twisted around such wire.

Having thus explained my invention, what I claim is--

1. In a machine of the class described a regulator provided centrally with a wire-opening and a hemp-opening adjacent thereto wherefrom the wire and hemp are simultaneously delivered to the flier.

2. In a machine for spinning compound rope yarn the regulator, *r*, provided with the opening, *t*, and flattened opening, B, arranged substantially as specified.

3. In a machine of the class described the regulator provided with the wire and hemp openings in combination with the rotary flier inclosing the nose of said regulator.

4. In combination the wire-reel and devices for rotating it at right angles to its axis; the stationary regulator provided with the hemp and wire openings; the slotted flier, with its reel and devices for rotating said flier at the same speed and in the same direction as said regulator.

HENRY RYDER.

Witnesses:

O. M. SHAW,  
T. M. SHUTE.