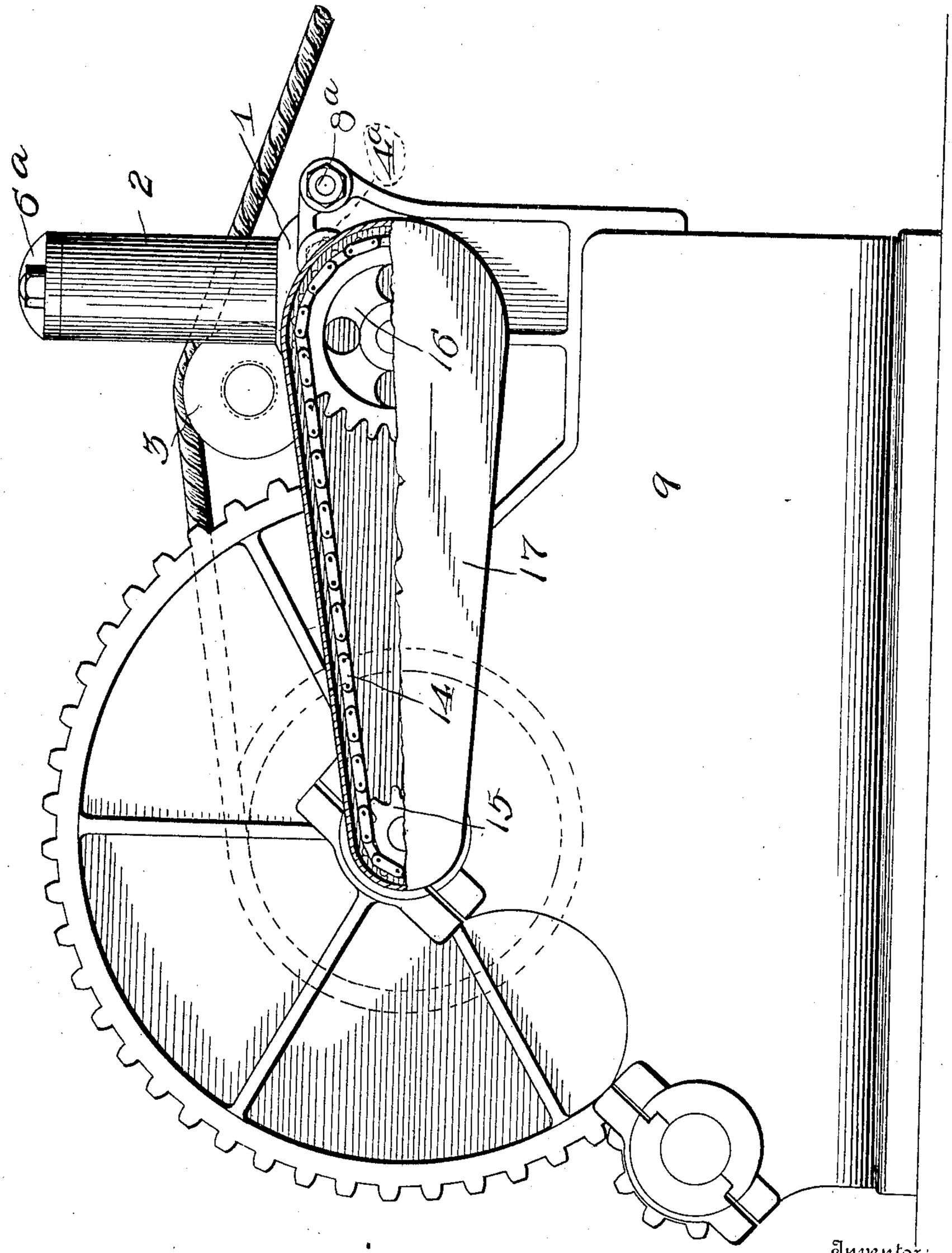
No. 876,261. PATENTED JAN. 7, 1908.

E. B. BRYANT.

WINDING MACHINE.

APPLICATION FILED JUNE 23, 1906.

3 SHEETS—SHEET 1.



Witnesses

H. J. Veihmeyer

E. S. Elliott

Fig. 1.

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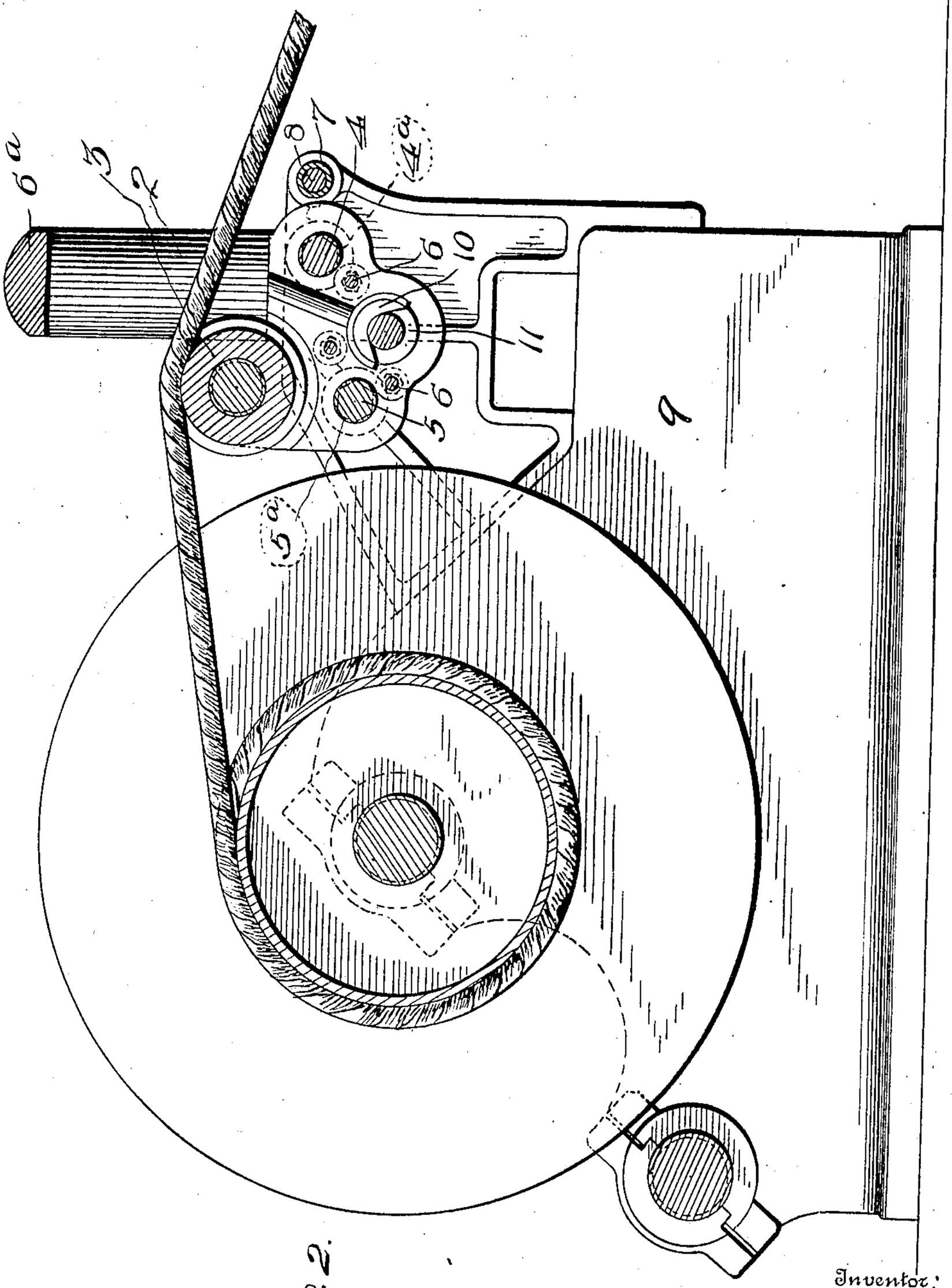

Fig. 2.

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3 SHEETS—SHEET 3.

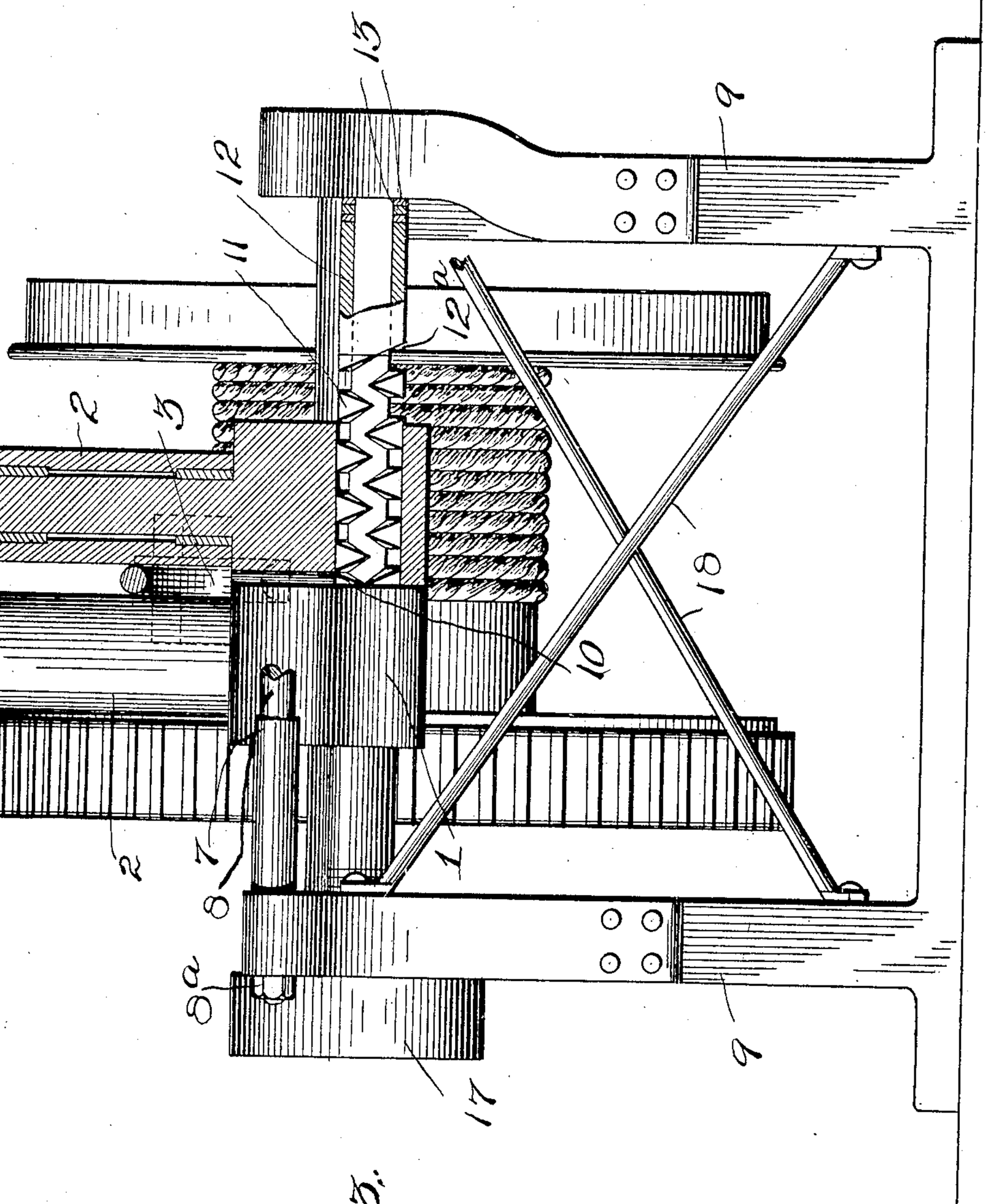

Fig. 3.

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UNITED STATES PATENT OFFICE.

EVERETT B. BRYANT, OF EAST PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE AMERICAN SHIP WINDLASS COMPANY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

WINDING-MACHINE.

No. 876,261. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed June 23, 1906. Serial No. 323,129.

To all whom it may concern:

Be it known that I, EVERETT B. BRYANT, a citizen of the United States, residing at East Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Winding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in winding machines and its object is to automatically wind and unwind rope or hawser in even layers upon the drums of towing machines, winches, windlasses or other rope handling machines.

The invention consists broadly in providing a carriage with means for guiding the rope from either side and directing it upon the drum and means for automatically reciprocating said carriage whereby said rope is wound in even layers without crossing which might cause cutting and stranding of the rope when it is being wound under great strain.

The invention also consists in the features of construction and combinations of parts hereinafetr described and more particularly pointed out in the claims concluding this specification.

In the accompanying drawings, illustrating the preferred embodiment of my invention: Figure 1 is a side elevation of a machine having a drum upon which rope is to be wound, a winding device constructed in accordance with my invention being mounted on said machine and part of the casing for the driving chain being broken away. Fig. 2 is a vertical sectional view thereof taken from front to back and between the vertical rolls, and Fig. 3 is a front elevation, parts being shown in section to more clearly bring out the construction.

Referring more particularly to the drawings, the carriage 1 upon which is mounted two vertical rolls 2 and a sheave 3, is arranged to slide upon two guide rods 4 and 5. Said sheave is mounted back of the center of the rolls, so that the rope rests thereon as it is guided through the rolls to the drum of the machine, whereby the rope is prevented from chafing and cutting the carriage. Said carriage is made in two parts, each part carrying one of the rolls, as shown in Fig. 3. The two parts are secured together near the bottom by means of tie-bolts 6, preferably three in number with their ends countersunk into the surface of the carriage, and by a link or plate 6^a at the top of the rolls.

The hawser is prevented from chafing the other parts of the machine by a piece of loose pipe 7 mounted on a cross-rod 8. Said rod and the guide rods 4 and 5 for the carriage are made smaller at their ends where they pass through the bits 9 of the winding device. The guide rods are provided with nuts 4^a and 5^a respectively and the rod 8 has nuts 8^a whereby said rods also act as tie-rods. The bits 9 should be of proper shape to be attached to the bits or housings of the machine carrying the drum.

The carriage is automatically reciprocated by means of a swivel nut 10 carried thereby engaging a rotary diamond screw 11 which is preferably formed with the diamond points overlapping, as shown in Fig. 3 so that the swivel nut cannot be turned to reverse the direction of the carriage except at the ends of said thread where collars 12 provided with grooves 12^a are arranged for that purpose. It will be seen that by providing the grooves in the collars 12, the direction of movement of the carriage is automatically changed without reversing the direction of motion of the diamond screw. At the end of the collars 12 are thrust washers 13 to take the lateral thrust of the screw. Said diamond screw is driven by a chain 14 engaging sprockets 15 and 16 arranged, respectively, on the drum shaft and said screw. The sprocket wheels are of the proper sizes to give the proper travel to the carriage according to the size of the rope and the drum. The chain and sprockets are preferably covered by a casing or guard 17 whereby foreign substance is kept out of them. Suitable braces for the machine, such as the diagonal ones 18 shown, may be employed.

I claim:

1. The combination, with a drum, of a carriage having means to guide a rope to said drum, means to revolve said drum and to automatically reciprocate said carriage and a loose pipe suitably mounted and forming a bearing for said rope for the purpose specified.

2. The combination, with a drum, of a carriage carrying vertical rolls and a sheave mounted back of the center of said rolls for the purpose specified, means to revolve said

drum and to automatically reciprocate said carriage, and a loose pipe suitably mounted and forming a bearing for said rope for the purpose specified.

3. The combination, with a drum, of a diamond screw, a carriage made in two sections, having means to guide a rope to said drum, a swivel nut mounted in a groove formed between the two sections of the carriage and engaging said screw, means to turn the nut at each end of the screw to reverse the movement of said carriage, and means to revolve said drum and screw.

4. The combination, with a drum, of a diamond screw, a carriage made in two sections and carrying vertical rolls and a sheave mounted back of said rolls for the purpose specified, a swivel nut mounted in a groove formed between the two sections of the carriage and engaging said screw, means to turn the nut at each end of the screw to reverse the movement of said carriage and means to revolve said drum and screw.

In testimony whereof, I affix my signature, in presence of two witnesses.

EVERETT B. BRYANT.

Witnesses:
GEORGE L. GRAHAM,
HARRY O. SWAN.