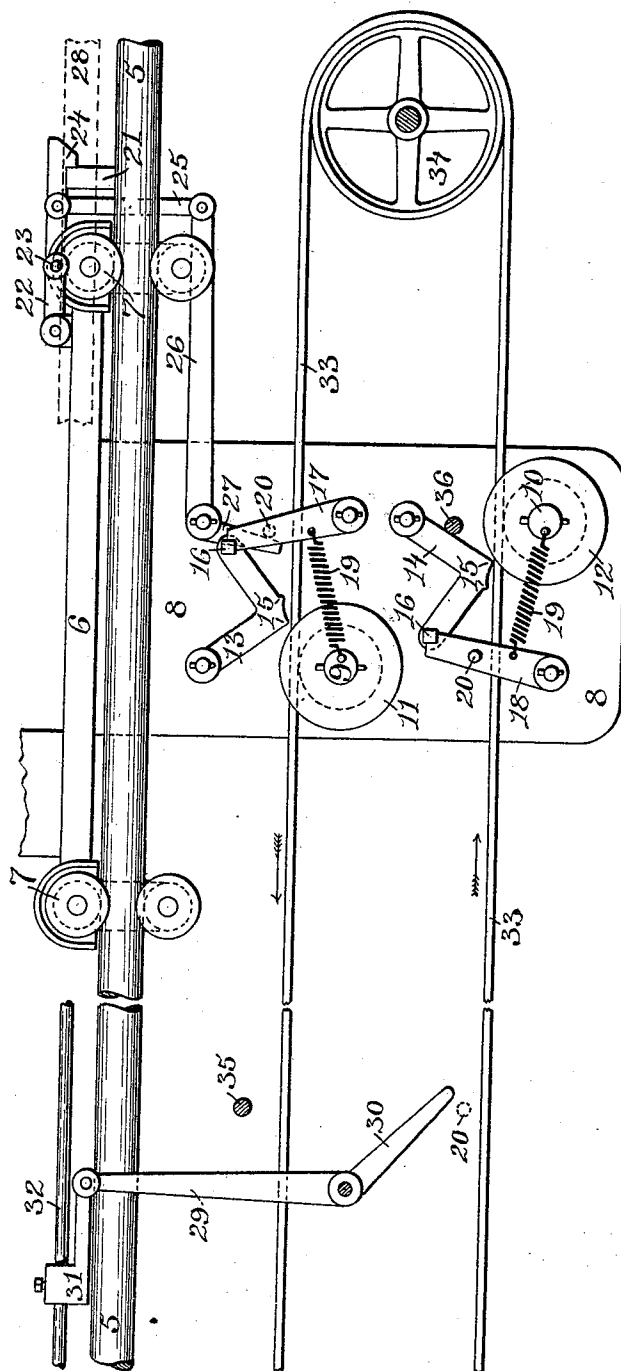


(No Model.)

J. WELKER.
BAND MACHINE.

No. 516,141.

Patented Mar. 6, 1894.



WITNESSES:

Henry J. Miller
Chas. H. Luelker Jr.

INVENTOR:

Joseph Welker,
by Joseph A. Miller & Co.
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH WELKER, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR TO HENRY S. COLE, OF SAME PLACE.

BAND-MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,141, dated March 6, 1894.

Application filed December 12, 1892. Serial No. 454,817. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WELKER, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain
5 new and useful Improvements in Band-Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.
10

This invention has reference more especially to improvements in holding carriages for band and cord twisting machines of the nature described in United States Letters
15 Patent to John I. Inman, of Putnam, Connecticut, dated April 22, 1890, No. 426,383.

The object of this invention is to produce a carriage for drawing out the loop of yarn or cord to be twisted, which will be adapted
20 to automatically grasp a moving belt by means of which the carriage may be traversed back and forth.

Another object of the invention is to produce a carriage of the nature described, which
25 will be adapted to automatically and alternately grasp and release the portions of an endless-belt traveling in opposite directions.

The invention consists in the peculiar construction of the traversing-carriage, carrying
30 the clutching-mechanism, and the stops and levers for operating the clutching-mechanism, as will hereinafter be more fully described and pointed out in the claims.

The drawing represents portions of the traversing and holding carriage with my improvements attached thereto, the carriage being supported by rails and driven by an endless belt.
35

Similar numbers of reference designate corresponding parts throughout.
40

In the drawing 5 indicates one of the rails on which the carriage travels.

6 is the base of the carriage on which is carried a yarn-holder, this base being supported by the wheels 7—7 which move over the rails. Depending from the base 6 of the carriage is the member 8 provided with the shafts 9 and 10 on which the grooved pulleys 11 and 12 are journaled. Pivoted on the member 8 above the pulleys are the bent clutching-arms 13 and 14 having the gripping-teeth
45
50

15, 15 and the square-pins 16, 16. Also pivoted on the member 8 are the locking-arms 17 and 18 which are drawn toward the pulleys 11 and 12 by the springs, 19, 19. In the upper ends of these locking arms 17 and 18 are formed recesses to receive the square pins 16, 16 of the clutching-arms to support these arms so that their gripping-teeth will be held away from the pulleys. On the locking-arms are also the pins 20, 20 which being struck by suitable stops at the opposite ends of the traverse the locking arms are alternately thrown and the clutching-arms released.
55
60

To the rail 5 is secured the stop 21, and pivoted on the carriage is the arm 22 having the stud 23 and the shoulder 24 beyond which the lower surface of the arm is beveled away to permit of its sliding over the stop 21. The depending-rod 25 is pivoted to the arm 22 and to the lever 26 which is in turn pivoted to the member 8 and has the finger 27 which is vibrated by the upward movement of the arm 22 and striking the pin 20 of the locking arm 17 throws this arm and releases the clutching-arm 13. The arm 22 is raised from engagement with the stop 21 by means of a lifting-bar 28 shown in broken lines corresponding to the releasing-rod 18 described on page 8, lines 129 *et seq.* of the patent to Inman heretofore referred to.
65
70
75
80

The lever 29 having the finger 30 is pivoted to the frame of the machine and to the arm 31 which is clamped to the reciprocally supported rod 32 this rod being reciprocated in any usual manner during the forward movement of the carriage to lift the finger 30 sufficiently to allow the pin 20 of the locking-arm 18 to reach the position indicated in dotted lines, and immediately afterward to depress this finger to strike the pin 20 and throw the arm 18 away from the square pin 16 to release the clutch-arm 14 from the support of that pin and allowing the clutch to engage the belt.
85
90
95

The endless-belt 33 is mounted on band-pulleys similar to 34 which are carried by shafts and are driven in any usual manner; this belt is constantly driven in the directions indicated by the arrows in the drawing and extends between the faces of the pulleys 11 and 12 and the clutch-arms 13 and 14 which
100

are alternately engaged with the belt when released from the support of the arms 17 and 18. As the carriage reaches the forward end of its traverse the clutch-arm 13 is struck by the pin 35 supported by the machine-frame and is thrown backward sufficiently to engage the pin 16 in the notch of the arm 17, thus releasing the upper portion of the belt. At the same time the arm 18 is moved by the finger 30 striking the pin 20 and allowing the clutch-arm 14 to drop and engage the lower portion of the belt; the carriage then being drawn in the direction the belt is moving until the end of the traverse is reached and the clutch-arm 14 strikes the pin 36 also supported by the frame to lift this clutch-arm away from the belt and into engagement with the upper end of the arm 18 while at the same time the finger 27, being shifted by the lifting of the arm 22 and the connections therewith, will strike the pin 20 on the arm 17 and force the upper end of the arm out of engagement with the square pin 16 of the clutch-arm 13, and the clutch arm 13 is allowed to engage the upper portion of the belt and the carriage is again drawn forward.

By the use of this device I am able to operate the machine without the use of reversing-gears for driving the belt in opposite directions and the action of the carriage is made automatic while the power required for driving the machine is greatly reduced.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a banding-machine, the combination with a carriage and an endless-belt for operating the same, of clutch-arms for alternately engaging the belt, spring-operated supports for sustaining the clutch-arms when not in use, and stops located on the machine for alternately shifting the supports to disengage the clutch-arms, as described.

2. The combination with the carriage 6 movable on the rails 5 and having the depending-member 8, the pulleys 11 and 12 carried by the shafts 9 and 10, the clutch-arms 13 and 14 pivoted to said member and having the square pins 16, 16, the spring-operated locking-arms 17 and 18 having notches in their upper ends for engaging the pins 16, 16, the pins 20, 20 on said arms 17 and 18, the pivoted-lever 26 for disengaging the arm 17, and the pivoted-lever 29 for disengaging the arm 18, of the endless-belt 33 supported on driving-pulleys, and the pins or studs 35 and 36 for alternately resetting the clutch-arms 13 and 14, as and for the purpose described.

In witness whereof I have hereunto set my hand.

JOSEPH WELKER.

Witnesses:

JOSEPH A. MILLER,
HENRY J. MILLER.