

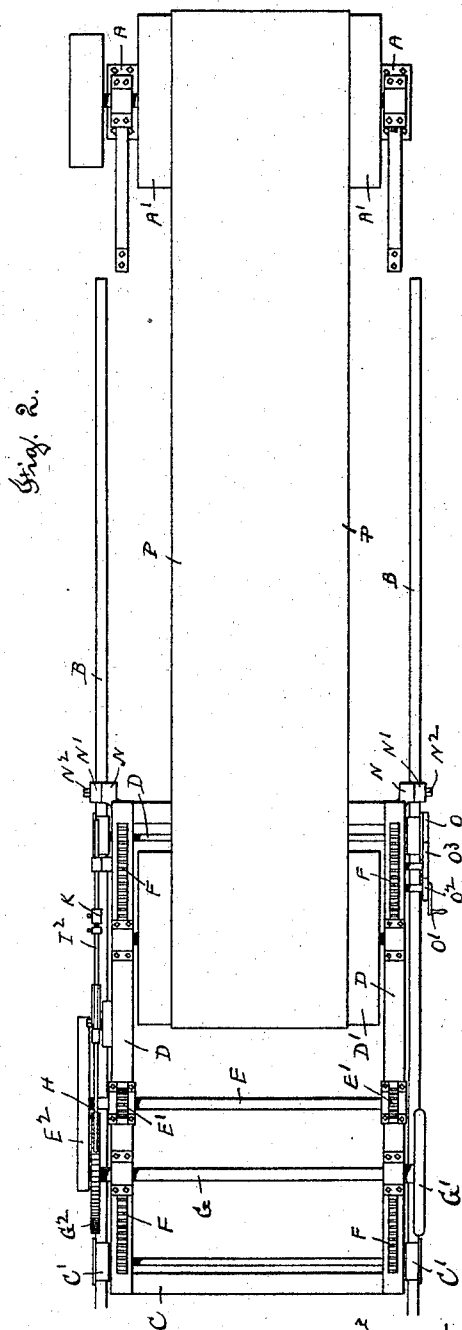
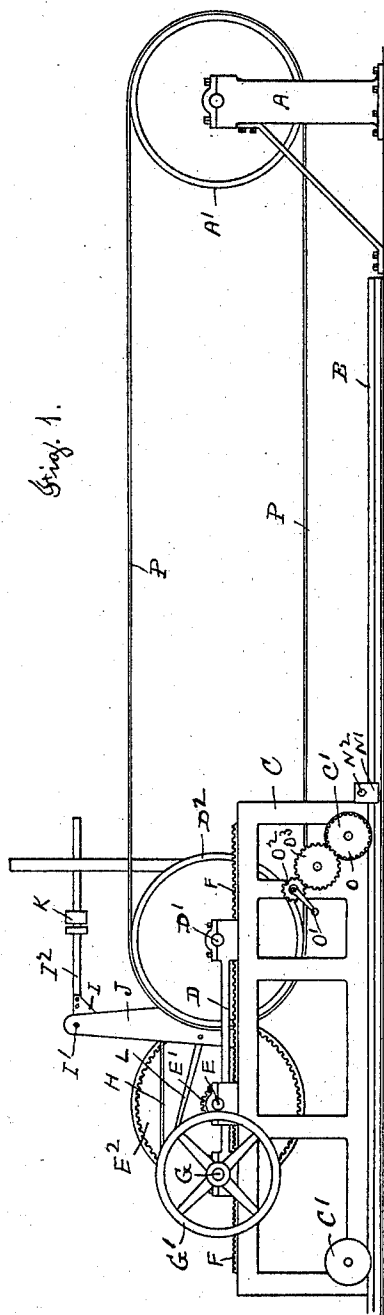
(No Model.)

2 Sheets—Sheet 1.

T. MURDOCK.
BELT STRETCHING MACHINE.

No. 577,873.

Patented Mar. 2, 1897.



Witnesses
Al Whiting
Lena Foster.

By his Attorney

Rufus B. Fowler.

Inventor
Tracy Murdock

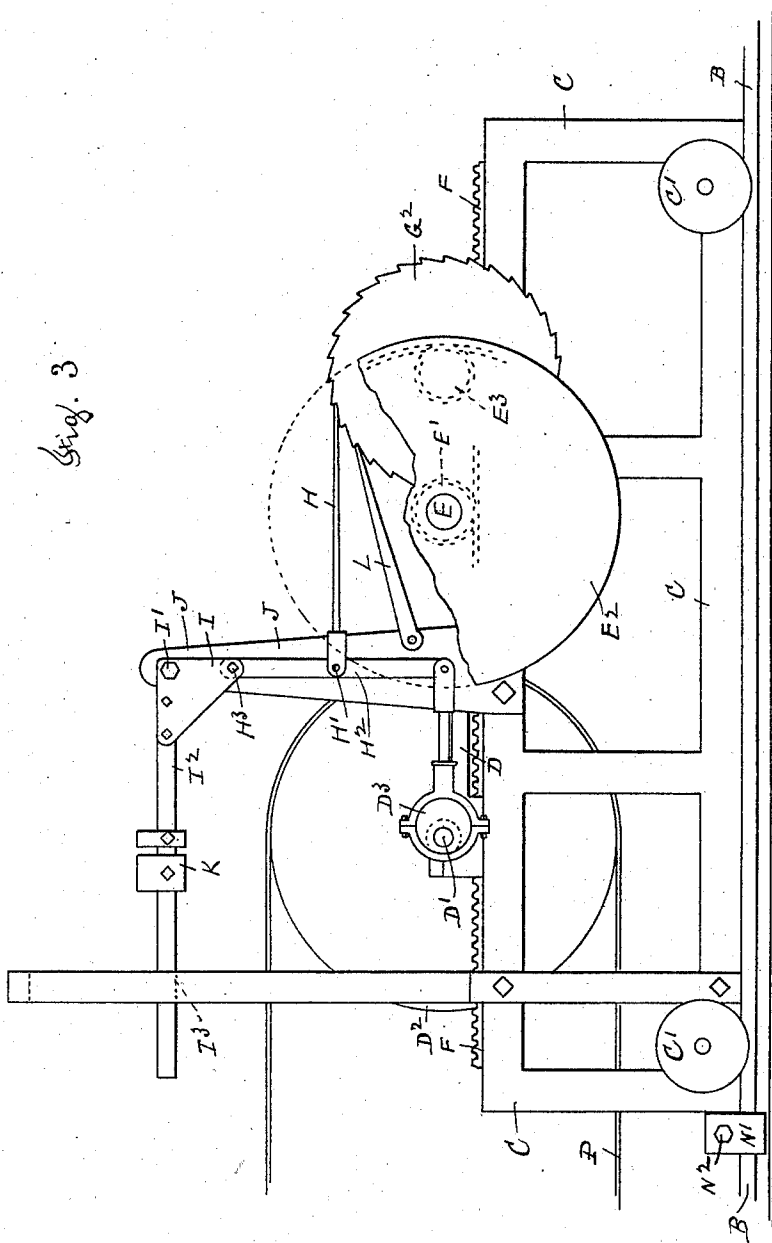
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UNITED STATES PATENT OFFICE.

TRACY MURDOCK, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE
GRATON & KNIGHT MANUFACTURING COMPANY, OF SAME PLACE.

BELT-STRETCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 577,873, dated March 2, 1897.

Application filed January 20, 1896. Serial No. 576,238. (No model.)

To all whom it may concern:

Be it known that I, TRACY MURDOCK, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in a Belt-Stretching Machine, of which the following is a specification, accompanied by drawings, forming a part of the same and representing a belt-stretching machine embodying my invention.

Figure 1 of the drawings represents a side elevation of one of my improved belt-stretching machines. Fig. 2 is a plan view of the same; and Fig. 3 is a side elevation of a portion of the machine, showing the opposite side of that represented in Fig. 1 and with a portion of one of the gear-wheels broken away to disclose the actuating and retaining pawls.

Similar letters refer to similar parts in the different figures.

The object of my invention is to provide a mechanism for stretching endless belts by subjecting the endless belt to a strain of the same kind which it receives when in use.

Referring to the drawings, A denotes an upright framework supporting a rotating cylinder A'.

B B denote the rails of a track extending for some distance from the frame A and at right angles with the axis of the cylinder A'.

C is a carriage provided with flanged truck-wheels C', adapted to run upon the rails B B.

Mounted upon the carriage C is a frame D, capable of a sliding motion along ways formed upon the carriage C, and journaled in the frame D is a shaft D', carrying a cylinder D², similar to the cylinder A', and also an eccentric D³.

Journaled in the frame D is a shaft E, carrying pinions E' E', which engage the racks F, attached to the carriage C. The shaft E also carries an internal gear E², which engages a pinion (shown by the broken lines E³, Fig. 3) on a shaft G, which is also journaled in the sliding frame D. The shaft G carries a hand-wheel G' and a ratchet-wheel G², which is actuated by a pawl H, pivotally connected at H' with a lever H², which is operatively connected at its lower end with the eccentric D³, and is pivoted at H³ to the short arm I of a bell-crank

lever pivoted at I' to a fixed post J, which extends upward from the carriage C.

K denotes weights which are adjustably attached to the long arm I² of the bell-crank lever.

A retaining-pawl L is pivoted to the post J in order to hold the ratchet-wheel from reverse movement.

The carriage C is provided with projecting jaws N, which extend forward and downward and are provided with faces fitting one side of the rails B B. Bearing against the opposite side of the rails are jaws N', which are united with the jaws N by the tightening-screws N², by which the rails B B are firmly clamped between the opposing faces of the jaws N and N', thereby holding the carriage C in a fixed position upon the rails B B.

One of the truck-wheels C' is provided with gear-teeth O, enabling the toothed truck-wheel to be rotated by means of a crank O' through the intermediate gears O² O³, which turn upon studs held in the carriage C.

The operation of the machine is as follows: The belt P which is to be stretched is placed upon the cylinders A' and D², and the carriage C is moved away from the frame A until the belt P is drawn taut. The rails B are then tightly clamped between the jaws N N', thereby holding the carriage C from further movement along the rails B. Rotary motion is imparted to the cylinder A', causing the cylinder D² to be also rotated through the belt P. As the cylinder D² rotates an oscillating motion will be imparted to the lever H², which is pivoted at H' to the actuating-pawl H and at H³ to the short arm I of the bell-crank lever. The weights K serve to hold the long arm I² normally in a horizontal position and against the stop I³. As the lever H² is actuated by the eccentric D³ it will rock upon the pivot H³ and impart an intermittent rotation to the ratchet-wheel G² through the actuating-pawl H and, by means of the gears E² and E³, shaft E, and pinions E', which engage the racks F, will impart a sliding motion to the frame D, moving it and the cylinder D² away from the cylinder A' and tightening the belt P. The weights K are adjusted upon the arm I² so that when the belt P is drawn suf-

ficiently tight the force required to rotate the ratchet-wheel G^2 will exceed the force applied to the lever H^2 by the weights K , and the lever H^2 will then be rocked about the pivot H' as a fulcrum, causing the bell-crank lever to be rocked upon the pivot I' and raise the weights K . The motion of the lever H^2 will continue to lift the weights K until the stretching of the belt P decreases the resistance to the rotation of the ratchet-wheel and allows the weights K to hold the pivot H^3 in a fixed position, when the ratchet-wheel G^2 will be again rotated by the actuating-pawl H .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a belt-stretching machine, the combination of a stationary frame, a drum supported by said frame, a movable carriage, a drum supported by said movable carriage, means for controlling the position of said movable carriage relatively to said stationary frame, whereby the axes of said drums are maintained in a parallel position, and means for adjusting the distance between said movable carriage and said stationary frame, substantially as described.

2. In a belt-stretching machine, the combination of a stationary frame, a drum supported by said frame, a track at right angles with the axis of said drum, a carriage movable on said track, a drum supported by said carriage with its axis at right angles with said track, means for moving said carriage along said track in order to vary the distance between said drums and means for attaching said carriage to said track in order to resist the strain upon a belt carried upon said drums, substantially as described.

3. In a belt-stretching machine, the combination of a stationary frame, a rotating drum supported by said frame, a track at right angles with the axis of said drum, a carriage adjustably attached to said track, a frame supported on said carriage and capable of a sliding motion parallel with said track, a ro-

tating drum supported by said sliding frame with its axis at right angles with said track and means for moving said frame and increasing the distance between said drums, substantially as described.

4. In a belt-stretching machine, the combination of a stationary frame, a drum supported by said frame, a track at right angles with the axis of said drum, a carriage movable on said track, a frame movable on said carriage, a drum supported by said frame, means for attaching said carriage to said track, and means for adjusting the position of said movable frame on said carriage, substantially as described.

5. In a belt-stretching machine, the combination of a rotating drum journaled in fixed bearings, a movable frame, ways along which said frame is moved, a shaft journaled in said frame, a drum carried on said shaft, an eccentric carried on said shaft, a fixed rack, a shaft journaled in said movable frame, a pinion carried on said shaft and engaging said rack, and operative mechanism between said drum-shaft and said pinion-shaft, whereby the latter is intermittently rotated to move said frame, substantially as described.

6. In a belt-stretching machine, the combination of a drum journaled in fixed bearings, a pair of rails forming a track at right angles with the axis of said drum, a carriage adapted to move along said track, a jaw projecting from said carriage, a movable jaw with one of the rails inclosed between said jaws, a tightening-bolt by which the rail is clamped between said jaws and the carriage held from movement on said track and a rotating drum supported by said carriage, substantially as described.

Dated the 21st day of December, 1895.

TRACY MURDOCK.

Witnesses:

RUFUS B. FOWLER,
LENA KESTER.