

(No Model.)

2 Sheets—Sheet 1.

J. HOWARD & O. B. FRAZIER.
BELT TIGHTENER.

No. 587,205.

Patented July 27, 1897.

Fig. 1

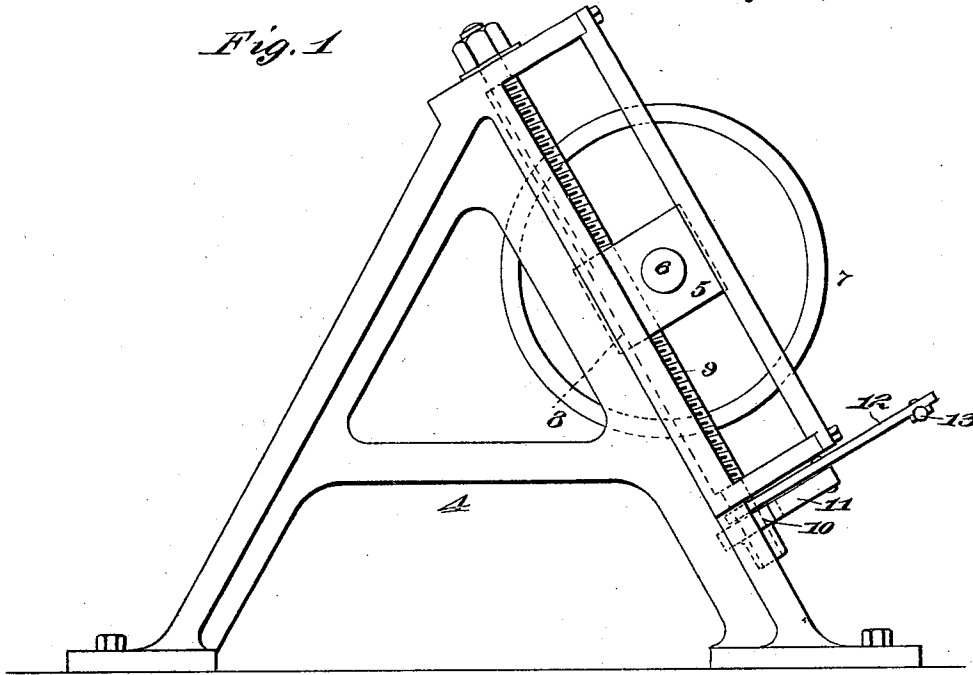
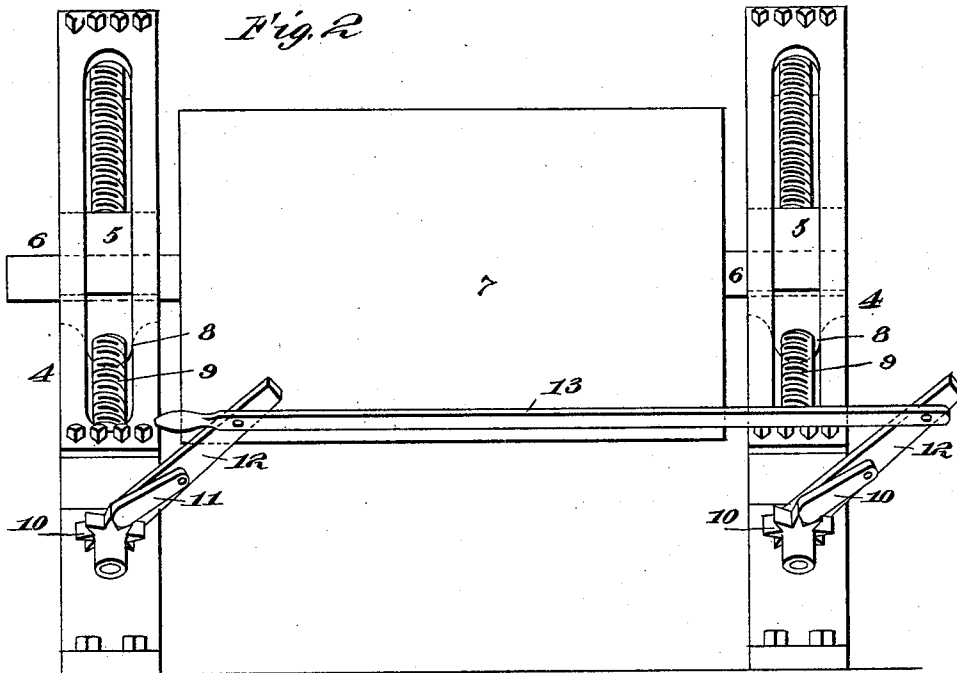


Fig. 2



Witnesses

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2 Sheets—Sheet 2.

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Fig. 3

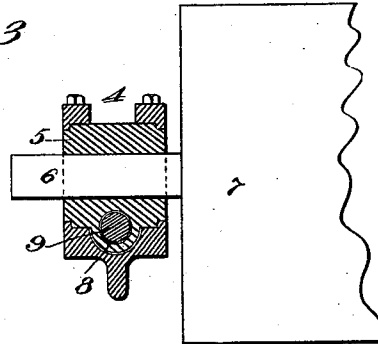


Fig. 4

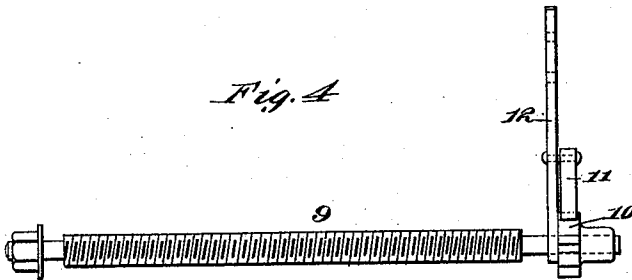


Fig. 5

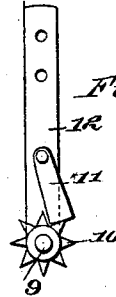
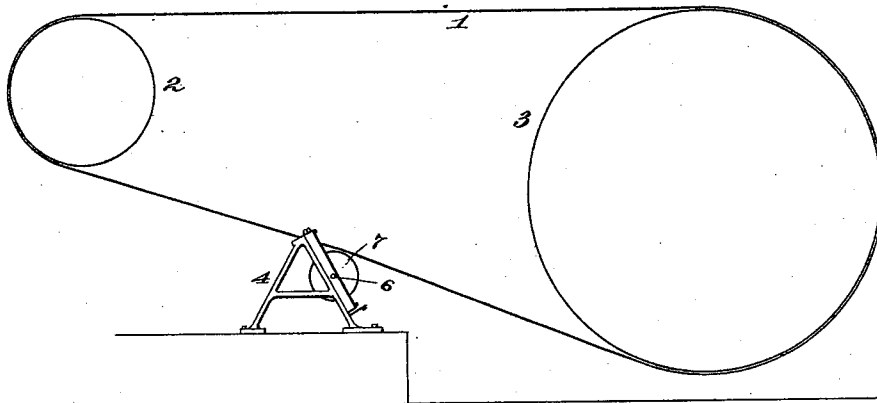


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES HOWARD AND OLIVER B. FRAZIER, OF ELWOOD, INDIANA.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 587,205, dated July 27, 1897.

Application filed June 11, 1896. Serial No. 595,136. (No model.)

To all whom it may concern:

Be it known that we, JAMES HOWARD and OLIVER B. FRAZIER, citizens of the United States, residing at Elwood, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Belt-Tighteners; and we 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.

Our invention relates to improvements in belt-tighteners, the object of the same being to provide a simple and cheaply-constructed tightener for belts of any width which is effective in operation and in which the drum may be adjusted to accommodate itself to variations in the angle between the main driving-shaft and the other roll over which the belt runs.

The invention consists of a frame made up of two supports or standards, preferably constructed of T-iron or angle-iron, bolted securely to the base of the machine, a drum whose shaft is mounted in sliding boxes in each of said standards, a threaded bolt extending through each of said boxes, a ratchet-wheel upon one end of said bolt, a lever loosely mounted on said bolt adjacent to said ratchet-wheel, and a pawl pivoted to said lever and adapted to engage said ratchet-wheel.

The invention also consists in other details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a side elevation of our improved tightener. Fig. 2 is a front elevation of the same. Fig. 3 is a cross-section through one of the boxes upon which the drum is mounted. Fig. 4 is a detail side elevation of the bolt and the operating-handle connected thereto. Fig. 5 is an end view of the same. Fig. 6 is a diagrammatic view showing the relation between our tightener and the main driving-belt.

Like reference-numerals indicate like parts in the different views.

In the drawings forming part of this specification our improved tightener has been shown in connection with a belt, 1 passing round the drums 2 and 3, the drum 2 being

upon the main driving-shaft of the machine. The tightener is made up of two parallel supports or standards 4 4, securely bolted to the base of the machine and preferably constructed of angle or T iron. The front faces of each of the standards 4 4 are angularly arranged, as shown, and mounted in suitable guides in said supports are the boxes 5 5, through which pass the ends of the shaft 6, upon which the drum 7 is mounted. The boxes 5 are each formed with an offset 8 upon one side, through which pass screw-bolts 9 9, engaging threads in said offsets and mounted to rotate in suitable bearings in the standards 4 4. Upon the lower end of each of the bolts 9 is a ratchet-wheel 10, which is engaged by a pawl 11, pivoted to the front face of a lever 12, loosely fulcrumed on the lower end of the bolt 9 and mounted to rotate thereon.

Our tightener is located between the drums 2 and 3, so that the upper surface of the drum 7 bears against the under surface of the belt 1. Should the said belt become loose from wear or variations in temperature, it is merely necessary in order to tighten the same to operate the levers 12 upon the lower ends of the bolts 9, screwing up said bolts by the engagement of the pawls 11 with the ratchet-wheels 10 on the lower ends of said bolts. Upon said bolts being rotated, the boxes 5, in which the drum 7 is mounted, will be forced upwardly, bringing said drum into closer contact with the belt 1. The pawls 11 are so mounted on the levers 12 that they may have their positions reversed to engage the opposite sides of the teeth on the ratchet-wheels 10. If, therefore, it be desired to relieve the tension of the belt 1, it is merely necessary to reverse the pawls 11 and operate the levers 12 in an opposite direction. In case the shafts upon which the drums 2 and 3 are mounted are not exactly in line there will be a tendency for the belt 1 to be forced off the drum 2 when operated. In order to prevent this and to counteract the tendency of the belt 1 to roll off the drum 3, the lever 12 on one or the other side is operated to raise one side of the drum 7 and leave the other stationary. The sides of the belt 1 will thereby be brought into closer contact with one side of the drum 7, obviating the difficulty.

In order to operate the levers 12 12 simultaneously, we may connect the upper ends of said levers by a bar 13, passing transversely across the front of the tightener, so that upon
5 the movement of said bar in one direction or the other both of said levers will be operated.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

10 In a belt-tightener, the combination with suitable supports or standards having guides formed therein, of journal-boxes slidingly mounted in said standards each having an offset therein fitting within said guides and
15 preventing the lateral movement of said boxes, a belt-tightening drum, a shaft to which said drum is secured mounted in said

boxes, threaded bolts mounted to turn in said standards and engaging threaded openings in said offsets, ratchet-wheels upon the lower
20 ends of said bolts, levers fulcrumed on the lower ends thereof and adapted to oscillate thereon, pawls pivoted to said levers adapted to engage the teeth on said ratchet-wheels, and
25 an operating-bar connecting said levers and pivoted thereto, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JAMES HOWARD.
OLIVER B. FRAZIER.

Witnesses:

CHARLES C. DEHORITY,
JOE A. DEHORITY.