

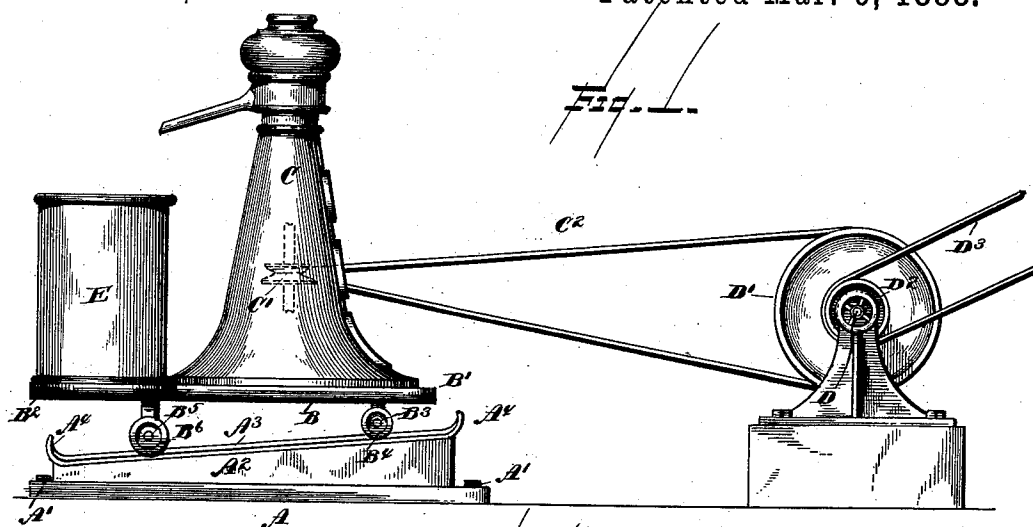
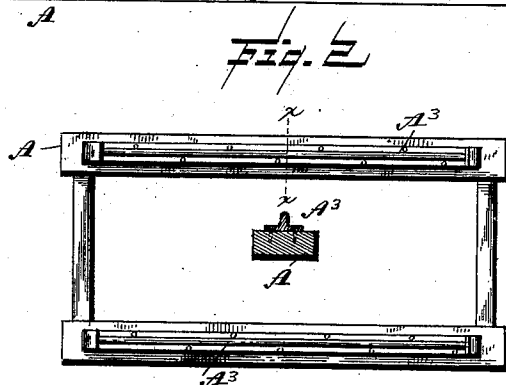
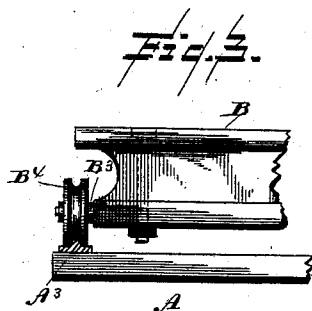
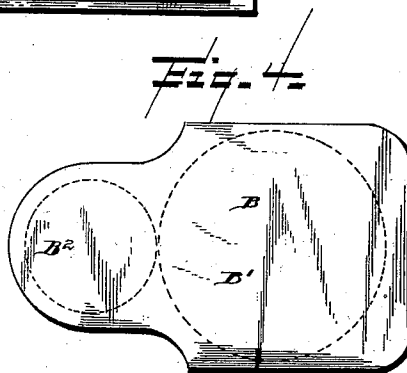
(No Model.)

F. LEININGER.

BELT TIGHTENER.

No. 379,116.

Patented Mar. 6, 1888.



Witnesses:

L. C. Hill,
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Inventor:

Frederick Leininger,
By his Attorney,
C. B. Stocking

UNITED STATES PATENT OFFICE.

FREDERIC LEININGER, OF NEW YORK, N. Y., ASSIGNOR TO CHARLES D. SHEPARD, OF SAME PLACE.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 379,116, dated March 6, 1888.

Application filed May 16, 1887. Serial No. 238,401. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC LEININGER, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Belt-Tighteners, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to provide an automatic belt-tightener for centrifugal and other machines; and the invention is especially designed for operation in connection with a counter-shaft shown and described in application No. 214,555, filed September 25, 1886. In this latter invention, although serving the functions set forth in the application, it has been found that by reason of the exceedingly great speed at which said shaft is run when used in connection with centrifugal machines, for which it was especially designed, the belt-
ing connecting the same with the machine gives and causes a slack which causes a slipping thereof at the cone-clutch illustrated in said counter-shaft application. By my invention, however, the belt is maintained at an even tension regardless of the high or low speed of the motor and the shaft. It is well known by persons conversant with machines of this class that, by reason of the variations of speed given the same, great trouble has been experienced by reason of the belt giving or slacking when the speed is increased and tightening when the speed is decreased. This causes a slipping of the belt and destroys and renders impossible the attainment of the uniform speed of the machine necessary to a successful separation of the constituents being operated upon.

In putting my invention into practice, as will be hereinafter described, it will be seen that a constantly even tension of the belt is maintained, no matter whether the speed be high or low or suddenly increased or decreased.

Referring to the drawings, Figure 1 is a side elevation of a belt-tightener constructed in accordance with my invention, the same being illustrated in connection with a centrifugal machine and counter-shaft. Fig. 2 is a plan

of the tightener and a cross-section of the same. Fig. 3 is a partial front elevation, and Fig. 4 is a plan of the machine-supporting truck.

Like letters of reference indicate like parts in all the figures of the invention.

A represents the stationary base or bed-frame, which is bolted or otherwise securely fastened to the floor, as at A', and it comprises an ordinary rectangular or oblong frame, running lengthwise of which and secured thereto, in this instance by bolts, are vertical flanges A², inclined from front to rear, as shown in Fig. 1, so that its highest end is toward the motor or shaft. If desired, it is evident that the base and flanges may be formed in an integral casting. Upon the flanges, either secured thereto or integral therewith, is a track, A³, of any desired shape in cross-section, the ends of which are upwardly turned to form stops or guards A⁴.

Mounted upon the track A³ is a movable truck, B, the plan of which is designed to conform to the relative shape and proportions of the machine which it is to support. In this instance it comprises a bed or support, B', for the centrifugal machine C and a forwardly-projecting portion, B², adapted to receive and support the receiving-can E. (See Figs. 1 and 4.)

The truck-base B is provided at its rear with a suitable axle, B³, having rollers or wheels B⁴, and at its front with an axle, B⁵, and rollers or wheels B⁶. The axles B³ B⁵ differ in their relative heights in the same proportion as do the front and rear ends of the flanges A², the difference being reversed—that is, the lower axle being at the rear or toward the motor or shaft and the higher axle being at the front—so that the table or truck-base is always in a horizontal position, no matter whether it be at the higher or rear end of the truck or at its lower front end.

The centrifugal machine C is provided with a pulley, C', over which the belt C², leading to the drive-wheel D' of the counter-shaft D, runs, which shaft is provided with a second pulley or wheel, D², driven by a belt, D³, leading to the motor.

The operation of my invention will be ap-

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parent from the above description; but for a better understanding I will proceed to describe the same.

Motion being imparted to the shaft and machine by the belting described, (it being understood that the belt when the machine is not in motion is of sufficient length to maintain the machine at the top of the incline,) when said speed is increased or reaches a height sufficient to cause the belt to expand or slacken, the weight of the machine and truck will cause said truck to travel down the incline, thus maintaining an even tension at all times upon the belt. The faster the machine is driven the more the belt expands and the farther down the track the truck and machine travel, it being prevented from leaving the track by means of the guards A⁴. It is evident that no matter how suddenly the speed of the motor is increased, and consequently the expanding of the belt, the machine will be drawn against the tension of the belt in the same relative proportion and the belt held taut, and no slipping of the same can take place. As the speed of the motor decreases, the belt will contract and draw the machine and truck up the incline in accordance with the decrease of speed.

Having described my invention and its operation, what I claim is—

1. A belt-tightener for machines of the class described, comprising an inclined base provided with a track, and a truck mounted on said track and provided with front and rear axles differing in height in proportion with and in contradistinction to the inclination of the base, substantially as specified.

2. In a belt-tightener, the combination, with a base provided with vertical inclined flanges having tracks, of a truck having a horizontal platform mounted to travel on said tracks, substantially as specified.

3. In a belt-tightener, the combination, with the base thereof, provided with inclined flanges having tracks, of a truck mounted to travel on said tracks and provided with axles mounted at different heights, whereby said truck is maintained in a horizontal plane, a centrifugal machine mounted on said truck, and intermediate power-conveying belt, substantially as specified.

4. The combination of the base A, having the vertical inclined flanges A², provided with tracks A³, bent to form stops, as at A⁴, with the truck B, comprising the platform or base B¹, B², the axles B³ B⁴, and the wheels B⁵ B⁶, substantially as specified.

5. The combination of the base A, having the flanges A² and tracks A³ mounted thereon, and the truck B, mounted for travel on said tracks, with the machine C, having pulley C¹, the counter-shaft D, and the belts C² D³, substantially as specified.

6. The apparatus comprising the truck B, the bed B¹, and forwardly-projecting portion B², the machine C, belt C², receiving-can E, and base A, substantially as specified.

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

FREDERIC LEININGER.

Witnesses:

M. M. CASS, Jr.,

V. W. SCHOOLEY.