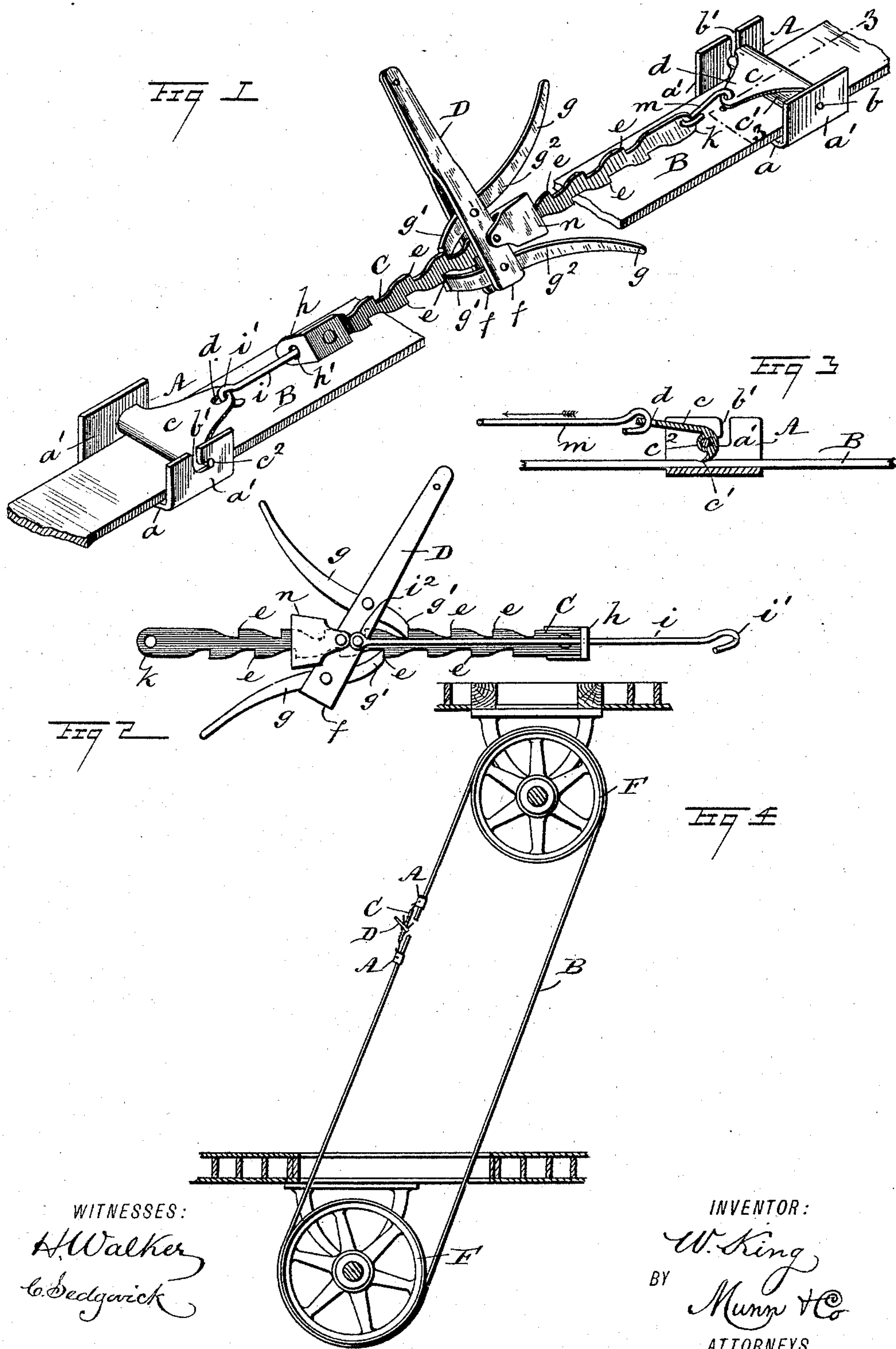


(No Model.)

W. KING.
BELT TIGHTENER.

No. 442,057.

Patented Dec. 2, 1890.



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WILLIAM KING, OF LONGMONT, COLORADO, ASSIGNOR OF ONE-HALF TO
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BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 442,057, dated December 2, 1890.

Application filed September 5, 1890. Serial No. 364,041. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KING, of Longmont, in the county of Boulder and State of Colorado, have invented a new and useful
5 Belt-Tightener, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, inexpensive, and convenient device, which will afford means for the speedy tight-
10 ening of flexible belts of any description, and particularly to take up the slackness in elevator-belts and retain them in taut condition while the excess of material is removed and the ends of the band or belt joined se-
15 curely.

To this end my invention consists in the construction and combination of parts, as is hereinafter described, and indicated in the claims.

20 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents the device in position
25 on two engaged belt ends ready for service. Fig. 2 shows the reverse side of one portion of the tightening device detached from the belt-clamps. Fig. 3 is a side view, in section, of one belt-clamp, taken on the line 3 3 in Fig.
30 1; and Fig. 4 represents the belt-tightener in position, clamped to the detached end portions of a driving-belt, ready for manipulation to shorten the belt or draw the severed ends into contact and hold them so adjusted
35 until they are secured together.

The belt-tightening implement, briefly described, consists of two locking-clamps that may be placed on an elevator-belt, or a driving-belt that is in place on its revoluble sup-
40 ports, which clamps are connected by a ratchet-bar and vibrating lever so arranged that a vibration of the lever will draw the clamps toward each other and tighten the belt or elevator-band, the slack portion of which
45 can then be removed and the ends joined. The belt-clamps A are of similar form, and each consists of a rectangular metal plate *a*, bent upward at right angles at its ends, forming flanges *a'* to engage the edges of the belt
50 B, or they may be wider apart than the width

of the belt without detriment. One of said flanges of each plate *a* has formed therein a circular perforation *b*, and the other flange of each plate has formed therein an L-shaped lantern lock-slot *b'*. This construction of the
55 plates *a* affords bracket-frames for the belt-clamps, which are completed by the insertion therein of a removable locking-dog *c* for each bracket-frame. As shown in Fig. 3, said lock-
60 ing dogs *c* are each formed from a metal plate cut into shape and bent to produce a depending toe *c'*, and at opposite points on the edges of this plate aligning pintles *c²* are project-
65 ed, which are introduced within the perforations *b* and lantern lock-slots *b'*, the sharp-
65 ened edges of the toes *c'* being adapted to catch fast to the belt B, when the ends of the dogs are drawn toward each other and release their bite on the belt when oppositely moved.

The rack-bar C is given sufficient length
70 for efficient service, and in its edges are cut at evenly-spaced intervals teeth *e*. The teeth *e* on the rack-bar C are sloped in the same direction on each of its edges, the series of
75 teeth on one edge of said bar being staggered with regard to the teeth on the other edge, or, in other words, are located with their locking-
80 shoulders between the shoulders of the teeth on the opposite edge. A bifurcated lever D is placed on the rack-bar C, having its limbs
85 *f*, of equal length, loosely engaged with the sides of the bar and projected above and below the toothed edges of the rack-bar, and in the spaces thus afforded between the limbs *f*
85 two latch-bars *g* are pivoted, having their
85 toes *g'* so projected with regard to the ratchet-teeth *e* that said toes will engage the teeth they are opposite, and by the rocking move-
90 ment of the lever D successively push against the rack-bar in the same direction. On the
90 end of the rack-bar C toward which the ratchet-teeth *e* are sloped a guide-block *h* is secured and projects laterally, the projecting
95 portion having in it a perforation *h'*, in which is adapted to slide a draft-bar *i*, which has
95 formed at one end a hook *i'*, whereby it may be connected with the perforated end *d* of one of the locking-dogs *c*, as shown in Fig. 1,
100 and the other end *i²* of the said draft-bar is pivoted to the lever D, as represented in Fig. 100

2. The opposite end *k* of the rack-bar C is perforated to receive the hooked end of a link or short connecting-bar *m*, which is loosely secured to the adjacent perforated end *d* of the locking-dog *c* of the other clamp A in a manner which will permit quick removal. Upon the limbs *f* of the lever D an abutment-block *n* is pivotally secured, through which the rack-bar C loosely slides, and said abutment-block, having contact with the opposing edges *g*² of the latch-bars *g*, when the lever D is vibrated enforces an engagement of the toes *g*¹ of said latch-bars with the teeth *e* of the rack-bar C.

15 To connect the device for use, the locking-dogs *c* are removed from the bracket-frames of the clamps A, and said frames are made to embrace the belt B or a band of an elevator between its buckets, and the locking-dogs, being then replaced, assume the positions shown in Fig. 1. The rack-bar C is now hooked fast at one end to one of the dogs *c*, and the draft-bar *i* is similarly secured to the other locking-dog. When the parts are connected with the belt B in the manner shown and described, the lever D should be slowly vibrated, which will cause the latch-bars *g* to alternately push against the teeth *e* of the rack-bar C and pull the locking-dogs *c* toward each other, and as they bite upon the flexible band or belt B its engaged portions are similarly moved, which operation can be maintained until the belt has been rendered sufficiently taut upon its pulley-supports F, when the surplus material may be removed and the belt ends joined, after which the tightening device may be quickly removed.

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

1. A belt-tightener consisting of a pair of locking-clamps, a double-toothed rack-bar connected to one of the clamps, a bifurcated lever spanning the rack-bar and connected to the other clamp, and latch-bars pivoted on the lever and adapted to engage the teeth of the rack-bar, substantially as set forth.

2. In a belt-tightener, the combination, with a pair of clamps, each comprising a bracket-frame and a removable locking-dog, of a rack-bar having teeth on both edges and connected at one end to one of the locking-dogs, a bifurcated lever spanning the rack-bar and connected to the other locking-dog, an abutment-block pivoted on the forks of the lever, and latch-bars pivoted on the lever above and below the abutment-block and adapted to alternately engage the teeth of the rack-bar, substantially as set forth.

3. In a belt-tightener, a belt-clamp consisting of a rectangular metal plate having vertical flanges at its ends, one of said flanges having a circular perforation therein and the other an L-shaped slot, and a locking-dog journaled in said perforation and slot and formed with an inwardly-extending toe, substantially as set forth.

WILLIAM KING.

Witnesses:

E. J. BAER,
CHAS. E. DAY.