

(No Model.)

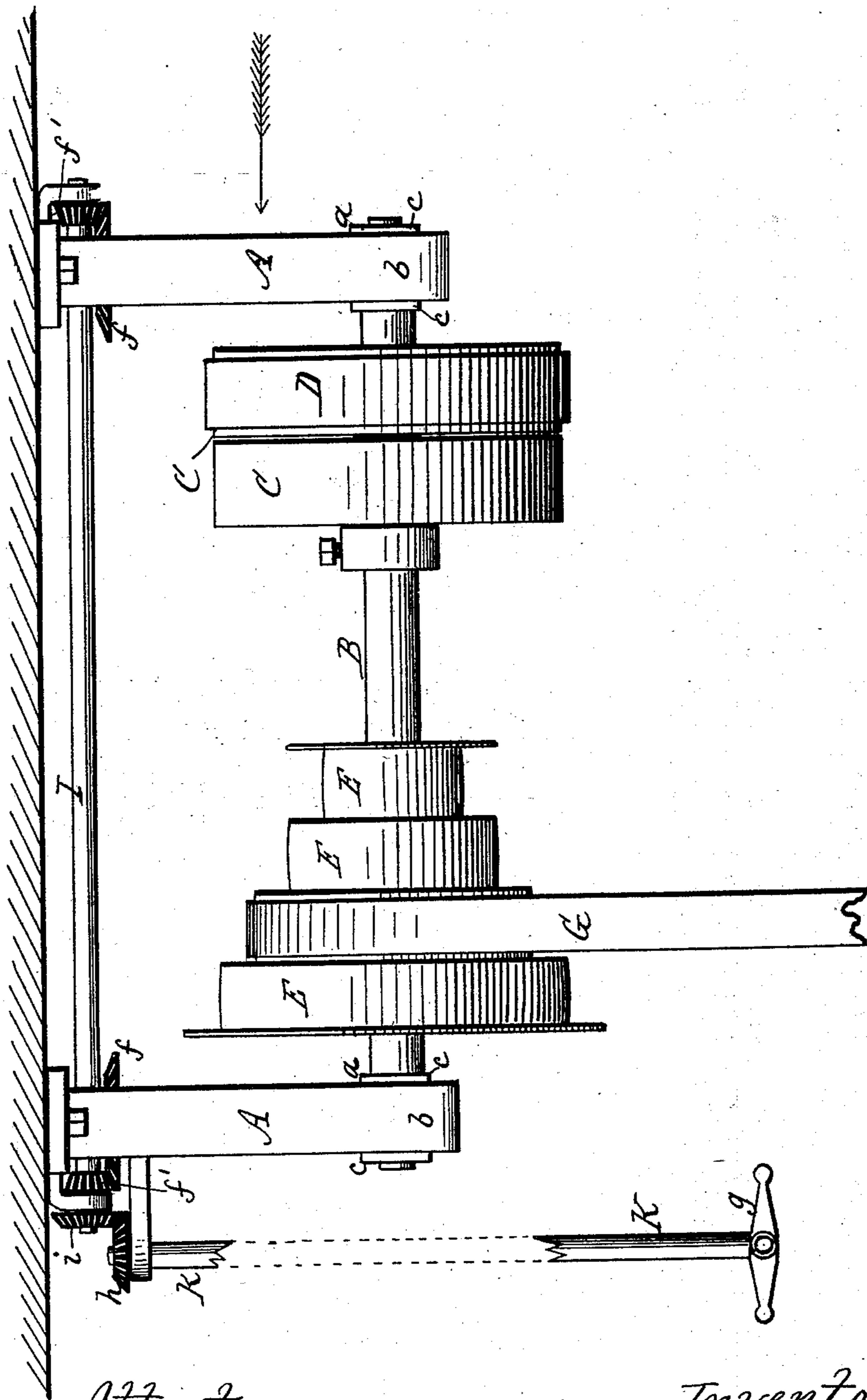
2 Sheets—Sheet 1.

F. R. HYNES.
BELT TIGHTENER.

No. 410,321.

Patented Sept. 3, 1889.

Fig. 1.



Attest.
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Atty.

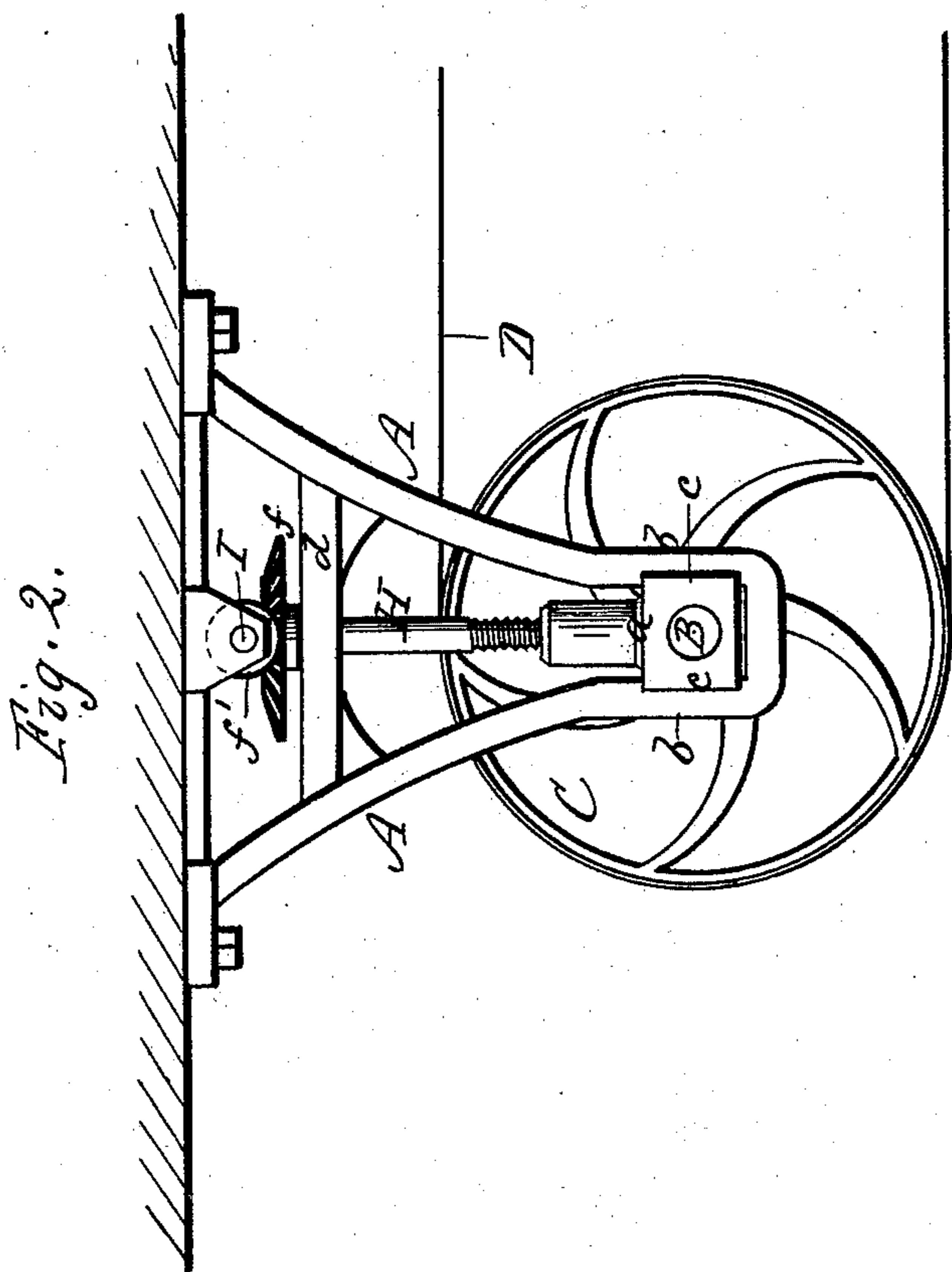
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UNITED STATES PATENT OFFICE.

FRANK R. HYNES, OF ROCHESTER, NEW YORK.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 410,321, dated September 3, 1889.

Application filed March 30, 1889. Serial No. 305,485. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. HYNES, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Belt-Tighteners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

The object of my invention is to provide means whereby a counter-shaft having pulleys thereon may be moved bodily to tighten or loosen the delivery-belt that extends from the pulleys to the machinery.

To this end my invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of the apparatus. Fig. 2 is an end elevation of the same, looking in the direction indicated by the arrows at the right in Fig. 1.

A A indicate two or more hangers suspended from a ceiling or other support.

B is the counter-shaft, the ends of which rest in boxes *a a*, which have free movement up and down in ways *b b* in the lower ends of the hangers. The boxes have flanges *c c*, which overlap the ways *b b* and keep the boxes in place.

C C are fast and loose pulleys on which runs a driving-belt D, that extends to a pulley on the line-shaft by which the power is communicated, and E E are a set of cone-pulleys, on which runs the delivery-belt G, that drives the machinery. Any desired number of the pulleys may be used.

H H are two vertical screw-shafts at opposite ends, screwing at their lower ends into the boxes *a a*, and sustained at their upper ends by cross-bars *d d*, or other suitable bearings of the hangers.

I is a longitudinal shaft above the hangers, and *f f* and *f' f'* are bevel-gears on said screw-shafts and longitudinal shaft, engaging together, as shown.

K is a hand-shaft provided with a hand-wheel *g*, and *h i* are two miter-gears, respect-

ively on the hand-shaft and longitudinal shaft, engaging together.

The operation is as follows: By turning the hand-shaft K the longitudinal shaft will be turned by reason of the engagement of the gears *h i*, and the screw-shafts H H will be turned by reason of the engagement of the gears *f f* and *f' f'*. Consequently the boxes *a a*, and with them the counter-shaft B, will be raised or lowered bodily and in accordance with the way in which the hand-shaft is turned. The shaft B, and with it the pulleys C C and E E, will be moved bodily up or down, and the tightening or the loosening action will be produced on the delivery-belt G, that extends to the machinery. The great advantage consists in locating the pulleys all on a counter-shaft and giving said shaft a movement bodily up and down, whereby the delivery-belt is tightened and released, while the driving-belt is under constant motion and is not affected by the adjustment.

The apparatus may be located vertically, as shown, or horizontally, or both, or in any desired position.

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

In a belt-tightener, the combination of the hangers A A, provided with ways *b b*, the boxes *a a*, resting loosely in the hangers, the counter-shaft B, resting in said boxes and provided with pulleys, the screw-shafts H H, screwing into the boxes, the longitudinal shaft I, located above the hangers, the gears *f f* and *f' f'*, connecting the longitudinal shaft and screw-shafts, the hand-shaft K, and the gears *h i*, connecting the hand-shaft and longitudinal shaft, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK R. HYNES.

Witnesses:

R. F. OSGOOD,
P. A. COSTICH.