

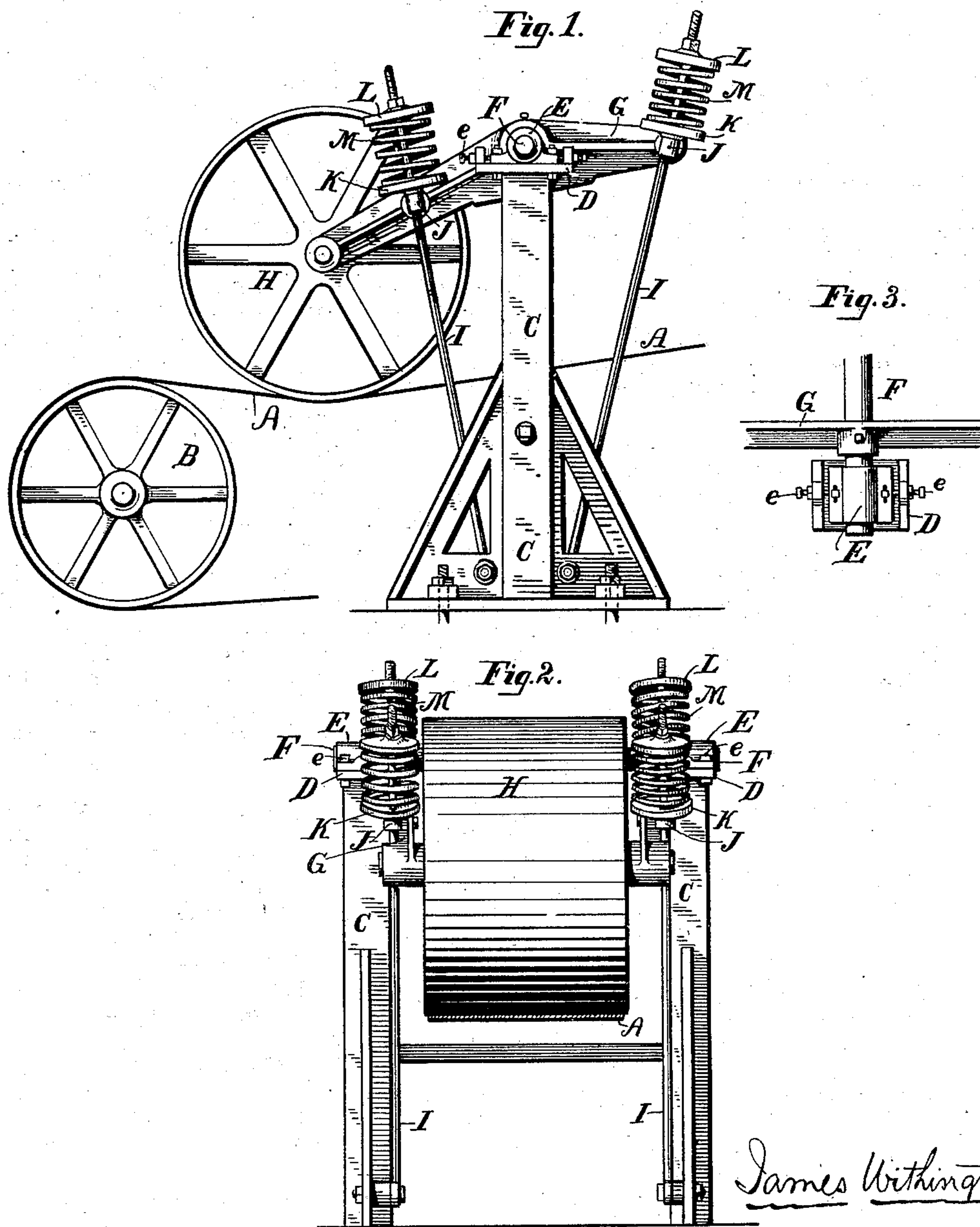
(No Model.)

J. WITHINGTON.

BELT TIGHTENER.

No. 280,276.

Patented June 26, 1883.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES WITHINGTON, OF CHAMBERSBURG, ASSIGNOR TO THE TRENTON IRON COMPANY, OF TRENTON, NEW JERSEY.

## BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 280,276, dated June 26, 1883.

Application filed March 16, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WITHINGTON, of Chambersburg, New Jersey, have invented an Improvement in Belt-Tighteners, of which the following is a specification.

My invention relates to a class of devices employed to take up slack in belts and to prevent their slipping and insure perfect grip upon the pulleys which they are employed to drive. In the accompanying drawings I have represented a preferred form of apparatus conveniently embodying my improvements.

In the drawings, Figure 1 is a side elevation of the entire apparatus, and Fig. 2 an end elevation of the same. Fig. 3 is a top plan view of one of the journal-boxes for the fulcrum-shaft of the tightener-lever.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a belt of any ordinary material, and in the present instance supposed to be employed to drive the driven pulley B.

C are fixed standards suitably erected one upon each side of the belt, and of such construction, material, and proportions as convenience of manufacture may dictate. Upon their upper extremities they are each provided with a head-plate, D, upon each of which one of the journal-boxes E of the fulcrum-shaft of the tightener-lever is placed, and adapted to be adjusted by means of the adjusting-screws e.

F is the fulcrum-shaft, and G the tightener-lever, the latter consisting of oscillatory arms constituting a frame of any fit construction, provided with a fulcrum-shaft, and being prolonged on one side of said shaft to an extent sufficient to fit it to carry the tightener-roll or pulley H, which latter is preferably made of the full width of the belt. This tightener-roll runs freely in journals at one extremity of the tightener-lever, and is caused to rotate rapidly by the travel of the belt. This roll is the device which, by its pressure, takes up the slack in and keeps the belt taut, and the other devices connected with it simply co-operate to such result.

I are vibratory rods or arms fixedly pivoted at their lower extremities, preferably, to the

base of the fixed standards. Two of these vibratory rods are applied to each side of the tightener-lever, preferably in the manner represented in the drawings, and pass freely through swiveled keepers J, connected with the sides of the tightener-lever, above which keepers they are provided with disk-cups K, which slide freely upon them and rest upon the swiveled keepers, and are also provided with caps L, threaded upon them, so as to be adjustable in position. Between the disk-cups and the caps are placed springs M, of any suitable character, but preferably ordinary spiral car-springs, although rubber cushions would answer the purpose.

Such being a description of a preferred form of apparatus conveniently embodying my improvements, the operation will be easily understood. The entire apparatus being erected in suitable proximity to the driven pulley the belt of which it is desired to tighten, the tightener-roll is allowed to rest on said belt. The screw-caps are then adjusted upon the vibratory rods, so as to occasion a predetermined compression of the springs upon the disk-cups, through the instrumentality of which latter and the swiveled keepers such tension is imparted to the tightener-lever as in effect to cushion it upon either side of its fulcrum, with the result that the tightener-roll is held with an even yet yielding pressure upon the belt.

The device permits of fluctuation of the belt without causing the latter to thump against the tightener-roll, relieves the belt from the sudden shocks to which belts are susceptible, and at the same time allows for fluctuation to a certain extent. The adjustment is such that the motion of the tightener-lever is almost imperceptible.

By the application of the adjusting-screws to the journal-boxes of the fulcrum-shaft the tightener-lever can be set forward or back, or set slightly out of line, as is sometimes desirable.

Having thus described my invention, I claim—

1. In a belt-tightener, the combination of a pivoted oscillatory lever, a pulley or tightener roll connected with said lever, and cushioning

devices upon both sides of the fulcrum of said lever, adapted to bear against and cushion the vibration of said lever.

2. The combination of a vibratory lever  
5 equipped with a rotatable roll, means for supporting the fulcrum of said lever, and vibratory rods connected with said lever and equipped with cushioning devices on both sides of the fulcrum of said lever, adapted to bear  
10 against said lever.

3. The combination of the tightener-lever, fixed standards or kindred supports for the

fulcrum thereof, and means for adjusting said fulcrum with respect to said support.

4. In combination with the tightener-lever, 15 vibratory rods, springs, and means for adjusting the tension of said springs, substantially as set forth.

In testimony whereof I have hereunto signed my name this 10th day of March, A. D. 1883.

JAMES WITHINGTON.

In presence of—

J. BONSALE TAYLOR,

W. C. STRAWBRIDGE.