No. 712,505. Patented Nov. 4, 1902.

J. T. COVO.

TENSION DEVICE FOR DRAWING ROLLS.

(Application filed Nov. 9, 1901.)

(No Model.)

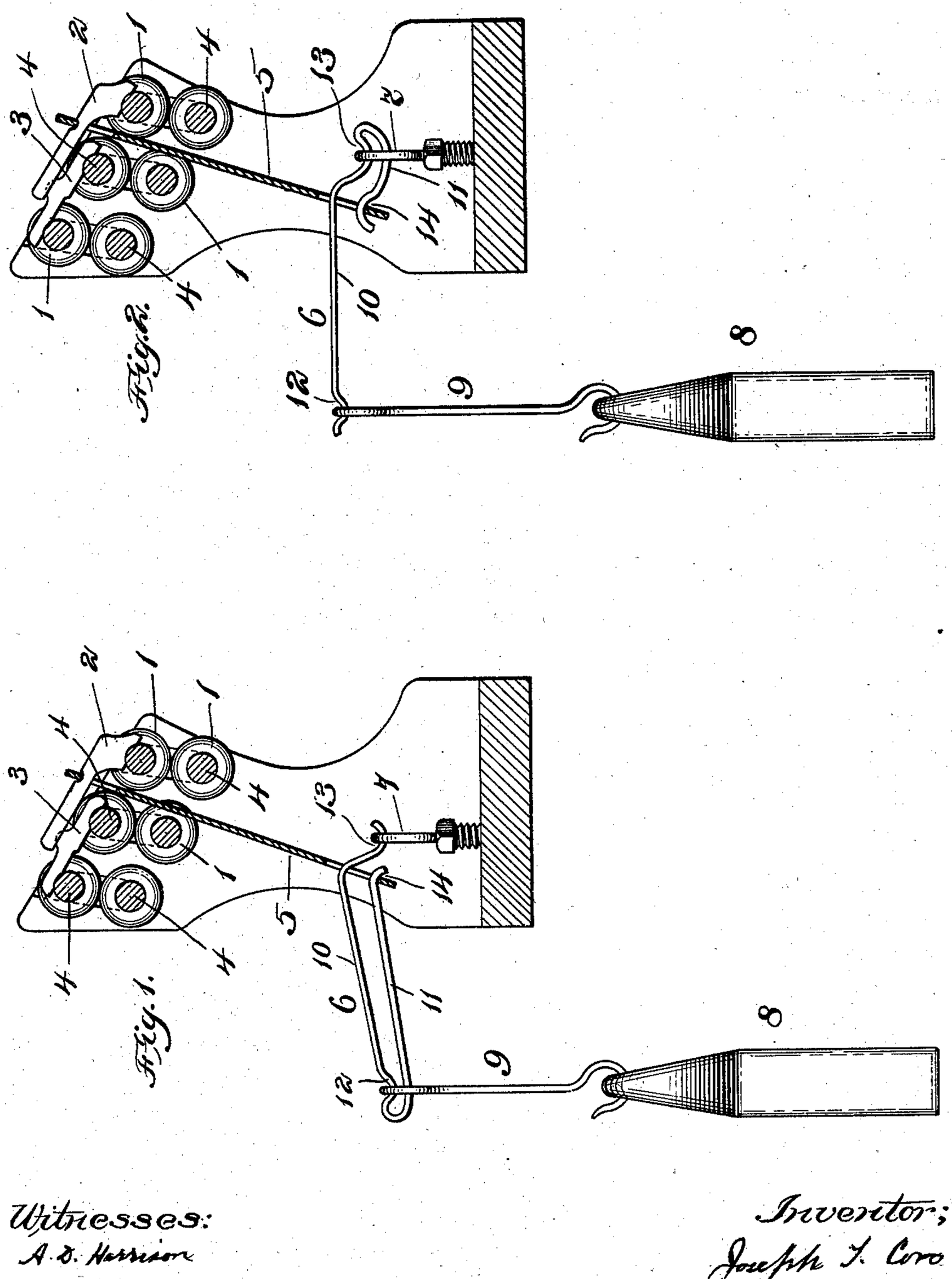

Fig. 1.

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UNITED STATES PATENT OFFICE.

JOSEPH T. COVO, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO TIMOTHY MOONEY, OF FALL RIVER, MASSACHUSETTS.

TENSION DEVICE FOR DRAWING-ROLLS.

SPECIFICATION forming part of Letters Patent No. 712,505, dated November 4, 1902.

Application filed November 9, 1901. Serial No. 81,651. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. COVO, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Tension Devices for Drawing-Rolls, of which the following is a specification.

This invention relates to the drawing-rolls of ring-spinning machines, speeders, mules, &c.; and its object is to maintain a firm and uniform grip of the rolls on the yarn under the varying conditions which exist in the working of the apparatus.

Of the accompanying drawings, Figure 1 represents in vertical transverse section a set of drawing-rolls provided with a tension device embodying my invention. Fig. 2 represents a partial side view showing a modification.

The same reference characters denote the same or similar parts in both views.

1 1 represent three pairs of drawing-rolls mounted in the usual manner, and 2 3 represent a pair of equalizing-levers bearing on the necks 4 4 of the upper rolls and forming together the part which is usually known as the "saddle."

5 is the stirrup, extending from the lever 2 to a lever 6, which latter bears upwardly on a fulcrum-piece 7 and is provided at its outer end with a weight 8, connected with the lever 6 by a suspender 9.

The common practice is to provide a solid or rigid lever between the stirrup, fulcrum, and weight—an expedient which has many practical objections, the principal ones being that the lever exhibits a tendency to bind, and hence to impair the normal effect of the weight, and that the inertia of a weight comes into play when the apparatus is subjected to vibration and produces considerable unevenness in the pressure exerted on the rolls, with consequent variation in the quality of the yarn. Binding is due to friction of the lever-pivots and to the fact that the lever, being rigid, is unable to yield between these pivots. Vibration arises from various causes, among the most pronounced of which are unbalanced driving-pulleys on the spinning or other frames, shaking of the floor, uneven wear of the necks of the drawing-rolls, causing them to raise and lower the saddle-levers, and unevenness in the leather covers of the rolls.

All of the above objections I either overcome or greatly minimize by providing the novel form of lever 6 illustrated in the drawings. In Fig. 1 this lever is made of spring-wire bent or recurved from the weight end of the lever to form upper and lower spring-arms 10 11, the former being notched or recessed toward the latter at 12 13 on its outer and inner ends to receive the weight-suspender 9 and the fulcrum 7, respectively, while the lower arm is notched toward the upper arm at 14 to receive the stirrup 5. By the employment of a lever of this form the sudden jars which with a rigid lever are transmitted to the weight and cause the latter to jump and vary the pressure on the rolls are here absorbed in the spring-lever, with the result that a much more even tension and firm grip of the rolls on the yarn is obtained than heretofore. Since the lever is constructed to yield between its points of connection with stirrup, fulcrum, and weight, the tendency to bind at any of these points, exhibited by a rigid lever, is practically overcome.

Fig. 2 represents a modification, in which the lower spring-arm 11 of the lever 6 extends outwardly from the fulcrum end of the upper arm 10 to its point of connection with the stirrup 5.

Other modifications may be made without departing from the spirit of my invention.

One marked advantage of my invention is that it permits the rolls, saddles, stirrups, and weights of existing apparatus to be employed without change, the only change necessary being the substitution of my novel form of spring-lever for the ordinary rigid lever.

I claim—

1. In a tension device for drawing-rolls, the combination with the rolls, saddle, stirrup, fulcrum and weight, of a lever interposed between said stirrup, fulcrum, and weight, the same being constructed to yield between certain of its points of connection with said elements, said points being pivotal bearings.

2. In a tension device for drawing-rolls, the combination with the rolls, saddle, stirrup, fulcrum and weight, of a lever interposed between said stirrup, fulcrum and weight and

constructed to yield between its three points of connection therewith, said points being pivotal bearings.

3. In a tension device for drawing-rolls, the combination with the rolls, saddle, stirrup, fulcrum and weight, of a lever interposed between said stirrup, fulcrum, and weight, and constructed with two spring-arms, one of which extends between the points of connection of the fulcrum and weight, and the other of which extends from the first said arm to the point of connection of the stirrup.

4. A lever for drawing-roll tension apparatus, the same being constructed of spring-wire recurved or bent to form two spring-arms one of which is notched toward the other at its opposite ends and the other of which is notched toward the first between the notched portions of the first.

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

JOSEPH T. COVO.

Witnesses:
JOHN E. MELLO,
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