(No Model.)

# T. WALKER.

## TAKE-UP DEVICE FOR SPINDLE BANDS.

No. 449,810. Patented Apr. 7, 1891.

Fig. 1.

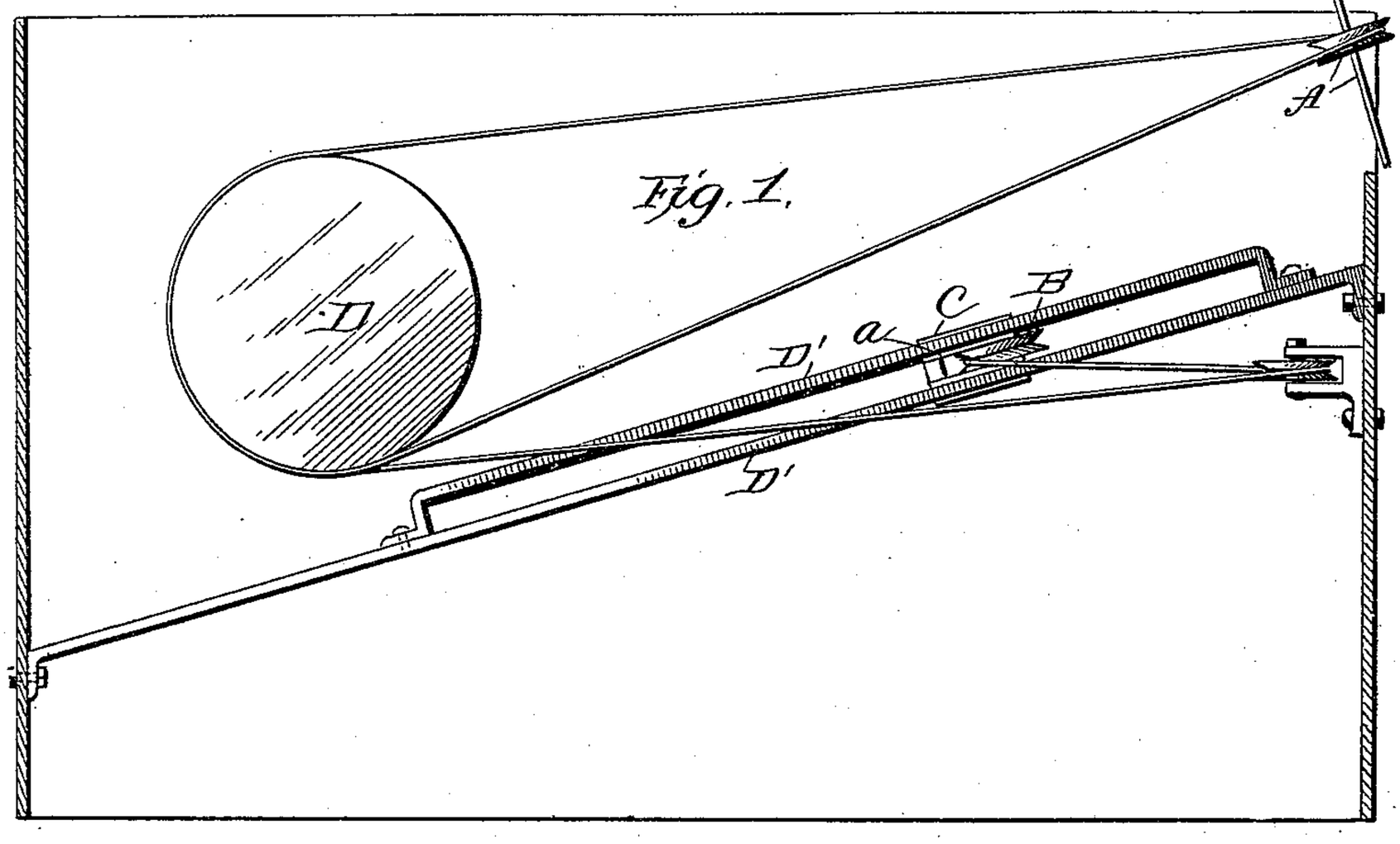



Fig. 2.

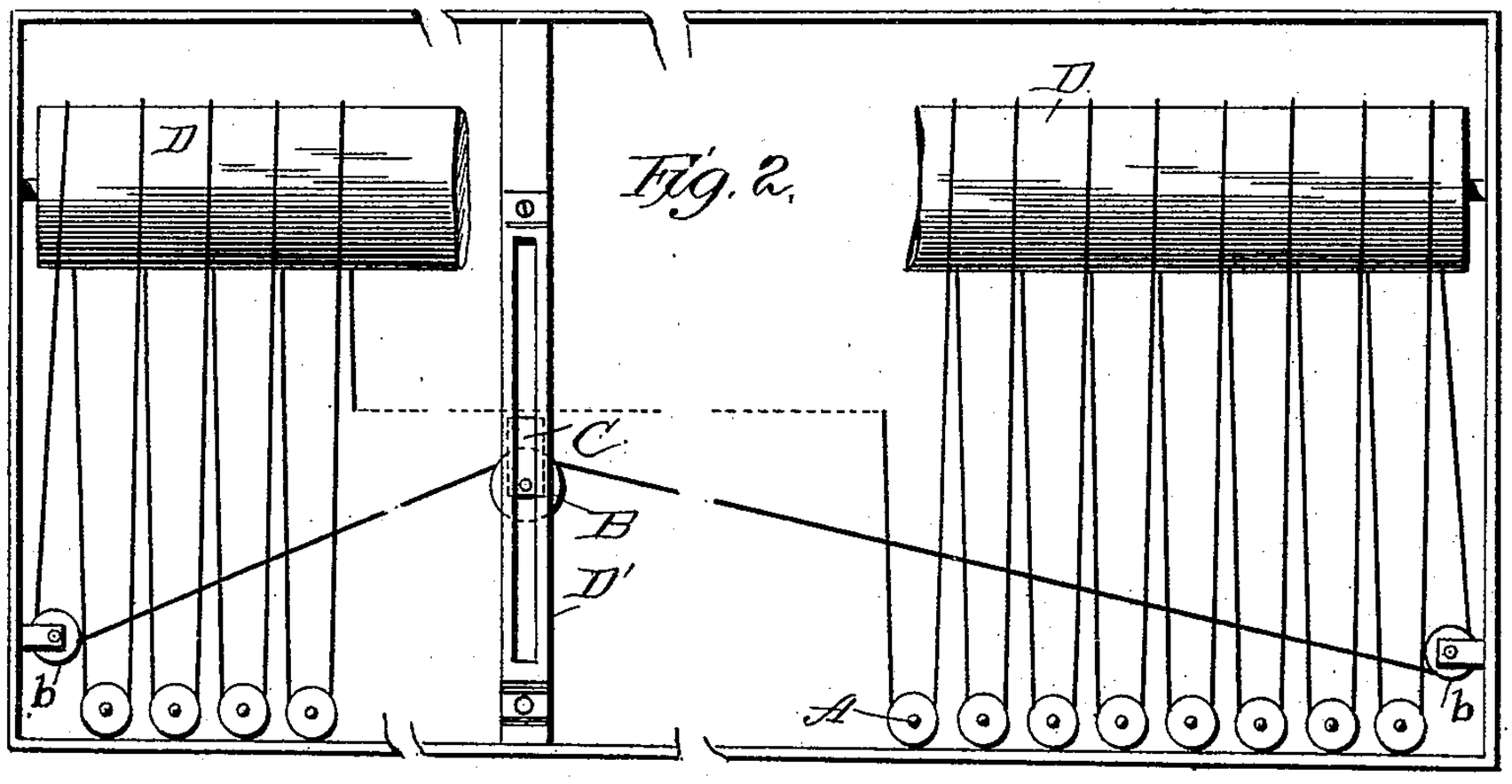
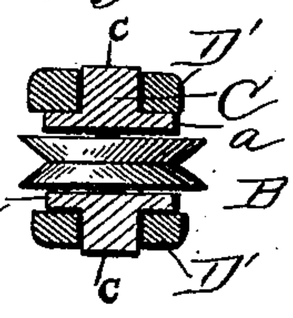



Fig. 3.




Attest
Walter Broadson
James M. Shea

Inventor
Thomas Walker
by Ellis Spear
Atty.

# UNITED STATES PATENT OFFICE.

THOMAS WALKER, OF WARREN, MAINE.

## TAKE-UP DEVICE FOR SPINDLE-BANDS.

SPECIFICATION forming part of Letters Patent No. 449,810, dated April 7, 1891.

Application filed March 2, 1889. Serial No. 301,784. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS WALKER, of Warren, in the county of Knox and State of Maine, have invented a new and useful Improvement in Take-Up Devices for Spindle-Bands; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved automatic take-up or tension-regulator for the driving-bands of spindles and spinning frames or mules, and is designed to reduce the amount of tension, while at the same time it maintains a uniform and sensitive strain upon the driving-band.

The invention consists, essentially, of an idler-pulley for the driving-band supported on an inclined guideway, on which it is adapted to be moved up and down in conformity to the motion of the band.

Heretofore weights have been used to take up the slack and maintain tension on spindle-driving bands—as, for example, in the British Patent No. 8,954 of 1887. In this patent the weight is suspended upon the band by means of a pulley, the weight hanging thereon in vertical position and taking up the slack by moving in vertical line. This take-up is imperfect in its action for the reason that under any circumstances, in connection with the spindles, it exercises too great a pressure and puts too much strain on the band and on the journals of the spindles with a result very well known to those skilled in the art. The amount of pressure necessary to be exerted by the band upon the spindles is so slight that the weight of the band itself is nearly sufficient for the purpose. Take-up devices through which the band passes must be provided with pulleys to prevent undue friction and wear upon the band and the pulley must be steadied by a block moving in suitable guides, and it is necessary also that it should have steadiness as well as sensitiveness of movement in taking up the slack under all circumstances.

I have found that the vertically-suspended weight, such as that above referred to, will not perfectly accomplish the purpose for the reason above stated, and my invention is designed to modify the action of this pulley and weight without limiting its scope, and I accomplish this by taking off a part of the weight from the pulley and introducing the element of friction through the inclined guideway above referred to.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 represents in side elevation the relative arrangement of my improved take-up and spindles with the driving-band. Fig. 2 is a plan view; Fig. 3, a detail view of my improvement.

In the drawings, the spindles are represented at A of ordinary construction, each provided with a grooved pulley for the driving-band, and the driving-band is shown in connection thereon for revolving the said spindles. The band is endless and passes alternately back and forth over a drum D and the spindle-pulley E, as shown, thence around guiding-pulleys *b* at each end of the frame and under pulley B, which has its bearings in a sliding block C, which is cut out at its central portion to allow for the insertion of the pulley. This block is free to slide between parallel bars D′ D′, provided with elongated slots at top and bottom, in which are fitted extensions *c c* of the sliding block C. Shoulders *a a* of the block C form bearings at top and bottom for the block in its travels. The ways D′ D′ for the block are supported in an inclined position, so that the tendency of the block C is constantly downward toward the lower end away from the spindles, and this will cause the pulley *b* to take up the slack incident to the stretching of the band or the removal of a spindle.

The particular form of the block to which the pulley is attached and the particular form of the guides therefor, as shown in the drawings, are not essential to my invention, and it will be obvious that these may be greatly modified by those skilled in the art; but it is essential that the pulley should bear on the band and should move on an inclined way, so that the way itself takes up part of the weight of the pulley and its attachments necessary to guide it on the way or support it thereon, and the action of the diminished weight is also modified by the friction of the parts in contact, whereby the sensitiveness and scope of the take-up are preserved, and the strain is lessened to any desired point.

The angle of inclination may be varied according to the amount of tension necessary to put upon the band, and the inclination must be above the line at which the pulley would stick upon the ways, so that it may be moved freely; but above this angle it may be set according to the amount of pressure required.

The free motion of the pulley and its block upon the inclined way are essential, for the reason that my tension device is a tension of the peculiar kind above described, in which a part of the weight is taken up by the inclined guide, and that part of the weight which remains supported upon the driving-band acts upon that band without being interfered with by any other connection, and in this respect my invention is distinguished from gravity-tensions heretofore referred to, and also from spring-tensions.

My invention does not include any spring-tension device connected with a driving-band by means of a pulley, whether the pulley and block of such spring-tension move upon a guide horizontally or inclined.

I claim as my invention—

A take-up for the driving-band of spindles, consisting of a pulley arranged to bear on the band and an inclined guideway for said pulley, the pulley being adapted to move up and down the inclined way and acting upon the driving-band by gravity, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS WALKER.

Witnesses:

ABEL WALL,

N. B. EASTMAN.