

(No Model.)

J. B. NOBLE & J. B. HENSLEY.
BELT TIGHTENER.

No. 489,323.

Patented Jan. 3, 1893.

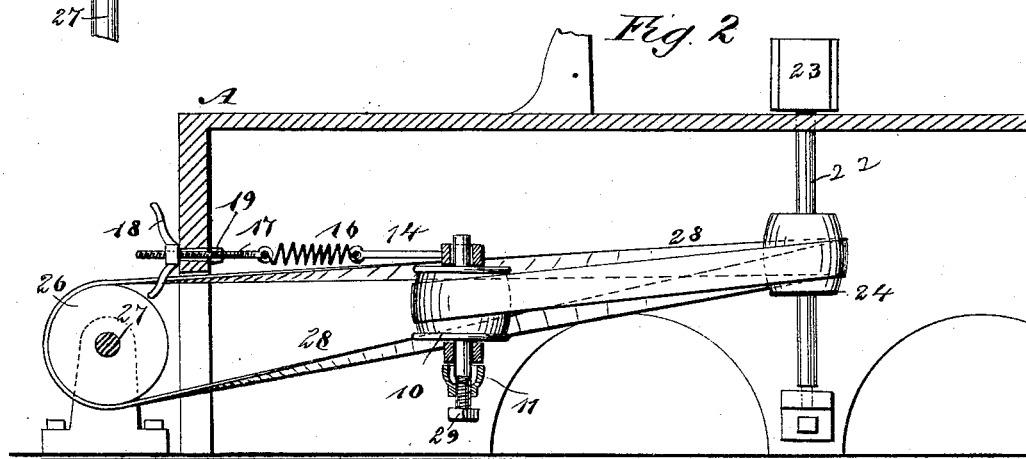
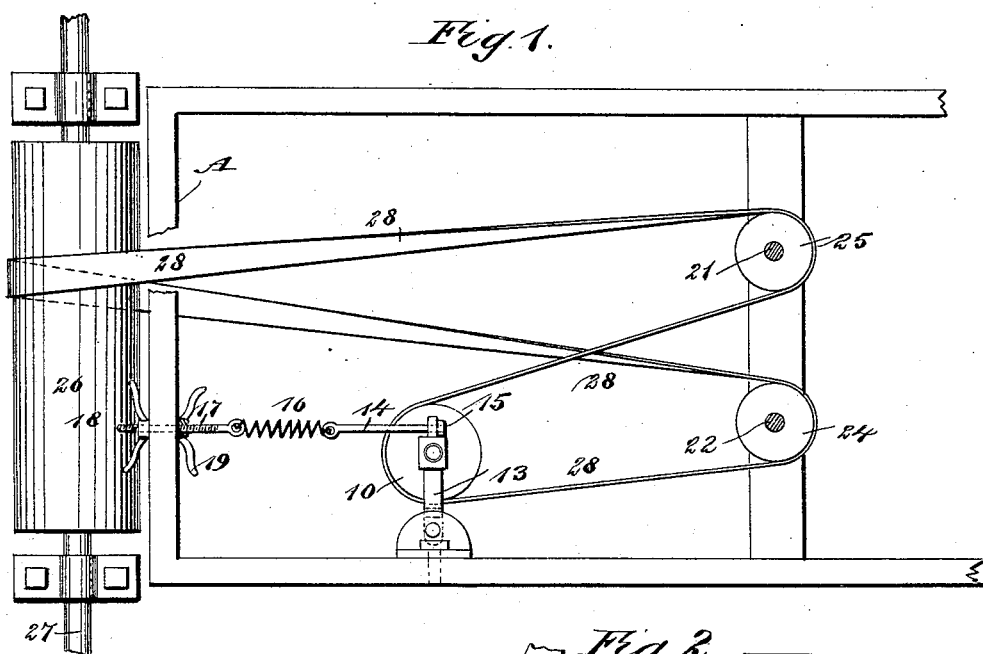
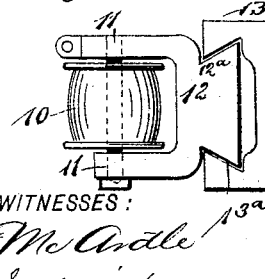


Fig. 4.



WITNESSES:

F. McArdle
C. Sedgewick

Fig. 3.

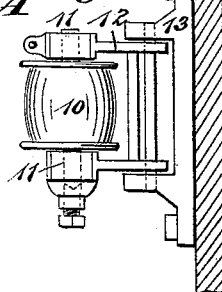
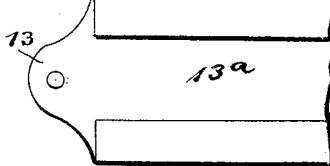


Fig. 5.



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JOHN B. NOBLE, OF TATUM, AND JOSEPH B. HENSLEY, OF BAIRD, TEXAS.

BELT-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 489,323, dated January 3, 1893.

Application filed May 20, 1892. Serial No. 433,671. (No model.)

To all whom it may concern:

Be it known that we, JOHN B. NOBLE, of Tatum, in the county of Rusk, and JOSEPH B. HENSLEY, of Baird, in the county of Callahan, State of Texas, have invented a new and useful Improvement in Belt-Tighteners, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in belt tighteners, especially adapted for use in connection with the running belts of planing, sizing, matching, molding and like machines, and has for its object to provide a tightener capable of being conveniently and expeditiously applied, and readily and effectually manipulated to tighten or to slacken belts; and also to provide a tightener which will economize in the cost of belting, as the shafts carrying both the right and left-hand cutter heads may be connected with the driving pulley by a single belt, and the belts when passing over the tightener will have their surfaces which come in contact with the pulleys upon the cutter head shaft, faced outward, so that any shavings, chips, or foreign material caught by the belts at the cutter heads will be discharged at the tightener.

Another object of the invention is to so construct the belt tightener that the tension upon the belt may be increased or decreased while the machine is in motion and without interfering in the least with the proper operation of the machine.

The tightener is both simple and durable and is also exceedingly economic.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

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

Figure 1 is a plan view of a portion of the frame of a planer, illustrating the application thereto of the invention; Fig. 2 is a vertical section through a portion of the frame of a planer, illustrating the device in side elevation and partly in section; Fig. 3 is a detail view of the tightener pulley, the said pulley

being in side elevation; Fig. 4 is a side elevation of a modified form of the tightener pulley; and Fig. 5 is a view of the base plate in which the pulley shown in Fig. 4 has movement.

The tightening pulley 10, is mounted in boxes 11, the said boxes being located at the ends of an essentially yoke-like frame 12, and this frame is pivotally mounted in a hanger 13. One member of the yoke frame above its box is provided with an opening through which a rod 14, passes, the rod being prevented from leaving the yoke by a nut 15, which is attached at one end. The opposite end of the rod 14, is connected with one extremity of a spring 16, preferably of a spiral form. The opposite extremity of the spring is secured to a second rod 17, exteriorly threaded, and this rod passes through an opening in one end of the body A, of the planer, as shown in Figs. 1 and 2; and the rod 17, carries two lock nuts 18 and 19, one being located in engagement with the inner face of the frame and the other in contact with the outer face of the end piece of the frame, whereby through the manipulation of the said nuts 18 and 19 the yoke 12 carrying the pulley 10 may be permitted to incline in direction of the cutter head shafts, or away from said shafts, or may be maintained in a vertical position, as may be demanded by the condition of the belt the pulley is to carry.

In applying the tightener to the machine, a planer for instance, the yoke is essentially vertical, and the hanger 13 in which the yoke is pivoted is secured in any suitable or approved manner to the inside of the planer frame.

Two vertical shafts 21 and 22, are illustrated, each of which shafts carries a cutter head 23, the right-hand shaft being provided with a pulley 25 and the left-hand one with a pulley 24. Through the medium of these pulleys the shafts are revolved. These shafts are to receive motion from a driving pulley 26, located upon a drive shaft 27. In the drawings this shaft is located at one end of the frame beneath the tension device of the pulley 10.

A single belt 28, is employed to drive both the cutter head shafts. This belt is passed

around the driving pulley 26, thence around the pulleys 24 and 25 of the right and left-hand cutter shafts, and around the tightening pulley 10, as shown in Figs. 1 and 2. It will be observed that those portions of the belt which engage with the pulleys upon the cutter shafts when passing over the tightening pulley are outermost; therefore any material clinging to these faces will drop off as the belt passes around the tightening pulley. The weight of the tightening pulley 10, is supported by an adjusting screw 29, located in the lower box 11, as is best shown in Fig. 2. The pulley, by the manipulation of this screw, may be tightened should it run too loosely; and the pulley is also provided with flanges at its ends, extending some distance beyond its periphery, the object of the flanges being to prevent the belt leaving the pulley.

We desire it to be distinctly understood that the spring 16, may be removed from the tension device if in practice it is found desirable; but the spring cushions the yoke 12 when employed, and when the spring is omitted a single threaded rod, that carrying the lock nuts, is carried through the ends of the machine and through the yoke.

Instead of the yoke frame 12 being pivoted in the hanger the frame may be constructed as shown in Fig. 4, in which it will be observed that at its back it is provided with an extension 12^a, and this extension is preferably made somewhat dove-tail shape in cross section, and the hanger whereby the pulley is attached to the frame of the machine in this instance, is provided with a dove-tail groove 13^a to receive the extension 12^a. The yoke frame so fits in the hanger that one is capable of sliding movement upon the other. This modification in the construction of the pulley frame and hanger may be very advantageously employed in connection with some machines; in other forms of machines the pivoted yoke is preferred.

Among the advantages that may be urged as possessed by the tightening pulley above set forth may be mentioned that when it is employed less belting is required than usual for belting up a machine; the belts are never run too tight, which always results in heating the boxes or breaking the belts; belts of light material, such as cotton, may be made to do as much service as will ordinary leather belts; the belts never run too loose, and are therefore not liable to slip over the pulleys,

and the belt is prevented from becoming heated.

Proper tension can be imparted to a belt through the medium of our attachment without stopping the machine and consequently without the operator losing time, and, as heretofore stated, it is impossible for saw-dust, chips or shavings to adhere to a belt when our tightener is used, as the inner side of the belt, that is, the side next to the driving or driven pulleys, is freed from all trash or foreign matter by centrifugal force as the belt passes around the tightener.

Having thus described our invention, we claim as new and desire to secure by Letters Patent,—

1. The combination with the frame, the vertical shafts 21, 22 having pulleys 25, 24, and the horizontal driving shaft 27, at the opposite end of the frame and the pulley 26, of a belt tightener, comprising a bracket 13 mounted between the drive and driven shafts, a movable yoke 12 carried by the bracket and a tightening pulley parallel with pulleys 24, 25, a screw rod extending through a bearing at the rear of the frame and provided with inner and outer jam nuts, a rod 14 connected to the yoke 12 and a spring 16 connecting the rods 14, 17, and the belt 28 passed around the pulleys 25, 26 and crossed, the loop formed by the crossing of the belt inclosing the pulleys 10 and 24, substantially as set forth.

2. The combination with the bracket 13, of the vertical yoke 12 pivoted at its inner end to the bracket and provided at its outer end with boxes 11, 11, an adjusting screw 29 projecting up into the lower bearing, and the tightening pulley the axis of which at its lower end is stepped on the said screw the threaded rod 17, having jam nuts 18, 19, spring 16 and the rod 14, connecting the spring and the said yoke, substantially as set forth.

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