Sheet 1. 2 Sheets.

T. Pye.

Spinning Jack.

No. 46,386. Patented Feb. 14, 1865.

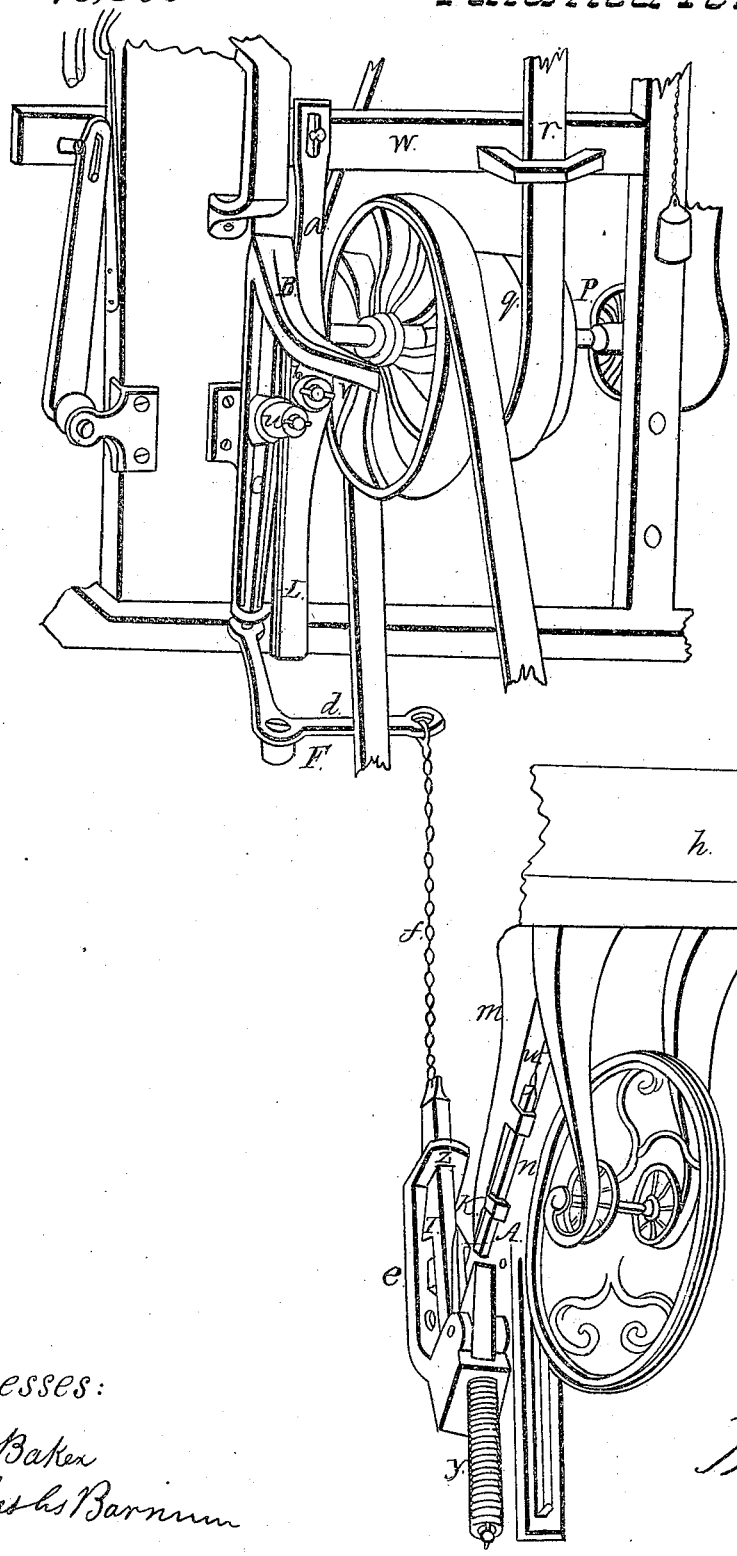


Fig. 1.

Witnesses:

Wm Baker

Chas Barnum

Inventor.

Thos Pye

Sheet 2. 2 Sheets.

T. Pye.

Spinning Jack.

No. 46,386. Patented Feb. 14, 1865.

Fig: 2.

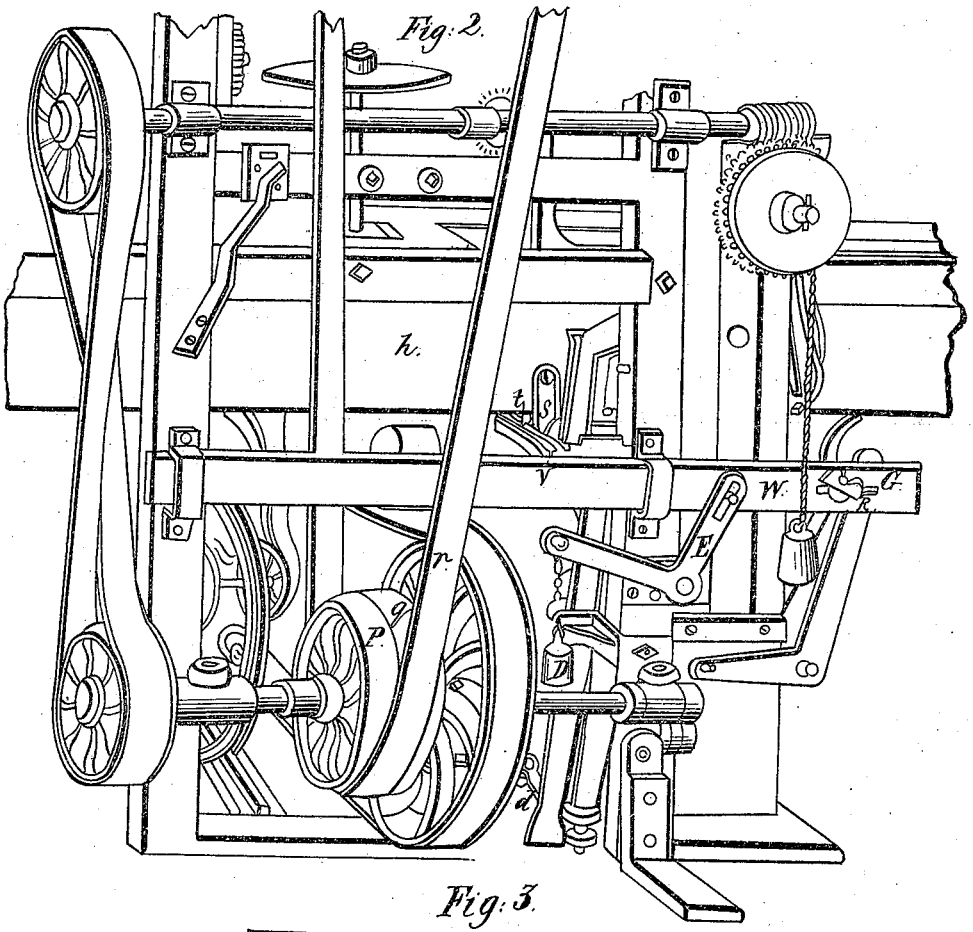
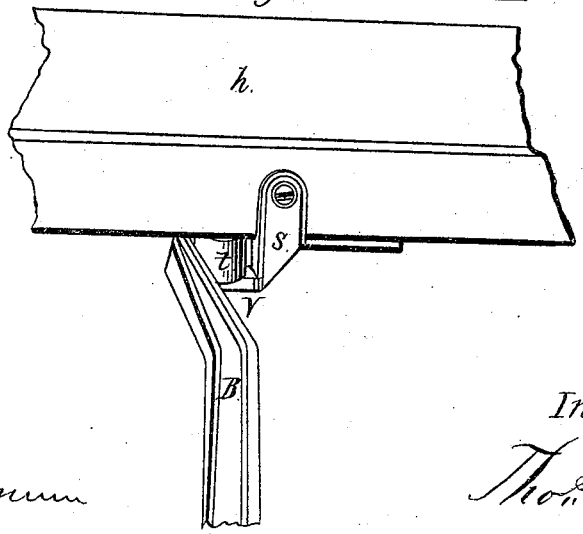


Fig: 3.



Witnesses:

Wm Bakes

Charles Barnum

Inventor.

Thos Pye

UNITED STATES PATENT OFFICE.

THOMAS PYE, OF NEW HARTFORD, NEW YORK.

IMPROVEMENT IN SPINNING MACHINES.

Specification forming part of Letters Patent No. **46,386**, dated February 14, 1865.

To all whom it may concern:

Be it known that I, THOMAS PYE, of the town of New Hartford, in the county of Oneida and State of New York, have invented a new and useful Improvement in the Spinning Machinery of Woolen-Manufactories; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

The object of my invention is to relieve the hand labor of the spinner in running up the jack and tightening the threads to make a hard bobbin, and also to save the belt from the wear of abrasion on the tight pulley when that pulley is stationary.

I have introduced certain agencies which are operated by the ordinary movements of the jack, by which the belt is kept entirely from the tight pulley while adjusting the thread on the bobbins preparatory to winding up, and then partially thrown back to assist in the return of the jack, thus entirely relieving the operation from friction when not needed and so much of it as is useful when required.

Figure 1 of the annexed drawings represents a front view of the machinery to which the upright portion of the improvement is attached, being a section of the frame-work, and portions of the attachments standing in front of the movement of the spinning-jack, the yellow portions, A, B, C, and V being parts of the improvement. The angular lever *d* and the bolt-stock *e*, connected by the chain *f*, are also parts of the improvement, and so are also the vertical bolt-stock *m* and the slide-bolt O. This bolt-stock is fastened at the upper end by a suitable flange to the under side of the breast *h* of the spinning-jack. The slide-bolt *n* in the movement of the jack operates on the point O of the lifter A O, as will be described. P is the loose, and *q* the tight, pulley and *r* the belt moving them.

Fig. 2 is a rear view of the same section of machinery shown in Fig. 1, and shows a section, *h*, of the spinning-jack as it approaches upon the opposite side on coming up. Some parts of the connecting machinery are here shown that are left off in Fig. 1.

Corresponding parts may be identified, as the same letters refer to like parts in all the figures.

Fig. 3 is a separate section of the breast *h* of the spinning-jack. It is shown here with the metal frame *s* and the sheave *t* attached on the under side to operate the lever B, Figs. 1 and 3, by striking its oblique surface V as the jack is run up, as herein after described. Many parts of the spinning machinery not necessary to show the action of the improvement are left off in the drawings. The belt-bar W is not new. It is used to change the belt *r* from the loose to the tight pulley and back again to the loose one, and its movements are modified through the immediate operation of the lever *a*.

The position of the parts as shown in the drawings, Fig. 1, is that existing when the spinning-jack has been drawn out, the threads twisted, and the jack commences to return to wind up the twisted yarn. The belt *r* is mainly on the loose pulley P, but sufficiently on the tight pulley to assist in running up the jack. As the jack on being run up approaches the bobbins a little sheave or friction-roller, *t*, Fig. 3, attached to the lower edge of the frame of the jack, strikes the oblique surface V of the crooked lever B C, Fig. 1, (this conjunction is seen on a diminished scale at *s t* V, Fig. 2,) throwing the upper end of this lever, as seen in the drawings, to the right, and consequently the lower end to the left, removing the latter from its contact with the lower end of the lever *a* at L, where it had prevented the movement of this lever, and through it had also held the belt-bar W stationary; but now, this obstruction being removed, the weight D, Fig. 2, operating on the angular lever E in the rear, moves the belt-bar W and throws off the slight hold of the belt on the tight pulley, and, by means of the catch T on the slide-bolt X, hereinafter described, keeps it off while adjusting the thread on the bobbins, saving the abrasion of the belt on this pulley while the pulley is stationary. When the twist is completed, the usual movement again returns the belt to the tight pulley, and the jack is again run out. Another consequence of the sheave *t* striking the oblique arm V in running up the jack, as here stated, and throwing the lower end of the lever B C to the left, as described, is that the angular lever *d*, turning on its center F, draws upon the sliding bolt X, actuating the spiral spring Y on its opposite extremity and, carrying the catch T through the guard Z, it catches on the oppo-

site side of this guard and holds it there; consequently, the upright lever C, which is in contact with the lever *a* at L, is not permitted by the action of the spiral spring Y to move the belt-bar W through its action on the lever *a*, as it would do if the bolt X were not held by the catch T, as aforesaid. While the parts are thus held the jack is again run out, as before mentioned. By the usual operation the threads are twisted and the usual movement takes place to change back the belt to the loose pulley before starting the return movement of the jack. At this juncture the ordinary manipulations of the spinner in dropping the guide-wire to adjust the threads on the bobbins for winding up drops the slide-bolt *n* (by means of a cord, *w*, which connects this bolt with the guide-wire) a little below the point O of the lifter A O, and the same peculiar movement to adjust the threads on the bobbins causes the slide-bolt *n* to strike the point O of the aforesaid lifter, which, suddenly lifting the slide-bolt X, disengages the catch T, when the action of the spiral spring Y, which incloses the outer end of the bolt X, brings back this bolt and the angular lever *d* to the positions shown in the drawings, and the action of the lever C in this movement on the lever *a* at the point of contact of these levers at L operates the belt-bar W, returning the belt *r* partially to the tight pulley *q*, to assist the hand, as before stated, in running up the jack and making a tight bobbin. The distance on the tight pulley to which the belt is to be thus moved is regulated to suit the operator by an arrangement shown at G, Fig. 2. There is a slot, G, in the sliding bar, with a bolt protruding and acting against a stationary pin in the rear. The set-screw R fixes this bolt in reference to the pin at such a point as to allow the belt to be moved just as far as may be desired. As the jack is again run up, the sheave *t* again strikes the oblique arm V and the same movement takes place to draw up the bolt X and hold it by the catch T, as before, until the jack is again drawn out and disengages it as before. Thus by the use of my improvement the belt is on the tight pulley to assist in running up the jack and making a tight bobbin, but is kept from the tight pulley altogether while previously adjusting the threads on the bobbins, and these advantages are gained without requiring any change in the manipulations of the spinner.

I claim as my invention and desire to secure by Letters Patent—

The improvement in the operations of the spinning-jack in woolen-manufactories, as I have described it, consisting of the levers *a*, *c*, and *d*, the slide-bolts *n* and X, and the lifter A O, Fig. 1, the weight and lever D E, Fig. 2, and the sheave *t*, Fig. 3, with their connections, adjustment, and adaptation, as described, and for the purposes described, the whole being arranged, combined, and operating substantially in the manner herein set forth.

THOS. PYE.

Witnesses:
WM. BAKER,
CHARLES BARNUM.