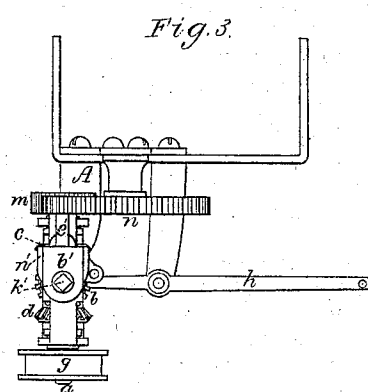
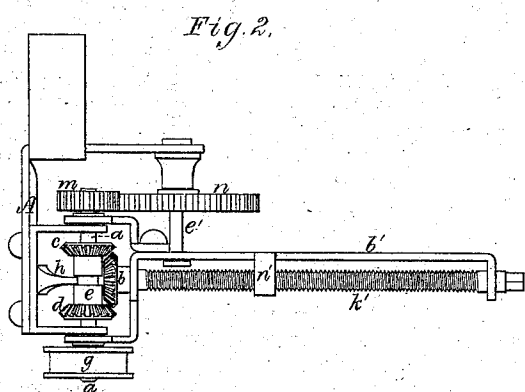
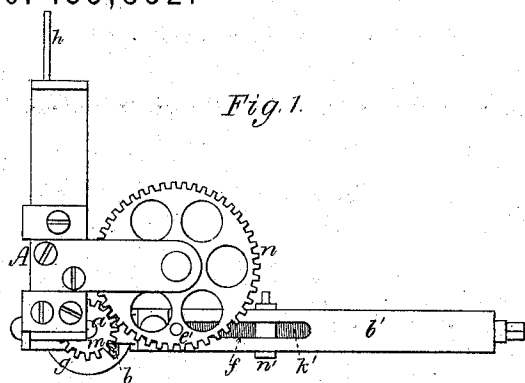


J. SHAW.
Winding-Machines for Spinning-Jacks.
 No. 135,852. Patented Feb. 11, 1873.



Witnesses.
S. W. Piper.
L. N. Hölzer.

James Shaw.
by his attorney.
R. H. Eddy

UNITED STATES PATENT OFFICE.

JAMES SHAW, OF BALLARD VALE, MASSACHUSETTS.

IMPROVEMENT IN WINDING MECHANISMS FOR SPINNING-JACKS.

Specification forming part of Letters Patent No. 135,852, dated February 11, 1873.

To all whom it may concern:

Be it known that I, JAMES SHAW, of Ballard Vale, of the county of Essex and State of Massachusetts, have invented an improvement in mechanism for regulating on a spinning-jack the taking up of the slack, and also the winding of the yarn; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view; Fig. 2, a front elevation; and Fig. 3, an end view of my said improved mechanism, and the parts with which it is immediately connected.

In the said drawing, *b'* denotes what is termed the radial arm, it being pivoted upon a vertical shaft, *a*, supported by and within a bracket, *A*, to be fixed to and extended from the carriage of the jack. The said radial arm carries a long rotary screw, *k'*, arranged as shown, and screwed into and through a slider or nut, *n'*, so applied to the radial arm as to be capable of sliding lengthwise thereon. To this nut, when in use, a chain is to be attached, such chain being extended from a drum. Furthermore, there is upon the inner end of the screw *k'* a bevel-gear, *b*, arranged between two other bevel-gears, *c d*, fixed on a tubular shaft or sleeve, *e*, which slides freely lengthwise on the pivotal shaft *a*, and is connected with it by a spline or feather, or its equivalent, so as to revolve with the shaft. On the upper end of such shaft is a pinion, *m*, which engages with a gear, *n*, pivoted to the bracket, and provided with a stud, *e'*, to extend from it and enter a long slot, *f*, made in the radial arm. A pulley-wheel, *g*, is fixed on the lower end of the shaft *a*, and the sleeve *e* at its middle is grooved transversely to receive the end of the short arm of a lever, *h*, pivoted to the bracket, and arranged as shown. By means of such lever the sleeve may be moved on the shaft *a*, so as to bring either of the bevel-gears *cd* into engagement with the gear *b* of the screw.

The jack-carriage, as is well known, has two "followers," one being for the tension or taking up of the slack of the yarn, and the other

being for guiding the yarn being wound upon the bobbins. The longer arm of the lever *h* is to be connected with the first of these followers by a connection-rod pivoted to the said arm and to a short arm projected from the follower-shaft. When the jack-carriage is nearly in, should the yarn be too slack, this follower will rise, whereby the lever will be moved so as to move the sleeve and cause its lower bevel-gear to be thrown into engagement with the gear of the screw, whereby the screw will be revolved and the nut *n'* moved in one direction. The said chain, which is attached to the nut or slider *n'*, and the drum before mentioned, on which said chain winds, constitute well-known parts of a jack or its mechanism for regulating the winding of the yarn upon the bobbins. Should the yarn not be slack enough, the lever *h* will be moved so as to bring the upper gear of the sleeve into engagement with the gear of the screw, thereby producing or causing to be produced reverse movements of the nut *n'*.

A line wound one or more times around the pulley-wheel of the pivotal shaft *a*, and fixed at its opposite ends to standards or posts erected on the floor, serves, while the jack-carriage is in movement, to revolve the said pulley, and thereby revolve the said shaft.

The movement of the nut *n'*, either toward or away from the gear of the screw, either lets out or takes up the chain connected with the said carriage, and thereby varies the winding of the yarn on the bobbins.

I claim as my invention—

The combination of the lever *h*, the sleeve *e*, the three bevel-gears *b c d*, the pivotal shaft *a*, the pulley *g*, the gears *m n*, and stud *e'*, arranged and combined with the bracket *A*, the slotted radial arm *b'*, and operative screw *k'* of the nut *n'*, substantially as specified, the said lever to be connected with the follower so as to be operated by it, as described.

JAMES SHAW.

Witnesses:

R. H. EDDY,
S. N. PIPER.