(No Model.)

E. THOMAS.

SPINNING MACHINE.

No. 318,522. Patented May 26, 1885.

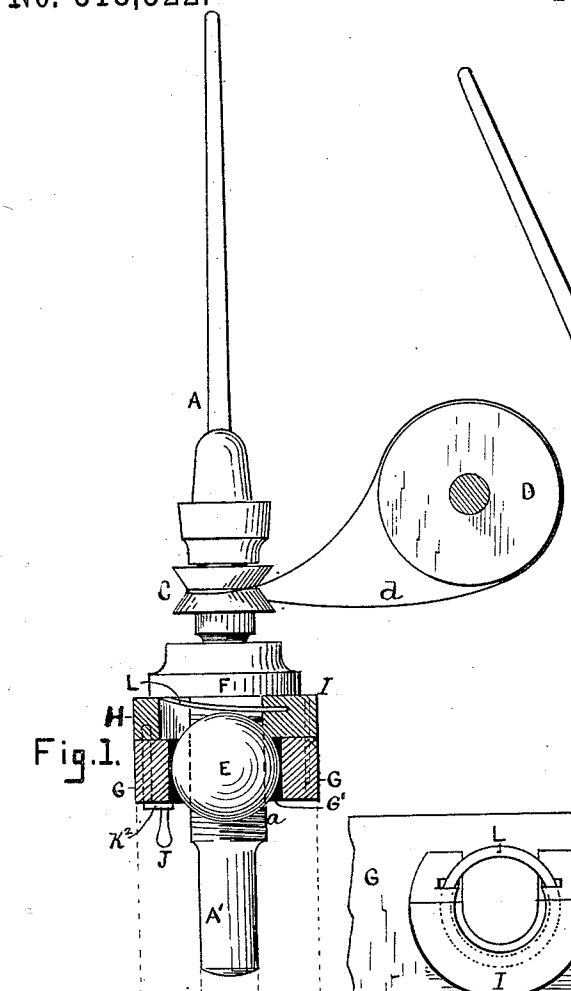


Fig. 1.

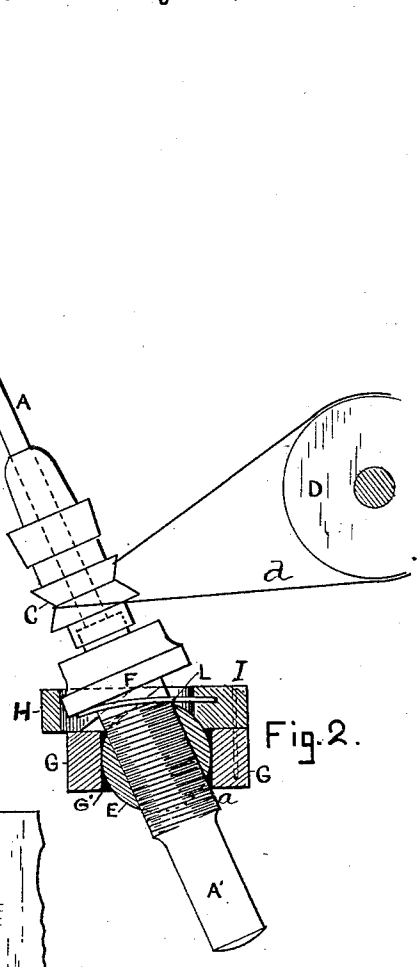


Fig. 2.

Fig. 3.

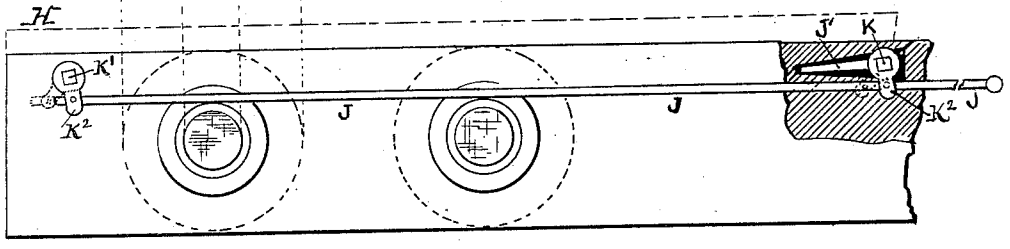


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

ELEAZER THOMAS, OF PAWTUCKET, RHODE ISLAND.

SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 318,522, dated May 26, 1885.

Application filed November 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER THOMAS, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Spinning-Machines, of which the following is a specification, reference being had to the drawings hereto annexed and forming part hereof.

The object of my invention is to provide improved means whereby the operation of doffing is facilitated by tipping the spindle out of its vertical operative position, and for automatically returning it to said vertical position; and to these ends my invention consists in the construction, arrangement, and combination of parts, which I shall now proceed to fully describe, and the specific points of novelty of which I shall set forth in the appended claims.

In the drawings Figure 1 is a vertical section from front to rear through the bolster-rail, open ring, and movable face-plate, the spindle and its bolster, pulley, and ball being shown in elevation in its normal vertical operative position. Fig. 2 is a similar view, the spindle being tipped, the ball being shown in section and the open ring and movable face-plate having beveled or inclined contact-faces; Fig. 3, a plan view of part of the bolster-rail, showing one of the open rings, the movable face-plate being removed; and Fig. 4 is a plan view of the under side of the bolster-rail, part of the same being broken away to show the crank-arm J′, the movable face-plate being shown in dotted lines in its outward position, the shafts K K′, crank-arms K^2, and rod J being also shown in dotted lines in the positions which they assume when the face-plate is thus adjusted.

Like letters of reference mark the same parts in all the figures.

Referring to the drawings by letter, A is the spindle, A′ its bolster, provided at *a* with an exterior screw-thread, and C the ordinary grooved pulley by which the spindle is rotated, through the medium of the cord *d*, from the driving drum or pulley D.

E is a ball, provided in its central perforation with an interior screw-thread to fit the exterior thread on the bolster A′.

G is the bolster-rail, provided with socket G′, to fit and receive the ball E and form a bearing in which said ball may rotate.

H is a face-plate, mounted movably on top of the bolster-rail G.

I is an open ring, rigidly secured on the rear side of the top of the bolster-rail, from which ring projects forward a spring, L, which encircles the bolster of the spindle, and has a bearing against the under side of a circular flange, F, secured to the bolster and resting, when the spindle is in its operative position, on the open ring and movable face-plate.

K K′ are vertical shafts having bearing in the bolster-rail and projecting upward through the same and into the face-plate H. Each of these shafts is provided below the bolster-rail with a crank-arm, K^2, to which is secured pivotally, or with a loose joint, a rod, J. They are also provided at their upper ends with crank-arms J′, working in slots or depressions in the movable face-plate H, only one of these crank-arms J′ being shown.

The operation of my device is as follows, viz: The spindles being in their normal, vertical, or operative position, (see Fig. 1,) and it being desired to doff the bobbins, the rod J is moved longitudinally of the bolster-rail by means of the handle *j*. This causes the shafts K K′ to rotate part of a revolution, and thus throw the crank-arms J′ forward, carrying with them the movable face-plate H, thereby leaving sufficient space in front of the spindle to allow it to be tipped forward by the operator into the position shown in Fig. 2. In this position the bobbins may be more readily doffed or removed than in the vertical position, and there being less liability to bend the spindles, they can, as a consequence, be made much lighter. The spindle is returned to its vertical position when released by the operator by the upward pressure of the spring L upon the forward portion of the flange F.

The bolster may be adjusted with relation to its ball-bearing by means of the screw-threads with which they are provided to raise or lower the spindle.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination, the bolster-rail, the bolster pivoted therein, the spindle, the open

collar secured on top the bolster-rail, and the face-plate movably mounted on top the rail, as set forth.

2. In combination, the spindle, the bolster having a step for the spindle, the ball secured on the bolster, and the bolster-rail having a bearing to receive the ball, whereby the spindle and bolster may be tipped forward to facilitate doffing, as set forth.

3. In combination, the spindle, its bolster, the flange F, the bolster-rail, the open ring I, and the movable face-plate, as set forth.

4. In combination, the spindle, its bolster having exterior thread, the ball E, having interior thread, and the bolster-rail having bearing to receive the ball, as set forth.

5. In combination, a spindle, its bolster, a ball adjustable on the bolster, and a bolster-rail provided with a bearing for said ball, as set forth.

6. In combination, a spindle, a bolster having a circumferential flange, the bolster-rail, a joint between said bolster and bolster-rail, which permits the bolster to tip, and a spring tending to maintain the spindle in its vertical position, as set forth.

7. In combination, the spindle, its bolster having flange F and ball E, the open ring, the movable face-plate, the spring L, and the bolster-rail having bearing to receive ball E, as set forth.

ELEAZER THOMAS.

Witnesses:
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