J. E. ATWOOD.

SPINNING-FRAME.

No. 169,507. Patented Nov. 2, 1875.

Fig. 2.

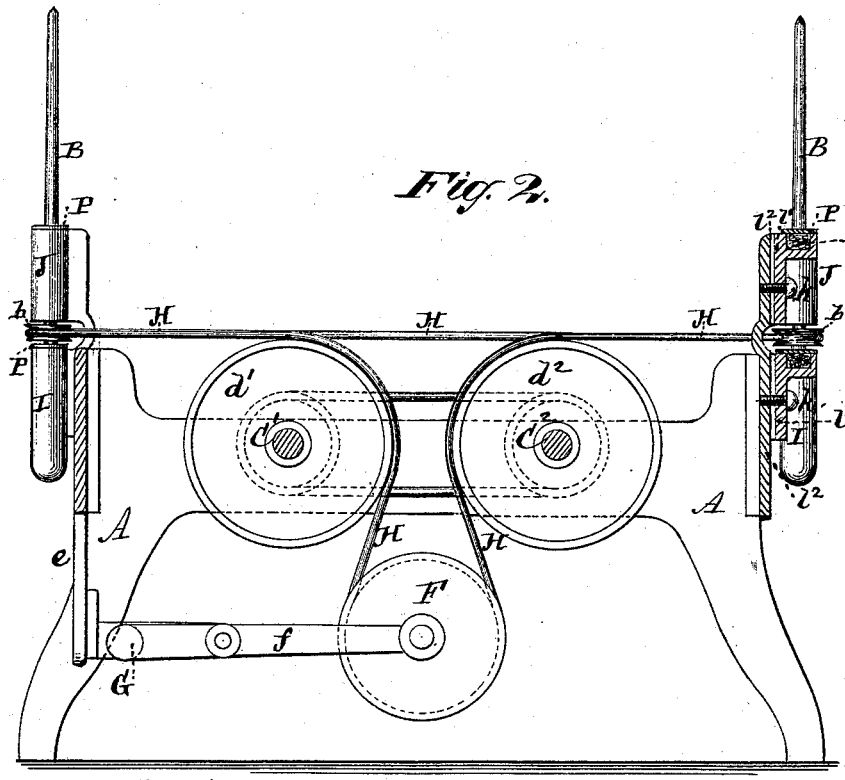


Fig. 3.

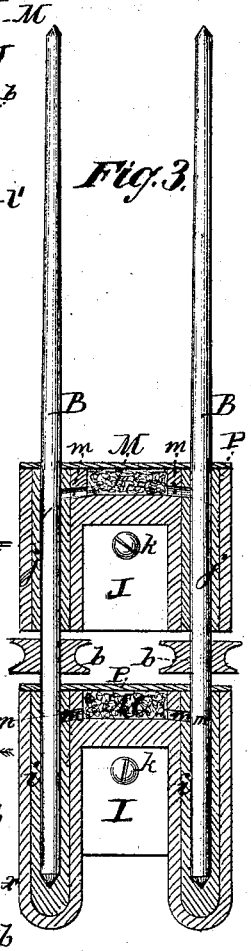
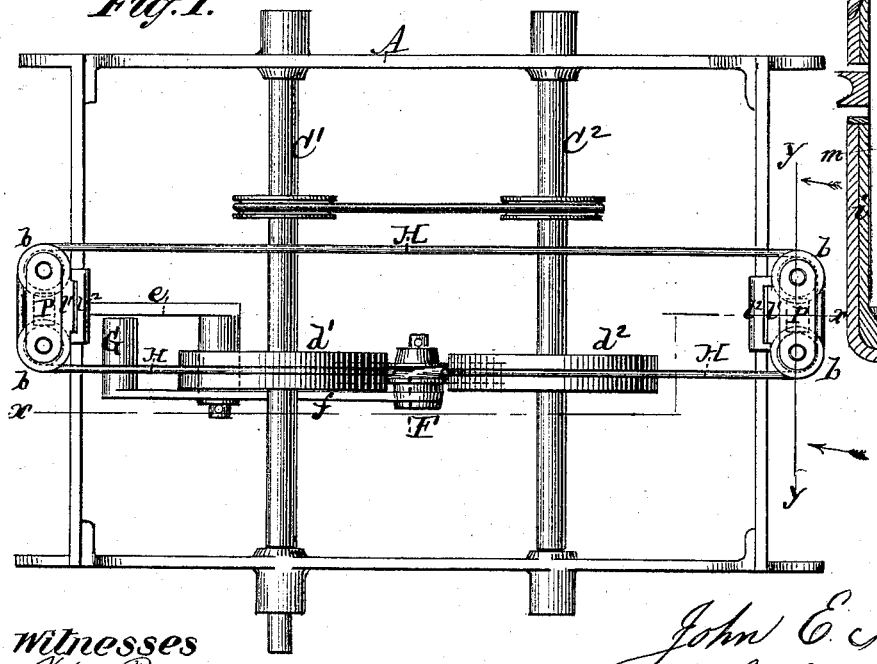


Fig. 1.



Witnesses
John Becker
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UNITED STATES PATENT OFFICE

JOHN E. ATWOOD, OF WILLIMANTIC, CONNECTICUT.

IMPROVEMENT IN SPINNING-FRAMES.

Specification forming part of Letters Patent No. **169,507**, dated November 2, 1875; application filed March 27, 1875.

To all whom it may concern:

Be it known that I, JOHN E. ATWOOD, of Willimantic, in the county of Windham and State of Connecticut, have invented certain Improvements in Spinning-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention consists in, first, a novel combination of two or more spindles and their pulleys on opposite sides of the frame, two horizontal shafts and their pulleys, and endless band, and an idler tightening-pulley, whereby a single band is made to drive spindles on opposite sides of the frame, and a uniform tension of the band under all circumstances is obtained; second, the combination, with the idler-pulley above mentioned, of a counterbalanced weight, to prevent too great friction and wear of the bearing.

In the accompanying drawing, Figure 1 is a top view of a machine embodying my invention. Fig. 2 is a vertical section taken in the line *x x* of Fig. 1. Fig. 3 is an enlarged vertical section taken in the line *y y* of Fig. 1.

A represents the frame of a spinning-machine, having spindles on opposite sides, the spindles B on each side being arranged in pairs, as shown. C^1 C^2 represent two horizontal shafts, arranged lengthwise of the frame, and carrying pulleys d^1 d^2, there being one pulley on each shaft for each pair of spindles. The shafts C^1 C^2 are connected by belting or gearing, so as to revolve in the same direction and at the same speed. On one side of the frame is a hanger, *e*, to which is pivoted a lever, *f*, one end of which carries a weighted idler-pulley, F, and the other end is provided with a counter-balance weight, G, which weight may be adjustable. An endless band, H, passes around the whirls or pulleys *b* of the spindles B′, over the pulleys d^1 d^2 of the shafts C^1 C^2, and under the idler-pulley F, which is preferably arranged immediately under the space between the pulleys d^1 d^2. By this arrangement of the endless band and the pulleys d^1, d^2, and F, with relation to each other and the spindles, a single band is made to drive the spindles on both sides of the frame, and by arranging the spindles in pairs the same band is made to drive four spindles, or two on each side of the frame. The idler-pulley F not only serves to enable the band to be arranged as described, but, by its weight, it automatically preserves the proper tension of the band and secures uniformity of speed, and by means of the counter-balance G, the pressure of the idler is regulated and excess of friction and wear of its bearing is prevented. The boxes I J, in which the spindles have their bearings, are of such construction that each spindle is provided with a step-bearing and a bolster-bearing, the lower box I having its lower end closed, and forming the step-bearing, and the upper box J having both ends open, and forming the bolster-bearing. Each box is formed with two bearings, at a distance from each other corresponding with the distance at which the spindles are located when arranged in the usual manner. The boxes are attached to the frame by screws *k*, and are prevented from lateral displacement by means of tongues l^1 on the boxes, and grooves l^2 in the frame. When the spindles are in place in the boxes, their whirls or pulleys *b* occupy a position between the top of the lower box and the bottom of the upper box, so that the friction is divided between the step-bearing *i* and the bolster-bearing *j*.

By this construction of the box with double bearings, I provide simple, cheap, and effective bearings for each pair of spindles.

In the upper portion of each of the boxes I J, is a chamber, M, provided with two ducts, *m m*, leading to the bearings *i i* or *j j*. In the chamber M is placed the lubricant for the spindles, consisting of oil or grease, or of fibrous material saturated with oil.

By this arrangement of the oil-chamber with relation to the bearings, one chamber is made to supply the lubricant simultaneously to both the bearings in the box.

The oil-chambers M are covered by caps or plates P, resting on the tops of the boxes. Each cap is provided, near its ends, with perforations, through which the spindles pass, by which means the caps are held in place without the use of screws, bolts, or other fastenings.

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

1. The combination, with two or more spindles on opposite sides of the frame, and two horizontal shafts arranged lengthwise of the frame, of the two pulleys d^1 d^2 on said shafts, the endless band H, running on said pulleys d^1 d^2 and b' b, and the idler tightening-pulley F, substantially as shown and described.

2. The combination with the idler-pulley F, and its lever f, of the counter-balance weight G, as shown and described, for the purpose specified.

JOHN E. ATWOOD.

Witnesses:
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