# F. HARDENBERGH & H. L. HOLMES.

## TOP-ROLL SUPPORTS FOR SPINNING MACHINES.

No. 190,756. Patented May 15, 1877.

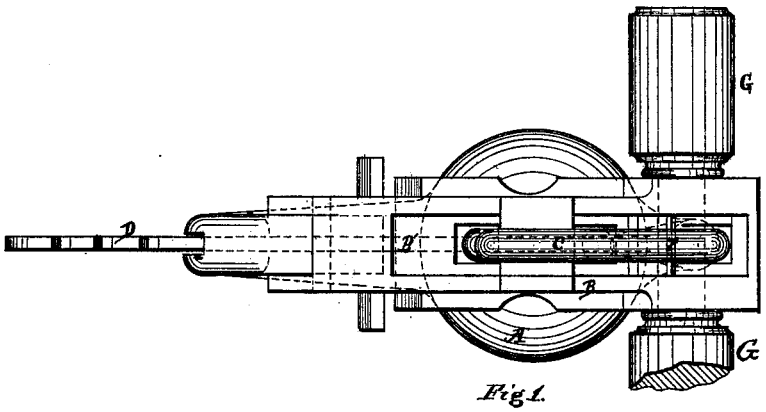


Fig. 1.

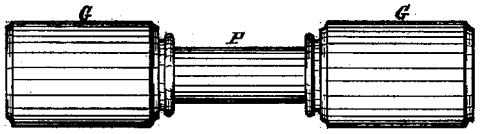


Fig. 3.


Fig. 4.

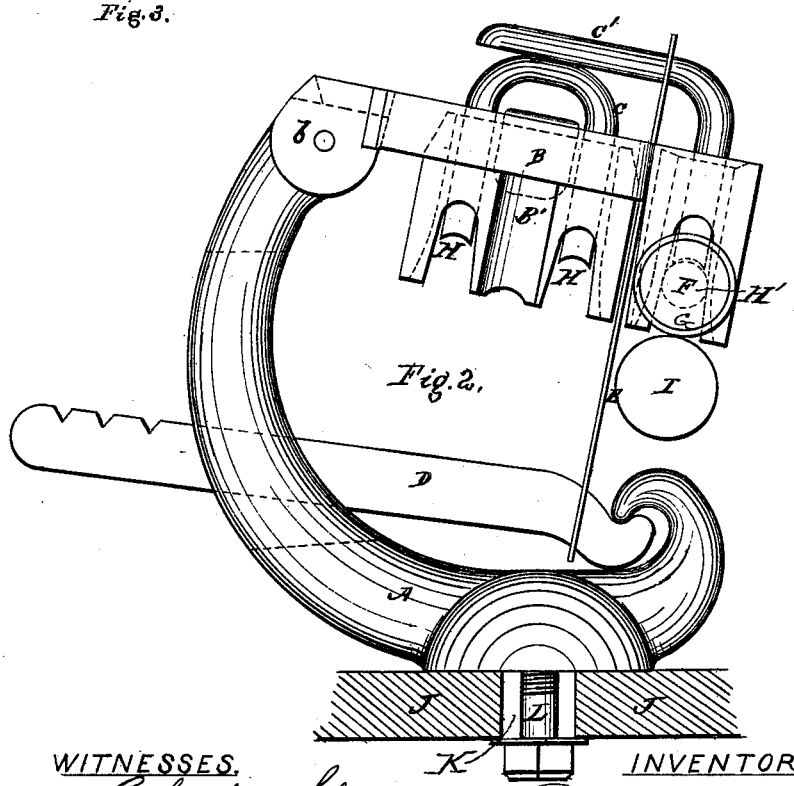


Fig. 2.

WITNESSES.

Charles Selden

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FAYETTE HARDENBERGH AND HORATIO L. HOLMES, OF PROVIDENCE, R. I.

## IMPROVEMENT IN TOP-ROLL SUPPORTS FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. **190,756**, dated May 15, 1877; application filed May 11, 1876.

*To all whom it may concern:*

Be it known that we, FAYETTE HARDENBERGH and HORATIO L. HOLMES, of the city and county of Providence, State of Rhode Island, have invented an Improved Mode of Holding the Top Rolls of Spinning-Machines, of which the following is a specification:

The nature of our invention consists in the employment of a single bearing, located at the middle of the roll, instead of the middle and two end bearings, as heretofore, and in an adjustable holding-stand for top rolls.

Figure 1 is a top view of the stand and cap-bar for holding the rolls. Fig. 2 is a side view of the stand and cap-bar. Fig. 3 is a longitudinal view of the improved top roll, and Fig. 4 an end view of the same.

To the upper end of the stand A is pivoted the cap-bar B, for holding the top rolls. The saddles C and C′ serve to press the top rolls down upon the lower rolls I of the machine through the action of a weight suspended from the notched lever D, which is connected to the outer saddle C′ by means of the connecting bar or stirrup E. The bearing F is placed between the two leather-covered portions G G of the roll, so that when the roll is in its proper position the two leather-covered portions may be on opposite sides of the cap-bar B, the bearing F being held in the cap H or H′, so as to be under the action of the saddle.

The cap H′ is stationary with regard to its distance from the pivot *b;* but the caps H H, attached to the cap-piece B′, are made movable within a slot in the cap-bar B, the saddle moving under the projecting arm of the saddle C′.

In the frame J is made the slot K, so as to allow the stand A to be moved forward or back, thus placing the top rolls by adjustment in the best position with regard to the lower rolls, and the stand A, by turning about the screw L as a center, may be moved so as to bring the axes of the top rolls parallel with the axes of the lower rolls.

By our improvement, as above described, an important advantage is gained over the ordinary rolls used on mules, spinning-frames, and speeders, by lessening the friction and saving the oil used for lubrication. The rolls are more readily accessible for adjustment than when attached to the frame by the ordinary method. There is, also, less liability of the roll becoming clogged at the ends, and less danger of getting oil on the leather covering of the rolls.

We claim as our invention—

1. The stand A, in combination with the pivoted cap-bar B and the roll G F G, substantially as described.

2. The pivoted cap-bar B, with the adjustable sliding cap-piece B′, for holding the middle and back rolls.

3. The combination of the top roll G F G, having a single intermediate bearing, with the pivoted cap-bar B and a weighted saddle, substantially as described.

4. The stand A, carrying the top roll G F G, and made adjustable around an axis, L, which may be moved horizontally in the slot K, substantially as described.

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Witnesses:
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