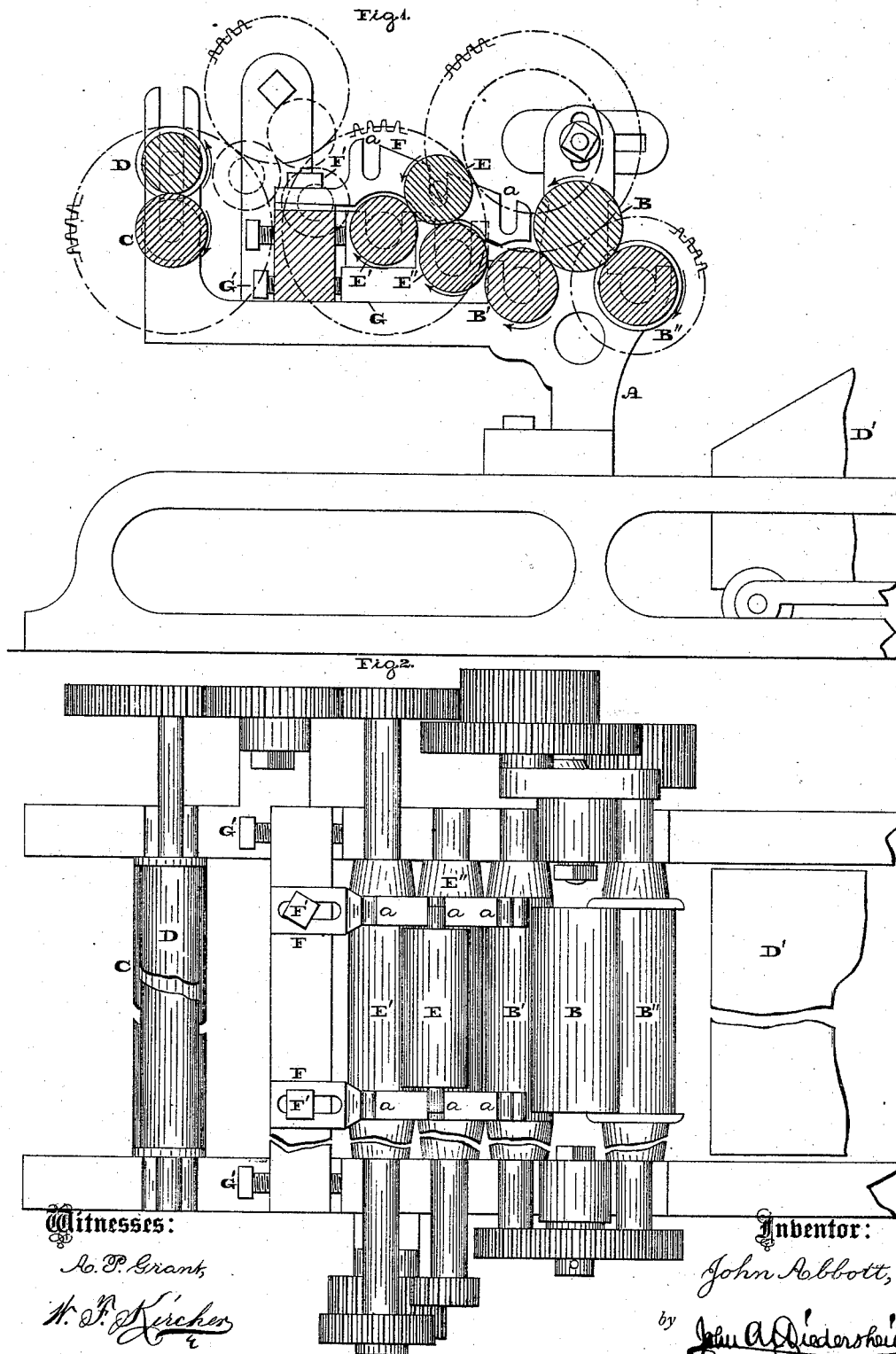


J. ABBOTT.  
Spinning Mules and Jacks.

No. 218,849.

Patented Aug. 26, 1879.



Witnesses:

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by

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# UNITED STATES PATENT OFFICE.

JOHN ABBOTT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO DE YOUNG & BROTHER, OF SAME PLACE.

## IMPROVEMENT IN SPINNING MULES AND JACKS.

Specification forming part of Letters Patent No. **218,849**, dated August 26, 1879; application filed June 10, 1879.

*To all whom it may concern:*

Be it known that I, JOHN ABBOTT, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Spinning Mules and Jacks, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a vertical section of the improvement in mules and jacks embodying my invention. Fig. 2 is a top or plan view thereof.

Similar letters of reference indicate corresponding parts in the two figures.

My invention relates to improvements in mules and jacks adapted for spinning woolen yarns, and cotton yarns carded by woolen machinery, which may be applied to hand or self-operating machines.

Heretofore slubbings from which yarn is spun on woolen mules and jacks have been delivered through one set of rollers, and the draft or drawing of the fibers has been between the rollers and the spindles.

The object of my invention is to wholly or partly draw and reduce the slubbings between two or more sets of rollers, by which I am enabled to spin fine yarn from heavy and coarse slubbings, and produce a greater length of yarn and better thread from the same material and in the same time than heretofore when using one set of rollers.

The invention consists in the construction, combination, and arrangement of said sets of rollers, as hereinafter more fully set forth.

Referring to the drawings, A represents one of the frame ends of a mule or jack, and B B' B'' a front line of rollers mounted thereon.

C represents the drum, D the sliver-spool, and D' the spindle-carriage, all of which generally are operated as usual in hand or self-acting machines.

E E' E'' represent another line of rollers or back rollers, consisting of one upper and two lower rollers, the upper roller, E, being mounted on a stand, F, which is provided with vertical slots *a* at intervals, and adjustably secured to the frame A by means of screws F', which pass through horizontal slots in the stands and are fitted to the frame A, and the lower rolls, E'

E'', are mounted on a stand, G, which is adjustably secured to the frame A by means of screws G'.

If desired, another line of back rollers similar to E E' E'', and shown in dotted lines, Fig. 1, may be employed, and they are mounted on the stands F G, respectively.

The upper rollers of the several lines rest freely on the lower rollers thereof, and are driven by frictional contact therewith.

The lower rollers are geared together in such manner that they rotate at different degrees of speed, the direction thereof being indicated by the arrows.

The operation is as follows: The woolen or cotton slubbings are delivered by the drum C from the spool D, and pass between the upper roller, E, and two lower rollers, E' E'', and thence to the front line of rollers, passing between the upper roller, B, and lower rollers, B' B'', from which they are delivered to the spindles of the carriage D', by which the slivers are twisted and spun into yarn, and wound on a bobbin or tube on the spindles.

Owing to the gearing of the rollers in the present case, the front line of rollers run one-fourth faster than the back rollers, and the draft is three to four—that is, the back rollers deliver three inches of slubbings to the front rollers, which will draw it into four inches and deliver it to the spindles on the carriage; and, if desired, the spindle-carriage may still more draw the slivers as they are being twisted into yarn.

The wheel on the front roller may be changed for varying the draft, as desired.

If desired, all of the draft may be between the two lines or three lines of rollers, or it may be distributed between said rollers and the carriage, as will be clearly understood by spinners.

By the construction and arrangement of devices above set forth the roving and sliver may have a more nearly straight course than when the rollers are arranged in the ordinary manner, and the back rollers may be set nearer to or farther from the front rolls, to adapt the bearing-centers of the rollers to the length of different kinds of staple to be drawn.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the drum C, sliver-spool D, and a back set of rollers, E E' E'', with the front set of rollers, B B' B'', and a spindle-carriage, D', substantially as and for the purpose set forth.

2. The combination of the drum C, the sli-

ver-spool D, the obliquely-arranged rollers E E' E'', and the adjustable stand F with the front set of rollers, B B' B'', and a spindle-carriage, D', substantially as and for the purpose set forth.

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