

## Improvement in Mules for Spinning.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MULES FOR SPINNING.

Specification forming part of Letters Patent No. 123,029, dated January 23, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM LEES, of Coatesville, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Spinning-Mules; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a top view.

This invention has for its object to prevent the delivery, by the drawing-rolls of a mule to the spindles of the same, of more sliver than the latter can properly spin at any one stretch; the invention consisting in a mechanism whereby, when the proper length of sliver has been delivered, the spool-shaft is stopped, and whereby it is started again during the next run of the carriage inward.

Referring to the drawing, A is the shaft that rotates the spools on which the sliver is wound. B is the drawing-roll, the same having a pinion, B', at one end, which engages with a spur-gear, C, whose shaft is mounted in a sliding-block, H, that is secured to a lever, F. When the roll B has delivered the proper length of sliver the pin D on the inside of the spur-gear C strikes a lever, E, near its outer extremity, depressing it and raising its other arm. On the latter rests the horizontal arm of a lever, K, which rises with the inner arm of E. The vertical arm of K, therefore, swings outward, and the lever F, which rests on a shoulder thereon, falls until the shoe F' on said lever comes in contact with the pulley G on the spool-shaft A and stops the latter. At the same time the block H, descending with the lever F, lowers the wheel C out of gear with the pinion B', whereupon the spur-gear C stops, and ceases, therefore, to exert a pressure on the le-

ver E. The roll B is brought to a stand at the same moment by means not here shown. As soon as the gear C and pinion B' are disconnected the former is put in rotation backward by means of a weight, J, hung to the hub of C. A pin, I, on the outside of the latter striking a stop, I', on the block H prevents the gear C from turning back too far. The carriage running out spins the quantity of sliver delivered by the roll B, and while running back strikes an arm, L, that is rigidly attached to the pivoted end of the lever F, and raises the latter till the wheel C gears again with the pinion B'. The shoe F' is at the same time removed from the pulley G, and the machine made ready for another delivery of sliver as soon as the roll B starts.

By this invention I secure a positive motion for stopping the delivery of sliver from the spool to the spindles. It is impossible for the operator having a mule with this improvement attached to gain more sliver than the apparatus is set to deliver. A spinner having the old style of hand-mule can hold his carriage back, and the roll will still continue to deliver sliver. With this improvement, even if the spinner does hold his carriage back, the rolls will only deliver a certain amount, and, therefore, there can be no uneven spinning. The invention can be applied either to hand-mules or self-actors, and to jack spinning-frames.

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

The combination of the drawing-roll B, wheel C, pin D, levers E, K, and F L, shoe F', block H, and spool-shaft A, as specified.

WILLIAM LEES.

Witnesses:

THOS. D. D. OURAND,  
 SOLON C. KEMON.