S. GEORGE.

SPINNING-MULE.

No. 192,064. Patented June 19, 1877.

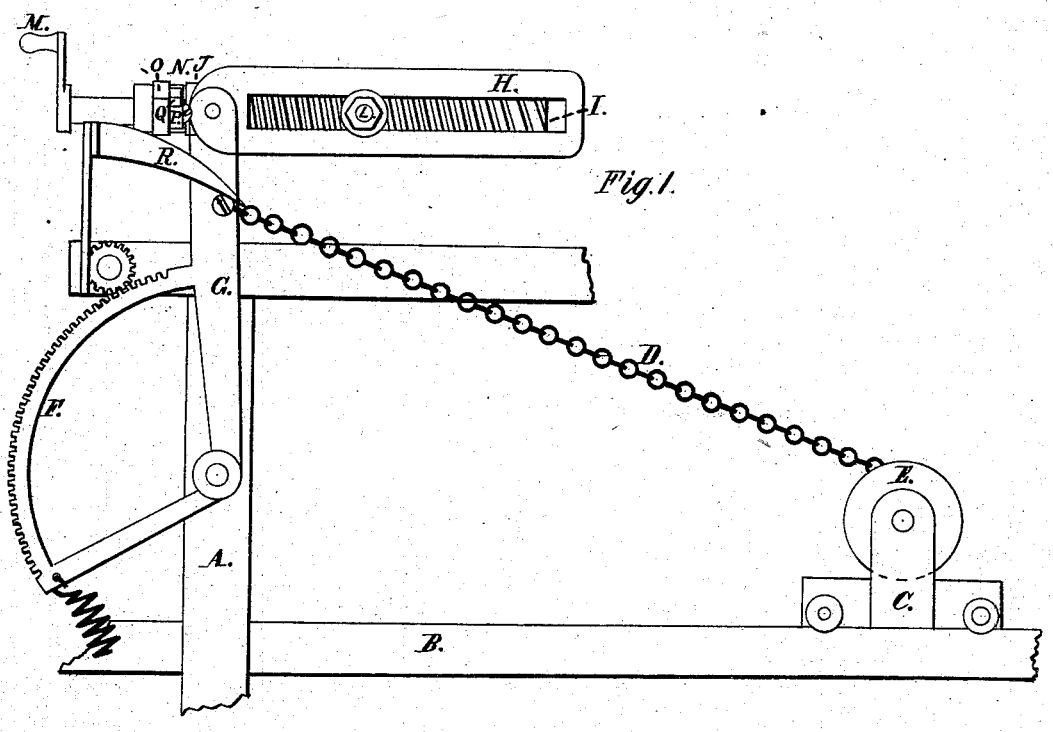
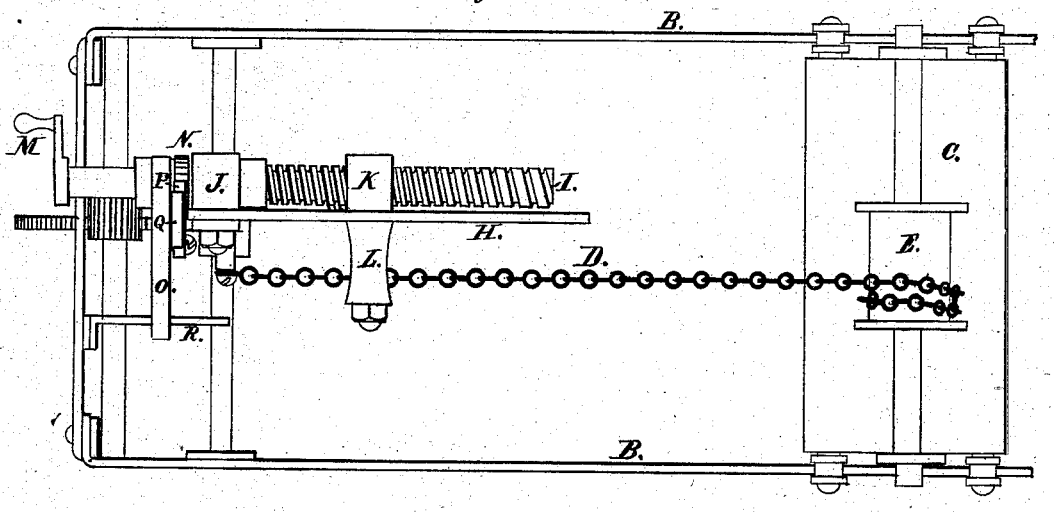


Fig. 1.

Fig. 2.



Witnesses.

Albert M. Moore.

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UNITED STATES PATENT OFFICE.

SAMUEL GEORGE, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN SPINNING-MULES.

Specification forming part of Letters Patent No. **192,064**, dated June 19, 1877; application filed August 31, 1876.

To all whom it may concern:

Be it known that I, SAMUEL GEORGE, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Spinning-Mules, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to devices for shaping the nose of the cop spun on the mule; and consists in adjusting the nose-peg, as hereinafter described.

Figure 1 is a side view of the quadrant, radial and slotted arm, winding-on chain, chain-barrel, nose-peg, screw, ratchet, pawl, lever, and incline; Fig. 2, a plan of the same parts.

A is a part of the frame of the head-stock of a mule; B, a part of the carriage slips or rails; C, a part of the carriage; D, the quadrant-chain or winding-on chain; E, the chain-barrel, on which said chain winds; F, the quadrant, and G the radial arm, all constructed and operated in the usual manner. Secured to the head of the radial arm G, in the usual manner, is the usual slotted arm H. In a bearing, J, on the arm H, is supported the non-traversing screw I. A sleeve, K, embracing the screw I, has a stud, which projects into the thread of the screw. The nose-peg L is attached to the sleeve K, and projects from it through the slot of the arm H.

It is well known that the position of the nose-peg L determines the shape of the nose, or upper end, of the cop being spun, and that said nose peg is now commonly set at different distances from the arm G by a thumb-nut, at the discretion of the mule-spinner, who requires much judgment and experience to move the nose-peg at the proper time and to the proper amount. I move the nose-peg by turning the screw I. Further, I make the screw I with such an increasing pitch, increasing toward the outer end, that by turning the screw equal amounts at each return of the radial arm to an upright position the proper shape is given to the cop. I also secure a circular ratchet, N, to said screw and apply a lever, O, turning on said screw, and carrying a pawl, P, and a spring, Q, the spring holding the pawl against the ratchet. An inclined plane, R, is secured to the frame A in such a position that when the radial arm G is thrown back to its upright position the outer end of the lever O slides up the inclined plane and turns the ratchet N, and with it the screw I, throwing the nose-peg to the right of the drawing and giving eventually the right shape to the cop.

If the "number" of the yarn is to be changed either a ratchet with a greater or less number of teeth or a screw having a different relative pitch must be used. The finer the yarn spun the slower the nose-peg should travel (from left to right) on the arm O, and the greater should be the number of teeth in the ratchet, or the more rapid the increase in the pitch of the screw, according as we resort to one or the other means of variation.

Before beginning a new set of cops the nose-peg is brought back to the left end of the slotted arm H by lifting the pawl out of the ratchet and reversing the motion of the screw.

Even with the best mules now in use it is necessary to employ a skilled spinner to every pair of mules in order to make cops suitable for weaving, and the principal difficulty in making such cops is in giving a proper shape to the nose of the cops.

With the invention above described, boys and girls, whose only duty shall be to mend the broken threads, may be employed at small wages, under the supervision of a competent spinner.

I claim as my invention—

1. The combination of the screw I, formed with a varied pitch in different parts of its thread, the studded sleeve K, and the nose-peg L, substantially as and for the purpose herein specified.

2. The combination of the screw I, the nose-peg L, the ratchet N, the pawl P, the lever O, and the incline R, as and for the purpose described.

SAMUEL GEORGE.

Witnesses:

ALBERT M. MOORE,

FRANK P. RATHBUN.