3 Sheets—Sheet 1.

C. H. COLBROOK.

Winding-on Regulator for Spinning Mules and Jacks.

No. 203,244. Patented May 7, 1878.

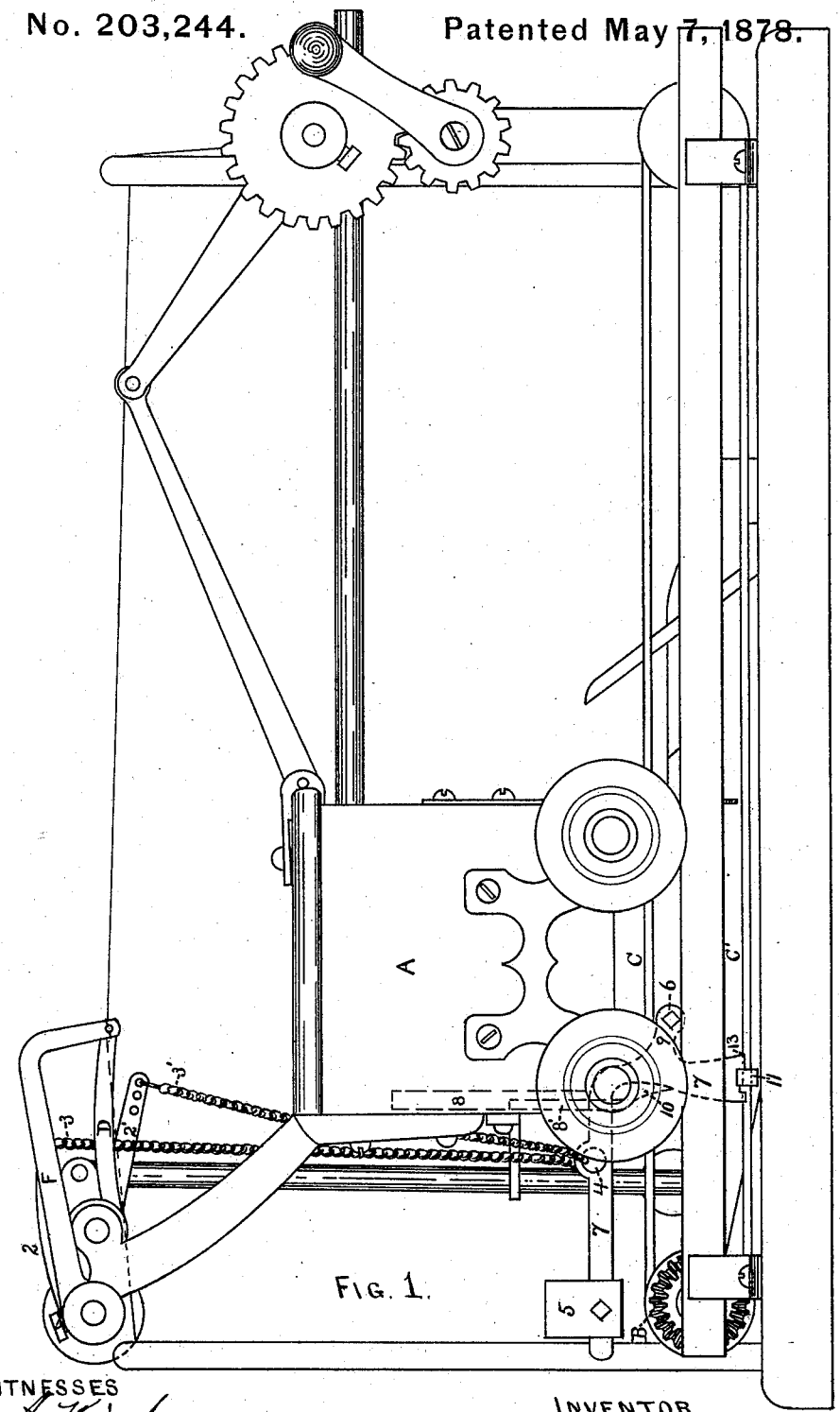

FIG. 1.

WITNESSES
Geo. A. Kimball
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Charles H. Colbrook

3 Sheets—Sheet 2.

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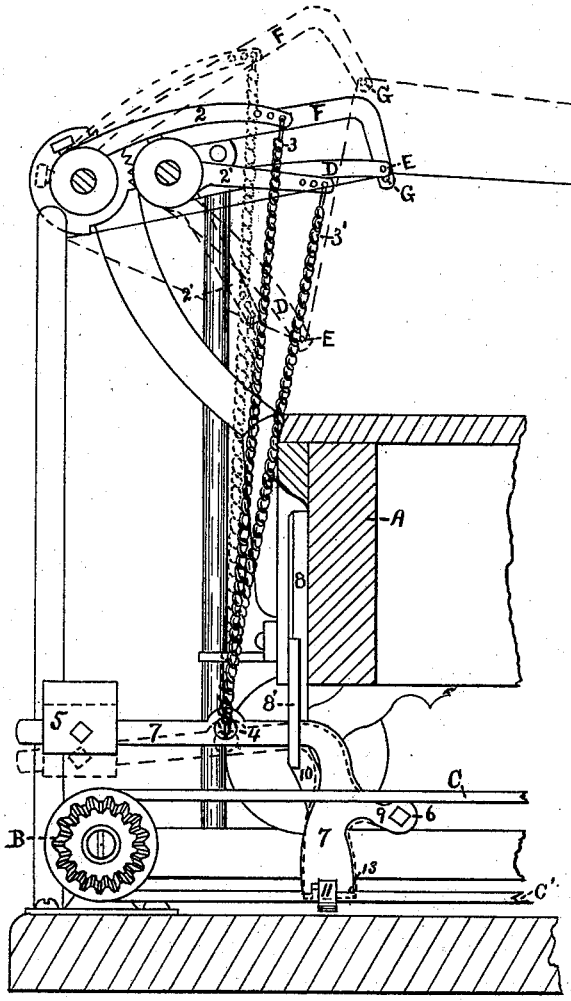

FIG. 2.

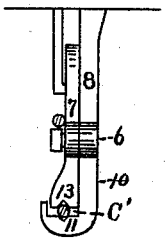

FIG. 3.

WITNESSES

Geo. A. Kimball

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INVENTOR

Charles H. Colbrook

3 Sheets—Sheet 3.

C. H. COLBROOK.

Winding-on Regulator for Spinning Mules and Jacks.

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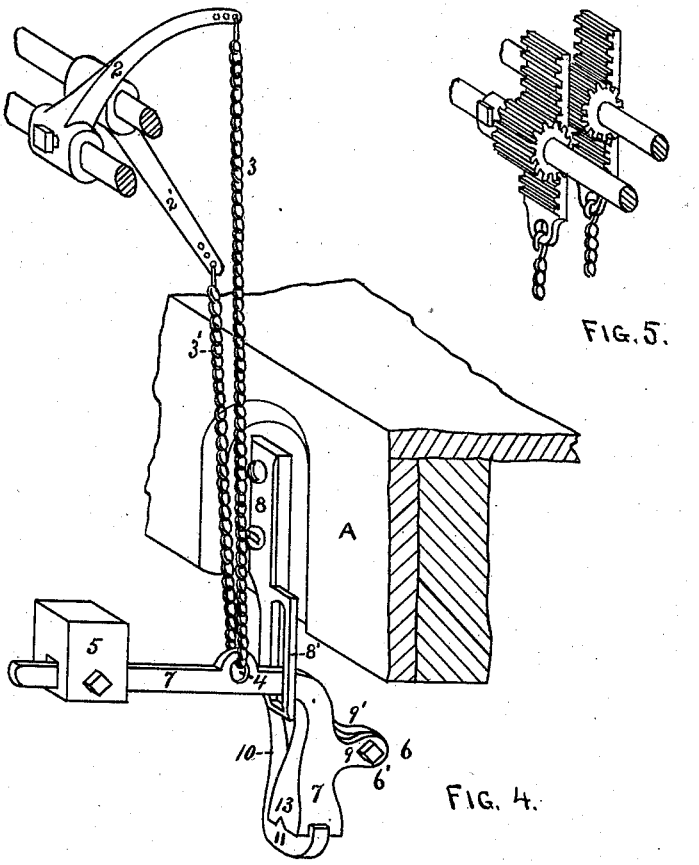

FIG. 4.

FIG. 5.

WITNESSES

Geo. A. Kimball

O. S. Bond

INVENTOR

Charles H. Colbrook

UNITED STATES PATENT OFFICE

CHARLES H. COLBROOK, OF MILLBURY, ASSIGNOR OF A PART OF HIS RIGHT TO WILLIAM WHITWORTH AND MOSES W. WHEELER, OF SAME PLACE, AND JONATHAN LUTHER, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN WINDING-ON REGULATORS FOR SPINNING MULES AND JACKS.

Specification forming part of Letters Patent No. **203,244**, dated May 7, 1878; application filed November 9, 1877.

To all whom it may concern:

Be it known that I, CHARLES H. COLBROOK, of Millbury, in the county of Worcester, Commonwealth of Massachusetts, have invented a new and useful Improvement in Winding-On Regulators for Jack and Mule Spinning, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1, Sheet 1, is a side elevation, showing the carriage, the faller-bars and tension-wires, quadrant-gear shaft, and relief-cord of a spinning-jack with my feed-winding regulator applied. Fig. 2, Sheet 2, is a sectional view of the same, showing a side view of my device. Fig. 3, Sheet 2, shows an edge front view of the weighted gripe-lever. Fig. 4, Sheet 3, is a perspective view of my feed-winding regulator; and Fig. 5, Sheet 3, represents a rack and gear, which may be used as an equivalent for the arms 2 and 2′ on the faller-bars, to which the chain is attached.

The object of my invention is to furnish a device by which the operation of the quadrant-screw on a spinning jack or mule may be regulated in winding the yarn on the spindle so the tension shall be uniform from the commencement of the building of the cop until it is full; and it consists in the form of construction and mode of adjusting and operating a gripe-lever, having an adjustable weight on the power-arm, and a vise-like gripe at the point of resistance, and so hung, with reference to the direction of its swing and the movement of the cord, that any resistance from the gear-head through the relief-cord shall be in the direction out from the gripe and not into it, so that the lever shall be controlled by the tension of the yarn on the faller-rods, and close upon or rise from the relief-cord freely upon any slight variation of the tension from that at which it is set at the commencement of the building of the cop until it is full, and at any point from the starting in of the carriage until the stretch is wound.

The form of the lever and gripe and the adjustment are such as to allow it to take hold and let go of the relief-cord freely at any point. In this way the tension can get neither too tight nor too loose, and will therefore be uniform throughout the building of the cop.

In the drawing, A represents the carriage of the spinning-jack; B, the quadrant-gear; C C′, the relief-cord, which regulates the tension of the yarn in the usual manner; D, the upper faller-bar, and E the tension-rod of the same; F, the under faller-bar, and G the tension-rod of same.

In spinning yarn the upper faller-rod controls the winding, and the under one takes the slack; and in order to show this operation in the drawing, in connection with my feed-winding regulator, I have affixed a device by which the carriage may be moved forward and back, illustrating the action of the faller-bars when operated by a self-operating machine in spinning and winding. As the carriage moves out the yarn is spun, and as it moves in it is wound.

2 and 2′ denote two arms, one on each of the faller-bars, nearly alike, set a short distance from each other, side by side, and projecting over the relief-cord C C′. Chain 3 is fastened, one end to arm 2 and the other to arm 2′, looped through a hole, 4, about midway between the weight 5 and the fulcrum 6 of the weighted gripe-lever 7. The hole 4 must be made so the chain 3 can render easily in its operation, and a sheave may be placed there, if needed.

The hanger 8, in which the weighted gripe-lever 7 is adjusted, is constructed with a slot, 8′, as a guide for the arm of the lever, and on both the hanger and lever there is a corresponding side projection, 9 9′, for the fulcrum 6 on pin 6′, in order to give a long arm to the lever between the fulcrum and point of resistance, and consequent more nearly vertical motion in the rising and falling of the gripe. The weighted end of the lever extends in the opposite direction. Arm 10 of hanger extends down about midway between hole 4 and the fulcrum 6, having hook 11 on the end, for the relief-cord C′ to rest in. The gripe-arm 13 of the lever is also turned down about midway between hole 4 and the fulcrum 6, so as to pinch in a vise-like manner upon cord C′ in hook 11.

5 denotes an adjustable weight on lever-arm 7, to be adjusted with reference to the weighted faller-rod G and the yarn. The lever is so hung with reference to the direction of its swing and the movement of the relief-cord C′ that the resistance from the gear-head through the cord is in the direction out from the gripe 13.

To adjust my appliance for operation on a spinning-machine, the quadrant-screw should be turned down preparatory to commencing a new cop, which brings the faller tension-rods to their proper position. The chain 3 3′ is then looped through hole 4 in the lever 7, and the ends hitched to the arms 2 2′, suspending the weighted gripe 13 just free from the relief-cord C′. In this condition any slight variation of the tension in winding will drop the gripe upon the cord or raise it up, as the case may require, at any point while the carriage is moving in, so that the tension can get neither too tight nor too slack.

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

The combination of the faller-bars D and F, chain 3 3′, relief-cord C C′, lever 7, provided with the gripe portion 13, and the adjustable weight 5, with the hanger 8, having the slot 8′ and hook portion 11, substantially as described, whereby the said lever is hung, with reference to the direction of its swing and the movement of the relief-cord, so that the resistance from the gear-head through the cord shall be in a direction outward from the gripe, all as specified.

CHARLES H. COLBROOK.

Witnesses:

GEO. A. KIMBALL,

O. S. POND.