I. FARTHING.

REGULATORS FOR ROPE-SPINNERS.

No. 181,565. Patented Aug. 29, 1876.

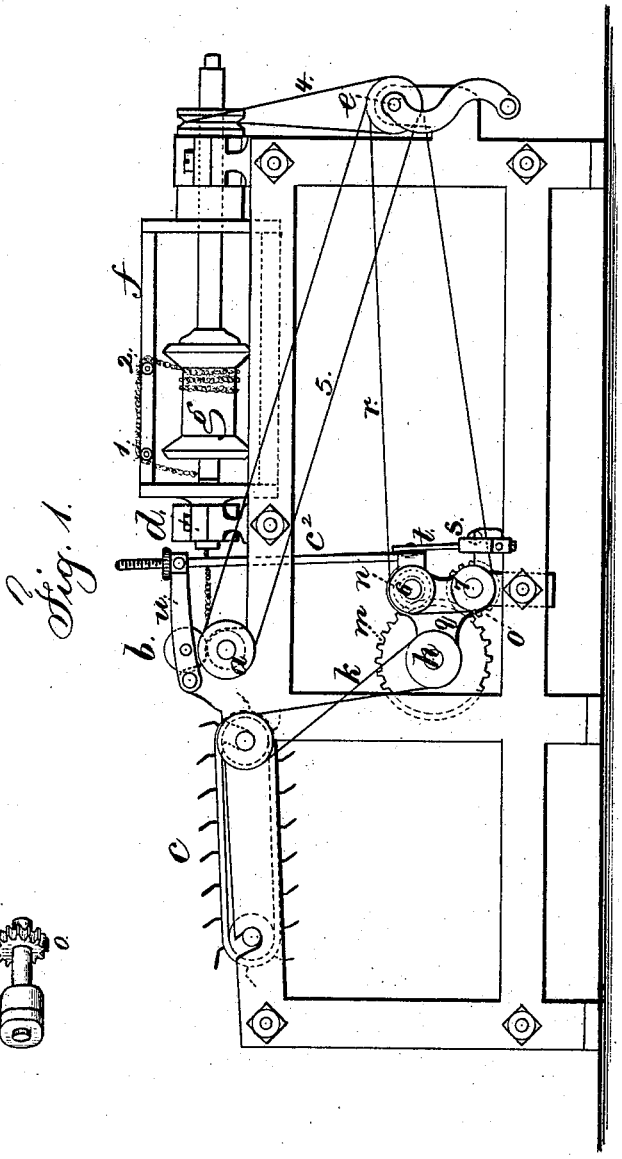

Fig. 1.

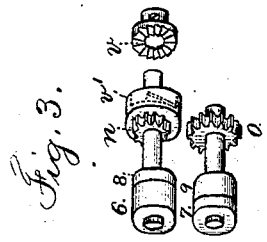

Fig. 3.

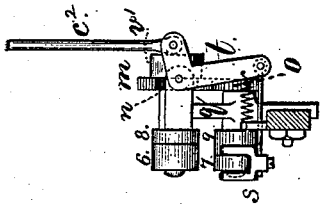

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

ISAIAH FARTHING, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN REGULATORS FOR ROPE-SPINNERS.

Specification forming part of Letters Patent No. **181,565**, dated August 29, 1876; application filed June 19, 1876.

To all whom it may concern:

Be it known that I, ISAIAH FARTHING, of Paterson, in the county of Passaic and State of New Jersey, have invented an Improvement in Regulators for Rope-Spinning Machines, of which the following is a specification:

In rope-spinning machines, the sliver passes from the gill-bars or belt to a pair of concentrating and drawing rollers, and thence to the fly that twists the yarn and winds it upon a bobbin.

Devices have been made to stop the movement of the gill-frame in cases where the fiber passes the draw-rollers in a sufficient mass to operate the belt-shifting mechanism, so that the sliver may be drawn down, and the reverse movement starts the gill-bars when the sliver is too thin. This produces a certain amount of regulation of the supply of fiber, according to the size of the sliver passing to the draw-roller; but this movement is objectionable, because it only operates when the sliver is larger than the maximum and smaller than the minimum size passing through the rollers without acting upon the regulator.

My invention relates to a regulator for the belt of gill-bars or card-teeth, said regulator varying the speed according to the size of the sliver passing the draw-rollers, without necessarily stopping the movement of the gill-bars or teeth, so that the twisted yarn is much more uniform than in the machines heretofore made.

In the drawing, Figure 1 is a side view of the machine, and Fig. 2 is an elevation of the belt-shifting mechanism; and Fig. 3 represents some of the parts thereof detached.

The fiber is supplied to the drawing-rollers *a b* by the feeding-belt or chain of gill-bars or card-teeth *c;* and the fiber passes from said rollers *a b*, through the hollow head *d*, over the rollers 1 and 2 on the fly-frame *f*, to the bobbin or spool *g*. These parts are of any usual or known character, and are only introduced herein to illustrate the manner in which my invention is applied.

The flier and draw-rollers are represented as receiving motion from the main shaft *e* by belts 4 and 5.

The feeding-belt *c* receives motion from the counter-shaft *h* by the pulleys and belt *k;* and upon this counter-shaft *h* there is a gear-wheel, *m*, into which gear the two pinions *n* and *o*, the pinion *o* being considerably larger than the pinion *n*. Each pinion is upon its own shaft in bearings in the frame *q*, and there is a fast and loose pulley on each shaft, the pulleys 6 and 7 being fast, and the pulleys 8 and 9 loose. The belt *r* from the shaft *e* passes below the pulleys 7 and 9, and over the pulleys 6 and 8.

The belt-shifter *s* is operated by the lever *t*, and a connection, c^2, to the hinged frame *u*, that carries the roller *b*, so that when the sliver raises the roller *b*, the belt-shifter moves the belt *r* toward the pulleys 8 and 9, and when it falls said shifter moves the belt *r* toward the pulleys 6 and 7.

The pulley 7 is narrow, and the pulley 6 wide, and the belt, when upon the fast pulleys 6 and 7, would turn both; but, as the pinion *n* is the smallest, I add to it a ratchet-wheel and pawl, *v*, within the case *v'*, which allows the said pinion to turn faster than its shaft. Hence the wheel *m* receives the fast motion due to the action of the larger pinion *o*.

If the roller *b* is raised, the belt is drawn off the narrow pulley 7 upon the loose pulley 9; but the belt still remains on and drives the pulley 6, and by its smaller pinion *n* gives a slower motion to the wheel *m* and the gill-belt. If the belt-shifter is further moved in the same direction, by a large lump of fiber passing into the rollers *a b*, the machine will be stopped by the belt being moved off the pulley 6 upon the narrow loose pulley 8. The reverse motions, consequent upon the small sliver allowing the roller *b* to fall, increases the speed, and causes the belt of gill-teeth to feed the fiber more rapidly to the machine.

I claim as my invention—

In combination with the spinning mechanism, the wheel *m*, pinions *n* and *o*, pulleys 6 and 7, loose pulleys 8 and 9, ratchet and pawl *v*, and belt-shifter *s*, substantially as and for the purposes set forth.

Signed by me this 12th day of June, A. D. 1876.

ISAIAH FARTHING.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.