J. GOOD.

Regulator for Hemp, Drawing and Spinning Machines.

No. 164,546. Patented June 15, 1875.

Fig. 1.

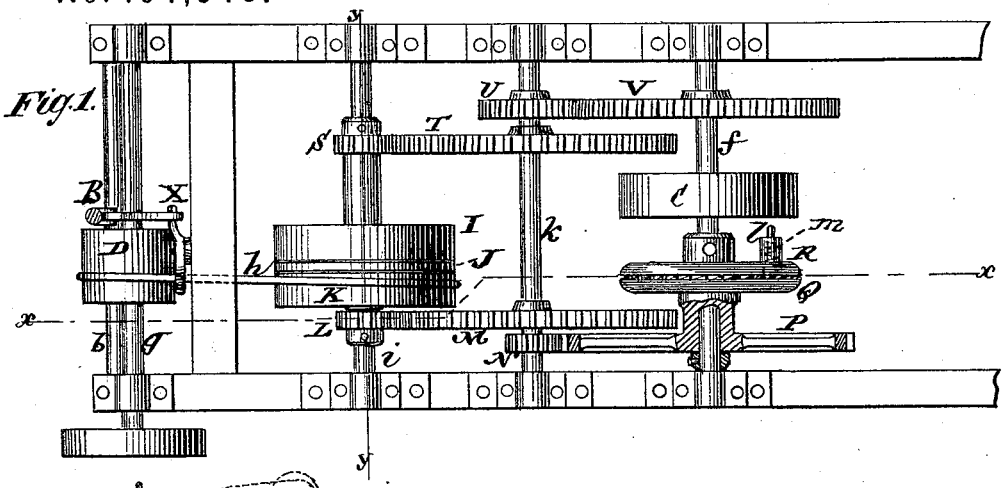


Fig. 2.

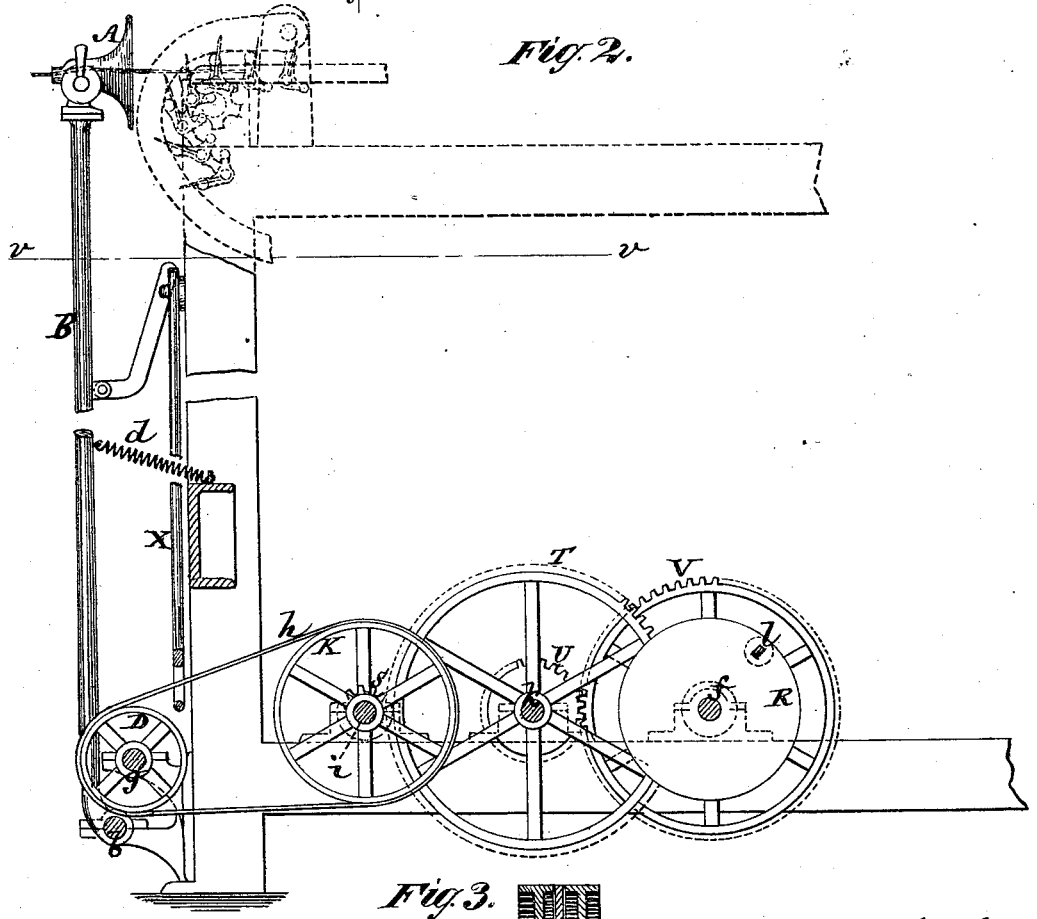
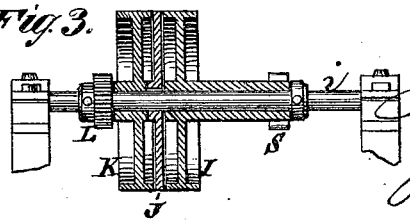


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN GOOD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN REGULATORS FOR HEMP DRAWING AND SPINNING MACHINES.

Specification forming part of Letters Patent No. **164,546**, dated June 15, 1875; application filed May 3, 1875.

To all whom it may concern:

Be it known that I, JOHN GOOD, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Means of Regulating the Feed of Sliver to Drawing and Spinning Frames or Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to machinery for drawing and spinning various fibrous substances, but is more especially designed to be applied to what is known as a jenny for spinning rope-yarn.

The invention consists in a combination with a swinging or yielding condenser, through which the slivers pass to the flier, of certain mechanism, including a slip-clutch, for automatically stopping or varying the velocity of the endless chain of gill-pins, which conduct the slivers to the condenser, in order that the supply of sliver may be more perfectly or advantageously regulated to produce an even or regular-sized yarn.

Figure 1 represents a horizontal section on the line *v v* of certain mechanism, controlled by the condenser, for stripping or varying the velocity of the endless chain of gill-pins. Fig. 2 is a vertical longitudinal section on the line *x x* of said mechanism, with the condenser attached; and Fig. 3, a transverse vertical section on the line *y y* of said mechanism in part.

A is the yielding condenser, which may be carried by a lever, B, having its fulcrum *b* below, whereby it is at liberty to swing backward or forward between suitable stops. Said condenser is borne or pressed forward—that is, toward the chain of gill-pins—by a spring, *d*, against which the draft upon the slivers, as the same are drawn through the condenser, operates to pull the latter back, and when the resistance encountered by the condenser is regular and bears a fixed limit, the condenser is held slightly back; but when the resistance is diminished by a short supply of sliver, then the spring *d* pulls on the condenser to draw the former forward. Combined with this yielding condenser is mechanism, controlled by said condenser, for automatically stopping and for varying the velocity of the endless chain of gill-pins, which conduct the slivers to the condenser, so as to produce an even or regular-sized yarn by regulating the supply of slivers to the condenser. This mechanism, which is irrespective of any special construction of the condenser as regards its throat, that may be fitted with a controlling-plug to vary the size or thickness of the yarn being produced, is constructed substantially as follows:

The endless chain of gill-pins receives its motion from a shaft, *f*, as, for instance, by belt from a pulley, C, or otherwise. This pulley C is fast on the shaft *f*, the motion of which is controlled by the condenser A, as follows:

Upon a driving-shaft, *g*, is a pulley, D, which serves to give motion by a belt or band, *h*, to one or other of two pulleys, I J, to give a different driving velocity; or said band is thrown onto a loose pulley, K, when it is required to arrest the chain of gill-pins. The central pulley J of the series of pulleys I J K is the actuating one of the endless chain of gill-pins when an even or regular thickness of slivers is passing over or by the gill-pins to the condenser A. This pulley J is fast on a shaft, *i*, which carries a pinion, L, that gears with a spur-wheel, M, on a counter-shaft, *k*. On this counter-shaft *k* is a pinion, N, that gears with a loose spur-wheel, P, on the shaft *f* of the pulley C, from which motion is communicated, as described, to the endless chain of gill-pins. The gear of the wheel P with the shaft *f* is effected by means of a slip rag-clutch composed of two disks or heads, Q R, the one of which, Q, is fast on the hub of the loose spur-wheel P, and the other disk, R, or its equivalent, is fast on the shaft *f*, and is provided with a pawl, *l*, controlled by a spring, *m*, at its back, to cause it, when driving, to engage with the toothed disk Q, but which pawl is free to yield or ride over the toothed face of the disk Q when the clutch Q R ceases to drive, and the shaft *f* is rotated at a higher velocity by the band *h* being thrown from the pulley J onto the pulley I. The pulley I is loose on the shaft *i*, but carries a pinion, S, which is in speeding-up gear by wheels T U V, with the shaft *f* of the pulley C, thereby ac-

celerating the motion of the endless chain of gill-pins to increase the feed or supply of sliver to the condenser when it thins off, thereby preventing irregularity in the thickness of the yarn. On the other hand, when too free a supply of sliver is passing to or through the condenser, the band *h* is thrown onto the loose pulley K. Such shifting of the band *h* to the right or to the left—that is, from the pulley J onto one or other of the pulleys I K, accordingly as the amount of sliver passing into the condenser is unduly augmented or diminished—is automatically effected by the corresponding change in the resistance which takes place against or within the yielding condenser as the condensed slivers are drawn or pulled by the flier with its attachments through said condenser. To this end the yielding condenser A has attached to it any suitable belt-shifter, X, which controls the band *h*. When the resistance encountered by the condenser A is regular and bears a fixed limit, then the band *h* runs on the pulley J; but when the resistance is diminished by a short supply of sliver, then the spring *d* pulls the condenser forward and operates the belt-shifter X to throw the band *h* onto the pulley I, which accelerates the endless chain of gill-pins, and increases the supply of sliver to the condenser. When, however, the resistance on the condenser is increased by a too free supply of sliver passing to or through it, the yielding condenser is forced back against the tension of its spring and beyond its normal position, which causes the belt-shifter X to throw the band *h* onto the loose pulley K. This arrests the endless chain of gill-pins and stops the supply of sliver till it is sufficiently diminished to make a uniform yarn, when, the resistance against the condenser diminishing again, the yielding condenser is pulled forward by its spring to put the band *h* by the belt-shifter X onto the pulley J, which actuates the endless chain of gill-pins at the required velocity, when a regular or proper quantity of sliver is being conducted to the condenser.

I claim—

The combination, with a yielding condenser, of a slip-clutch, Q R, the shaft *f*, the loose and fast pulleys I J K, the band *h*, a belt-shifter, X, and differential gear for communicating the power from said band to actuate the shaft *f* at different velocities, essentially as described.

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Witnesses:
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