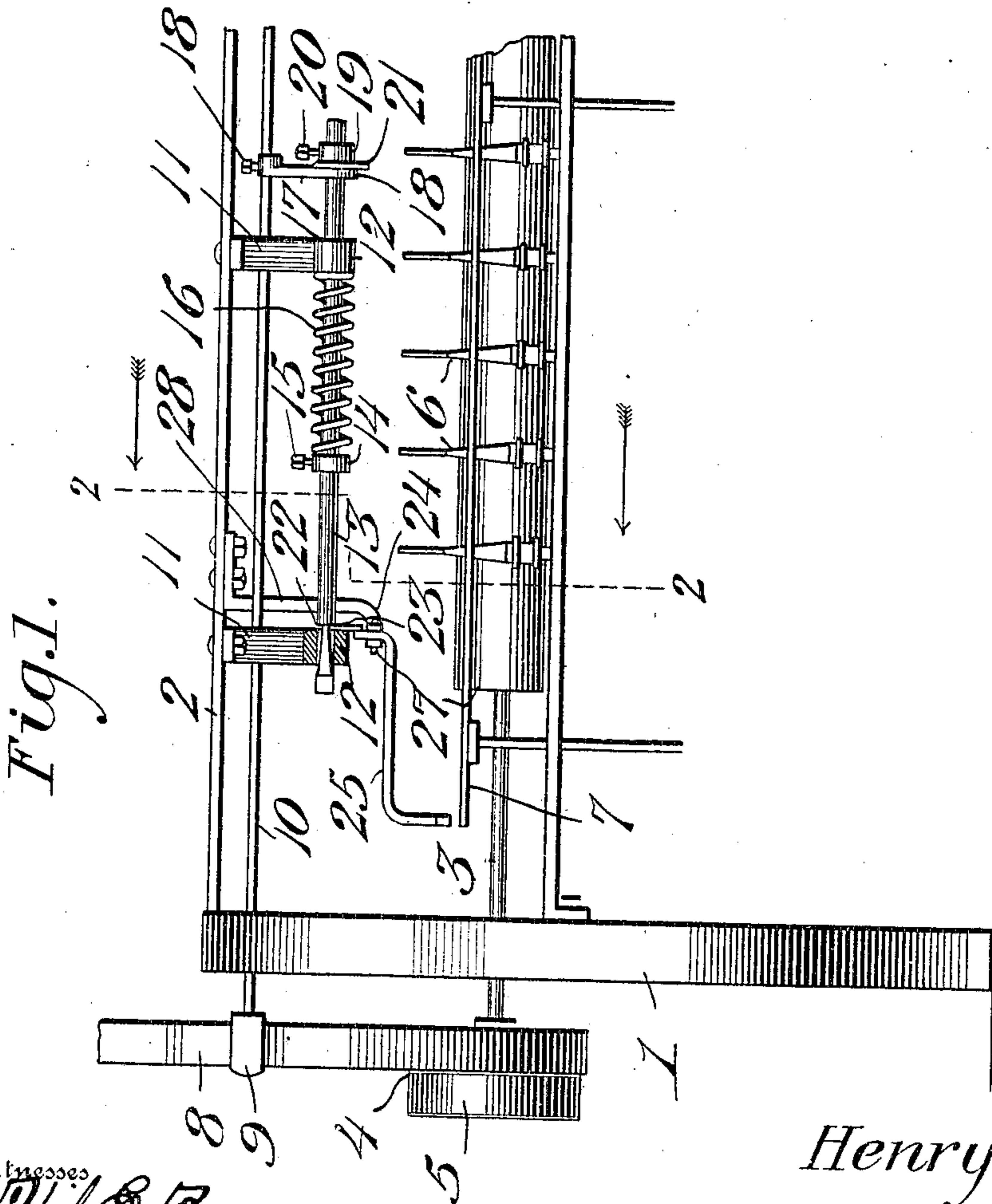
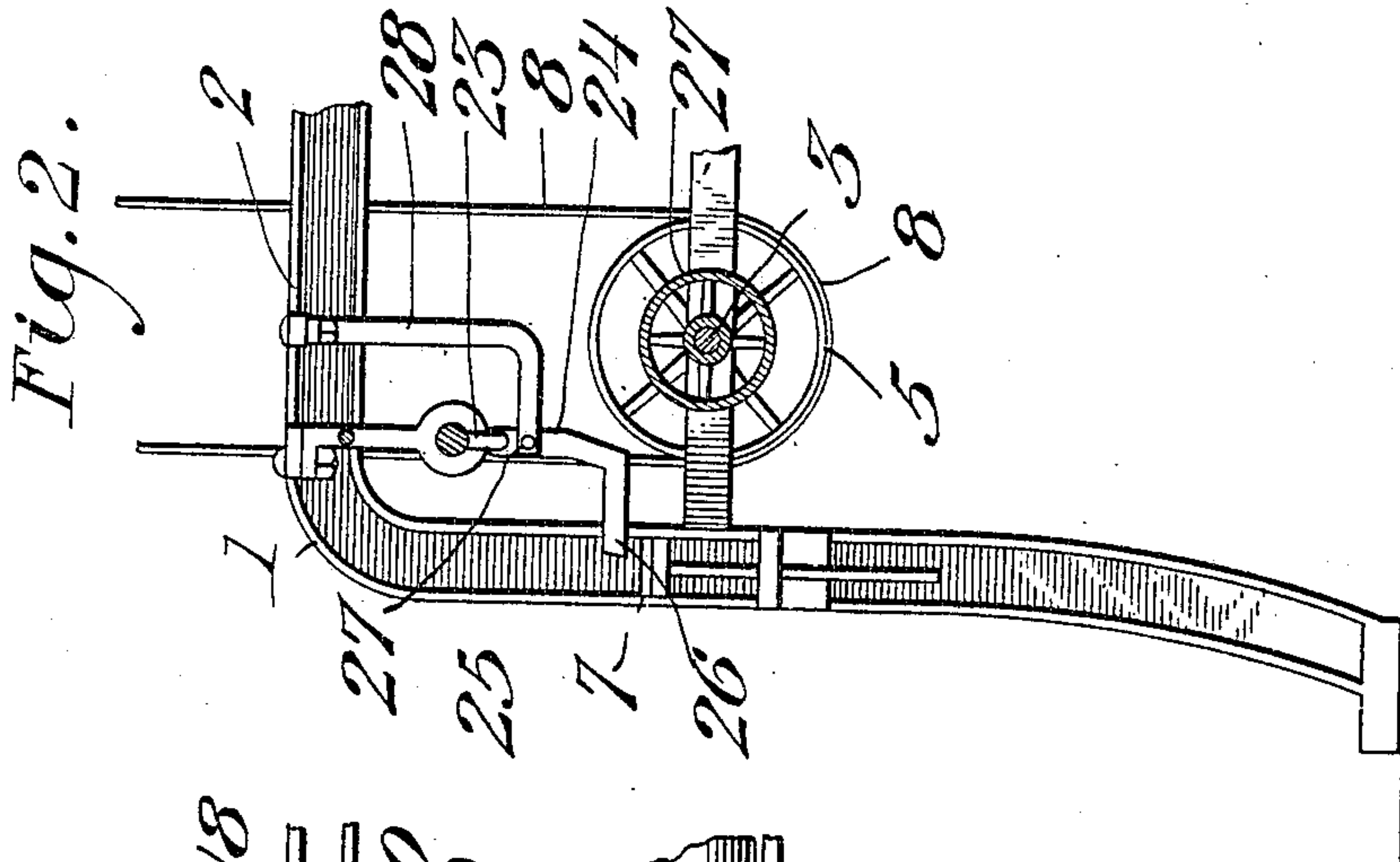


No. 837,135.

PATENTED NOV. 27, 1906.

H. SIROIS.
STOP MOTION MECHANISM.
APPLICATION FILED DEC. 1, 1905.



Witnesses

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HENRY SIROIS, OF LAWRENCE, MASSACHUSETTS.

STOP-MOTION MECHANISM.

No. 837,135.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed December 1, 1905. Serial No. 289,857.

To all whom it may concern:

Be it known that I, HENRY SIROIS, a citizen of the United States of America, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Stop-Motion Mechanism. of which the following is a specification.

This invention relates to stop-motion mechanism for ring-spinning frames.

The object of the invention is to provide simple and effective mechanism for positively and automatically stopping the spinning-frame when the builder-motion has built the threads on the bobbins to the required height in order to prevent the building of the thread on the bobbins beyond the tops of the bobbins and the waste of material and loss of time in reestablishing operative conditions occasioned thereby.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a ring-spinning frame embodying my invention. Fig. 2 is a cross-section on the line 2 2 of Fig. 1.

Referring now more particularly to the drawings, the numeral 1 designates one of the end frames of the machine; 2, the top rail; thereof; 3, the main shaft; 4 and 5, the fast and loose pulleys thereon; 6, the bobbins; 7, the builder-rail; 8, the drive-belt; 9, the belt-shifter for moving the belt from engagement with the fast pulley to the loose pulley, and vice versa; 10, the shipper or shifting rod slidably mounted in the frame and operatively connected with the belt-shifter; and 11, hangers depending from the top rail.

The hangers 11 are provided with bearings 12 for a longitudinally-sliding rod 13, carrying a collar 14, adjustably connected thereto by a set-screw 15, and surrounding said rod 13 between the collar 14 and bearing 12 of the rear hanger is a coil-spring 16. The rod 13 is operatively connected with the rod 10 by means of a connecting-arm 17, fixed at its upper end to the rod 10 by a set-screw 18 and having its lower end formed with an eye 18, loosely engaging the rod 13. A collar 19 is fixed to the rod 13 in rear of the arm 17 by a set-screw 20 and bears against a wear-reducing washer 21, disposed between said collar and the eye 18.

The rod 13 is notched at its forward end to form a shoulder 22, adapted to be engaged by a latch or locking-dog 23. Fig. 1 of the drawings shows the rod 13 in retracted position, which position it occupies when the

shipper-rod 10 is drawn backward to maintain the driving-belt 8 in engagement with the fast pulley 4, and in which position the rod 13 is held from movement by the engagement of the dog 23 with the shoulder 22 and the spring 16 held compressed between the bearing 12 of the rear hanger 11 and the adjustable collar 14.

The dog or latch 23 is carried by the normally vertical arm 24 of an angle-lever 25, the horizontal arm 26 of which has a depending terminal which normally lies above and in the path of movement of the builder-rail 7. The arm 24 is pivoted, as at 27, to the horizontal arm of an L-shaped hanger 28, fastened to and depending from the top rail 2, so that said arm 24 is adapted to swing laterally to move the dog 23 into and out of the path of the shoulder 22.

When the bobbins 6 are filled or built up to the maximum extent by the builder-motion of the machine, the rail 7 reaches the limit of its upward movement and contacts with the arm 26 of the bell-crank lever 25, thus swinging said arm upwardly and the arm 24 laterally, whereby the dog 23 will be moved out of engagement with the shoulder 22, thus allowing the spring 16 to slide the rod 13 forward. This action of the rod 13 transfers motion through the arm 17 to the shipper-rod 10 to shift the belt 8 from the fast pulley 4 to the loose pulley 5, and thus stop the machine to prevent the further accumulation of the material on the bobbins. In order to start the machine again after the doffing operation has been performed, the rod 10 is shifted back through the medium of the usual operating mechanism, (not shown,) and the stopping device will be reset for operation as the arm 17 will transfer backward motion to the rod 13 and the lever 25 will swing by gravity back to normal position and throw the dog 23 into engagement with the shoulder 22. The lever 25 is held from premature action under the vibrations of the machine by reason of the fact that the horizontal arm 26 is of greater length and width than the vertical arm 24, and consequently serves the function of a counterbalance to prevent the rotation of the lever about its center, such action being supplemented by the firm clamping of the dog 23 against the hanger 12 by the rod 13. Hence the lever will be maintained in normal position against all shocks and jars until it is positively operated by the builder-rail 7.

It will thus be seen that by the use of my improved stop-motion waste of material by the overbuilding of the threads on the bobbins and the loss of time in reestablishing operative conditions will be effectually prevented.

Having thus described the invention, what I claim is—

The combination with the frame and builder-rail of a ring-spinning machine, of a belt-shifting mechanism including a sliding shipper-rod, hangers supported by the frame above the builder-rail, a sliding operating-rod supported by said hangers, a connecting-arm fixed to the shipper and slidably engaging the operating-rod, said arm being limited in its forward movement by the rear hanger,

a collar on the operating-rod adapted to engage and transfer forward movement to said arm, a second collar adjustably mounted on the operating-rod between the hangers, a projecting spring surrounding the operating-rod between said collar and rear hanger, a locking-dog to engage and hold the operating-rod from movement, and an angular lever having one of its arms connected with the dogs and its other arm arranged in the path of upward movement of the builder-rail.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY SIROIS.

Witnesses:

FRANK WINN,
MYLES COSTELLO.