

(No Model.)

C. A. TAFT.
SEPARATOR FOR SPINNING MACHINES.

No. 540,198.

Patented May 28, 1895.

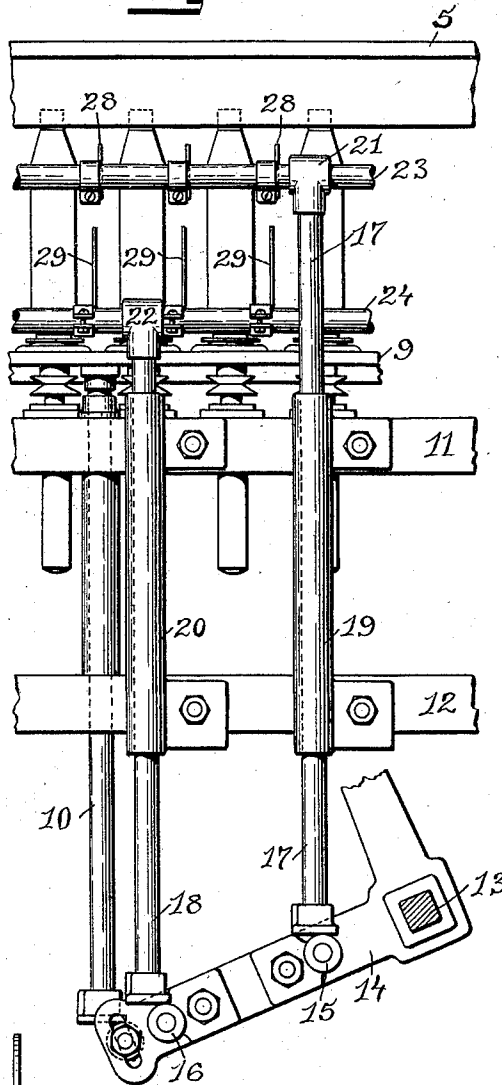
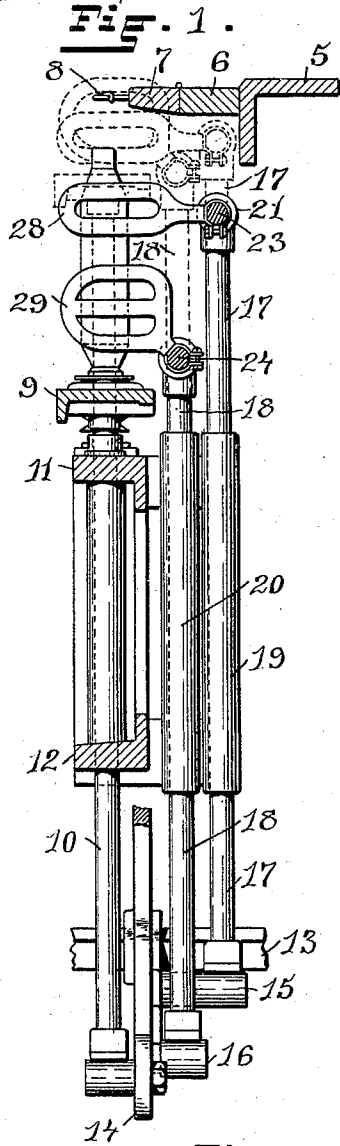
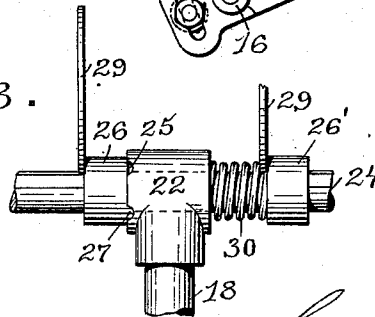


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CYRUS A. TAFT, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE
WHITIN MACHINE WORKS, INCORPORATED, OF SAME PLACE.

SEPARATOR FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 540,198, dated May 28, 1895.

Application filed February 21, 1895. Serial No. 539,167. (No model.)

To all whom it may concern:

Be it known that I, CYRUS A. TAFT, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Separators for Spinning-Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in devices for separating the yarn passing from the guides of the thread-board to the various spindles and to prevent the undue ballooning of the same from the centrifugal force imparted thereto by the action of the ring-traveler.

The object of the invention is to more thoroughly separate the yarns passing to adjacent spindles.

Another object is to so construct a separating device that, while acting to separate the yarn for the entire length of the bobbin at the lower traverse of the ring-rail, they will not interfere with the upward traverse of the ring-rail, either by resisting this traverse by adding weight thereto, or by obstructing the space through which the rail traverses.

Still another object is to so construct a separator device that while adapted to separate the yarns passing to the spindles for a space equal to the limits of traverse of the ring-rail, the separator may be completely removed from between the spindles for the purpose of doffing.

The invention consists in the use of a series of separators located between each pair of spindles and mounted on independent supports, together with means for actuating the supports at different speeds.

The invention also consists in the combination with a series of actuating mechanisms, each of which may be independently operated, of shafts journaled in the respective actuating-mechanisms and separator-blades mounted on the shafts and arranged so that the blades on one shaft may move past the blades on the other shaft.

The invention also consists in the combination with an upper and lower separator-shaft journaled in bearings, of a series of separa-

tors secured to each shaft, and mechanism for preventing the undue rotation of the shafts.

The invention also consists in the combination with a plurality of actuating mechanisms, of shafts journaled in the actuating mechanisms, clutching devices for preventing undue rotation of the shafts, and blades carried by the separator-shafts.

The invention still further consists in such other novel features of construction and combination of parts, as may hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a cross-sectional view of a portion of a spinning-frame, showing the improved separator devices. Fig. 2 represents a rear view of portions of the same. Fig. 3 represents an enlarged detail view showing one form of clutch connection for preventing the undue rotation of the separator-shafts.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 5 represents a portion of the top of a spinning-frame to which the thread-board 6 is secured, the blocks 7—7, hinged to the thread-board, being provided with yarn-guides or pig-tails 8—8.

The ring-rail 9 is of any usual construction being mounted on the ordinary actuating-rod 10 which is vertically movable in bearings provided on the bolster-rail 11 and on the lower rail 12 and operated through the usual mechanism, consisting of the rock-shaft 13 and the arm 14 secured to the rock-shaft on a bearing secured to which arm the actuating-rod 10 is supported. The rock-shaft 13 extends across the spinning-frame and the arm 14 extends at right angles to the rock-shaft in a vertical plane parallel to that in which the ring-rail traverses.

On the arm 14 are mounted the pins or studs 15 and 16 furnished with anti-friction sleeves, and on these sleeves are supported the separator-actuating rods 17 and 18 vertically reciprocal in the guides 19 and 20 secured to the rails 11 and 12. At the upper ends of these actuating-rods are bearings 21 and 22 in which the separator-shafts 23 and 24 are journaled. To prevent the undue rotation of the separator-shafts, by the overbalancing of the separator-blades they are connected with the bearings 21 and 22 by clutch-connections

of which one form is shown in Fig. 3 of the drawings. In this construction the bearing-sleeves 21 or 22 have notches 25 and adjacent to these bearings the collars 26, secured to the separator-shafts, have projections 27 which engage in the notches 25 of the bearings 21 or 22 and resist the rotation of the separator-shafts. The collars 26 are preferably formed in part with the separator-blades 28 or 29, but separate collars may be used for the purpose of making the connection with the bearing-sleeves with which the collars 26 are held in intimate contact by springs, as 30, surrounding the separator-shaft and bearing on the sleeve 21 or 22 and against the collar 26' of the next separator which is also clamped to the separator-shaft, the spring 30 exerting a pressure to draw the collar 26 toward the sleeve 21.

The separator-blades 28 and 29 may be of any usual construction and are furnished with collars by means of which they may be secured to the separator-shafts. The blades 28 are, however, preferably narrower than those marked 29 owing to the shorter traverse necessary for the upper series. The wide blades 29 are so located on the separator-shaft 22 that in their upper traverse they may pass by the blades 28 and may enter the spaces between the blocks 7—7. The traverse of the separator-blades is regulated by the location of the pins 15 and 16 on the arm 14, the distance traversed by the blades 29 being greater than that traversed by the blades 28. In the doffing process the blades 28 are thrown downward and those marked 29 are thrown upward, the rotation of the separator-shafts allowing the blades to pass wholly from between the spindles as is not the case where a single separator-blade of the necessary width is used.

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

1. In a separator, the combination with a plurality of separator blades operatively mounted between each pair of spindles, of actuating mechanism independent of the ring-rail for actuating the separator-blades.

2. In a separator, the combination with a plurality of separator-blades between each pair of spindles, and independent rotatable supports on each of which one of the blades is mounted, of independent actuating-mechanisms adapted to actuate the supports, and connections between said mechanisms and the supports.

3. In a separator-mechanism, the combination with a plurality of independent actuating-rods reciprocal in vertical guides, means for actuating the rods at different speeds, and separator-shafts journaled in the actuating-rods, of a series of separator-blades secured to each shaft, as described.

4. The combination with a spinning-machine provided with the rock-shaft 13, the arm 14 secured to the rock-shaft and furnished with the pins 15 and 16, of the actuating-rod 17 supported on the pin 15, the bearing 21 secured to the rod, the shaft 23 journaled therein, the separator-blades 28 secured to the shaft, the actuating-rod 18 supported by the pin 16, the sleeve 22 on said rod, the shaft 24 journaled therein, and the separator-blades 29 mounted on said shaft.

In witness whereof I have hereunto set my hand.

CYRUS A. TAFT.

Witnesses:

HENRY J. MILLER,
JOSEPH A. MILLER, Jr.