No. 763,121. PATENTED JUNE 21, 1904.

H. K. SMITH.

SEPARATOR MECHANISM FOR SPINNING FRAMES.

APPLICATION FILED APR. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

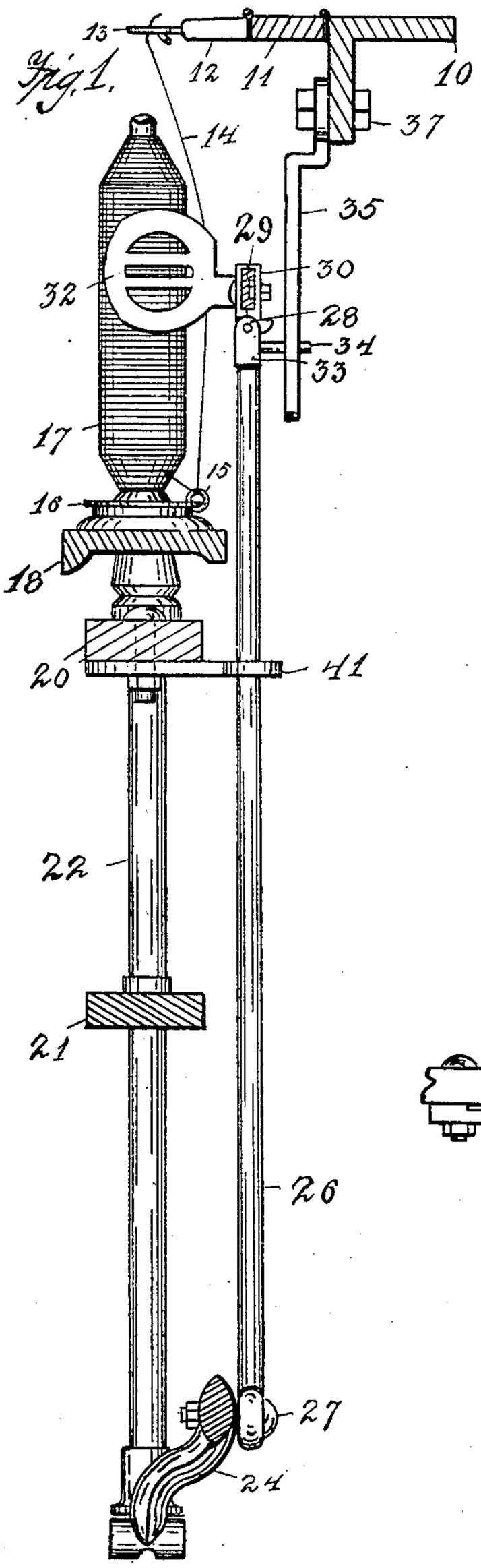
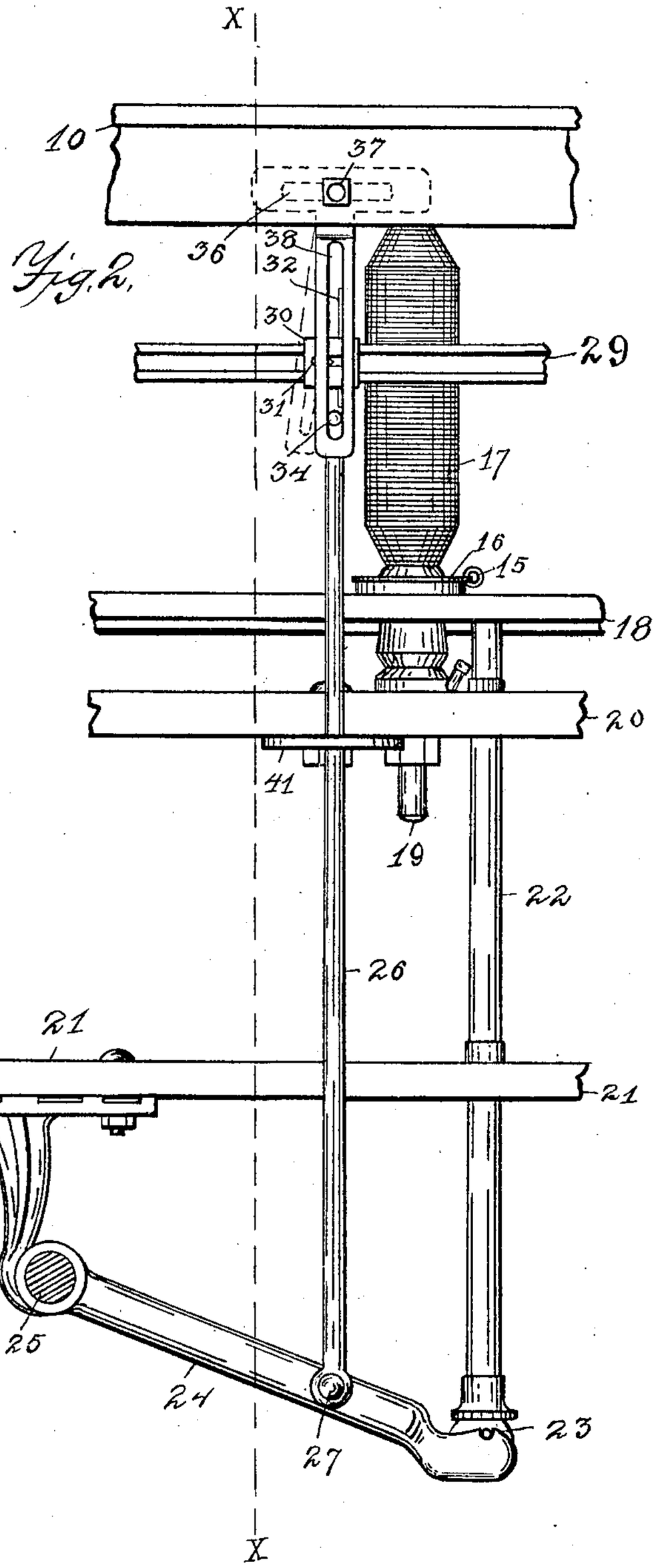


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

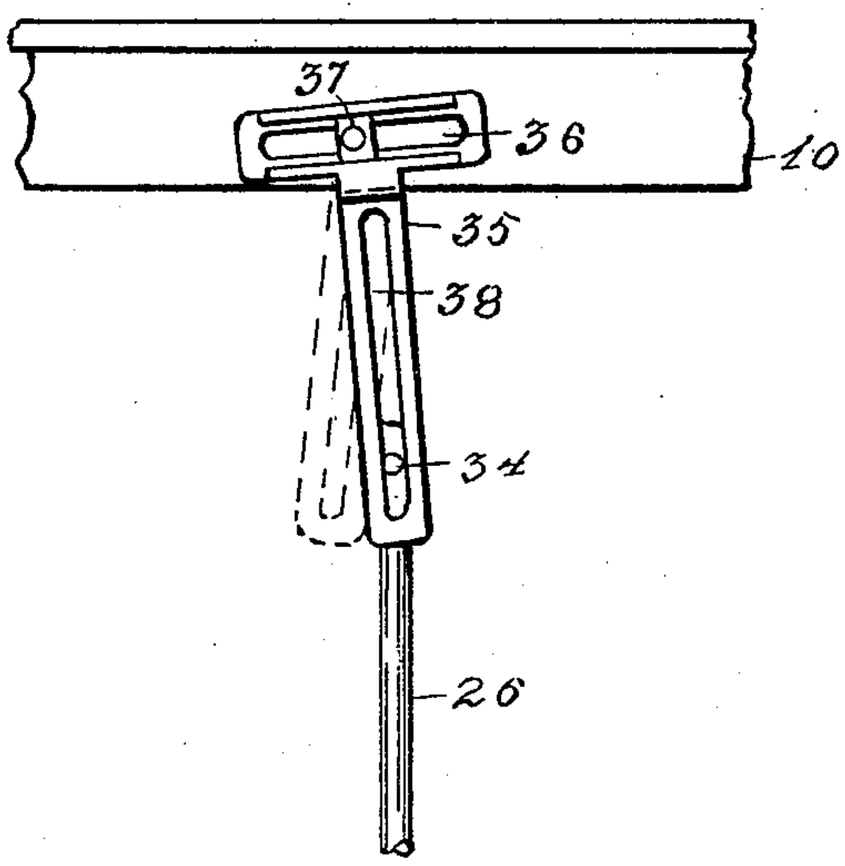

Fig. 4.

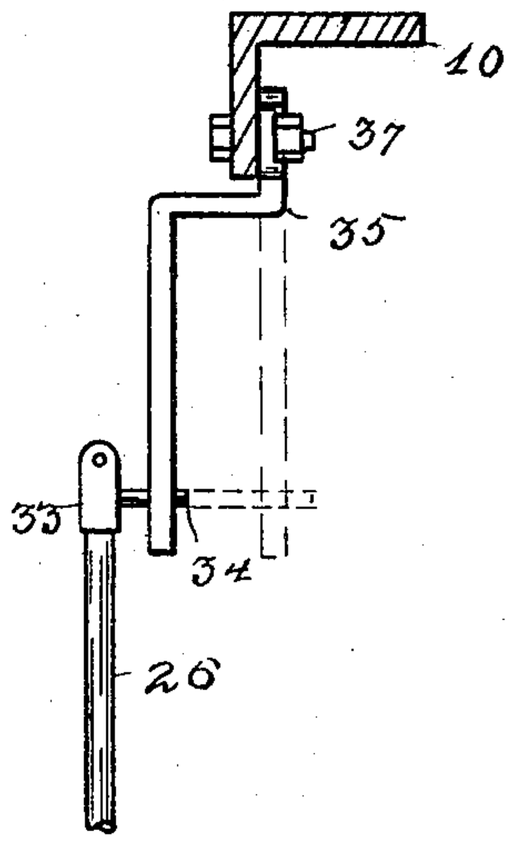

Fig. 5.

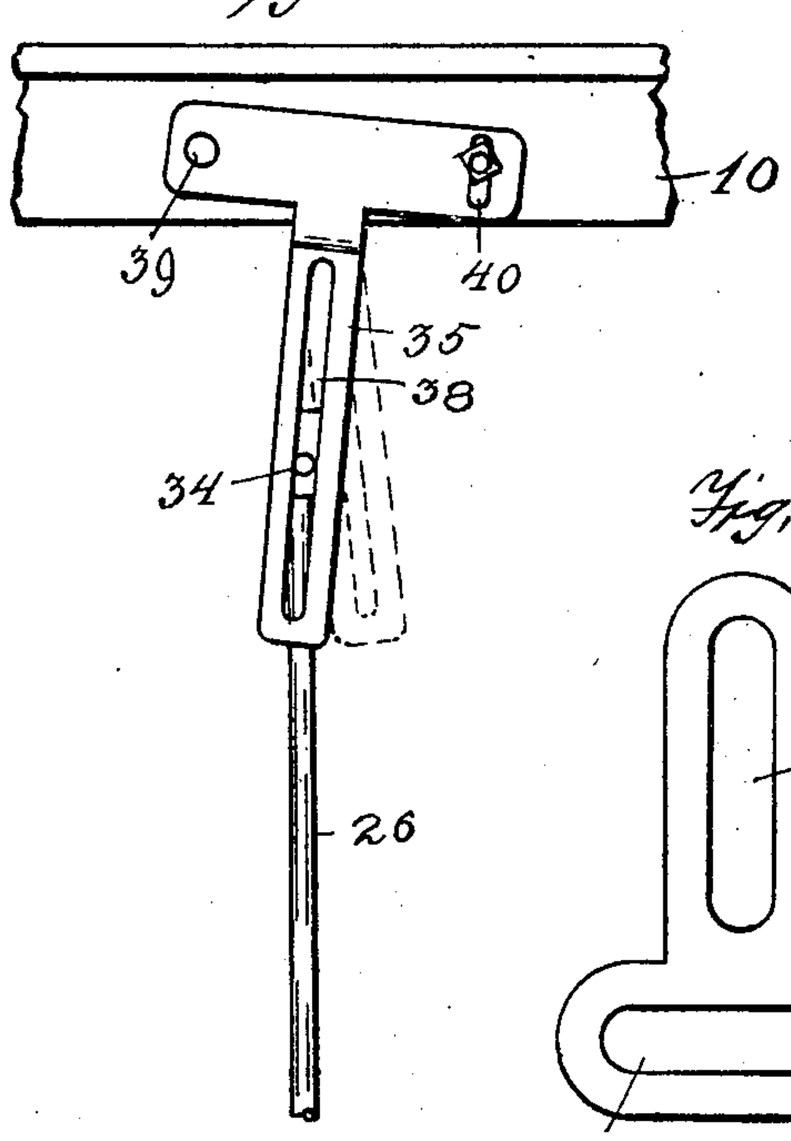

Fig. 6.

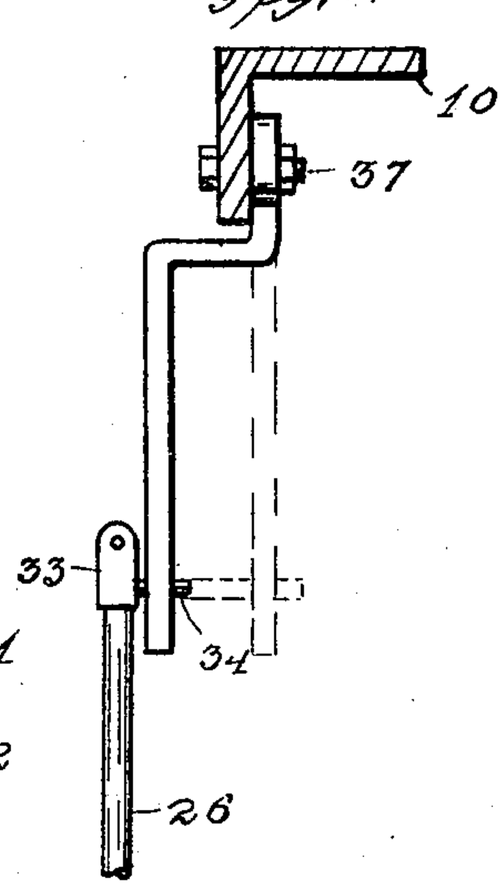

Fig. 7.

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No. 763,121. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

HENRY K. SMITH, OF JAMESTOWN, NEW YORK.

SEPARATOR MECHANISM FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 763,121, dated June 21, 1904.

Application filed April 13, 1903. Serial No. 152,426. (No model.)

To all whom it may concern:

Be it known that I, HENRY K. SMITH, a citizen of the United States, and a resident of Jamestown, in the county of Chautauqua and State of New York, have invented new and useful Separator Mechanism for Spinning and Twisting Frames, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to separators for spinning and twisting frames which are supported from rocker-arms and have an upward and downward traverse in connection therewith; and the object of my invention is to provide an exceedingly simple means for adjustably controlling the direction of the traverse from one point for an entire length of separator-bar, so that a vertical or angular traverse may be attained, as desired, and also to make provision for the lengthwise adjustment of an entire length of separator-bar and blades from one point in connection with my simple guide for controlling the direction of traverse.

In the drawings, Figure 1 is a sectional view, at line X X in Fig. 2, of the rails, separator-bar, and roll-supporting beam of a spinning-frame, showing my simple adjustable guide-bracket attached to the front of the roll-supporting beam. Fig. 2 is an elevation of the rear side of the rails, separator-bar, and roll-supporting beam, showing my guide-bracket in vertical position. Fig. 3 is an elevation of guide-bracket attached to the back of the roll-supporting beam and with horizontal adjusting-slot in angular position. Fig. 4 is a side elevation of guide-bracket, as shown in Fig. 3, with roll-supporting beam in section. Fig. 5 is an elevation of a modification of slotted guide attached to the roll-supporting beam with pin and pivotal-clamp adjustment. Fig. 6 is a side elevation of modification of slotted guide, as shown in Fig. 6. Fig. 7 is a plan view of a supporting-clip for the separator-lifting rods.

Similar numerals refer to corresponding parts in the several views.

The numeral 10 is the roll-supporting beam. A thread-board 11 is hinged to beam 10, and a finger-board 12 is hinged to thread-board 11 in the usual manner. In the edge of finger-board 12 is a yarn-guide 13, and the yarn 14 passes through guide 13 and down to traveler 15 on ring 16 on ring-rail 19, thence to the bobbin 17. The spindles 19, on which bobbins 17 are mounted, are secured on spindle-rail 20 at suitable distances apart. A lower rail 21 of the frame is placed at the desired distance below spindle-rail 20.

A lifting-rod 22 for the ring-rail 18 is stepped on a bowl 23 on the common form of rocker-arm 24 and rocker-shaft 25. A separator-lifting rod 26 is pivotally attached to rocker-arm 24 by bolt or pin 27. Lifting-rods 26 have a hinged attachment 28 at their upper ends to a separator-bar 29. Hinge 28 is attached to bar 29 by a clamping-piece 30, which has a horizontal slot 31 to receive a suitable bolt for clamping piece 30 onto the separator-bar 29. Slot 31 allows of the lengthwise adjustment of bar 29 at the point of attachment to lifting-rod 26. Separator-bar 29 has the blades 32 attached thereto on its front side and extending out between the spindles 19. The hinged attachment 28 of rods 26 allows the bar 29 and blades 32 to be turned back for doffing. Lifting-rods 26 are supplied for the separator-bar 29 at intervals along the side of the frame to suitably support the bar and raise and lower the same. Each lifting-rod 26 has its rocker-arm 24 with shaft 25, and separator-bar 29 is raised and lowered in an upward and downward traverse by arm 24.

In order to control the direction of traverse of the entire length of separator-bar 29 from one point, I provide head 33 of one of the lifting-rods 26 for each separator-bar with a pin 34, which extends horizontally to the rear of bar 29. A guide-bracket 35, made in the form of a T, having its parts slotted at right angles, is attached to the roll-supporting beam opposite pin 34, usually to the front of the roll-supporting beam, though it may be attached to the back, as shown in Fig. 4. The horizontal slot 36 in the head of piece 35 is for adjustably attaching the guide to the roll-supporting beam by means of a suitable bolt 37. Horizontal slot 36 and slot 31 in piece 30 allow of great flexibility of lengthwise adjustment for bar

29. The use of the single bolt 37 allows guide-slot 38 in bracket 35 to be adjusted vertically or at different angles, as shown in Figs. 2 and 3. The long vertical slot 38 in guide-bracket 35 is for pin 34 to travel in, thereby guiding the traverse of the entire length of the separator-bar according to the angle at which slot 38 is placed. The lower part of guide-bracket 35 is usually bent toward the separator-bar. This reduces the length of pin 34 and makes the parts more firm in guiding the traverse of the separator-bar. In some cases, however, it is extended straight down, as shown in dotted outline, and pin 34 is lengthened. It is apparent that guide-bracket 35 can be adjusted vertically or at any desired angle and that the traverse of the entire length of separator-bar 29 is controlled by slot 38. As the length of a separator-bar is usually the length of the frame, it is obvious that the traverse of an entire side of a frame is controlled by this simple guide mechanism. Guide-bracket 35 and pin 34 on lifting-rod 26 must be so placed as not to interfere with the turning back of blades 32 for doffing.

In the modification of guide-bracket 35 shown in Figs. 5 and 6 the guide-piece has the long vertical slot 38. The head is attached to the roll-supporting beam by means of a pin 39 near one end of the horizontal head and a curved slot 40 in the other end to receive the bolt 37 for clamping the guide in position. It is apparent that with this means of attaching to the roll-supporting beam the modification can easily be adjusted to any angle of traverse. I prefer the first form shown, however, because of its adaptability for lengthwise adjustment of bar 29.

In order to give due support to separator-lifting rods 26 in their peculiar sidewise upward movement when the separator-bar 29 is given an angular traverse and to allow for the lengthwise adjustment of bar 29, I attach a clip 41 to the under side of spindle-rail 20 by suitable bolt in a slot 42 in the tail-piece of clip 41. Slot 42 allows clip 41 to be horizontally adjusted crosswise of the rail, thereby adjusting the forward position of separator-blades 32 as to the bobbin. A second slot 43 is made in the clip 41 at right angles to slot 42 and receives separator-lifting rods 26, allowing them the sidewise movement above described as bar 29 and blades 32 move to one side in controlling the "balloon" of the yarn.

The operation of my separator mechanism is so simple that it must have been apparent from the description of the mechanism. The blades 32 are usually first adjusted to the desired position between the bobbins, and guide-bracket 35 is given the desired angle for the traverse. With the starting of the spinning-frame rocker-shaft 25 raises arm 24, and thereby lifts rods 22 and 26 and ring-rail 18 and separator-bar 29. As separator-bar 29 travels upward and downward, pin 33 must be guided by slot 38, thus giving the desired traverse to separator-bar 39 and blades 30.

I claim as new—

1. In a spinning and twisting frame, a separator-bar with separator-blades thereon, lifting-rods for said bar having freedom of sidewise movement, a pin on one of said rods, and a slotted bracket pivotally attached to the roll-supporting beam to engage said pin and direct the traverse of the separator-blades at different angles.

2. In a spinning and twisting frame, a separator-bar and separator-blades thereon, lifting-rods for said bar and means for actuating said rods, supporting-clips for said rods which allow sidewise movement, a projection on one of said rods, a bracket pivotally attached to the roll-supporting beam and means for clamping said bracket in different angular positions, said bracket formed with a slot to receive and guide said projection.

3. In a spinning and twisting frame, a separator-bar and separator-blades thereon, lifting-rods for said bar and means for actuating said rods, supporting-clips for said rods which allow sidewise movement, a projection on one of said rods, a bracket formed with a vertical slot to receive and guide said projection and a horizontal slot for the endwise adjustment of the entire separator-bar at one point.

4. In a spinning and twisting frame, a separator-bar and separator-blades thereon, lifting-rods attached to said bar by a clamp slotted for longitudinal adjustment of said bar a projection on one of said rods, a bracket pivotally attached to the roll-supporting beam and means for clamping said bracket in different positions, and said bracket formed with a slot to receive and guide said projection.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY K. SMITH.

Witnesses:
ALFRED L. FURLOW,
S. A. BALDWIN.