

(No Model.)

C. A. TAFT.

YARN SEPARATOR FOR SPINNING MACHINES.

No. 488,136.

Patented Dec. 13, 1892.

Fig. 1.

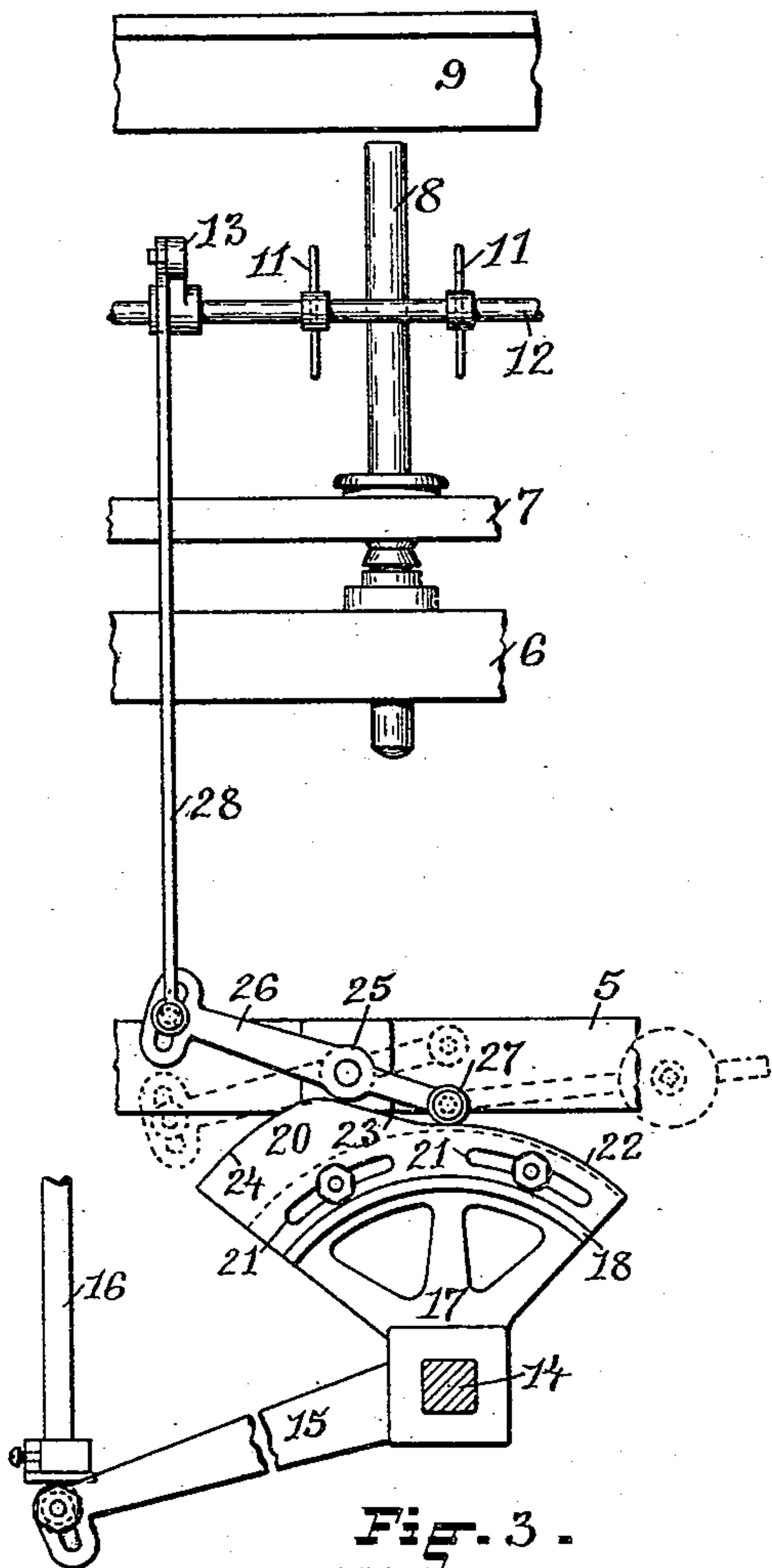


Fig. 3.

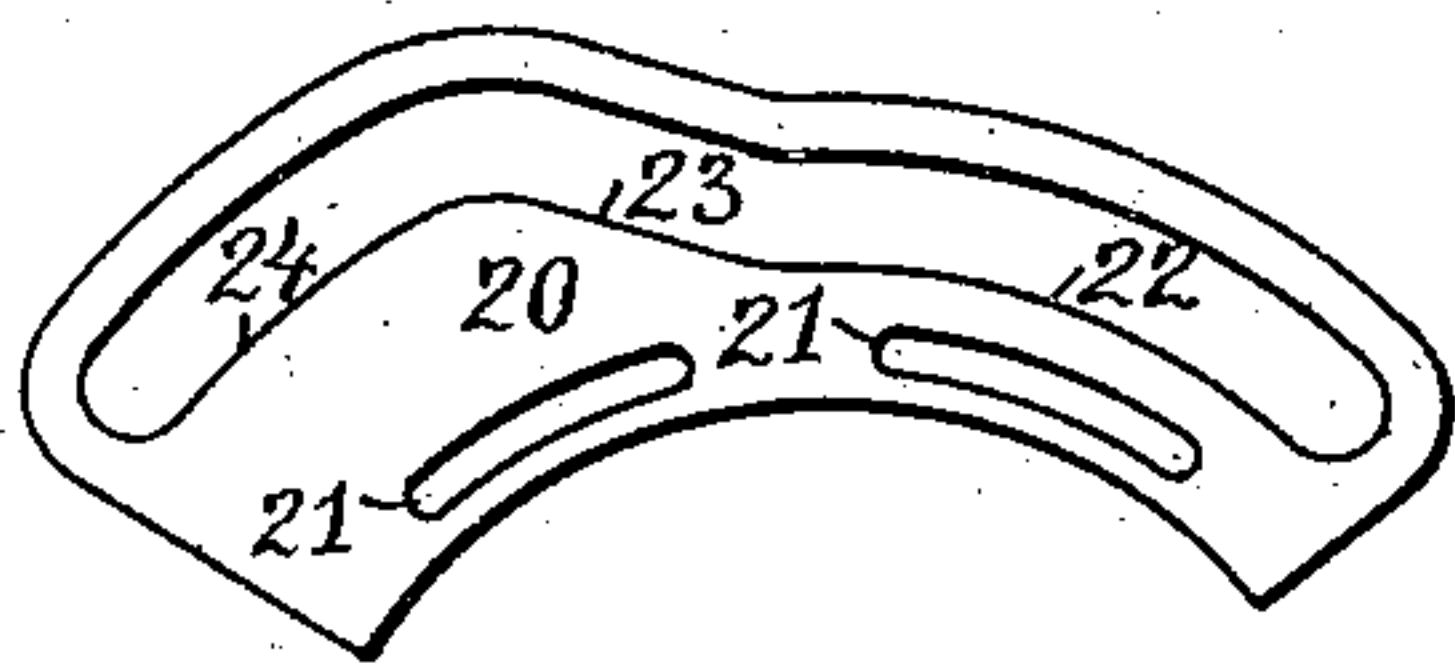
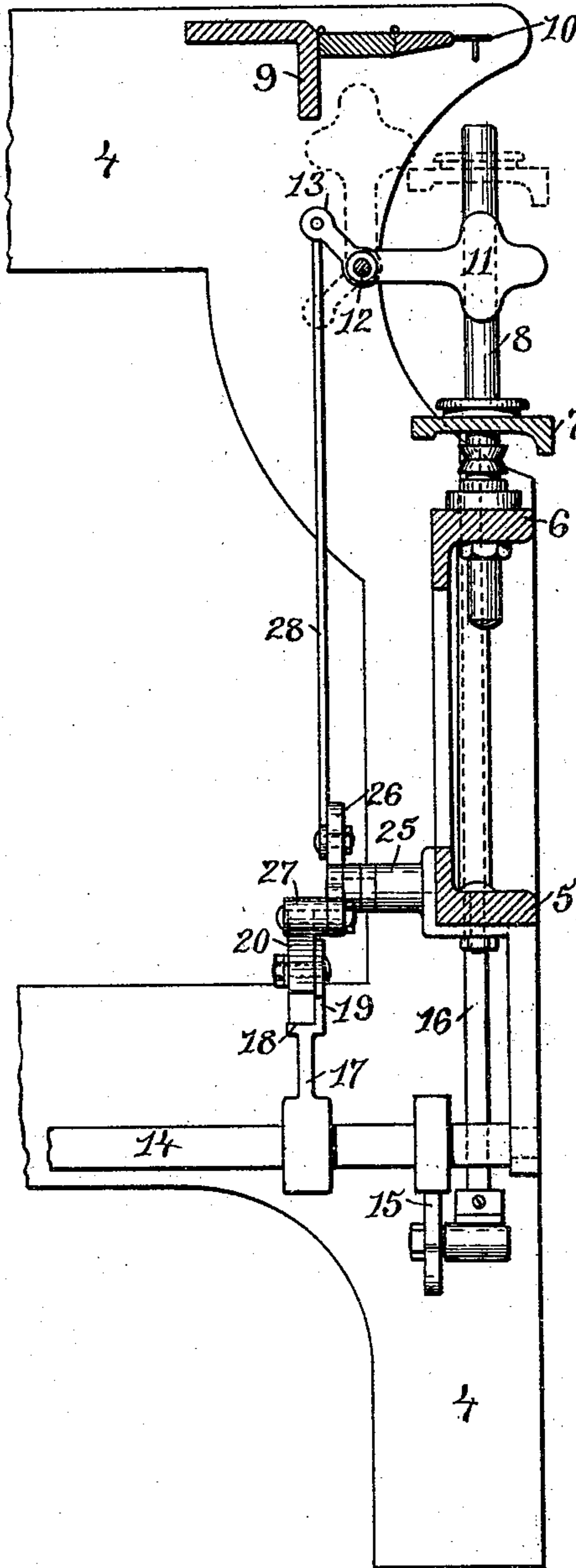


Fig. 2.



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

YARN-SEPARATOR FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 488,136, dated December 13, 1892.

Application filed June 15, 1892. Serial No. 436,783. (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 a new and useful Improvement in Yarn-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.

In the modern spinning-machine the spindles are placed as close together as possible, so as to enable one attendant to attend to the largest possible number of spindles. These spindles are also run now at a much higher speed than formerly. The threads, revolving at high speed, are bowed outward and form balloons when the ring and traveler are laying the yarn on the lower half of the bobbin or cop. Thin metal plates, usually termed "separators," are therefore placed midway between two spindles, by which the interfering of the threads is prevented. These separators are placed midway, or nearly so, of the vertical traverse of the ring-rail, and are arranged so as to move out of the way of the ring-rail while the yarn is being wound on the upper portion of the cop or bobbin, where, owing to the short length of thread between the guide-eye and the ring, the outward bowing or ballooning of the thread is not so great and separators are not required.

The invention has reference to an improvement in the mechanism for operating the separators automatically in connection with the vertical traverse of the ring-rail; and it consists in the peculiar and novel construction more fully set forth hereinafter.

Figure 1 is a view showing the mechanism for operating the separators in connection with a cam secured to the rock-shaft. Fig. 2 is a vertical transverse section of one side of a spinning-machine, showing the mechanism for operating the separators. Fig. 3 is a view of a modified form of the cam.

Similar numbers of reference indicate corresponding parts throughout.

In the drawings, 4 indicates part of the end frame of a spinning-machine; 5, the lower side rail; 6, the bolster-rail; 7, the ring-rail; 8, the spindle; 9, the top rail; 10, the guide-

eyes; 11, the separators; 12, the shaft to which the separators are secured; 13, the arm secured on the shaft 12 by which the shaft, which is journaled at intervals in suitable bearings, is turned; 14, the rock-shaft, on which the arm 15 is secured, the outer end of which arm is connected by the rod 16 with the ring-rail, so that by the rocking of the shaft 14 the ring-rail is raised and lowered.

The parts so far described are now used on the modern ring-spinning machine.

To the rock-shaft 14 the segmental arm 17 is secured. It is provided with the curved bearing-surface 18, which forms a section of a circle of which the center of the rock-shaft is the center, and is also provided with the side lugs 19. The cam 20 rests on the curved segmental surface 18 and is secured by bolts passing through the segmental slots 21 and nuts to the lugs 19, so that the cam can be adjusted on the segmental bearing-surface 18, and two or more cams at different parts of a spinning-machine may be adjusted to operate the separators simultaneously.

The cam 20 has three distinct faces. The cam-face 22 is a segment of a circle of which the axis of the rock-shaft is the center. The cam-face 23 is a steep incline connecting the cam-face 22 with the cam-face 24, which latter is also a segment of a circle of which the axis of the rock-shaft 14 is the center. The wrist-pin 25 is secured to the lower rail 5 and forms the pivotal support for the lever 26, one end of the lever 25 being provided with the roller 27, which bears on and rolls on the face of the cam 20. To the other end of the lever 26, in a slot formed in said end, the rod 28 is pivotally connected, the upper end of the rod 28 being connected with the arm 13. During the vertical reciprocation of the ring-rail on the lower part of the bobbin or cop the roller 27 bears on the segmental cam-face 22 and no motion is imparted to the separators. When the roller 27 reaches the inclined face 23 of the cam, the separators are gradually raised into the position shown in broken lines in Fig. 2, and while the ring-rail is on the upper part of its traverse the roller is on the segmental cam-face 24, and the separators are not moved while the roller is on this segmental cam-face. The weight of the separa-

tors is sufficient to keep the roller 27 in contact with the cam-face. To insure, however, a prompt movement of the separators when the roller reaches the cam-face 23 and the
5 separators are practically in the vertical position shown in broken lines in Fig. 2, the lever 25 may be extended beyond the roller 27 and a weight be placed on the extended end, as is shown in broken lines in Fig. 1, or the
10 cam may have a slot formed in it, as is shown in Fig. 3, in which the roller 27 rolls, so that both sides of the cam-slot act on the roller, and thereby impart positive motion to the lever 25 and through the same to the separa-
15 tors. In a warp-frame provided with these separators when the rings approach the separators they will swing upward out of the way of the ring-rail and retain that position until the ring-rail has passed down again
20 about one-third of its traverse. The separators will then swing outward and maintain that position until the ring-rail again approaches them in its upward traverse. In a filling or cop frame the separators will main-
25 tain their position until the ring-rail nearly approaches them. In laying the conical lay-

ers of the yarn on the middle portion of the spindle the separators rise and fall with the ring-rail, while the roller 27 is on the inclined cam-face 23. When winding on the upper part
30 of the spindle, the separators are held in the position shown in broken lines in Fig. 2. By the construction shown less power is required to operate the separators, because they are only moved into position when required and
35 are out of the way when they are not needed.

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

In a device for operating the separators of
40 a spinning-machine, the combination, with the rock-shaft 14 and the segmental arm 17, having the curved bearing 18 and lugs 19, of the cam 20, provided with the segmental slots
45 21, the separators, and mechanism, substantially as described, intermediate the cam and the separators adapted to operate the separators, as described.

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Witnesses:

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