

No. 701,935.

Patented June 10, 1902.

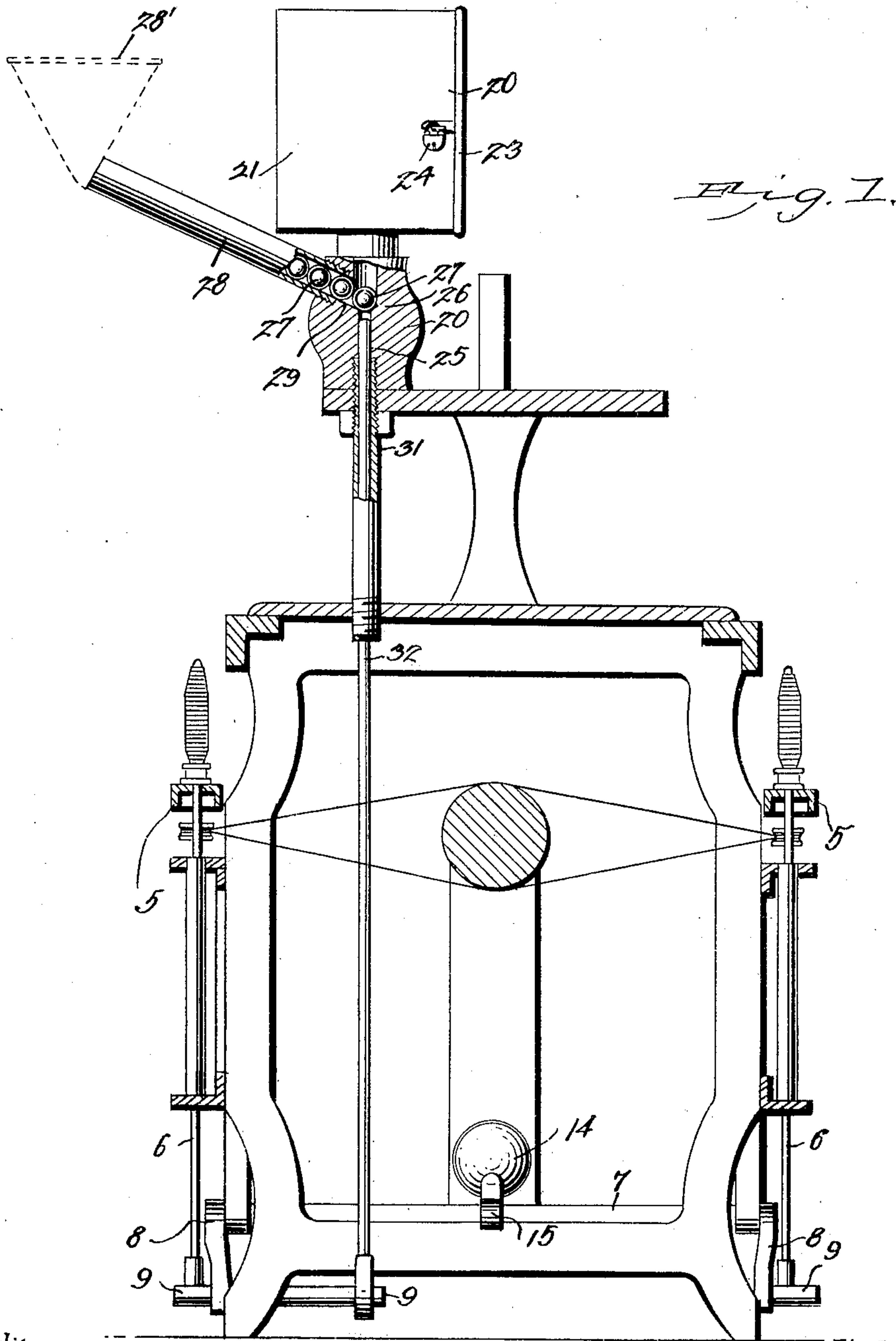
B. G. ROBBINS.

REGISTER.

(Application filed Apr. 14, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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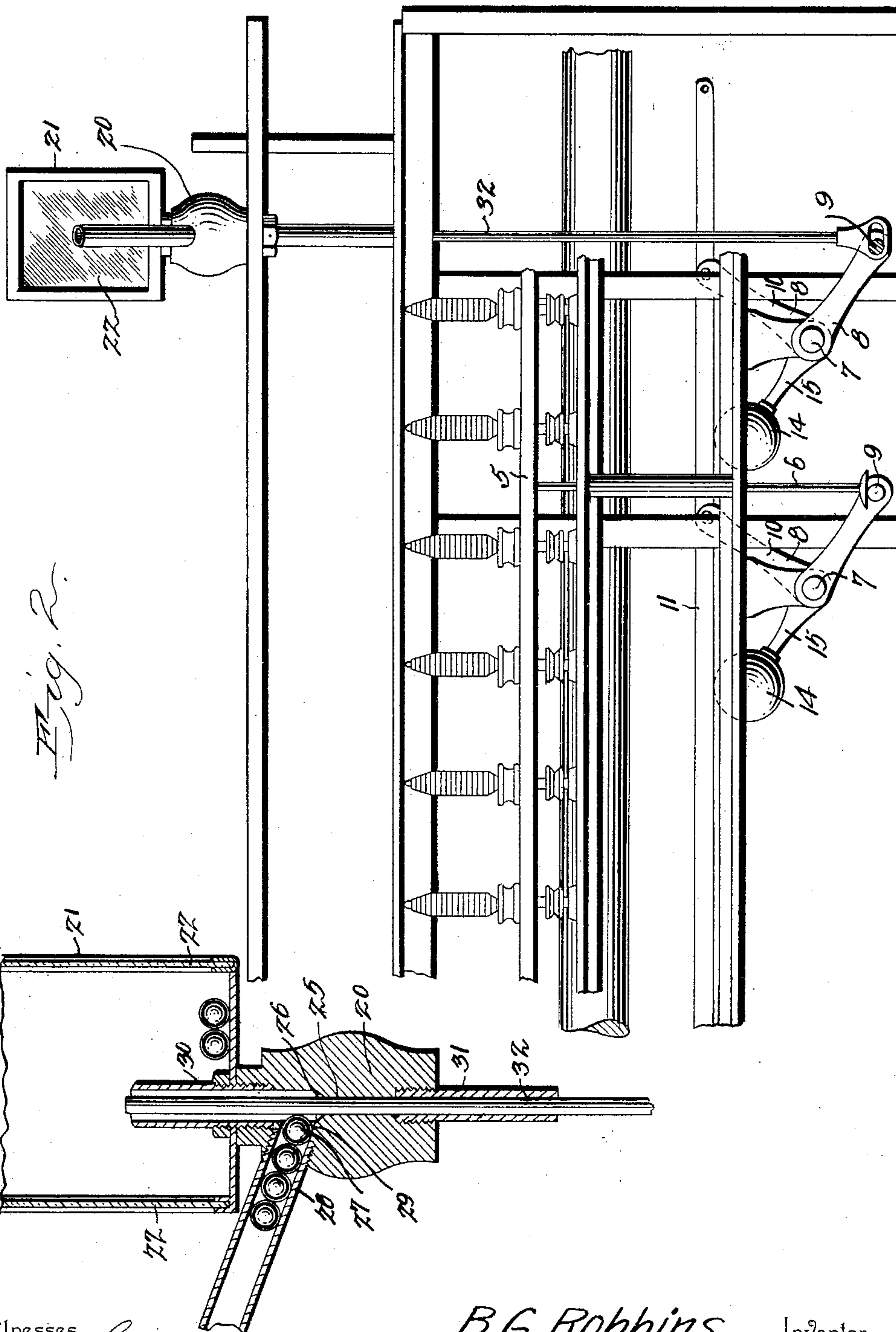
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2 Sheets—Sheet 2.



*Fig. 2.*

*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

BENJIMEN G. ROBBINS, OF LEXINGTON, NORTH CAROLINA.

## REGISTER.

SPECIFICATION forming part of Letters Patent No. 701,935, dated June 10, 1902

Application filed April 14, 1902. Serial No. 102,904. (No model.)

*To all whom it may concern:*

Be it known that I, BENJIMEN G. ROBBINS, a citizen of the United States, residing at Lexington, in the county of Davidson and State of North Carolina, have invented a new and useful Register for Spinning-Frames, of which the following is a specification.

The invention relates to certain improvements in that class of spinning-frames in which the ring-rail has a vertical reciprocating movement with respect to the spindles, and has for its principal object to provide a device for automatically registering the number of times the bobbins are doffed, so that the amount of yarn spun may be readily ascertained at any time.

With this and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a transverse sectional elevation of sufficient of a ring-spinning frame to illustrate the application thereto of a registering device in accordance with my invention. Fig. 2 is a side elevation of the frame, a portion of the mechanism being broken away in order to more clearly illustrate the arrangement and connection of the registering mechanism. Fig. 3 is a sectional elevation of a portion of the registering mechanism, as illustrated in Fig. 1, showing the parts in different positions.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The drawings illustrate a portion of an ordinary form of ring-spinning frame comprising in part a ring-rail 5, mounted on a plurality of rods 6, to which vertical movements are imparted by rock-shaft 7. Each rock-shaft 7 carries a bell-crank lever 8, one end of which is either pivotally connected to the rod 6 or is provided with a pin 9, on which the broadened base of the rod 6 rests. The arms 10 of all of the bell-crank levers are connected to each other by the horizontal bar 11, which receives motion from the usual traverse mechanism, comprising a builder-lever and cam operating in the usual manner. The mechanism serves to impart a downward

movement to the ring-rail against the influence of counterbalancing-weights 14, carried by arm 15, projecting from the several rock-shafts, said weights serving when permitted by the mechanism to raise the ring-rail during the building up of the bobbins.

The principal object of the present invention is to provide a device for automatically registering the number of doffing operations, each doff representing a certain number of bobbins and quantity of yarn, so that the amount of work performed by any machine may be readily ascertained at the close of the day or at any other desired period.

In carrying out my invention I place on the top of the frame a casing 20, on which is mounted a box or receptacle 21, preferably provided with glass panels 22, through which the interior of the casing may be observed. The casing is provided with a door 23, having a suitable lock 24, which may be opened to gain access to the interior.

The casing 20 is provided with a centrally-disposed vertical passage 25, which is contracted in diameter at a point about midway of its length to form a seat or support 26 for the reception of a registering-ball 27, and extending into the side of the casing is a tube 28, arranged at an angle of about forty or forty-five degrees to the horizontal; said tube communicating with a passage 29, which opens into the passage 25 at a point directly above the supporting-seat 26. The tube 28 is made of sufficient length to hold any desired number of balls, and the arrangement of the seat 26 with respect to the adjacent mouth of the passage 29 is such that a ball 27, located on the seat, serves to prevent the movement of a following ball into the passage 25. Communicating with the upper end of the casing 20 is a short tube-section 30, which extends up into the box or casing 21 and has an open upper end through which the balls are successively discharged.

From the casing 20 depends a tube 31, forming a guide for a vertically-disposed ball-discharging rod 32, the lower end of which has a slotted connection with one of the ring-frame-actuating pins 9, the connection being such that the rod receives a reciprocating movement simultaneously with the ring-frame.



In the operation of the device a sufficient quantity of balls are placed in the tube 28, an additional hopper being placed at the end of the tube, as indicated at 28' in Fig. 1, if  
 5 necessary. Each time the ring-rail is depressed to permit the doffing of the filled bobbins a ball runs from the end of the tube 28 to the supporting-seat 26, the upper end of the discharging-rod 32 passing below the seat  
 10 to permit the entrance of the ball. As the ring-rail moves upwardly during the ordinary building up of the bobbins the upper end of the rod 32 will engage the register-ball supported on seat 26 and will force the same up  
 15 through the tube 30, the ball being discharged into the casing 21. During this movement the rod prevents the entrance of a second ball to the seat 26, and it is only when the ring-rail is sufficiently depressed to permit  
 20 doffing that the upper end of the rod passes below the seat 26 and permits the passage of a second ball to said seat. In this manner the proprietor of the mill is enabled to ascertain at the end of the day exactly how many  
 25 bobbins have been wound and the amount of stock on hand.

While the construction herein described, and illustrated in the accompanying drawings, is the preferred form of the device, it is  
 30 obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

35 Having thus described my invention, what I claim is—

1. A doffer-register for spinning-frames, comprising a casing having a vertically-disposed passage, a receiving-chamber in com-  
 40 munication with the upper end of said passage, a ball-feed tube communicating with said passage, and a vertically-disposed rod guided in said passage, said rod having an operative connection with the ring-rail-actu-  
 45 ating mechanism.

2. The combination with a spinning-frame including a ring-rail and its actuating mechanism, of a registering device comprising a casing having a vertically-disposed passage

provided with a ball-seat, a ball-supply tube in 50 communication with said passage at a point above the ball-seat, registering-balls in said tube, a receiving-chamber in communication with the upper end of the vertical passage, and a vertically-disposed rod guided in said pas- 55 sage, said rod having an operative connection with the ring-rail-actuating mechanism.

3. The combination with a spinning-frame including a ring-rail and its actuating mechanism, of a registering device comprising a 60 casing having a vertically-disposed passage provided with a contracted portion forming a ball-seat, a ball-feed tube in communication with said passage at a point directly above the ball-seat and so situated that a ball sup- 65 ported on the seat will prevent the passage of a succeeding ball from the tube, a receiving-chamber in communication with the upper end of said passage, the bottom of said chamber being situated at a point below the open 70 top of the passage, and a vertically-disposed rod guided within said passage, said rod having an operative connection with the ring-rail-operating mechanism, and its upper end being movable to a point below the valve-seat 75 each time the ring-rail is moved to doffing position.

4. A registering device comprising a casing having a vertically-disposed passage provided with a contracted portion forming a ball-seat, 80 the upper end of said passage being in communication with a ball-receiving chamber, a ball-feed passage opening into the vertical passage at a point immediately above the ball-seat, registering-balls, and a vertical rod dis- 85 posed within the vertical passage, said rod having a reciprocating movement from a point below the ball-seat to a point above the upper end of the vertical passage, substantially as specified. 90

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BENJIMEN G. ROBBINS.

Witnesses:

JOHN W. LINDSAY,  
 SYLVESTER LEE OWEN.