

No. 745,466.

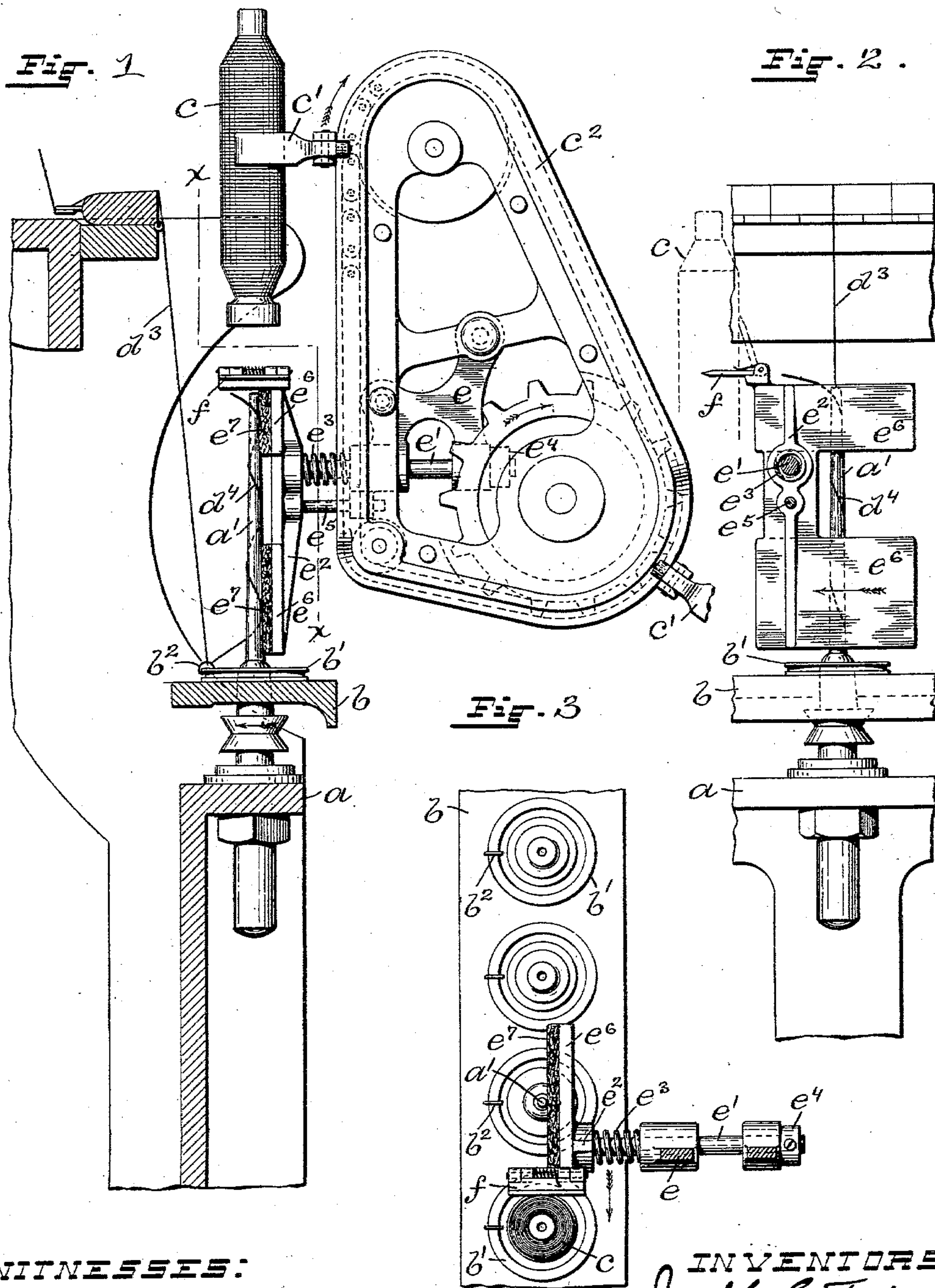
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# YARN CONTROLLER AND SEPARATOR FOR RING SPINNING FRAMES.

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NO MODEL.



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# UNITED STATES PATENT OFFICE.

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## YARN CONTROLLER AND SEPARATOR FOR RING-SPINNING FRAMES.

SPECIFICATION forming part of Letters Patent No. 745,466, dated December 1, 1903.

Application filed December 12, 1901. Renewed September 9, 1903. Serial No. 172,529. (No model.)

### *To all whom it may concern:*

Be it known that we, JOSEPH E. TICHON and HENRY S. FOSTER, citizens of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Yarn Controllers and Separators for Ring-Spinning Frames, of which the following is a specification.

10 This invention has reference to an improved device to separate the yarn and insure the winding of the yarn on the spindle in doffing the bobbin.

15 The invention consists in the peculiar and novel construction of the knife-blade and thread-guide and in the combination with the same of means for lifting the bobbin off the spindle, as will be more fully set forth hereinafter and more particularly pointed out in the claims.

20 When the bobbins of a ring-spinning machine have been completed and are removed from the spindles, it is necessary to separate the yarn and also necessary to wind the end of the yarn on the spindle, so that when the full bobbin is replaced by an empty bobbin the yarn may be at once guided onto and wound on the fresh bobbin. To secure this result, a length of yarn is wound on the spindle or the bobbin-holder below the bobbin. 30 As the bobbin is lifted off the spindle the yarn is drawn upward spirally around the spindle and is separated from the yarn on the bobbin. When the empty bobbin is placed on the spindle, the end of the yarn on the spindle is held by the bobbin, and when the frame is started the yarn is laid on the bobbin by the reciprocating ring and traveler.

40 The object of this invention is to hold the loose end of the yarn on the spindle and separate the same from the yarn on the spindle automatically.

45 Figure 1 is a transverse sectional view of part of a ring-spinning frame, showing part of a doffing device provided with our improved yarn holder and separator. Fig. 2 is a front elevation, partly in section, taken on the line X X of Fig. 1. Fig. 3 is a top view, 50 partly in section.

Similar marks of reference indicate corresponding parts in all the figures.

In the drawings, *a* indicates the bolster-rail of a spinning-machine; *a'*, the spindle, supported on the bolster-rail; *b*, the ring-rail; 55 *b' b'*, the spinning-rings; *b<sup>2</sup> b<sup>2</sup>*, the travelers; *d<sup>3</sup>*, the sliver delivered to the traveler, and *d<sup>4</sup>* the yarn end wound on the spindle in doffing. The bobbin *c* is shown in the drawings lifted from the spindle by the clamp *c'* of the doffing-machine *c<sup>2</sup>*, by which the bobbin is lifted 60 off from the spindle. This doffing-machine may be of any suitable construction. We do not wish to confine ourselves to any particular construction of this machine, but have 65 illustrated in Fig. 1 a form of doffing-machine invented by us.

The yarn-end holder and separator is designed to cooperate with some form of doffing-machine. As illustrated in the drawings, the 70 bracket *e* is secured to the frame of the doffing-machine *c<sup>2</sup>*, and on the bracket is supported in sliding bearings the shaft *e'*. The frame *e<sup>2</sup>* is secured to the end of the shaft *e'* near the spindles. A spiral spring *e<sup>3</sup>* is placed 75 on the shaft *e'* between the frame *e<sup>2</sup>* and the bracket *e*, and the collar *e<sup>4</sup>* is adjustably secured to the other end of the shaft to limit the action of the coiled spring. The pin *e<sup>5</sup>*, projecting from the frame *e<sup>2</sup>*, slides in a bearing 80 on the bracket *e* and serves to maintain the vertical position of the frame *e<sup>2</sup>*. The plates *e<sup>6</sup> e<sup>6</sup>* of the frame *e<sup>2</sup>* have the faces parallel with the spindles covered with the cushions *e<sup>7</sup> e<sup>7</sup>*, of felt-cloth or other material suitable 85 to hold the yarn ends on the spindles. The separating device is supported on the frame *e<sup>2</sup>* above the spindles. It consists of the knife-blade *f*, flexibly connected with the frame. In the preferred form the knife-blade 90 *f* is hinged on a support secured to the frame *e<sup>2</sup>* and held by a spiral spring in the horizontal position.

When our yarn controlling and separating device is used in connection with a doffing-machine, the lifting of the bobbin causes the 95 knife-blade to yield upward, as is shown in broken lines in Fig. 2, and the yarn previously wound on the spindle and still connected with the bobbin is drawn spirally up- 100



ward on the spindle, and as soon as the bobbin is lifted above the knife the same resumes the horizontal position and cuts the yarn between the bobbin and the spindle. As the  
5 bobbin is lifted the doffing-machine continues its forward movement, so that when the yarn end  $d^4$  is separated the cushions hold the yarn on the spindle until the fresh bobbin is placed on the spindle and the yarn end secured.

o Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a yarn controller and separator for ring-spinning machines, the combination with  
15 the spindles, of a yieldingy-supported frame having cushioned surfaces bearing on the spindles and provided with a knife-blade, as described.

2. In a yarn controller and separator, the  
20 combination with a cushioned frame bearing

on the spindles, of a knife supported on the frame, as described.

3. In a spinning-machine, the combination with the spinning-spindles, of a bobbin doff- 25 ing-machine, a frame supported on the doffing-machine, cushions on the frame bearing on the spindles, and a hinged knife supported on the frame, whereby as a bobbin is lifted off from the spindle the yarn is automatically separated and the end securely held 30 on the spindle, as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOSEPH E. TICHON.  
HENRY S. FOSTER.

Witnesses:

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B. S. WEBSTER.