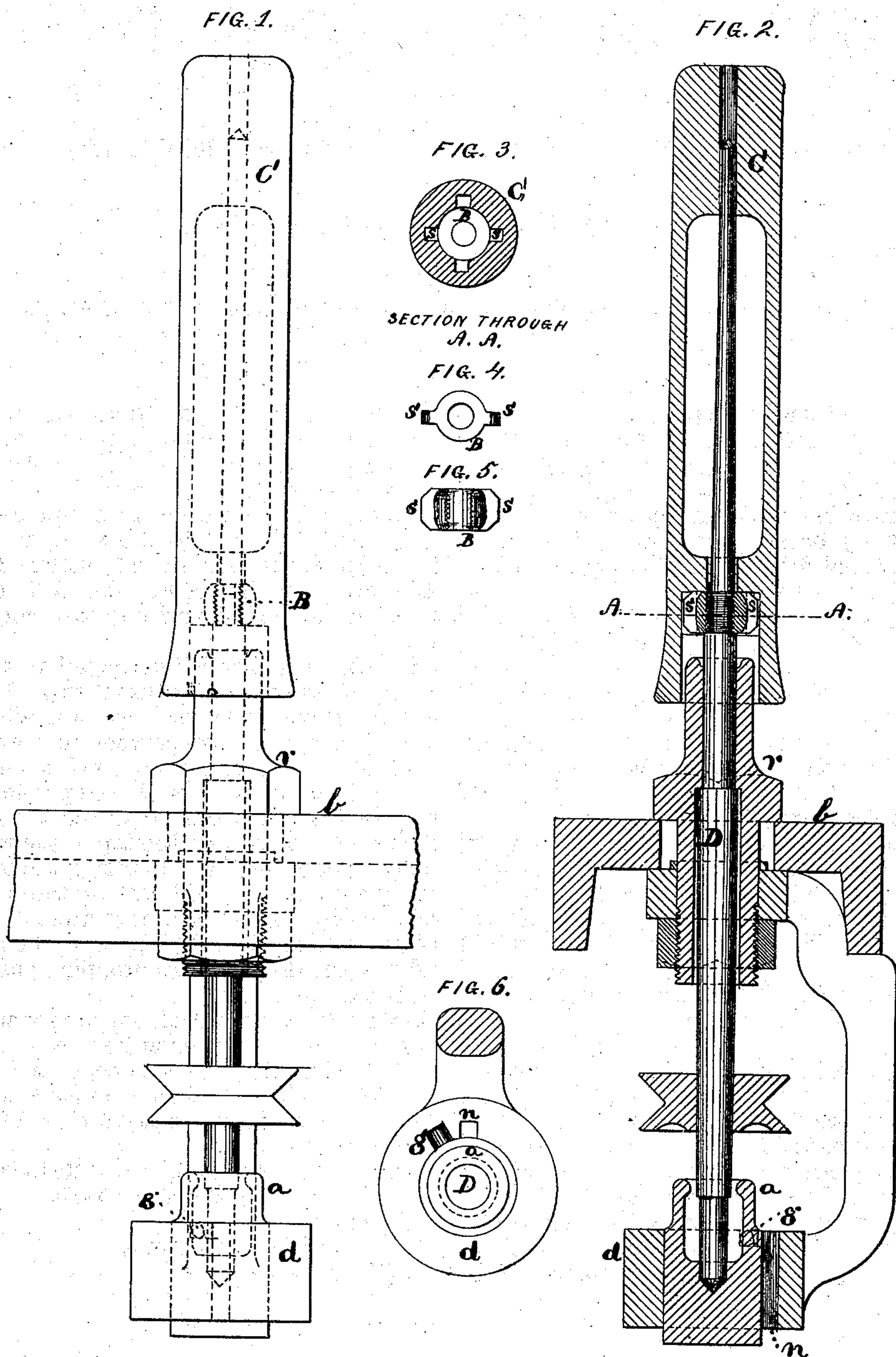


G. CHATTERTON & T. MAYOR.  
Spindle-Steps.

No. 156,205.

Patented Oct. 27, 1874.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

GEORGE CHATTERTON AND THOMAS MAYOR, OF PROVIDENCE, R. I.

## IMPROVEMENT IN SPINDLE-STEPS.

Specification forming part of Letters Patent No. **156,205**, dated October 27, 1874; application filed March 28, 1873.

*To all whom it may concern:*

Be it known that we, GEORGE CHATTERTON and THOMAS MAYOR, of the city and county of Providence and State of Rhode Island, have invented certain Improvements in Machinery for Spinning Cotton, Wool, and other Material for Textile Fabrics, of which the following is a specification:

Our invention relates to a mode of holding the spindle-step in the rail, so that it shall not drop out if the set-screw that holds it becomes loose; and consists of a pin in the side of the step, a channel in the rail for the pin to pass through, and a recess on top of the rail and at one side of the channel for the reception of the pin.

Figure 1 is a front elevation of a spindle-bobbin and the parts that hold them. Fig. 2 is a vertical cross-section of the same taken through the center of the spindle. Fig. 3 shows a horizontal section, taken through line A A, Fig. 2. Fig. 4 is a top view of the spindle-collar and its rings. Fig. 5 shows a side view of the same. Fig. 6 is a top view of the step and its support or rail.

D is a spindle, running in the bolster *n* in the rail *b*, and in the step *a* in the support *d*. B is a collar having one or more wings or flanges, *s s*, projecting from its sides. This collar is secured to the spindle by being screwed on, or in any other suitable way. The end of the bobbin C has a recess made in it, into which the collar B fits, and radial grooves *e e* are made in the sides of the recess to receive the wings *s s*. The collar and wings fit into

the recess and grooves tightly, so that the bobbin is held down and cannot rise and allow the yarn to vary in its twist. The wings *s s* afford large driving-surfaces in a direction so nearly radial to the center of spindle as to cause but little wear to the wood, and when it does wear, the bobbin only settles down a little farther on the collar, and still remains tight and capable of running at a very high speed.

The step *a* is fastened in the rail or support *d* with set-screws in the usual way; but the set-screws sometimes get loose and allow the steps to drop out. To prevent this a pin, *g*, is put in the side of the step, and a channel, *n*, is made in the side of the step-hole in the support *d*, and at a short distance to one side of this channel, and on the top of the rail *d* is made a recess, so that in putting the step up into place the pin *g* will pass up the channel, and then by turning the step around a little the pin will reach and drop into the recess, and prevent the step from dropping out when a set-screw gets loose.

Having thus described our improvements, what we claim as our invention, is—

The combination of the step *a* and pin *g*, with the support or rail *d*, channeled and recessed, substantially as described, and for the purpose specified.

GEORGE CHATTERTON.  
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Witnesses:

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