

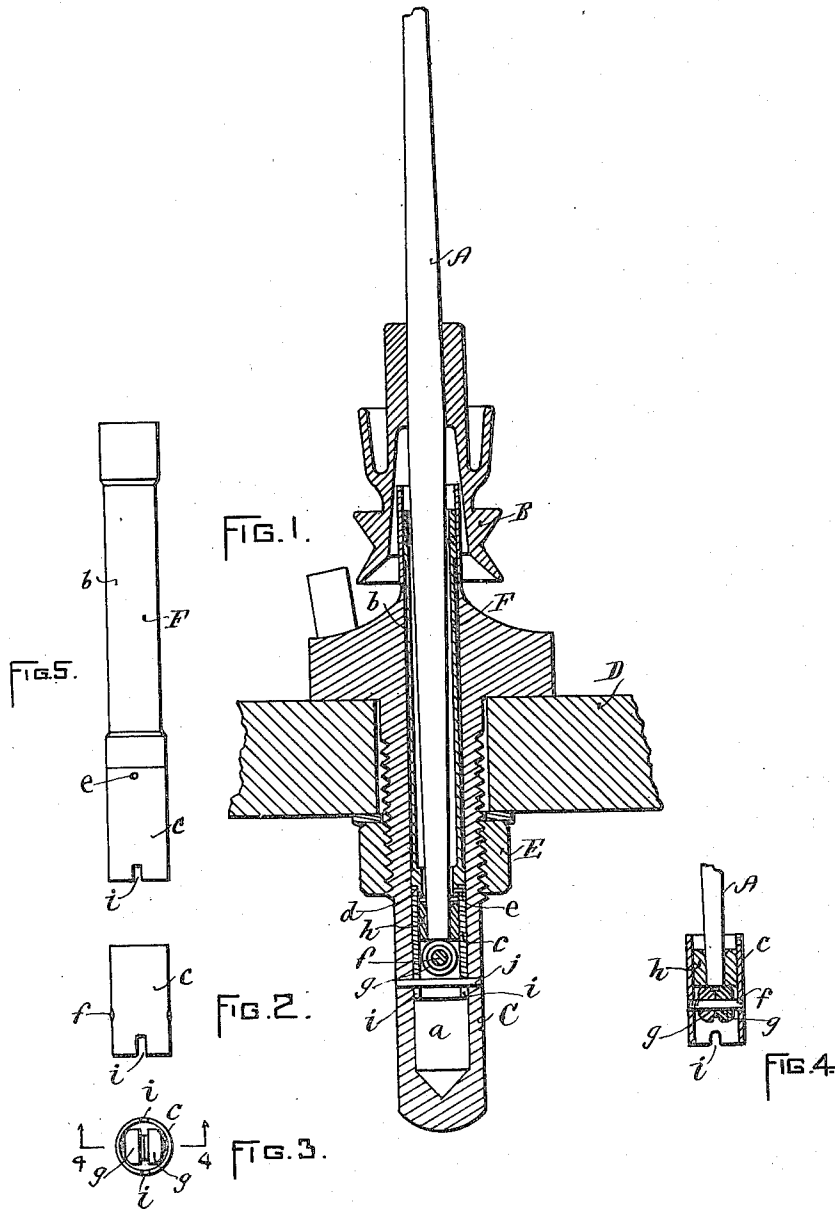
No. 627,062.

Patented June 13, 1899.

H. E. HUGHES.  
SPINDLE.

(Application filed Dec. 20, 1897.)

(No Model.)



WITNESSES:

Henry J. Garvan  
Henry Marsh

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# UNITED STATES PATENT OFFICE.

HENRY E. HUGHES, OF PAWTUCKET, RHODE ISLAND.

## SPINDLE.

SPECIFICATION forming part of Letters Patent No. 627,062, dated June 13, 1899.

Application filed December 20, 1897. Serial No. 662,723. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. HUGHES, a citizen of the United States, residing at Pawtucket, in the State of Rhode Island, have invented a new and useful Improvement in Spindles, of which the following is a specification.

My invention consists in the employment of antifriction-rollers with the step for the spindle, as hereinafter fully set forth.

In the accompanying drawings, Figure 1 represents an axial section of the supporting-case or holder, the bolster, and the step. Fig. 2 represents a side view of the step removed from the bolster. Fig. 3 represents a lower end view of the same. Fig. 4 represents a section taken on the line 4 4 of Fig. 3. Fig. 5 represents a side view of the bolster and step removed from the case or holder.

In the drawings, A represents the spindle, B the whirl, and C the supporting-case or holder, held in place upon the rail D by means of the nut E. Within the cavity *a* of the supporting-case C are placed the bolster and step F, the said bolster and step being made in two parts *b* and *c*, the tube *c*, which forms the step, being connected with the tube *b*, which forms the bolster, by means of a joint *d* and pin *e*. The screw *f* passes diametrically across the cavity of the tube *c*, and upon the screw *f* are placed the antifriction-rollers *g g*, the peripheries of which are so arranged as to form an antifrictional support for the spindle, the squared lower end of the spindle resting thereon, as shown in Fig. 4, and within the cavity of the tube *c*, above the antifriction-rollers *g g*, is placed the loose sleeve *h*, which serves to hold the lower end of the spindle centrally of the step, so that the said

lower end will bear properly upon the peripheries of the antifriction-rollers. Notches *i i* are made diametrically opposite each other in the lower end of the tube *c* of the step, the said notches serving to engage the wire *j*, passing diametrically through the cavity of the case C, and thus prevent the bolster and step from turning with the spindle, while at the same time the bolster and step are upwardly removable at will from the case. The guiding-sleeve *h* is preferably employed, but may be dispensed with, and in that case the bore of the tube *c* will be contracted so as to loosely fit the spindle above the antifriction-rollers.

I claim as my invention—

1. The combination of the spindle, and the supporting-case, with the step and bolster, the antifriction-rollers arranged at opposite sides of the axis of the step and bolster, and engaging means, arranged between the step and bolster, and the supporting-case, whereby the step and bolster are made readily removable from the case, and rotation with the spindle prevented, substantially as described.

2. The combination of the spindle, and the supporting-case, with the step and bolster, the antifriction-rollers arranged at opposite sides of the axis of the step and bolster, the guiding-sleeve, and means arranged between the step and bolster, and the supporting-case, for preventing the rotation of the step and bolster, with the spindle, substantially as described.

HENRY E. HUGHES.

Witnesses:

THOMAS H. HUGHES,  
JAMES J. HUGHES.