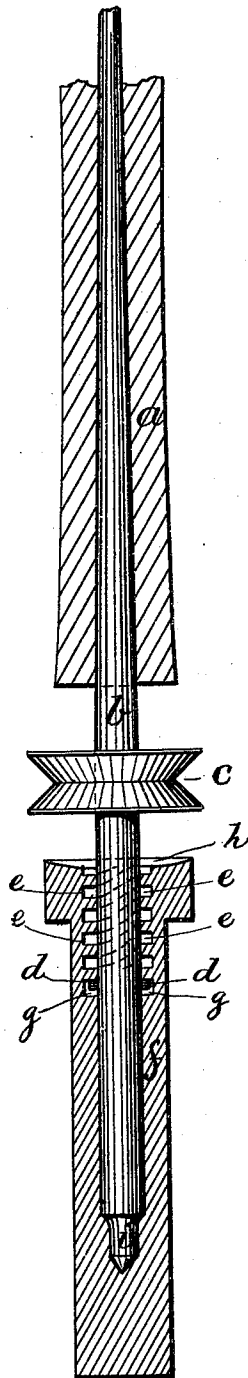


J. C. ARNOLD.

SPINDLE FOR SPINNING-MACHINES.

No. 170,929.

Patented Dec. 14, 1875.



Witnesses:

G. Allen

A. Torrey

Inventor:

John C. Arnold.

by *Allen Andrien*
his atty.

UNITED STATES PATENT OFFICE.

JOHN C. ARNOLD, OF WHITINSVILLE, MASSACHUSETTS.

IMPROVEMENT IN SPINDLES FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. **170,929**, dated December 14, 1875; application filed August 30, 1875.

To all whom it may concern:

Be it known that I, JOHN C. ARNOLD, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spindles for Spinning-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in spinning-machine and other spindles, and its step and bolster combined; and consists of an ordinary spindle, provided with projections somewhere between the whirl and the extreme lower end of the spindle, in combination with a double screw-thread cut in the upper end of the bearing. Below the said screw-thread is made an annular recess in the bearing, in which the projections on the spindle are allowed freely to revolve, after the spindle has been screwed down to its proper bearing in the step and bolster combined.

The aforesaid step and bolster combined is secured to the rail by means of a set-screw or its equivalent, in the usual manner.

By this, my improved spindle and step and bolster combined, the spindle is kept rotating in its proper position during the revolution of the spindle and bobbin. When the spindle is to be removed from the step and bolster combined, it is only necessary to turn it in an opposite direction to that of its revolution when

the projections of the spindle enter the double-threaded screw of the bearing, and thus raise it up and out of the bearing.

The accompanying drawing represents a central longitudinal section of my invention, on which *a* represents the bobbin, and *b* represents the spindle with its whirl *c*. *d d* represent projections on the spindle *b*. *ee* represent a double-threaded female screw in the step and bolster combined, *f*, which screw-thread terminates as an annular recess, *g*, in which the projections *d d* are made to revolve during the revolution of the spindle *b*.

The upper end of the step and bolster combined is made as an oil-cup, *h*, from which the oil is conveyed to the step and lower part of the spindle through the female screw-thread *ee*. The lower end *i* of the spindle *b* rests in a suitable step in the bearing *f*.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

In combination with the spindle *b*, provided with projections *d d*, the step and bolster combined, *f*, having screw-thread *ee*, and annular groove *g*, as and for the purpose set forth and described.

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

JOHN C. ARNOLD.

Witnesses:

GEORGE F. SEARLES,
G. W. RAWSON.