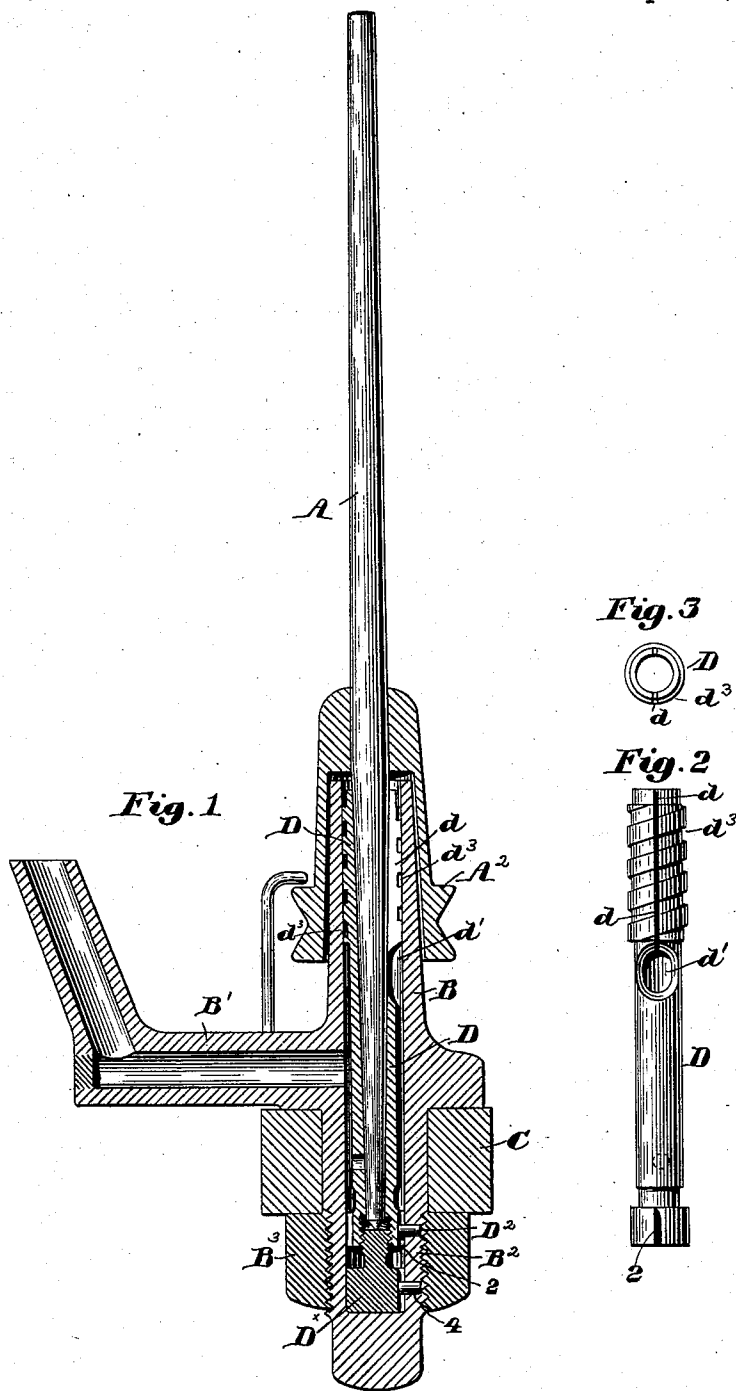


(No Model.)

E. J. CARROLL.
SPINDLE AND BEARING.

No. 567,219.

Patented Sept. 8, 1896.



Witnesses:
Walter E. Soutar
Thomas J. Drummond

Inventor:
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Attys.

UNITED STATES PATENT OFFICE.

EDGAR J. CARROLL, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE SAWYER SPINDLE COMPANY, OF BOSTON, MASSACHUSETTS.

SPINDLE AND BEARING.

SPECIFICATION forming part of Letters Patent No. 567,219, dated September 8, 1896.

Application filed June 3, 1896. Serial No. 594,125. (No model.)

To all whom it may concern:

Be it known that I, EDGAR J. CARROLL, of the city and county of Worcester and State of Massachusetts, have invented an Improvement in Spindles and Bearings, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention relates more particularly to that class of spinning-spindles having tapering pintles and correspondingly-shaped bolsters; and it has for its object the production of means for preventing the natural tendency of the oil to follow the upwardly-inclined pindle and be thrown off from the spindle.

The bolster has heretofore been provided with a spiral slot directed from the upper toward the lower end of the bolster and in the direction of rotation of the spindle for preventing such rise and waste of the oil, as shown in United States Patent No. 544,805, but such bolster is only applicable to spindles always rotated in the same direction.

I have devised a bolster or loose bearing which will operate in whichever direction the spindle is rotated, it being sometimes necessary to reverse the rotation of the spindles to put a reverse twist in the yarn.

Figure 1 in partial vertical section and elevation represents a spindle mounted in one of my improved bolsters. Fig. 2 is a side elevation of the bolster detached, and Fig. 3 is a top or upper end view of the bolster.

The spindle A, having a tapering lower end or pindle and provided with a sleeve-whirl A², the supporting-bolster case B, having an oil-reservoir B' and a threaded shank B², and the nut B³ thereon to clamp the case to the rail C may be and are substantially as shown in United States Patent No. 484,356, to which reference may be had, a pin or projection D², entering a suitable notch 2 in the lower end of the bolster or loose bearing D, preventing its rotation.

A step or end bearing D^x is herein shown as united to the bolster by a screw-thread, the step being restrained from rotation by a pin 4, Fig. 1.

The bolster is composed of a metallic shell D', slotted longitudinally, as at d, from at or

near its upper end downwardly in a straight line, terminating at or a little below the middle of the bolster in a large hole or opening d', cut through the wall of the bolster. Each longitudinal edge of the slot d forms a square corner adjacent the pindle of the spindle, and acting to skim or scrape off the oil when in excess, and whichever way the spindle may be rotated one of the edges acts as described. The slot provides a direct return-channel for the oil so collected, leading into the large hole or enlargement d' of the lower end of the slot, the hole d' acting as a sort of collecting-reservoir for and to distribute the excess of oil to the lower part of the bolster and pindle.

As best shown in Fig. 2, the upper portion of the bolster has formed in its outer surface a spiral groove d³, extending from the upper end of the bolster down to about the termination of the straight slot d. The oil must pass down between the walls of the slot comparatively slowly, as the slot is a narrow one, and I have increased the rapidity of circulation of the oil by making the spiral groove d³ on the outer surface of the bolster and intersecting the slot-walls. This groove thus presents a series of passages which can receive the oil from one or the other of the slot-walls, assisting in leading the oil to the lower part of the bolster.

Owing to the fact that the straight inner corners of the slot-walls act to remove surplus oil from the spindle the trend of the spiral groove does not interfere with the rotation of the spindle in either direction, said spiral groove forming, as it does, an auxiliary passage for conducting the oil to the lower portion of the bolster.

I have shown the bolster herein without any packing between its lower portion and the bolster-case, but it will be understood that yielding packing may be employed in usual manner if desired.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A spindle-support, combined with a bolster held loosely therein and having a straight slot cut through the same, extending longitudinally from its upper end toward its middle, and a large hole or opening in the bolster

at the bottom of the slot, substantially as described.

2. A spindle-support, combined with a bolster held loosely therein and provided with a spiral groove in the exterior of and extending from the upper end of the bolster toward its middle, said bolster also having a straight slot cut therethrough from the upper to the lower end of the spirally-grooved portion, and intersecting said spiral groove at one or more points, substantially as described.

3. A spindle-support, combined with a bolster loosely mounted therein and restrained from rotation, the upper portion of the bolster being grooved spirally upon its exterior and

having a straight-sided slot cut through the bolster, extending from its upper end toward its middle and terminating thereat in an enlargement or hole through the bolster, one or other side of the slot acting to remove excess of oil from the spindle, the slot and the spiral groove conducting the oil therefrom to the enlargement, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDGAR J. CARROLL.

Witnesses:

WILLIAM T. CARROLL,
C. F. STEVENS.