(No Model.)

F. M. DAY.

SPINDLE.

No. 490,245. Patented Jan. 17, 1893.

Fig: 1.

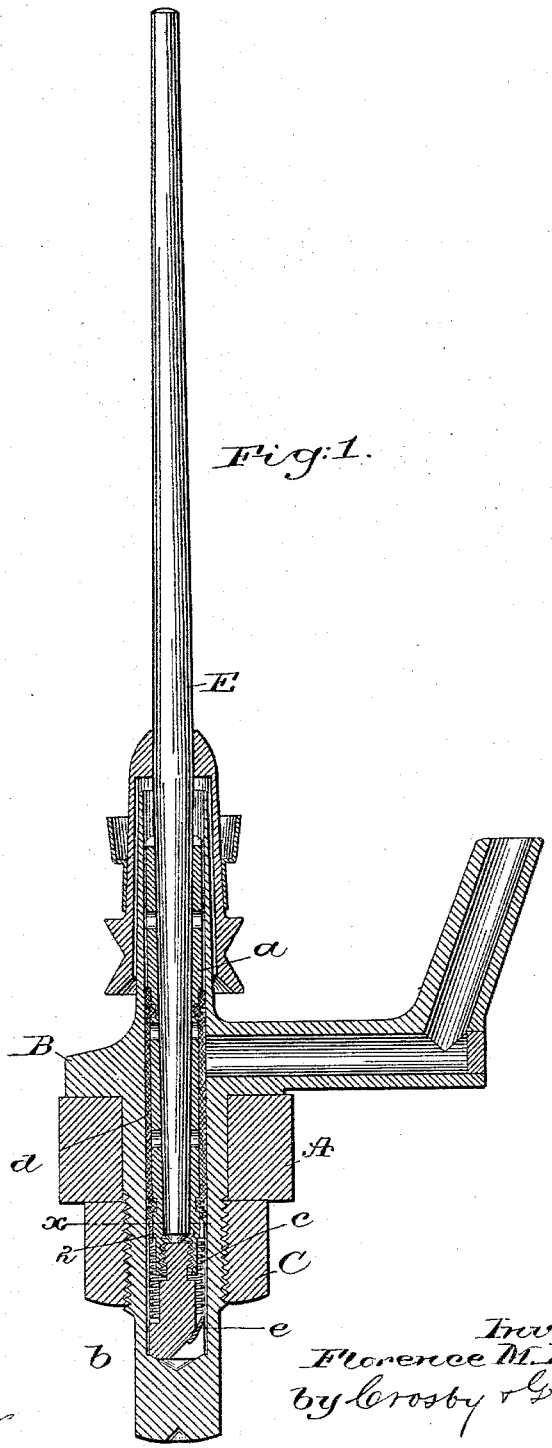

Fig: 2.

Fig: 3.

Fig: 4.

Witnesses.
Fred S. Greenleaf.
Louis N. Goodell

Inventor:
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UNITED STATES PATENT OFFICE.

FLORENCE M. DAY, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE SAWYER SPINDLE COMPANY, OF SAME PLACE.

SPINDLE.

SPECIFICATION forming part of Letters Patent No. 490,245, dated January 17, 1893.

Application filed October 3, 1892. Serial No. 447,630. (No model.)

To all whom it may concern:

Be it known that I, FLORENCE M. DAY, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Spindles, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention is intended as an improvement on the class of spindle support and connected bearings represented in United States Letters Patent No. 378,877, said patent showing a spindle having a tapering pintle which enters a tapering hole in a bolster, said bolster having a step connected to its lower end by a screw thread, whereby, as the spindle and bolster wear, the latter may be rotated and elevated with relation to the step to preserve the proper contact between the bolster and spindle. In this class of spindle in order to adjust the bearing with relation to the step, it has been customary to remove the spindle and thereafter by a suitable screw driver or device, rotate the bolster. In practice it has been found that with a tapering pintle in a tapering hole in a bolster, the presence of dirt or foreign matter in the oil or other lubricating fluid, sometimes results in binding the pintle in the bolster so that the free rotation of the spindle is retarded more or less by the resulting friction.

This invention has for its object to obviate this binding between the pintle of the spindle and the bolster, and I have effected this object automatically by connecting to the bolster a spring. Ordinarily either the step or bolster, or both, in this class of spindle are positively restrained while in the supporting case, so that a bolster cannot be adjusted with relation to the step without removing the bolster and step.

Figure 1, in vertical section represents a spindle and support containing a bolster and step embodying my invention. Fig. 2, is a top or plan view of the bolster. Fig. 3, is a section of the bolster in the line *x* Fig. 1; and Fig. 4, is a top or plan view of the step with its surrounding spring to be described, the bolster being detached from the step.

The rail A, the bolster bearing or support B mounted thereon and secured in position by the nut C, and the sleeve whirl spindle E; the bolster bearing *a*, the step *b* connected thereto by screw threads as at *c*, and the means for supplying oil to the spindle are and may be all as common. In this instance of my invention I have shown the bolster as surrounded by a fibrous or yielding packing, but in this particular this invention is not limited.

I will now describe my invention. I have connected to the step *b* one end of the spring *e*, the opposite end of said spring, marked 2, entering one of the notches 3 in the lower end of the bolster. The spring *e* is so applied that it is adapted to be wound tighter as the spindle is rotated in the direction of spinning, but the force of the spring is such as compared with the established friction between the pintle of the spindle and the interior of the bolster that under ordinary circumstances the spindle running with the desired freeness will not turn the bolster to further wind the spring, but in case of any undue sticking or binding of the tapered pintle of the spindle in the tapering hole of the bolster, then the friction between the pintle spindle and bolster being in excess of that required for good work, the pintle of the spindle will rotate the bolster with it against the stress of the spring, and in so doing will cause the bolster by or through its screw threads engaging the screw threads of the step to be moved downwardly with relation to the step and consequently away from the pintle of the spindle and thus reduce the friction. This spring connected at one end of the bolster united to the step by a screw thread is of the gist of this invention, and by its use the spindle may always run freely notwithstanding lack of proper adjustment by the operator, or by impurities or foreign matter lodged between the pintle of the spindle and the interior of the bolster.

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

1. In a spindle support, a supporting case, a bolster, a step connected to the bolster by a screw thread, and a pintle to fit the said bolster, combined with a yielding or spring connection to under normal conditions engage the bolster and prevent its rotation with the

spindle, but permit the bolster to be rotated by the spindle on the occurrence of undue friction between the pintle of the spindle and the interior of the bolster to thus lessen said friction, substantially as described.

2. A spindle having a taper fit in its bearing, a bolster tapered internally to fit the spindle and provided with a screw thread, a support having a thread engaged by the thread of the bolster, and a spring attached to said bolster to enable it at predetermined times to rotate with the spindle, substantially as described.

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

FLORENCE M. DAY.

Witnesses:
S. F. SMITH,
O. H. LANE.