(No Model.)

B. N. GOODALE.

SUPPORT FOR SPINNING SPINDLES.

No. 418,333. Patented Dec. 31, 1889.

Fig: 1.

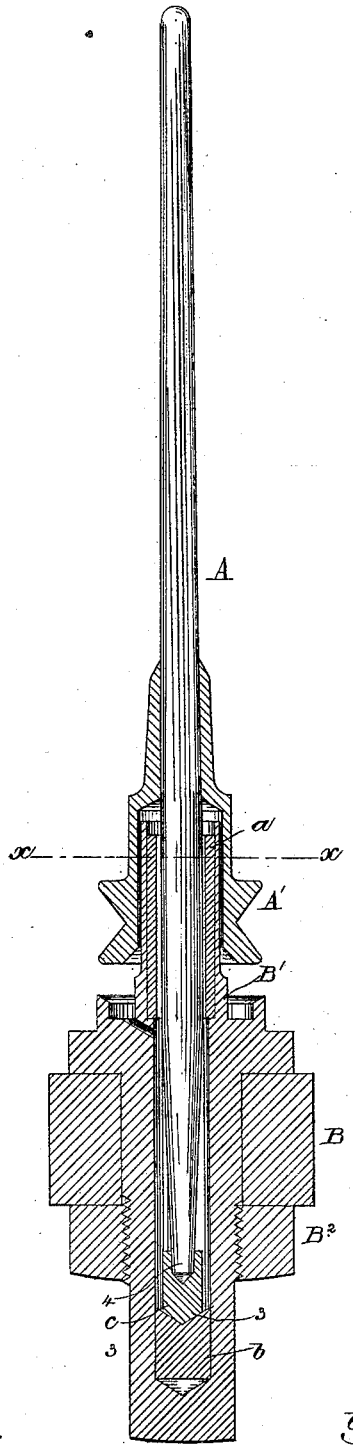


Fig: 2.

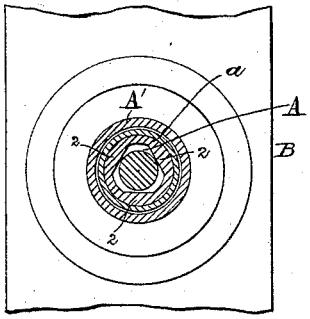


Fig: 3.

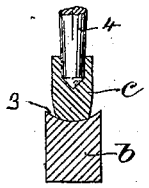
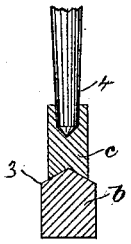


Fig: 4.



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UNITED STATES PATENT OFFICE.

BENJAMIN N. GOODALE, OF SACO, MAINE, ASSIGNOR TO THE SAWYER SPINDLE COMPANY, OF BOSTON, MASSACHUSETTS.

SUPPORT FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 418,333, dated December 31, 1889.

Application filed May 24, 1889. Serial No. 311,960. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN N. GOODALE, of Saco, in the county of York and State of Maine, have invented an Improvement in Supports for Spindle-Bearings, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a spindle with a bearing-step and step-support of such construction that a spindle having a loose fit or running in loose bearings will be lifted or moved longitudinally as the foot of the spindle wanders to find the true center of rotation of the load carried by it. In this way the weight of the spindle is made to produce a restraining influence opposed to the lateral movement of the spindle, thus obviating the use of springs, cushions, &c., which have been heretofore commonly employed.

My invention consists, essentially, in the combination, with a spindle, a bolster-bearing, and a step-support having an inclined or tapered top, the incline or taper being obtuse, as will be described, of an independent step for the foot of the spindle, one end of the said step having tapered or inclined surfaces to co-operate with the tapered or inclined surfaces of the step-support, whereby the step may move laterally bodily on the step-support with the spindle and return to its normal central position by gravity, substantially as will be described.

In this my invention the weight of the spindle and its load is exerted toward centering the spindle upon the step.

Figure 1, in partial elevation and section, represents a spindle and its support embodying my invention. Fig. 2 is a section below the dotted line *x*, and Figs. 3 and 4 show modifications of my invention.

The spindle A, having a sleeve-whirl A′, the rail B, the supporting-case B′, and nut B^2 to confine the said case on the rail, are and may be all as usual. The supporting-case contains a bolster-bearing *a*, herein represented as held rigidly and as having at its inner side facets or plane surfaces 2, substantially such as represented in application Serial No. 311,959, filed concurrently herewith, against which facets the spindle is aligned by the pull of the usual band on the whirl of the spindle. The lower end of the supporting-case is provided with a step-support, shown as a separate block *b*, provided at its top with inclined or beveled faces, as 3, on which rests inclined or beveled faces at the lower end of the step *c*, the latter being shaped at its upper end to receive the lower end of or constitute a center of rotation for and to guide the lower end 4 of the spindle. The spindle has a loose fit in the bolster-bearing, and as the foot of the spindle starts to move laterally or wander in its efforts to seek the center of rotation of the load carried by it the step is moved by the spindle and the lower end of the step as it is moved is compelled to rise, thus lifting the spindle and its load. In this way the weight of the spindle and its load constitute an opposing force which retards the lateral motion of the foot of the spindle, and such opposing force is always exerted to center the spindle upon the step.

I do not desire to limit my invention to the use of the described step and step-support or equivalent in connection with the particular bolster described, but may use other well-known forms of bolster-bearing having provision for necessary looseness, to thereby allow the spindle to move laterally or tip somewhat as it revolves.

I do not desire to limit my invention to the particular inclination or taper of the step-support or of the step, and, instead of the inclination being in a perfect straight line, the surface may be somewhat curved, as represented in Fig. 3.

I claim—

The combination, with a spindle, a bolster-bearing, and a step-support having an inclined or tapered top, the incline or taper being obtuse, substantially as described, of an independent step for the foot of the

spindle, one end of the said step having a tapered or inclined surface to co-operate with the tapered or inclined surface of the step-support, whereby the step may move laterally bodily on the step-support with the spindle and return to its normal central position by gravity, as and for the purpose set forth.

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

BENJ. N. GOODALE.

Witnesses:
GEORGE A. EMERY,
H. FAIRFIELD.