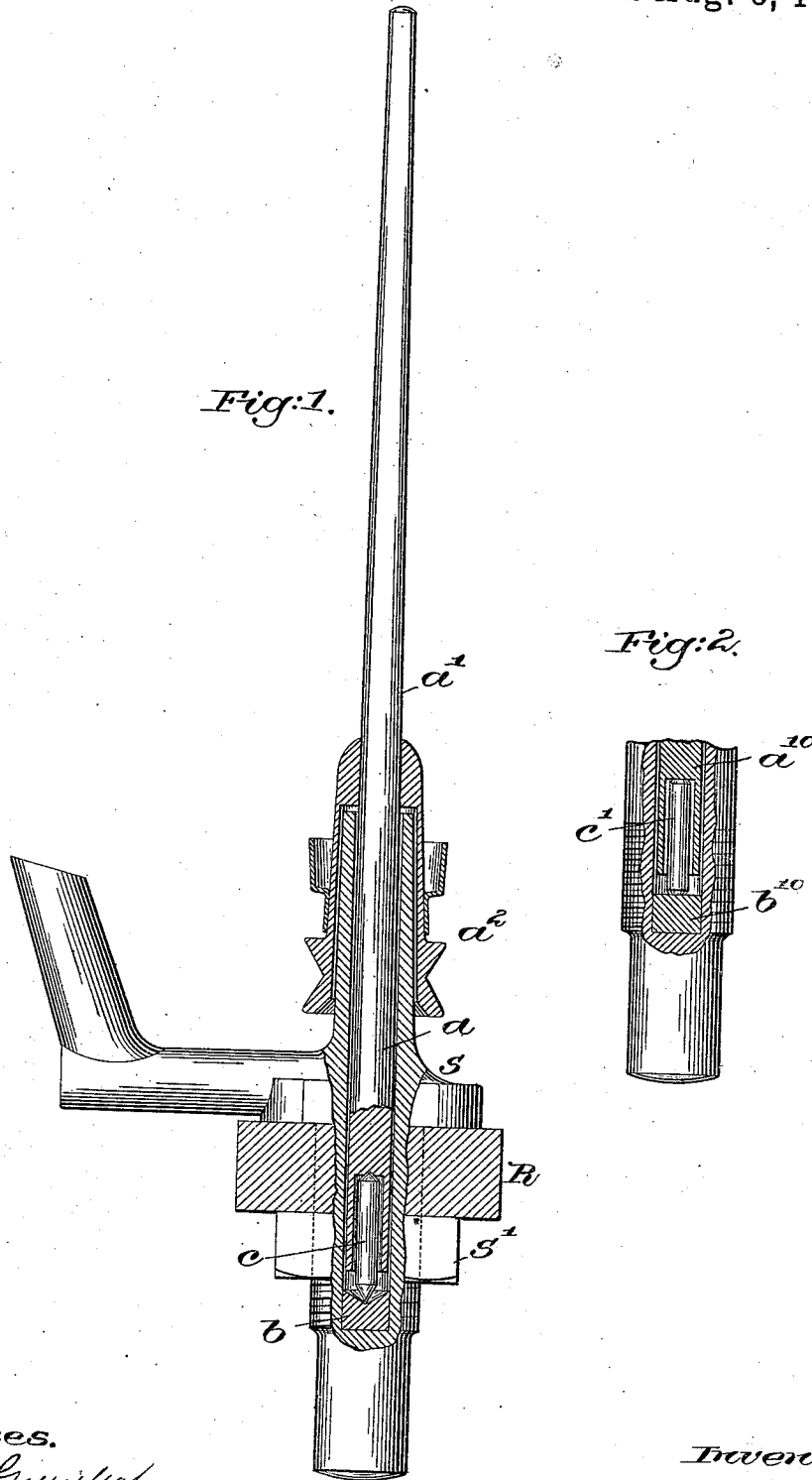


(No Model.)

J. H. NORTHROP.
SPINDLE BEARING.

No. 503,061.

Patented Aug. 8, 1893.



Witnesses.

Fred S. Guillet
John F. C. Permitt

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UNITED STATES PATENT OFFICE.

JAMES H. NORTHROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
GEORGE DRAPER & SONS, OF SAME PLACE.

SPINDLE-BEARING.

SPECIFICATION forming part of Letters Patent No. 503,061, dated August 8, 1893.

Application filed April 22, 1893. Serial No. 471,394. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. NORTHROP, a subject of the Queen of Great Britain, residing at Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in 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 novel and useful bearing for a sleeve whirl spindle. High speed sleeve whirl spindles commonly have loose lateral bearings. In this my invention as herein embodied, I dispense with a loose lateral bearing external to the pintle of the spindle, and instead sustain the free end of the pintle on a post which is free to move and also to rotate as the spindle rotates, the post having a suitable step to sustain its lower end, the lower end of the spindle and post being centered one with relation to the other.

Figure 1, in elevation and section represents a spindle and bearing therefor embodying my invention, and Fig. 2 is a modification.

The rail R has applied to it a supporting-case S which is held in place by a nut S', of usual construction, engaging a threaded part of the shank of the case. The supporting-case is bored centrally for the reception of the pintle *a* of the spindle *a'*, provided with a sleeve whirl *a''*, the said case constituting a rigid or unyielding lateral bearing for the pintle of the spindle.

In the bottom of the bore in the supporting-case or lateral bearing I have made a step *b*, it being shown as a separate piece, and it may have a central depression to receive the lower end of the post *c*, the opposite or upper end of the post entering loosely a recess or pocket at the lower end of the spindle, the post and lower end of the pintle being so shaped and combined that the post, while it supports the weight of the spindle, is free to move or tip as the lower end of the pintle is moved laterally in the rigid surrounding lat-

eral bearing in which said pintle has a loose fit. The post is free to rotate with the spindle. A spindle supported directly by a post, such as shown, may be rotated with the expenditure of but the minimum of power. The post will preferably enter the lower end of the pintle for a distance sufficient to form side walls to aid in keeping the upper, and it may be pointed end of the post in substantially central position with relation to the longitudinal center of the spindle, but this invention is not limited to the particular shape of the post so long as the post may move to let the spindle move laterally.

In Fig. 2 I have shown a blunt ended post *c'* resting on a step *b'* and entering loosely a hole in the spindle *d''*.

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

1. A spindle, and a lateral bearing therefor, combined with an unattached loosely mounted post to support the end of the pintle of the spindle, substantially as described.

2. A spindle having a pintle provided with a central opening; and a lateral bearing for the spindle; combined with a post entering said opening loosely to provide for lateral movement of the spindle on the post, said post sustaining the weight of the spindle and being free to be rotated by the friction between the bottom of said opening and the end of the post, substantially as described.

3. A spindle having a pintle provided with a chamber; a lateral bearing and a step, combined with a post centered loosely at one end in the step, and entering loosely a chamber in the end of the pintle, substantially as described.

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

JAMES H. NORTHROP.

Witnesses:

C. E. LONGFELLOW,
S. F. SMITH.