

(No Model.)

W. F. DRAPER.

SUPPORT FOR SPINNING SPINDLES.

No. 412,170.

Patented Oct. 1, 1889.

Fig: 1.

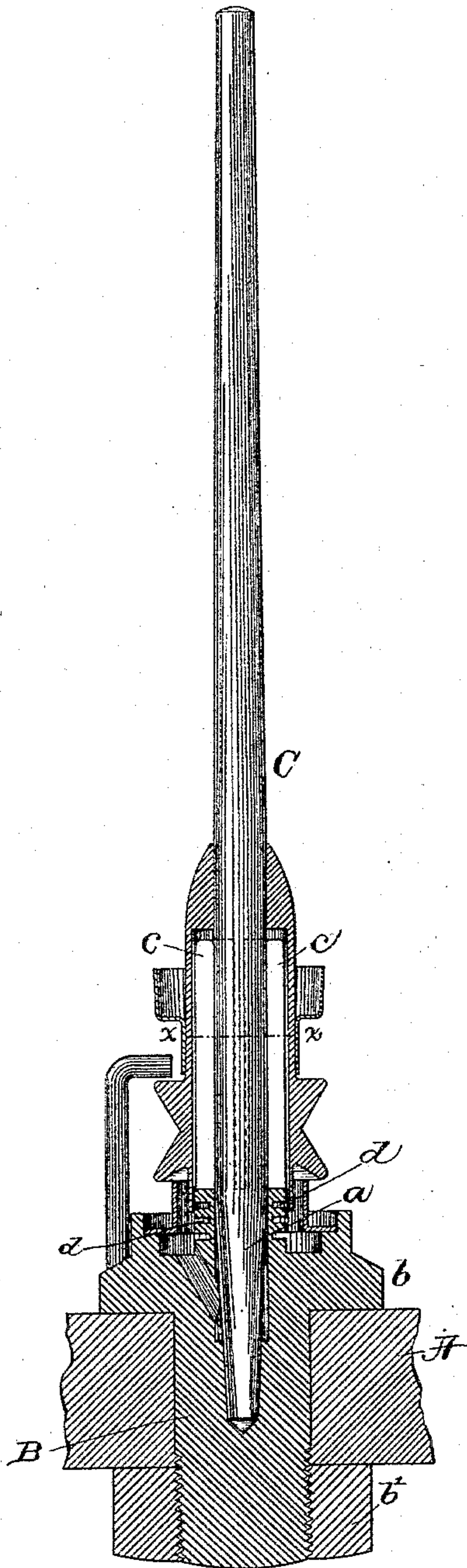


Fig: 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO  
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## SUPPORT FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 412,170, dated October 1, 1889.

Application filed January 3, 1888. Serial No. 259,618. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. DRAPER, of Hopedale, county of Worcester, and State of Massachusetts, have invented an Improvement in Supports for Spinning-Spindles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention is an improvement on that class of bearings shown in United States Patent No. 332,067, dated December 8, 1885.

15 The patent referred to contains a bolster rising as a sleeve from a base supported in a hole in the usual rail, the sleeve being slotted to form four arms, and being surrounded by a spiral spring, the arms and spring being surrounded by the usual sleeve-whirl, the slots in the sleeve being so formed as to present two sharp corners at the inner side of each arm. It is well understood that the smaller the diameter of the whirl the greater the speed of the spindle, other things being equal, so it is a great desideratum to keep the diameter of the spindle to the minimum. In the bolster referred to it was deemed essential to surround the said arms with the said spring to restrain the too free expansion of the arms under the strain of the band; but in practice the arms were so slender that the spring forced them in against the spindle injuriously, causing the arm to bind the spindle and the sharp corners of the arms more rapidly into the spindle. Retaining a sleeve-whirl of the usual diameter internally necessitated making the arms comparatively thin, for the space to be occupied by the arms and springs was necessarily limited.

40 In my experiments to improve the class of bolster-bearing referred to I discovered that when the sleeve-like part of the bolster was made thicker, so as to practically fill the space between the pintle of the spindle and the interior of the whirl, the arms themselves were sufficiently stiff to properly support the spindle and that the spring might be dispensed with, and by rounding the inner corners of the arms the spindle was not worn. Dispensing with the sharp corners shown upon the arms in the said patent and round-

ing the same, as herein shown, is also of advantage, as it enables the spindle to rotate in the bolster without the arms scraping the oil from the surface of the spindle.

The arms herein referred to are extended into the space between the sleeve-whirl and spindle and constitute a lateral bearing for the spindle within the sleeve-whirl, the said arms being entirely unrestricted as to their movement except by the whirl.

60 Figure 1 represents in section a spindle bearing and rail embodying my invention, the sleeve-whirl being also in section, the spindle being in elevation; and Fig. 2 is a section of the bolster only in the dotted line *a*.

65 The rail A receives within it the shank B of a piece of metal, which constitutes not only the bolster, but the step for the pintle *a* of the sleeve-whirl spindle C. This piece of metal has a collar or flange, as *b*, which rests upon the rail A, and the shank of the piece of metal is secured to the rail by means of a nut *b'*. At a point above the flange or collar *b* the tubular sleeve-like portion of the piece of metal, thick enough to nearly fill the space between the pintle *a* of the spindle and the interior of the sleeve-whirl, is slotted at right angles, as best represented in Fig. 2, separating the said tubular or sleeve-like portion into independent arms, as *c*, the drawings showing four such arms, the inner corners of the arms left by slotting the said sleeve-like portion being rounded off or having their sharp corners cut away, so as not to enter or wear into the surface of the spindle rotating in contact therewith or scrape off the oil from the said surface. These arms are left unrestrained externally, so as to spring or yield to a limited extent or move laterally with the spindle as the pintle thereof vibrates. The sleeve-whirl is extended down about the said arms and nearly touches them.

To impart or give yet further elasticity to the bearing portion of the bolster above the flange *b*, I have provided the same with a series of grooves, as *d*, which are cut annularly into the sleeve-like portion of the bolster, but not entirely through the same from its outer side toward its inner wall, the said grooves being deep enough to leave a thin wall of



metal between their bottoms and the interior of the sleeve.

I do not claim a bolster slotted through from one to its other side.

5 I claim—

1. The combination, with a sleeve-whirl spindle, of a bearing composed of a block having rising from it a series of independent arms c, arranged in a circle and of a thickness  
10 to substantially fill the space between the pintle of the spindle and the interior of the sleeve-whirl and having inner rounded corners, the said arms forming a lateral bearing for the spindle at a point below the attachment of the whirl and being extended into  
15 the space between the sleeve of the whirl and the spindle, the said arms being entirely unrestricted as to their movement excepting by the whirl, substantially as described.

20 2. In a spindle-bearing, a sleeve-like support or bolster to receive within it the pintle or lower end of the spindle and slitted longi-

tudinally to constitute a series of independent arms, the inner corners of which are rounded, and provided with a suitable number of grooves cut into it from the outside to render the said support or bolster elastic under the strain of the spindle, substantially as described.

3. In a spindle-bearing, a sleeve-like support or bolster to receive within it the pintle or lower end of the spindle, and provided at or near its base with annular grooves extended well into the substance of the support or bolster to render it elastic under the strain  
35 of the spindle, substantially as described.

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

WM. F. DRAPER.

Witnesses:

G. W. GREGORY,  
C. M. CONE.