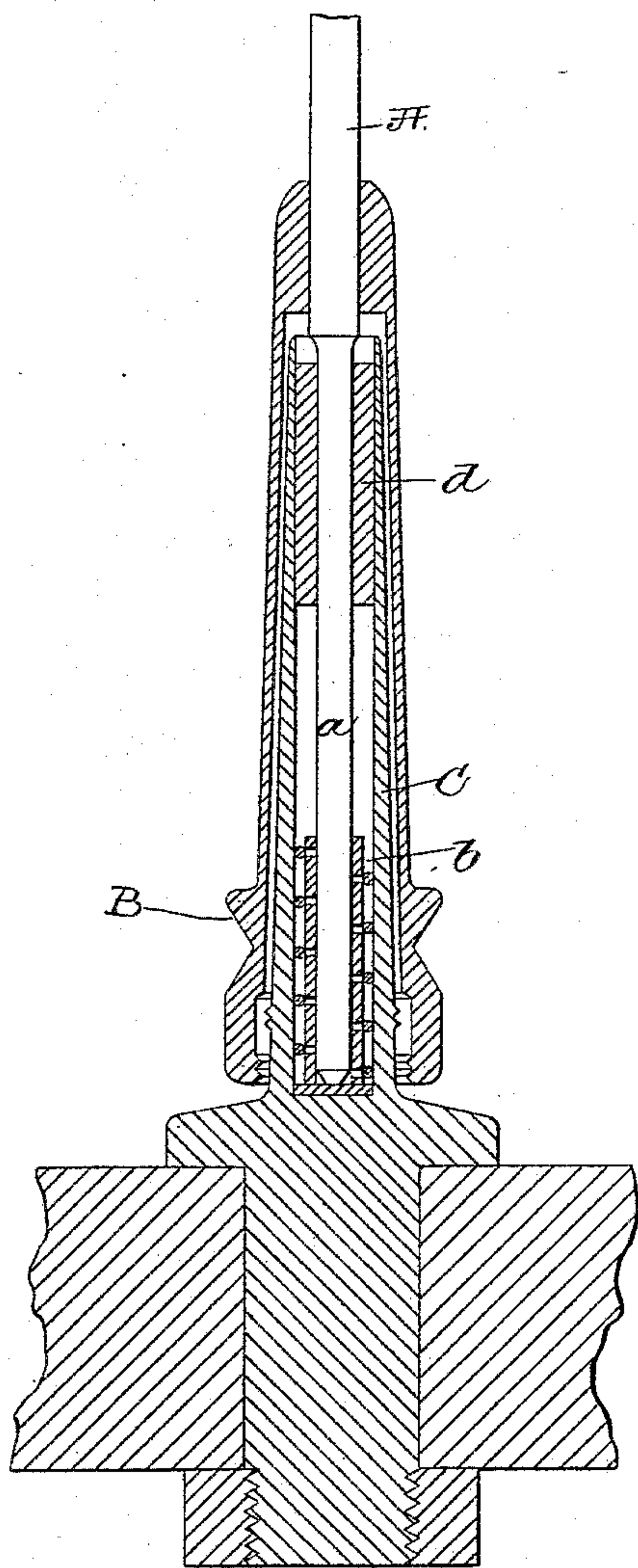


(No Model.)

W. F. DRAPER.
SUPPORT FOR SPINNING SPINDLES.

No. 412,169.

Patented Oct. 1, 1889.



Witnesses.
Fred. S. Greenleaf
Fred L. Emery.

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UNITED STATES PATENT OFFICE.

WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
GEORGE DRAPER & SONS, OF SAME PLACE.

SUPPORT FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 412,169, dated October 1, 1889.

Application filed April 22, 1887. Serial No. 235,773. (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 Improve-
5 ment in Supports for Spinning-Spindles, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

10 This invention is an improvement upon that class of spindle-supports wherein the entire lateral bearing for the spindle is located below the junction of the whirl and spindle.

In accordance with this invention the spindle below the junction of the sleeve-whirl with the spindle has two independent lateral bearings, the lower one of which is yielding, so that the spindle when being rotated rapidly and carrying an unequally-distributed
20 bobbin-load may yield in any radial direction at its lower end for a limited or sufficient distance to thus enable the vibrations of the rotating spindle to be taken up without that shock or blow which is experienced when a
25 support or bearing unrestrained as to its lateral movement except by a bolster-case itself is moved therein by the foot of the spindle.

My invention consists, essentially, in the combination, with a spindle, of a bolster case or tube affording an upper rigid lateral bearing for the spindle and a yielding lateral bearing for the lower end of the spindle, which in the example shown is disconnected from the rigid upper bearing.

35 The drawing in vertical section shows a sleeve-whirl spindle, a bolster case or tube affording a rigid upper lateral bearing for the spindle, and the independent yielding bearing for the foot of the spindle, the spindle being in elevation.

40 The spindle A has secured to it a sleeve-whirl B.

C represents the bolster case or tube. This bolster case or tube has a fixed or rigid metal bearing *d*. The independent yielding lateral bearing for the foot of the spindle is shown at *b*. The bearing *b* surrounds and comes in contact with the sides of the spindle at its lower end, while the bearing *d* surrounds
50 and comes in contact with the spindle above

the bearing *b*, the said bearing being disconnected in the example shown in the drawing.

In this present embodiment of my invention the bearing *b* is shown as composed of a spirally twisted or wound strip of flat metal 55 surrounded by a spirally-wound wire spring, (the wire coming opposite the spiral space between the adjacent edges of the flat metal strip,) and the whole inclosed in the tubular case, so that as the lower end of the spindle 60 is vibrated or made to tremble at high speed the said lateral bearing *b* will be free to yield or move sufficiently under spring action to take up the blow of the spindle.

I am aware that it is old to provide a bolster-case with a single laterally-movable tube constituting the sole lateral bearing of the spindle; but prior to my invention I am not aware that the spindle has been surrounded below the junction of the sleeve-whirl and 70 spindle by two bearings, one at the foot of the spindle capable of yielding to vibration or blows of the spindle due to rapid rotation with an unbalanced load, and the other the bolster-bearing, which is fixed or rigid, so 75 as to hold the spindle in proper position against the pull of the band upon the whirl.

I have found by experiment that a spindle run in independent bearings—the upper one fixed and the lower one movable laterally 80 with the lower end of the spindle—makes a very steady-running spindle at high speed. The sleeve-whirl attached to the spindle is extended down for a considerable length, and at a point below the upper bearing is provided with a band-receiving portion. 85

I claim—

1. A spindle and a bolster case or tube, combined with a rigid upper lateral bearing located in said case or tube and an independent yielding lateral bearing for the lower end of the spindle, located in said supporting-tube, the said bearings being separated, substantially as described. 90

2. A spindle and bolster case or tube, combined with a rigid upper lateral bearing located in the said case or tube, an independent yielding lateral bearing for the lower end of the spindle, located in the said supporting-tube, and a yielding or elastic support there- 100

for within said tube, substantially as described.

3. A sleeve-whirl spindle and bolster case or tube, combined with a rigid upper lateral bearing located in the said case or tube, an independent yielding lateral bearing for the lower end of the spindle, located in the said supporting-tube, and a yielding or elastic support therefor within said tube, substantially as described.

4. The bolster case or tube, the rigid upper lateral bearing fixed in the upper portion of said case or tube, and a yielding lateral bearing for the lower end of the spindle and located in said case or tube, combined with a sleeve-whirl spindle having the band-receiv-

ing groove of its whirl located below the said rigid bearing, substantially as described.

5. A spindle and a bolster case or tube, combined with a rigid lateral bearing fixed in the upper portion of said case or tube and an independent yielding lateral bearing for the lower end of the spindle, located in said supporting-tube, the said bearings being separated, 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:

F. J. DUTCHER,

A. W. BEARDSSELL.