

(No Model.)

W. F. DRAPER.
SUPPORT FOR SPINNING SPINDLES.

No. 428,556.

Patented May 20, 1890.

Fig:1.

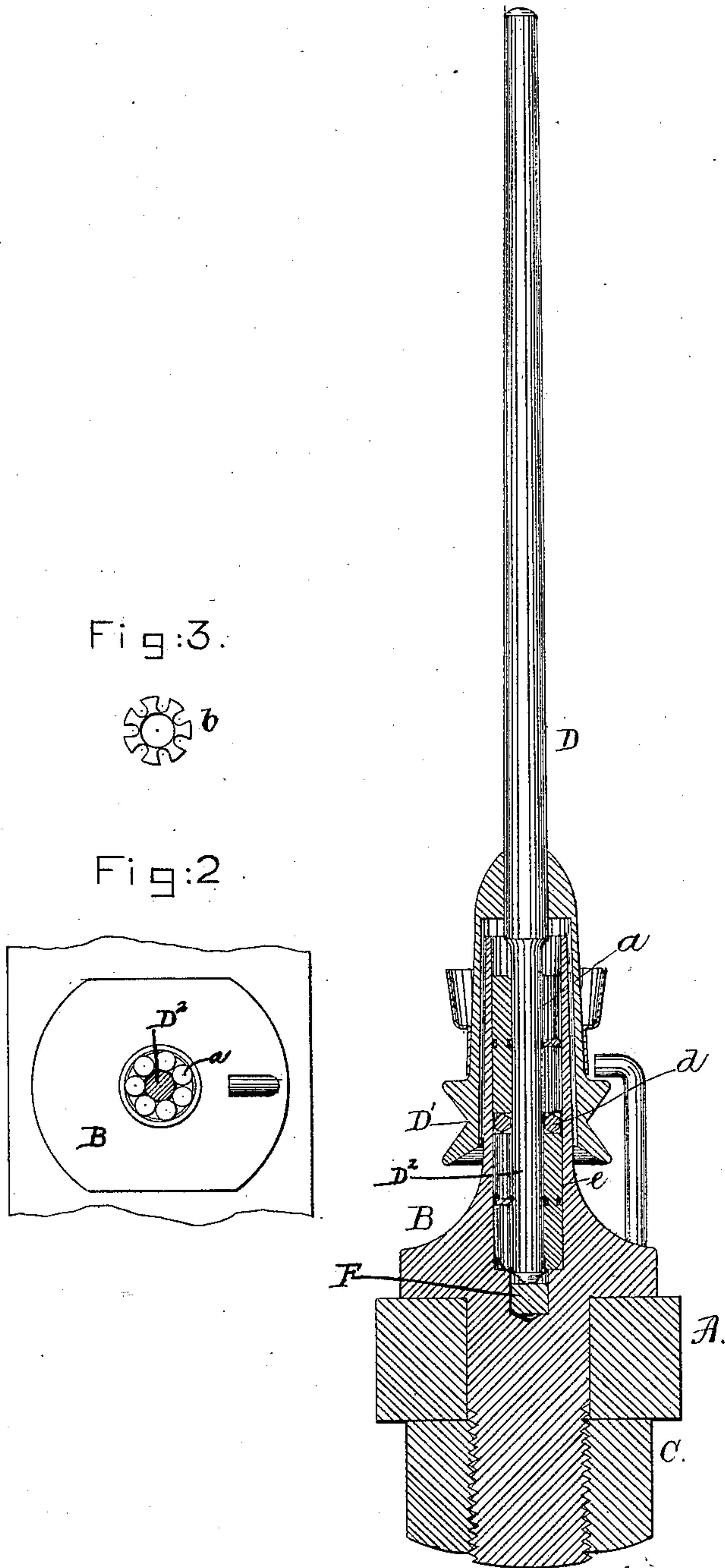


Fig: 8.

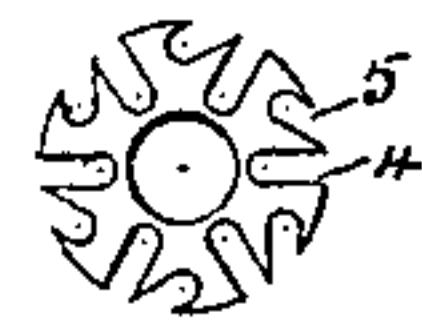


Fig: 7.

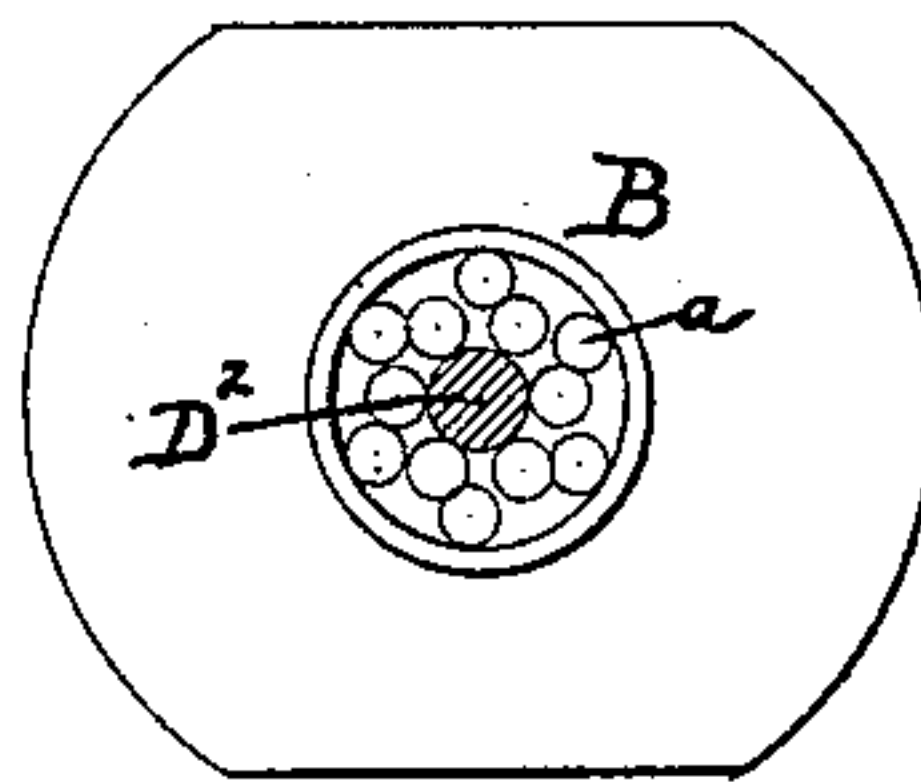


Fig: 4.

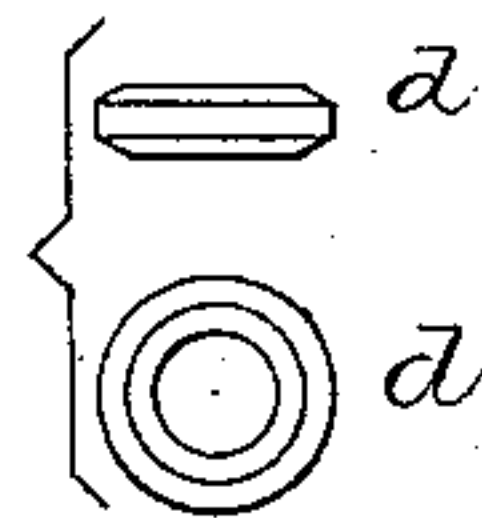
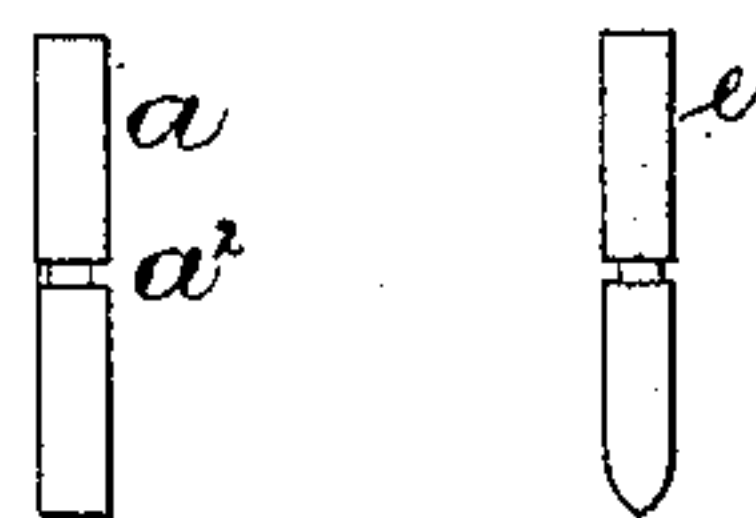


Fig: 5. Fig: 6.



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

Inventor:
William F. Draper.
by Leroy Gregory attys

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. 428,556, dated May 20, 1890.

Application filed January 17, 1888. Serial No. 261,035. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. DRAPER, of Hopedale, county of Worcester, 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 has for its object to provide a sleeve-whirl spindle such as employed in spinning-machines with a bearing capable of letting the spindle run loosely with the minimum of friction, thereby reducing not only
15 the power employed to rotate the spindle, but the wear of the actuating parts. I have by experiment ascertained that the greatest speed for spinning-spindles with the least friction and least loss of power may be gained by
20 the employment, within the sleeve-whirl and between the spindle and the bolster case or support, of a bolster composed of or containing rolling or rotating surfaces. Preferably I shall employ two sets of rolling surfaces.
25 My invention consists, essentially, in a hollow bolster-case and a vertical spindle having a pintle and a sleeve-whirl connected thereto above the end of the pintle, combined with a bolster inserted within the said bolster-case
30 and receiving the pintle of the spindle and provided with rolling surfaces located within the bolster-case and between it and the pintle of the spindle, a step at the lower end of the bolster and on which the said pintle rests, and
35 a plate located directly in the line of the pull of the band, as will be described.

Figure 1 in vertical section shows a bolster-case, a rail or support for it, and a bolster embodying my invention, the spindle, with the
40 exception of the whirl, being in elevation. Fig. 2 is a top or plan view of Fig. 1 with the spindle removed. Fig. 3 shows one of the spiders for holding the rolling surfaces; Fig. 4, details of the separating disk or plate. Figs.
45 5 and 6 show some of the rolling surfaces detached; Fig. 7, a top or plan view similar to Fig. 2 of a modified form of my invention, and Fig. 8 a form of spider suitable for holding a double set of rolling surfaces.

50 The rail A, the bolster case or support B secured to it by the nut C, the spindle D, hav-

ing the sleeve-whirl D', its pintle D², and a step F, upon which the lower end of the pintle D² rests, are and may be all as usual.

My improved bolster-bearing having rolling surfaces, as herein shown, is composed of a series of rolls or cylinders, as *a*, held in operative position within the bolster-case and within the whirl by means of a spider *b*, as
55 herein represented, being made as a notched ring, (shown best in Fig. 3,) the said spider keeping the rolling surfaces in place when the spindle is removed, the annularly-grooved portions *a*² of the rolling surfaces entering the
60 notches at the periphery of the spider. I shall employ these rolling surfaces as a lateral support for the spindle both above and below the line of band-pull, and in separating one set of
65 rolling surfaces from the other vertically I introduce between them a plate, as *d*, and preferably to reduce friction the sides of the
70 said plate will be made cone-shaped, or else the end of the rolls or cylinders will be made cone-shaped, as shown by the lowermost set of
75 rolling surfaces *e*, each set of said rolling surfaces being held by a like spider, and by locating this plate *d* directly within the pull of the
80 band on the whirl the liability of the rolling surfaces to cramp in the supporting-case is reduced to the minimum. The rolling surfaces held by the spider are a loose fit in the
85 bolster case or holder and afford a sufficient amount of looseness to enable the spindle to run steadily with an unbalanced load.

In the modification represented in Fig. 7 I
85 have shown a bolster having two sets of rolling surfaces arranged in contact between the interior of the bolster-case and the exterior of the spindle, the innermost of the rolls or cylinders entering the notches 4, and the outer-
90 most rolls or cylinders the notches 5 of the spider shown in Fig. 8. These single or double series of rolling surfaces interposed between the spindle and the interior of the
95 bolster-case and within the sleeve of the whirl reduce the power required to rotate the spindle and the wear of the parts to the minimum. The rolling surfaces may or may not run in oil.

I do not intend to limit my invention to the
100 exact form of rolling surfaces shown to constitute a lateral bearing for the spindle, and in-

stead of the particular rolls or cylinders shown, or the particular spiders shown, I may employ those of any other usual or well-known construction.

5 The power required to rotate the spindle will be applied to the whirl in usual manner by a band, and it will be noticed that the band-pull will be in the direct line of the diameter of the rolls and of the spindle within the
10 sleeve-whirl, and also that the band-pull is entirely within the ends of the bearing-surfaces, represented as rolls, so that the band-pull cannot possibly exert any strain which would tend to cramp the spindle in its bear-
15 ings, as would be the case were the whirl attached to the spindle beyond and entirely outside the ends of the rolling surfaces constituting parts of the bolster-bearing.

I claim—

The hollow bolster-case B, the vertical spin- 20 dle D, having a pintle D² and a sleeve-whirl D', surrounding the pintle, combined with a bolster having rolling surfaces and inserted within the said bolster-case, the bolster re-
ceiving the pintle of the spindle, the rolling 25 surfaces being located between the bolster-case and the pintle of the spindle, a step below the bolster on which the pintle of the spindle rests, and the plate d, located directly in the
line of the pull of the band, substantially as 30 described.

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

WILLIAM F. DRAPER.

Witnesses:

F. J. DUTCHER,

A. W. BEARDSSELL.