(No Model.)

G. O. DRAPER.

CENTERING DEVICE FOR SPINDLES.

No. 527,015. Patented Oct. 2, 1894.

Fig. 1.

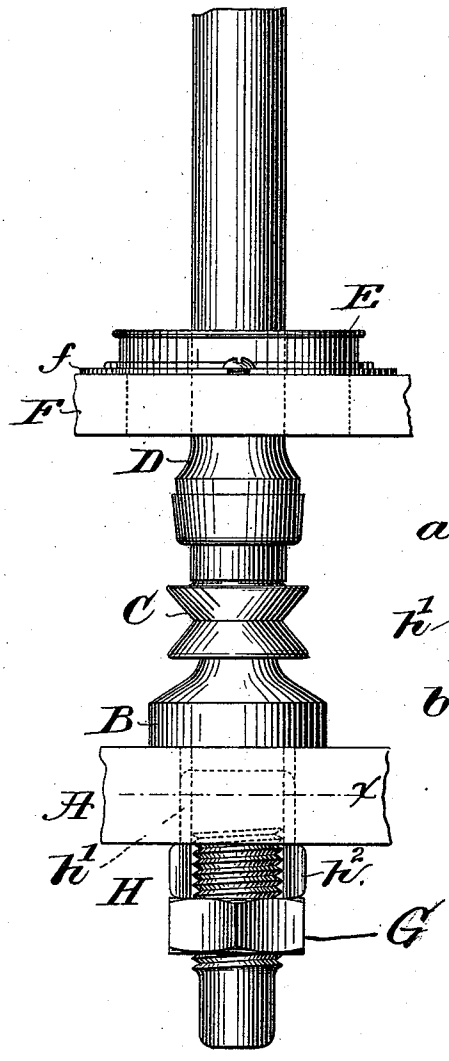


Fig. 2.

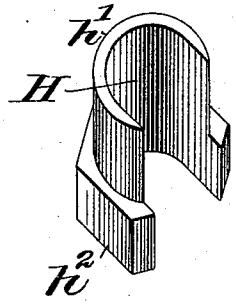


Fig. 4.

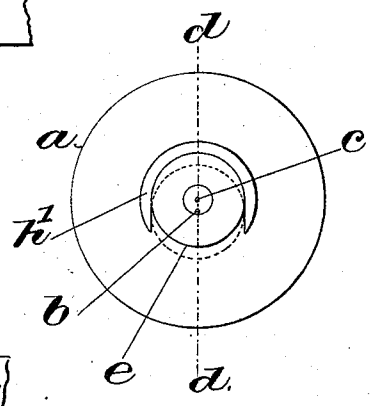
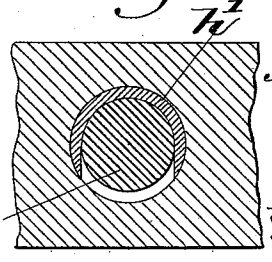


Fig. 3.



Witnesses.
Edward F. Allen.
Thomas J. Drummond.

Inventor.
George O. Draper.
by Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

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

CENTERING DEVICE FOR SPINDLES.

SPECIFICATION forming part of Letters Patent No. 527,015, dated October 2, 1894.

Application filed May 21, 1894. Serial No. 511,921. (No model.)

To all whom it may concern:

Be it known that I, GEORGE O. DRAPER, of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Centering Devices for Spindles, of which the following description in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In ring spinning and twisting machines, it is highly important that the spindles should occupy a central position with relation to the ring surrounding them, to thereby insure even strains on the yarn at all points during the spinning and twisting operation. To gain this central position for the spindle, it has been customary to adjust the rings on the ring rail, and so also spindle supports have been set in holes in the rail, the holes being of such a diameter as to permit the support containing the bearing for the spindle to be moved laterally within the limits of the hole. This latter method is quite common when the rings are not adjustable, but this latter plan is objectionable because of the band pull which tends to pull the spindle always toward the driving cylinder, and such strain frequently displaces the support and spindle after they have been, it is thought, fixed in position.

In accordance with my invention I place the shank of the supporting case in a larger hole in the rail, but to avoid the slipping of the supporting case after it has been adjusted, I have devised a segmental bushing by which to fill up the space between one side of the shank of the spindle support and the edge of the rail, such bushing preventing movement of the supporting case except in one direction, as will be described. This bushing will preferably project below the rail and have flat sides to be engaged by the wrench used to tighten the nut holding the spindle support on the rail.

Figure 1 in elevation represents a sufficient portion of a spinning frame with my improvements added to enable my invention to be understood. Fig. 2 shows the segmental bushing in isometric projection; Fig. 3, a section below the dotted line x, Fig. 1; Fig. 4, a diagram to be referred to.

In the drawings, A represents the spindle rail; B, the supporting case having its shank put through an opening in the rail of enough greater diameter as to provide the requisite space for all adjustment of the said support in said hole to put the spindle C and bobbin D mounted thereon central with relation to the ring E which may be fixed to the rail F in any usual manner.

When the supporting case has once been set in desired position, it is fixed in that position by the nut G applied to the shank or lower end of the supporting case.

The object of my invention is to enable the supporting case and spindle to be adjusted centrally with relation to the ring, and yet to avoid any slipping of the supporting case after the same has once been set in position, and to accomplish this desired result I have devised a segmental bushing H or a bushing to extend partially around the shank of the supporting case, said bushing as shown in this instance of my invention, being composed of a segmental upright flange or wall h' and a base h^2.

Fig. 4 shows a large circle a which may represent the ring; b, a center which may be supposed to be the true center of said ring, and c, a point supposed to be the center of the spindle, and e, a circle supposed to represent the supporting case. Viewing said diagram, it will be evident that, to center the spindle or to bring the center of the spindle to the center of the ring, the spindle support must be moved in the line d—d, drawn through the two centers b—c. To do this, the operative will move the bushing H until its point or slotted side is in the line d—d, and then the spindle support may be moved as indicated from its full into its dotted line position in said diagram, which will effect the correct centering.

The difficulty heretofore resulting from the band pull is substantially eliminated by the use of my invention, and in many positions entirely eliminated.

Of course it will be understood that the open side of the bushing will be located in the direction of movement of the supporting case or the direction in which it is desired to push the spindle to center it to the ring, and in the

movement of the said case the bushing acts as a guide to insure true radial direction of movement.

In my invention the ring hole *f* need not be adjustable, but may be secured to the rail in any usual manner.

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

1. A spindle supporting-case having a shank, and a spindle rail having a hole to receive said shank loosely, combined with a segmental open sided bushing composed of a base having an upright wall adapted to be interposed between the said shank at one side and the inner wall of the hole in the said rail and adjustable around said shank within the hole in said rail, to operate, substantially as described.

2. A ring rail, a ring thereon, a spindle rail, a supporting case having its shank entered loosely in a hole in the spindle rail, and a sleeve whirl spindle mounted in said supporting case, combined with a segmental open-sided bushing inserted between said shank and said rail and adjustable around said shank, and means to secure the said case to said rail, whereby adjustment of the supporting case may be readily and accurately effected to center the spindle to the center of the ring, substantially as described.

3. A spindle rail, a spindle supporting case having its threaded shank inserted loosely in a hole in said rail, and a nut on said shank, combined with a segmental bushing having an upright flange adapted to be interposed between said shank and rail, and having a base located below said rail and adapted to be acted upon by said nut, the base of the bushing and the nut being free to be engaged by a suitable wrench, substantially as described.

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

GEORGE O. DRAPER.

Witnesses:
GEO. W. GREGORY,
EMMA J. BENNETT.