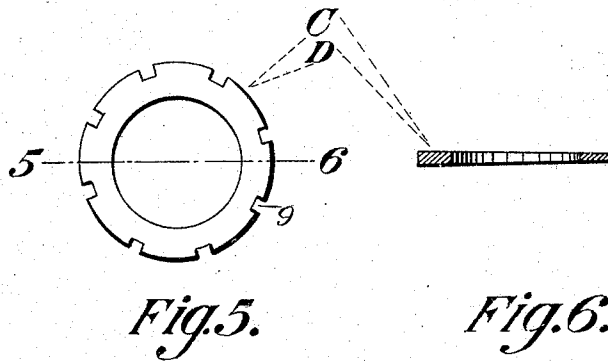
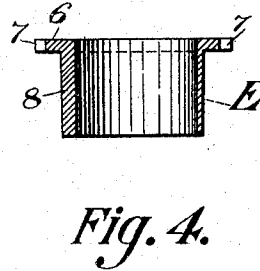
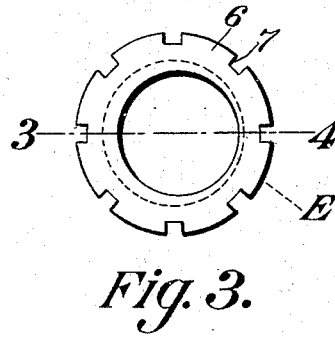
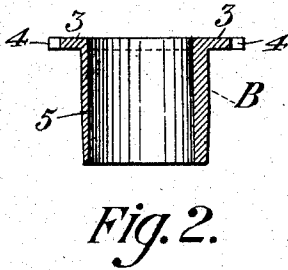
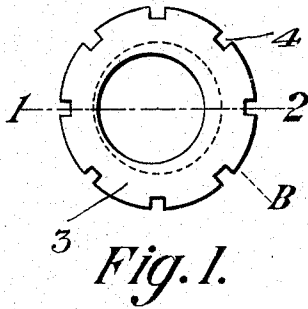


J. B. NAINTEAU & E. C. RICH.
 CENTERING DEVICE FOR SPINDLES.
 APPLICATION FILED JUNE 10, 1908.

952,931.

Patented Mar. 22, 1910.
 2 SHEETS—SHEET 1.



Witnesses.
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 Walter E. Grey

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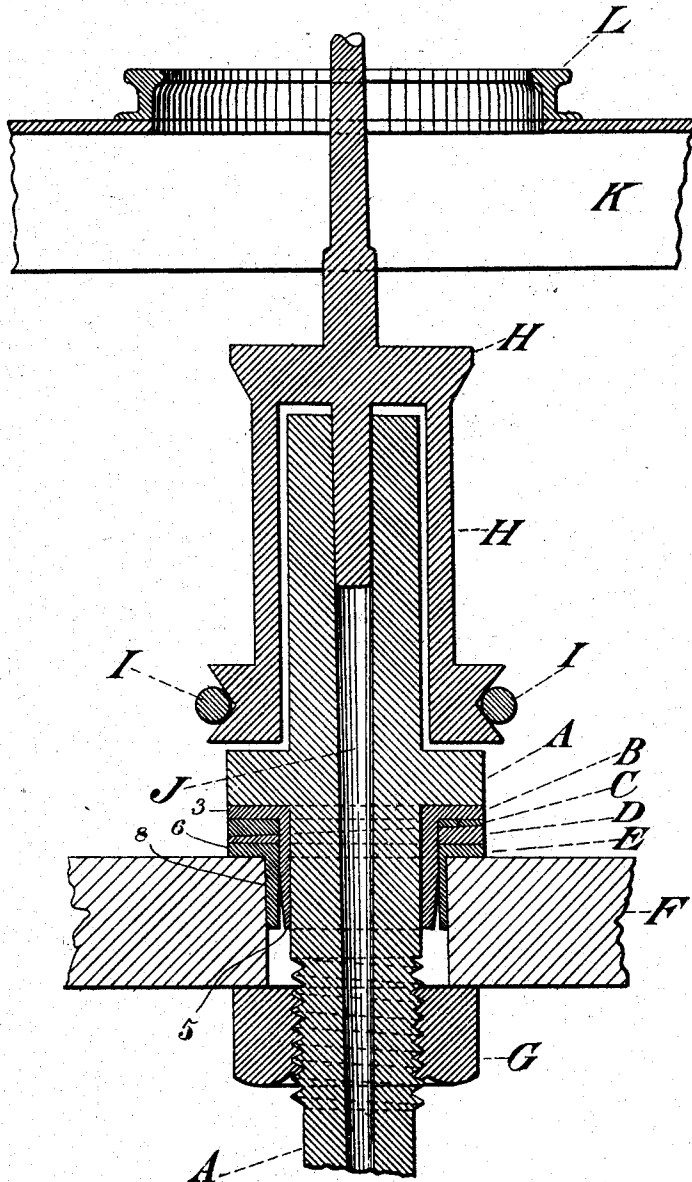


Fig. 7.

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UNITED STATES PATENT OFFICE.

JOHN B. NAINTEAU AND EDGAR C. RICH, OF CENTRAL FALLS, RHODE ISLAND.

CENTERING DEVICE FOR SPINDLES.

952,931.

Specification of Letters Patent.

Patented Mar. 22, 1910.

Application filed June 10, 1908. Serial No. 437,694.

To all whom it may concern:

Be it known that we, JOHN B. NAINTEAU and EDGAR C. RICH, citizens of the United States, residing at Central Falls, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Centering Devices for Spindles, of which the following is a specification.

Our invention relates to improvements in setting or adjusting a spindle base in the lower or stationary rail of any ring spinning frame or twisting frame, and the object of our improvement is to provide a convenient and accurate method of setting a spindle base so that the spindle will revolve in the center of the ring in the upper or traveling rail.

We attain these objects by means of two flanged bushings, one fitting inside of the other, and the bushings being separated by two washers.

See the accompanying drawings:—Figure 1 is a top plan view of the smaller bushing; Fig. 2 is a vertical section of the same on the line 1—2 of Fig. 1; Fig. 3 is a top plan view of the larger bushing; Fig. 4 is a vertical section of the same on the line 3—4 of Fig. 3; Fig. 5 is a top plan view of one of the washers; Fig. 6 is a vertical section of the same on the line 5—6 of Fig. 5; and Fig. 7 is a vertical section through the center of spindle, spindle base, lower rail and upper rail of a ring spinning frame, showing the invention applied thereto.

The spindle base, A, extends through a hole in the lower rail, F, and is supported on the rail by a shoulder on the spindle base A. The spindle base A, is provided with threads below the rail F, on which a nut G, is received for holding the spindle base in position. A tapered hole J, is formed in the spindle base for supporting the spindle H. At the lower end of the spindle a bearing is provided for rotating the spindle by the driving band, I. The upper, or traveling rail K, is of channel shape in cross section. It travels vertically from top to bottom of bobbin, and carries a ring L, the center of which should exactly coincide with the center of the spindle H, in order that the yarn may spin true and even. In setting up a machine, it is found to be very difficult to arrive at this result for two reasons, owing to the top of the lower rail F, not being absolutely true, thus causing the spindle H, to deviate from

a true vertical line, and the center of the ring in the traveling rail K, is not always exactly above the center of the hole in the lower rail F.

A flanged bushing B is provided with a flange 3 of uniform thickness, having slots 4 therein for adjusting the bushing. A vertical barrel 5 of uniform varying thickness from one side to the other, extends from the flange having one thick side and one thin side. The lower portion of the outer surface of the barrel 5 is tapered toward the inside, and the hole in this bushing is designed to be an exact fit for the spindle base. A similar flanged bushing E is provided with a flange 6, having slots 7 to permit of adjustment, and a barrel 8 extends from the flange, having a uniform varying thickness from one side to the other, thus having one thick side and one thin side. The outer surface of this barrel is designed to fit in the hole in the lower rail F, of a spinning frame, while the hole in this bushing just fits the vertical barrel of the smaller bushing B.

C and D are washers, having slotted edges 9 to admit an adjusting wrench, and having a uniform varying thickness from one side to the other, thus having one thick side and one thin side. The hole in these washers just fits the outside of the barrel of the smaller bushing B.

The invention is assembled by placing the smaller bushing B inside the larger bushing E, with the two washers, C and D, placed between the flanges of the bushings. When the parts are so adjusted that the thick side of the washer C is above the thin side of washer D, and so that the thick side of bushing B is against the thin side of bushing E, the invention has the effect only of a flanged bushing, having a uniform thickness of flanges and barrel.

The method of setting or adjusting the spindle is as follows:—The spindle setter is assembled and then placed in the hole in the lower rail F, which it should fit exactly. The spindle base A, is then placed in the spindle setter, and the nut G tightened. The spindle H, is mounted on the spindle base, and inserted in the ring L, when it is adjusted by means of two wrenches by turning the bushings, B and E, in opposite directions until the spindle is centered. This adjustment moves the spindle H, and spindle base A, horizontally as a whole, without changing the inclination of the vertical center line of

the spindle. After this adjustment is made, the traveling rail is moved to its highest position, and the two washers, C and D, are turned in opposite directions thus changing
 5 the inclination of the vertical position of the spindle sufficiently to bring the top of the spindle to the center of the ring L. The taper on the outside of the lower portion of the bushing B allows this inclination to be
 10 made without changing the position of the bushing E. Having completed this adjustment, the nut G is tightened and the adjustment is finished.

It is evident that more or less slight
 15 changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of our invention, and hence we do not wish to limit ourselves to the exact construction
 20 herein set forth, but:—

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. The combination with a rail having a
 25 cylindrical orifice therein, a spindle base having a cylindrical portion which extends through said orifice, of a centering device composed of eccentrically telescoping members assembled rotatably, one of which fits
 30 the orifice, and the other the portion of the spindle base within the orifice, said members fitting each other throughout a portion of their length, and diverging throughout the remaining portion, and cam-faced washers
 35 interposed between a part of the base and the rail, and rotatable, whereby the turning of the washers causes a rocking of the spindle base.

2. A centering device for spindles comprising flanged bushings, one of which is
 40 adapted to turn within the other, the internal and external bores of these bushings being eccentric to each other, the inner bushing capable of being rocked within the outer
 45 bushing, and cam-faced washers interposed between the flanges of the bushings, said washers adapted to be turned, whereby to rock the inner bushing.

3. The combination with a rail having a
 50 cylindrical orifice therein, and a spindle base having a cylindrical portion which extends into the orifice, and an enlarged portion of greater diameter than the diameter of the orifice, of a centering device comprising a
 55 plurality of members filling the space between the enlarged portion of the base and the rail, and the cylindrical portion of the base and the wall of the orifice in the rail, two of said members eccentrically telescoped,
 60 and one capable of turning and being rocked

with respect to the other, and means fitted to turn upon the smaller telescopic member, and constructed and adapted when turned to rock said member.

4. The combination with a rail having a
 65 cylindrical orifice therein, and a spindle base having a cylindrical portion which extends into the orifice, and an enlarged portion of greater diameter than the diameter of the orifice, of a centering device comprising a
 70 plurality of members filling the space between the enlarged portion of the base and the rail, and the cylindrical portion of the base and the wall of the orifice in the rail, two of said members eccentrically telescoped,
 75 and one capable of turning and being rocked with respect to the other, and means fitted to turn upon the smaller telescopic member, and constructed and adapted when turned to rock said member, and means on the lower
 80 end of the base for locking the base securely to the rail when adjusted by the centering device.

5. The combination with a rail having a
 85 cylindrical orifice therein, and a base having a portion which extends into and is adapted to be centered in said orifice, of a centering device comprising two eccentrically telescoping bushings, one adapted to turn within the
 90 other and capable of being rocked therein, said bushing fitting a portion of the spindle base, and the other bushing fitting the orifice in the rail, the bushings having flanges of uniform thickness throughout, said flanges
 95 being notched at their outer edges to receive a wrench, and cam-faced washers interposed between the flanges and rotatably mounted on the inner bushing, and provided with notched outer edges adapted to receive
 100 a wrench whereby they are turned.

6. In a centering device for spindles, the
 105 combination with a spindle rail having vertical bores therein, of a spindle bolster, and a series of flanged, eccentrically bored telescoping bushings, the inner member of
 110 which is externally tapered to form a rocking pivot, and a plurality of rotatable cam-faced washers interposed between the flanges of said telescoping bushings, whereby the turning of the bushings will adjust the axis
 115 of the bolster horizontally, and whereby the turning of the cam-shaped washers will adjust the upper end of the spindle.

In testimony whereof we affix our signatures, in the presence of two witnesses.

JOHN B. NAINTEAU.
 EDGAR C. RICH.

Witnesses:

GEORGE S. READ, Jr.,
 WALTER E. GREY.