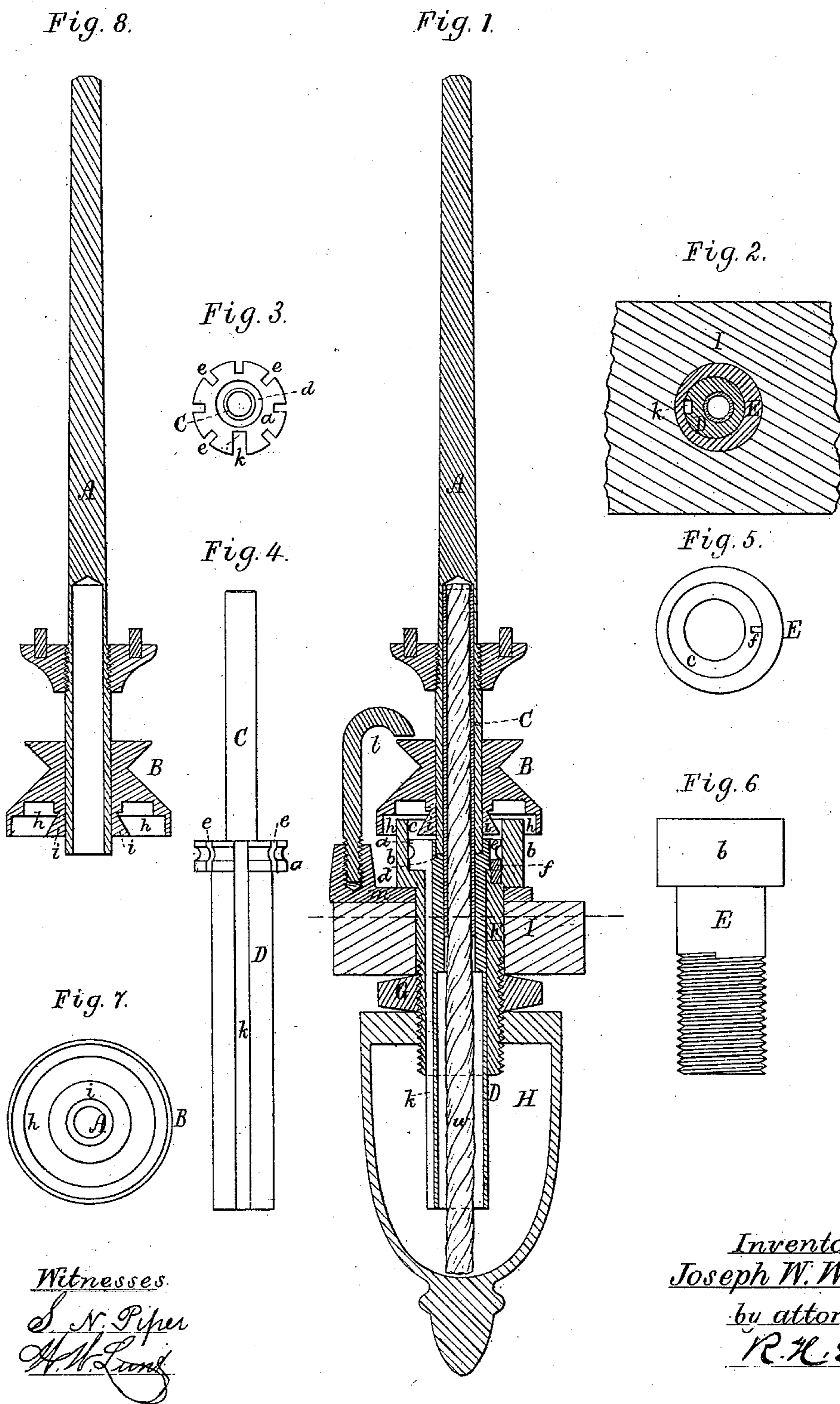


J. W. WATTLES.  
Mechanism for Supporting, &c., Spindles of Ring  
Spinning Frames.

No. 234,897.

Patented Nov. 30, 1880.



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# UNITED STATES PATENT OFFICE.

JOSEPH W. WATTLES, OF CANTON, MASSACHUSETTS.

MECHANISM FOR SUPPORTING, &c., SPINDLES OF RING-SPINNING FRAMES.

SPECIFICATION forming part of Letters Patent No. 234,897, dated November 30, 1880.

Application filed January 23, 1880.

*To all whom it may concern:*

Be it known that I, JOSEPH W. WATTLES, of Canton, of the county of Norfolk and State of Massachusetts, have invented a new and  
5 useful Improvement in Mechanism for Supporting, Adjusting, and Lubricating the Spindles of Ring-Spinning Frames; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical and longitudinal section of a spindle and its adjuncts provided with my invention. Fig. 2 is a transverse section taken through the spindle-rail. Fig. 3 is  
15 a top view, and Fig. 4 a side elevation, of the eccentrically-bored spindle-supporter. Fig. 5 is a top view, and Fig. 6 a side view, of the eccentrically-bored receiver of such spindle-supporter. Fig. 7 is a bottom view, and Fig.  
20 8 a longitudinal section, of the spindle, to be hereinafter described.

The nature of my present invention is defined by the claims hereinafter made.

The improvement relates more particularly  
25 to ring-frame spindles provided with means of effecting from time to time, as occasion may require, their adjustment into concentricity with their rings.

With the said invention I use an eccentrically-bored spindle-supporter and an eccentrically-bored receiver therefor, each having a flange or head projecting from it at its upper part, such supporter and receiver being like those shown in Letters Patent No. 218,843,  
35 granted to me, and to effect, by being revolved, adjustment of the spindle into concentricity with the ring.

In carrying out my invention, or one portion thereof, the clamping-nut G or the oil-reservoir  
40 H, or both, are screwed directly upon the said receiver E, whose flange or chambered head *b* rests upon the supporting-rail I. The said receiver is chambered in its upper part, as shown, to receive the flange or head of the eccentrically-bored spindle-supporter, and is provided  
45 with a stud or tooth to enter either of a series of notches made at equal distances apart in the circumference or head of the spindle-supporter.

Furthermore, the eccentrically-bored spindle-supporter is furnished with a journal, C,

extending up from it into the spindle A, which, at its lower part, is tubular to receive and fit upon such journal. The spindle may be stepped or rest at its foot on the eccentrically-bored spindle-supporter, or, instead thereof, such spindle may rest on the upper end of the journal. The said journal and the spindle-supporter I make tubular, or with a bore or passage through them, to receive a wick, *w*, to extend from the upper end of the journal down to and into the oil-reservoir, in order that oil by capillary attraction may be raised from said reservoir by the wick up to the top of the journal, from whence it will flow down between the bearing-surfaces of the journal and spindle, and thence into that chamber in the eccentrically-bored spindle-supporter into which the lower part of the spindle is stepped or extended, there being from the chamber in the head of the receiver a groove or passage extending to and into the reservoir, in order for the surplus oil to be discharged into the said reservoir from the said chamber.

In the drawings the spindle is shown as provided with a whirl, B, and as tubular at its lower part to receive the journal C, that extends upward from the eccentrically-bored spindle-supporter D, arranged within the eccentrically-bored receiver E.

The bore of the spindle-supporter D and that of the journal C, extending up therefrom, are in a straight line, but are eccentric relatively to the outer periphery of the spindle-supporter and that of its head or flange *a*. So the bore of the receiver E, which has a diameter corresponding to the external diameter of the spindle-supporter, is eccentric relatively to the outer periphery of it, (the said receiver.) Furthermore, the flange or head *b* of the said receiver is chambered, as shown at *c*, to receive the flange or head of the spindle-supporter, which, in turn, is chambered in its upper part, as shown at *d*, to receive the foot of the spindle.

The head or flange of the spindle-supporter is provided, as stated, with a series of notches, *e*, made in its periphery to receive a tooth or stud, *f*, extending upward from the bottom of the chamber in which the said head or flange is placed.

The whirl is chambered, as shown at *h*, to receive and encompass the upper part of the head of the eccentrically-bored receiver *E*, and there projects down from the whirl and around the spindle and into the chamber in the head of the receiver a cone or conic frustum, *i*, the purpose of which is to prevent oil from the spindle-foot, while the latter is in rapid revolution, from being thrown into and out of the whirl-chamber, and also to cause such oil to be discharged into the chamber in the head of the receiver, from which it will flow into and through the groove *k*, leading from the said chamber and made down in the outer surface of the spindle-supporter.

By supporting the spindle by means of a journal extending up from the eccentrically-bored spindle-supporter and into the spindle and above the whirl, the spindle is caused to run or revolve with great steadiness, and even while revolving can be readily adjusted into concentricity with the ring. To effect such adjustment of the spindle when it may be in revolution the reservoir is to be unscrewed from the eccentrically-bored receiver *E*, after which, by taking hold of the spindle-supporter at its lower part, where it projects below the receiver, and forcing upward the spindle-supporter sufficiently to carry its head above the tooth in the chamber or head of the receiver, the supporter may be more or less revolved, and the receiver may also be revolved to effect the desired adjustment of the spindle, the tooth on the supporter, being dropped to its lowest position, taking into one of the notches in the head of the supporter, and thereby holding the supporter in its new position. By means of the journal arranged in the spindle and with the whirl in manner as set forth, I am enabled to get rid of or avoid the leverage which results from the strain of the driving-band when the spindle projects below the whirl into a bolster and rests at its foot in a step below such bolster, and thus I am enabled to dimin-

ish the wear and friction of the bearing-surfaces due to such leverage.

In the drawings, *l* represents the hook for preventing rise of the spindle. This hook screws into a flat carrier, *m*, arranged on top of the rail and to revolve on the eccentrically-bored receiver, as shown. By having the carrier as described the hook can be adjusted into any convenient position around the whirl and the said receiver.

What I claim as my invention is as follows, viz:

1. The combination of the eccentrically-bored spindle-supporter and its eccentrically-bored receiver, provided with flanges or heads, as set forth, with a clamping-nut or oil-reservoir, or both, screwed upon the shank of the receiver, so as to confine, in manner as represented, the receiver in place within the sustaining-rail.

2. The eccentric spindle-supporter provided with a series of notches or recesses in its head or flange, in combination with the eccentric receiver having a stud or tooth to engage with either of the said notches, as and for the purpose specified.

3. The eccentrically-bored and tubular spindle-supporter provided with the tubular spindle-supporting journal arranged with it, as described, and also with the spindle-foot-receiving chamber, and having an oil-duct in its side, substantially as represented.

4. The combination, with the eccentrically-bored receiver, of the whirl, chambered to receive the upper part of the head of such receiver, and having a cone or conic frustum adapted to extend down from the said whirl into the chambered head of the receiver and about the spindle, essentially as represented.

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Witnesses:

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