

(No Model.)

J. W. WATTLES.

MECHANISM FOR SUPPORTING AND LUBRICATING THE SPINDLES OF  
RING SPINNING FRAMES.

No. 335,980.

Patented Feb. 9, 1886.

Fig. 1.

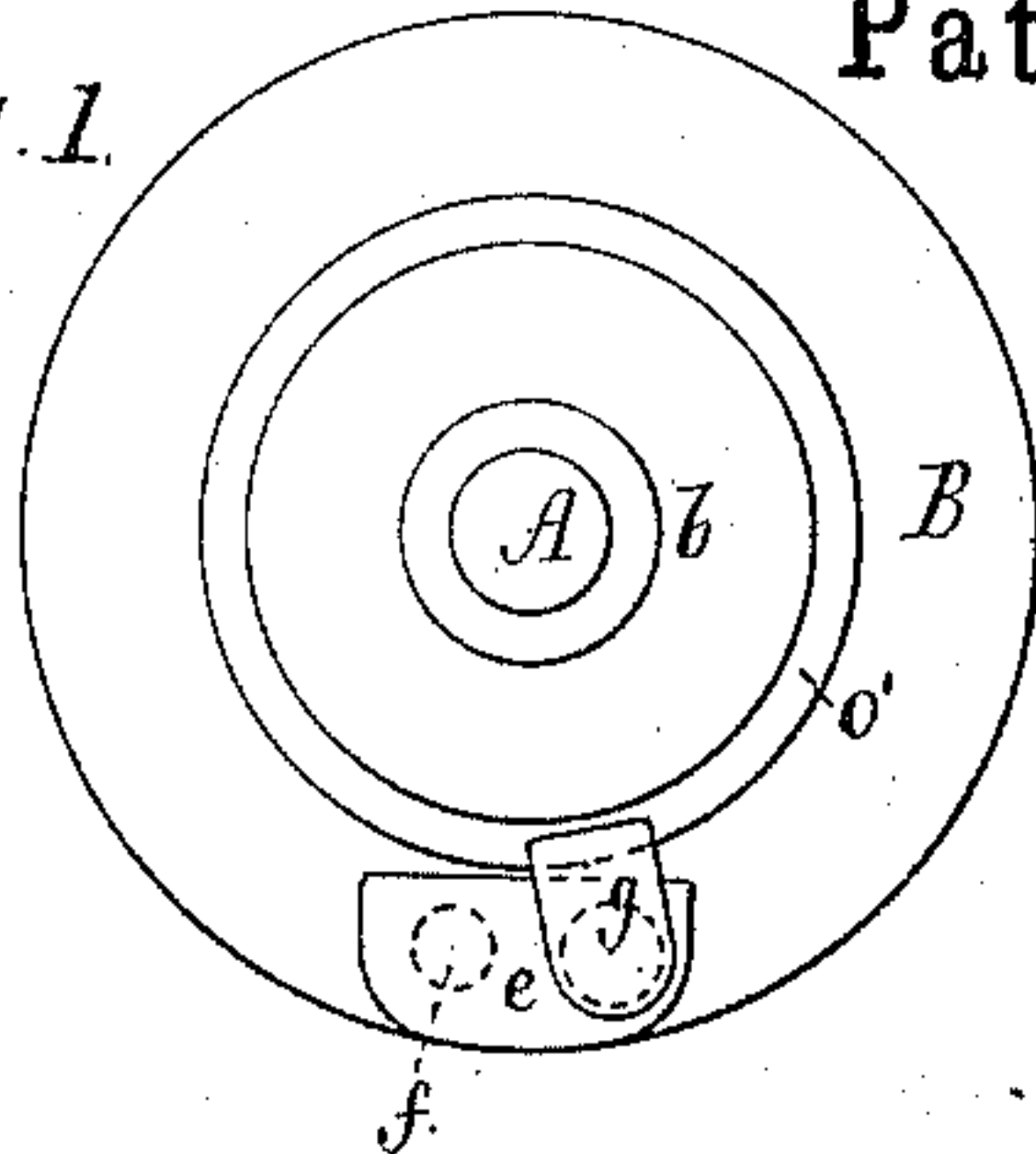


Fig. 2.

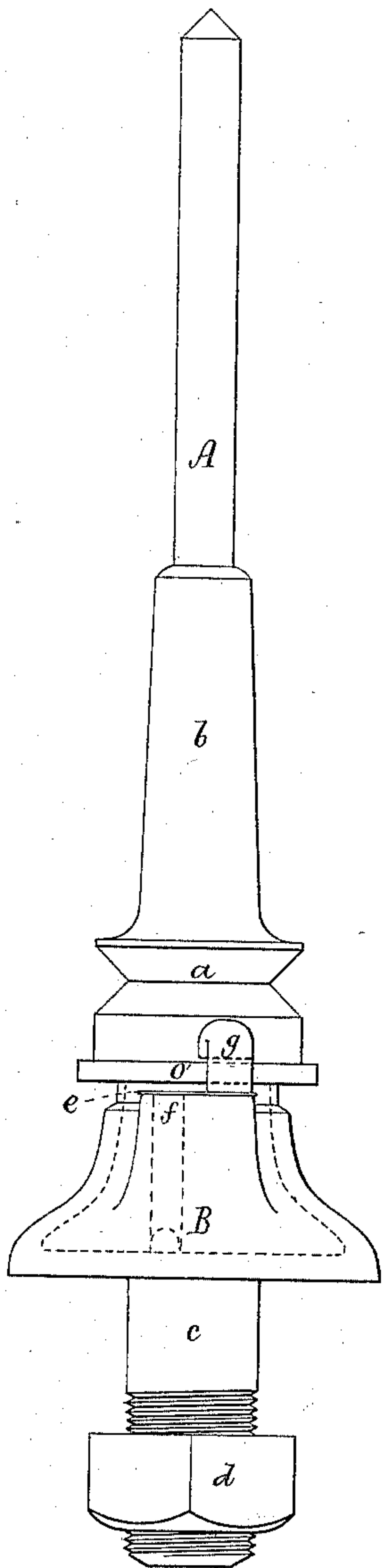


Fig. 4.



Fig. 6.

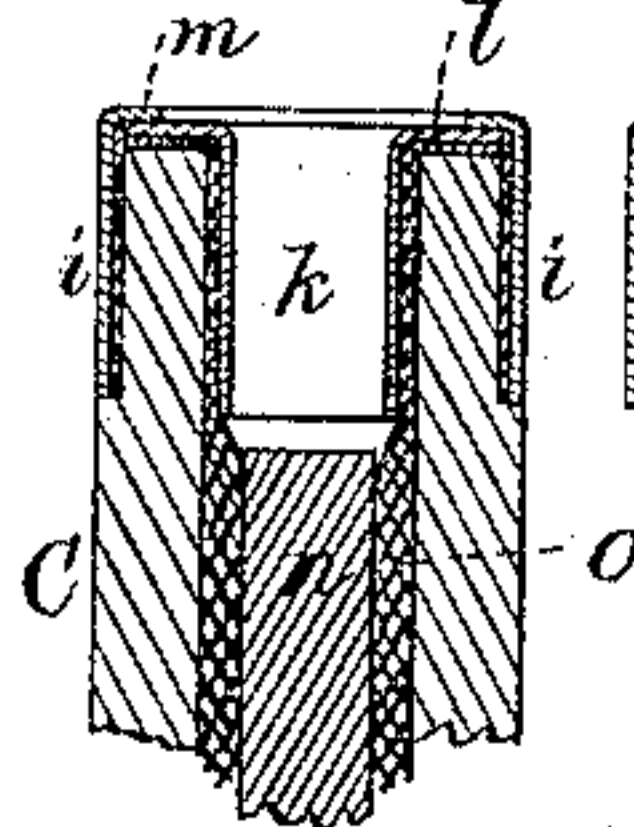


Fig. 7.

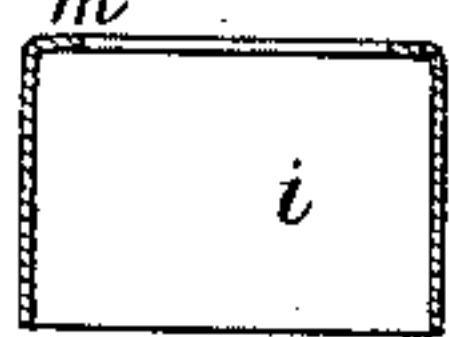


Fig. 8.

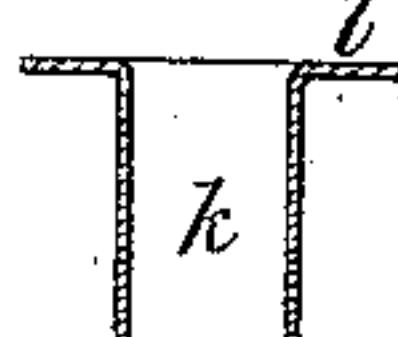


Fig. 5.

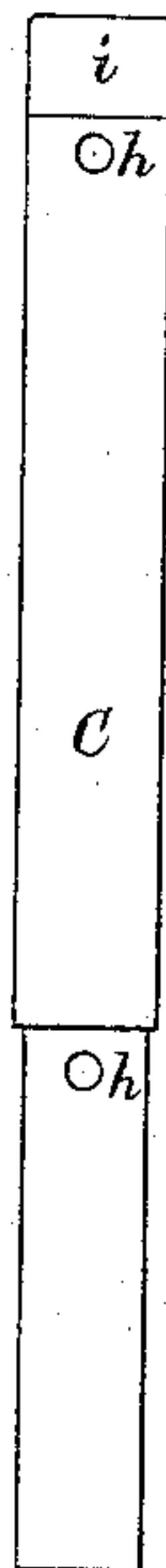


Fig. 9.

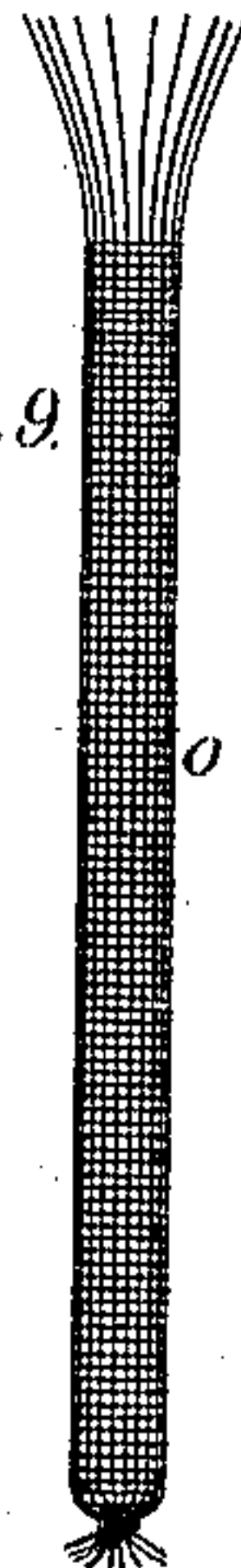
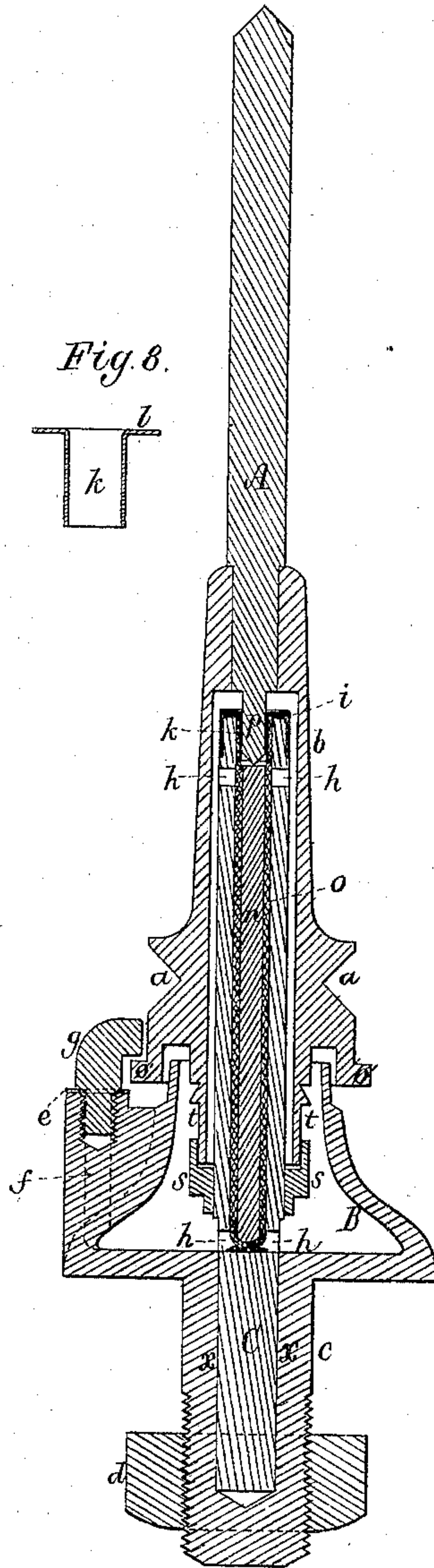


Fig. 10.



Fig. 3.



Witnesses  
S. N. Piper.  
R. B. Toney.

Inventor,  
Joseph W. Wattles.  
by R. K. Day atty.



# UNITED STATES PATENT OFFICE.

JOSEPH WARREN WATTLES, OF CANTON, MASSACHUSETTS.

MECHANISM FOR SUPPORTING AND LUBRICATING THE SPINDLES OF RING SPINNING FRAMES.

SPECIFICATION forming part of Letters Patent No. 335,980, dated February 9, 1886.

Application filed October 19, 1885. Serial No. 180,252. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH WARREN WATTLES, of Canton, in the county of Norfolk, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Mechanism for Supporting 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 top view, Fig. 2 a side elevation, and Fig. 3 a vertical and transverse section, of a ring-frame spindle and its supports in accordance with my invention, the nature of which is defined in the claims hereinafter presented. Fig. 4 is a top view, and Fig. 5 a side elevation, of the stationary post C extending through the oil-reservoir. Fig. 6 is a transverse and vertical section, on an enlarged scale, of the upper part of such post C, showing its metallic cap and the spindle-pivot bearing within such cap, which are exhibited in transverse section separately from each other in Figs. 7 and 8. Fig. 9 is a side view of the oil-elevator, and Fig. 10 a transverse section of it as applied to the spindle-step rod.

In such drawings, A denotes a "live-spindle," whose driving-whirl is shown at *a* and the supporting-sleeve thereof at *b*, all being formed in section and arranged as represented in Fig. 3.

B is the oil-reservoir, provided with a fastening-neck, *c*, having screwed on it a nut, *d*. This reservoir has a filling induct or mouth, *f*, having a laterally-movable cover, *e*, which is pivoted on the shank of a turn-button or hook, *g*, journaled in the upper part of the reservoir, or adapted thereto so as to be capable of being turned directly over or off a flange, *o'*, projecting from the whirl-sleeve *b*. Such hook and flange serve to keep the spindle from being raised relatively to its supports during the act of doffing or removing a bobbin from it. In the place of such a turn-button or hook, a headed screw may be used, as represented in the United States Patent No. 309,903, granted to me. The turn-button or hook serves not only as a pivot or journal for the cover *e* to turn on, but as a means of aiding in preventing the spindle from being accidentally lifted. By this application of the cover a separate fastening-screw for connecting it with the oil-reser-

voir is rendered unnecessary, the shank of the turn-button being screwed into the said reservoir, as shown in Fig. 3.

Extending up from the bottom of the oil-reservoir concentrically therewith, and inserted in a socket, *x*, leading down from such bottom into the neck *c*, is a wooden post, C, cylindrical in shape and tubular where above such bottom. Leading laterally out of the base of the post, at the bottom and near the top of such base, are oil-ducts *h*. The post has upon it a metallic cap or thimble, *i*, and within and concentric with the latter a metallic tube or spindle-pivot bearing, *k*, flanged at its upper end, the flange *l* having a diameter corresponding to that of the interior of the cap. Such cap at its upper end is also flanged, as shown at *m*, to overlap the flange *l*. This construction of cap and spindle-pivot bearing is a convenient one; but both may be in one piece of material. Within the bore of the wooden post, concentrically, is a metallic rod, *n*, encompassed by a capillary sleeve or tubular wick, *o*, which I prefer to have closed at its lower end. It extends upward into the cap *i* and down between it and the part of the post circumscribed by it. The rod *n* is a metallic one, preferably of steel, the spindle-pivot *p* resting directly upon said rod at its top, the rod constituting a step to support the spindle at the lower end of its pivot. Oil from the reservoir will, by the capillary tube or wick, be raised into the spindle-foot bearing, the surplus flowing through the upper oil-ducts, *h*, and down the outside of the post into a metallic cup, *s*, to support the lower part, *t*, of the whirl-sleeve. This cup is fixed to and arranged concentrically upon the wooden post C where it is within the oil-reservoir, its arrangement therein being as represented.

From the above it will be seen that the spindle-pivot has a metallic step or rod to rest on and a metallic bearing for its support laterally, and that such step or rod serves as a means of supporting the capillary sleeve or tube and introducing it within the base of the post.

In practice it has been found that a spindle as represented supported and lubricated by means as described may be run at very high speed and with little, if any, vibration.

Having the wick in the bore of the post is better than to have it to encompass the post



or arranged on the outer side thereof, as when wholly within the post such wick or oil-elevator cannot come into contact with the whirl-sleeve, to be injured thereby or to impede the velocity of the spindle while the latter is in revolution. It is also not in the way of the spindle while the latter may be in the act of being drawn off the post. The rod within the wick also serves to strengthen the post, and in case of wear of the rod in its upper part such rod can be readily extracted from the post and wick and another be substituted without the necessity of removing the wick from the post.

I claim—

1. The combination of the spindle-supporting post, tubular where above the bottom of the oil-reservoir, and provided with oil-ducts, as described, and at its upper part with a cap

and pivot-bearing, as specified, with the spindle and oil-reservoir and with the rod and the capillary wick or oil-elevator arranged within the bore of the said post and extended up to the foot of the spindle-pivot, all being substantially as represented.

2. The combination of the separate flanged metallic cap and spindle-pivot bearing, applied to each other and to the wooden post at its upper end, essentially as set forth, with the spindle and the said post, and with the rod and the wick or capillary oil-elevator, arranged within the said post and relatively to its oil-inducts and to the oil-reservoir and the spindle-pivot, substantially as represented.

JOSEPH WARREN WATTLES.

Witnesses:

R. H. EDDY,  
S. N. PIPER.