# A. M. WADE.

## Lubricating-Spindles.

No. 165,433. Patented July 13, 1875.

Fig. 1.

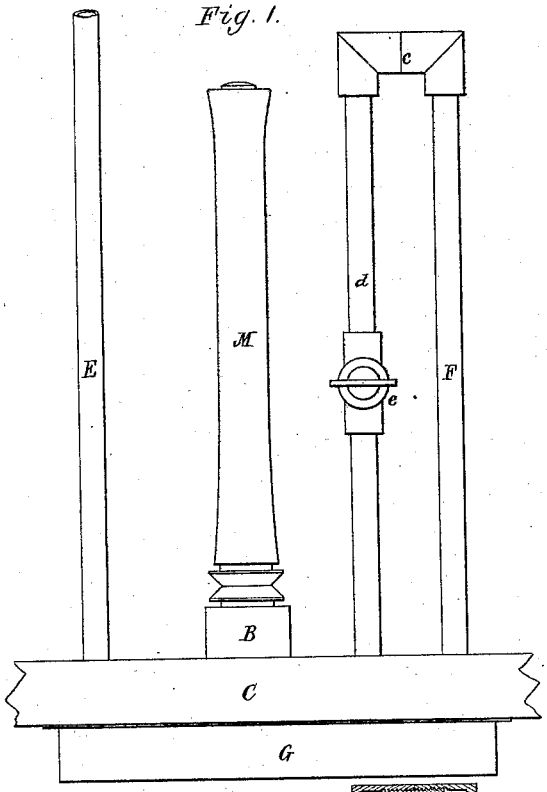



Fig. 2.

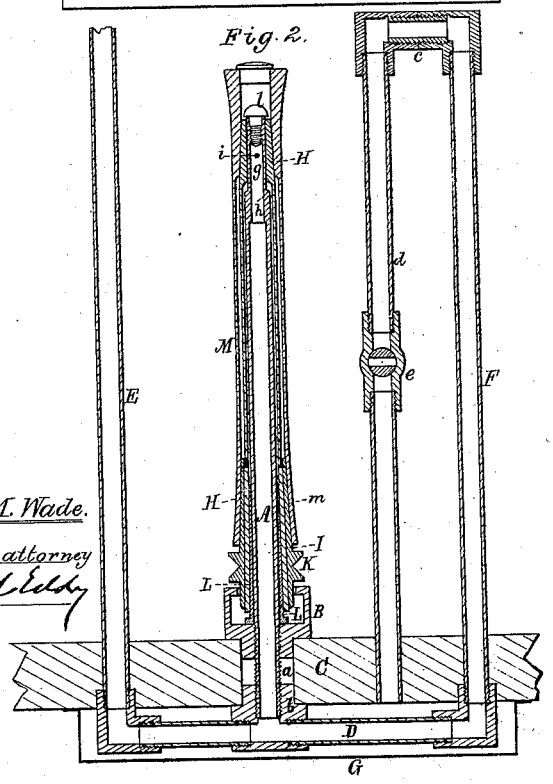
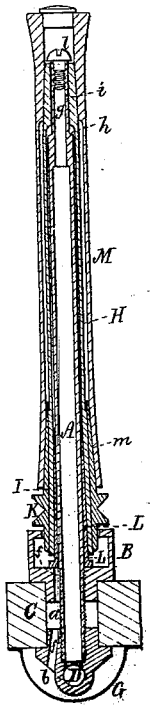



Fig. 3.




Witnesses
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# UNITED STATES PATENT OFFICE.

ASEL M. WADE, OF LAWRENCE, MASSACHUSETTS.

## IMPROVEMENT IN LUBRICATING SPINDLES.

Specification forming part of Letters Patent No. **165,433**, dated July 13, 1875; application filed April 14, 1875.

*To all whom it may concern:*

Be it known that I, ASEL M. WADE, of Lawrence, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Mechanism for Spinning Yarn; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation; Fig. 2, a longitudinal section; and Fig. 3, a transverse section of a spindle and bobbin with sundry appliances appertaining to my invention, which relates to means or mechanism for lubricating the bearings of each of the spindles or devices by which the bobbins are sustained and revolved.

My invention, as hereinafter described, is represented as applied to a "live spindle" or bobbin-carrier composed of a wooden tube, a tapering metallic bushing thereto, and a tapering metallic bearing-tube, provided with a whirl, the wooden tube being tapered near its upper end to answer as a friction-bearing for the bobbin. It is connected with and revolved by the whirled tube, which also serves as a friction-bearing for the bobbin. Furthermore, with the said live spindle is shown a "dead spindle," which is a single tube having a neck and shoulder to support the live spindle. It also has an orifice for discharge of the oil to and between the bearing-surfaces.

In such drawings, A is a tubular dead or stationary spindle, provided at or near its lower end with an oil cup or receiver, B, and also with a screw, *a*, projecting down from said cup, in manner as shown. The cup constitutes a base to support the spindle on the rail C, with the screw *a* screwed into the coupling *b* of an oil conduit or tube, D, arranged along underneath the said rail C, in manner as represented. At the extremities of the conduit D are two stand-pipes, E and F, which extend upward above the top of the dead spindle. The pipe F terminates at top in an elbow-pipe, *c*, provided with a return-pipe, *d*, which extends down from the elbow-pipe to and through the spindle-rail C, and is provided with a stop-cock, *e*, all being as shown. There is fixed to the spindle-rail, underneath the conduit D, a trough, G. Furthermore, the hollow spindle opens at its foot, directly into the coupling *b*, and there is an educt, *f*, leading through the bottom of the oil cup or receiver B, and through the rail and into the trough G. The dead spindle, at and near its upper end, is provided with a neck or journal, *g*, terminating at its foot in a shoulder, *h*. There is a small hole or educt, *i*, leading from the bore of the tube through the said journal or neck. A wooden tube or sleeve, H, encompasses the spindle, and takes a bearing, as shown, upon its neck *g* and shoulder *h*, and is held in place thereon by the head of a screw, *l*, screwed into the upper end of the spindle. The wooden tube H, at its lower part, is encompassed by a tapering metallic tube, I, provided with a whirl, K, and there is driven into the wooden tube, at its lower end, a tapering tubular bushing, L, whose office is not only to expand the wooden tube into so as to fit to the tube I, but to serve as a bearing for the combined parts H I to run on the spindle. At its upper portion the tube H is slightly tapering, in order that it, with the tapering part *m* of the tube I, may answer as friction-bearings to a "quill-bobbin," M, to encompass and fit to them, as shown. The bore of the tube H is somewhat larger in diameter than the spindle within it, in order that oil escaping from the orifice *i* may pass freely down the outside of the dead spindle, and thence into the bearing-tube L, and from thence into the cup or receiver B, from which it will be discharged by the educt thereof into the trough. If we suppose oil from the trough to be thrown by a force-pump into the upper part of the stand-pipe E, it will flow down in such pipe into the conduit D, and thence up through the hollow spindle, out of which, by the educt *i*, it will be discharged, so as to lubricate the bearing-surfaces of the live and dead spindles, the surplus oil passing into the receiver B, and from thence back into the trough. Any number of live and dead spindles so made may be applied to the conduit D, whereby their bearing-surfaces may all be oiled. The auxiliary stand-pipe F and the return-pipe *d*, provided with the stop-cock *e*, are to maintain a proper head of oil on the dead spindle, and enable any excess of such oil to be thrown back into the trough. The stop-cock is to interrupt the

escape of the oil, as may be necessary, to insure it being forced through all the bearings, as well as to cut off the escape of oil, as circumstances may require.

In the apparatus represented in my Patent No. 153,185 the waste oil from the spindles passed into a channel in the rail, as the waste oil in my present apparatus escapes from the receiver B into the trough G; but there was with such means of discharging the oil nothing like the connected stand-pipes F and *d* to maintain the necessary head of oil and allow of the excess not required for lubrication to readily pass off into the return channel or trough.

I do not claim the live spindle composed of the wooden tube H, the tapering metallic bushing L, and the tapering bearing-tube I, provided with the whirl K. Nor do I claim, in combination therewith, the single-tube dead spindle A, provided with the bearing-neck *g*, shoulder *h*, and oil receiver or support B, as I have made such the subject or subjects of claim in another application for a patent.

I claim—

The combination of the two stand-pipes E F and the return-pipe *d* with the conduit D, and with a spinning-bobbin spindle or spindles, and the bearings or supports thereof, provided with one or more ducts to open out of the conduit D and lead to and from the bearing-surfaces to be lubricated, all being substantially as specified.

Witnesses: ASEL M. WADE.

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