

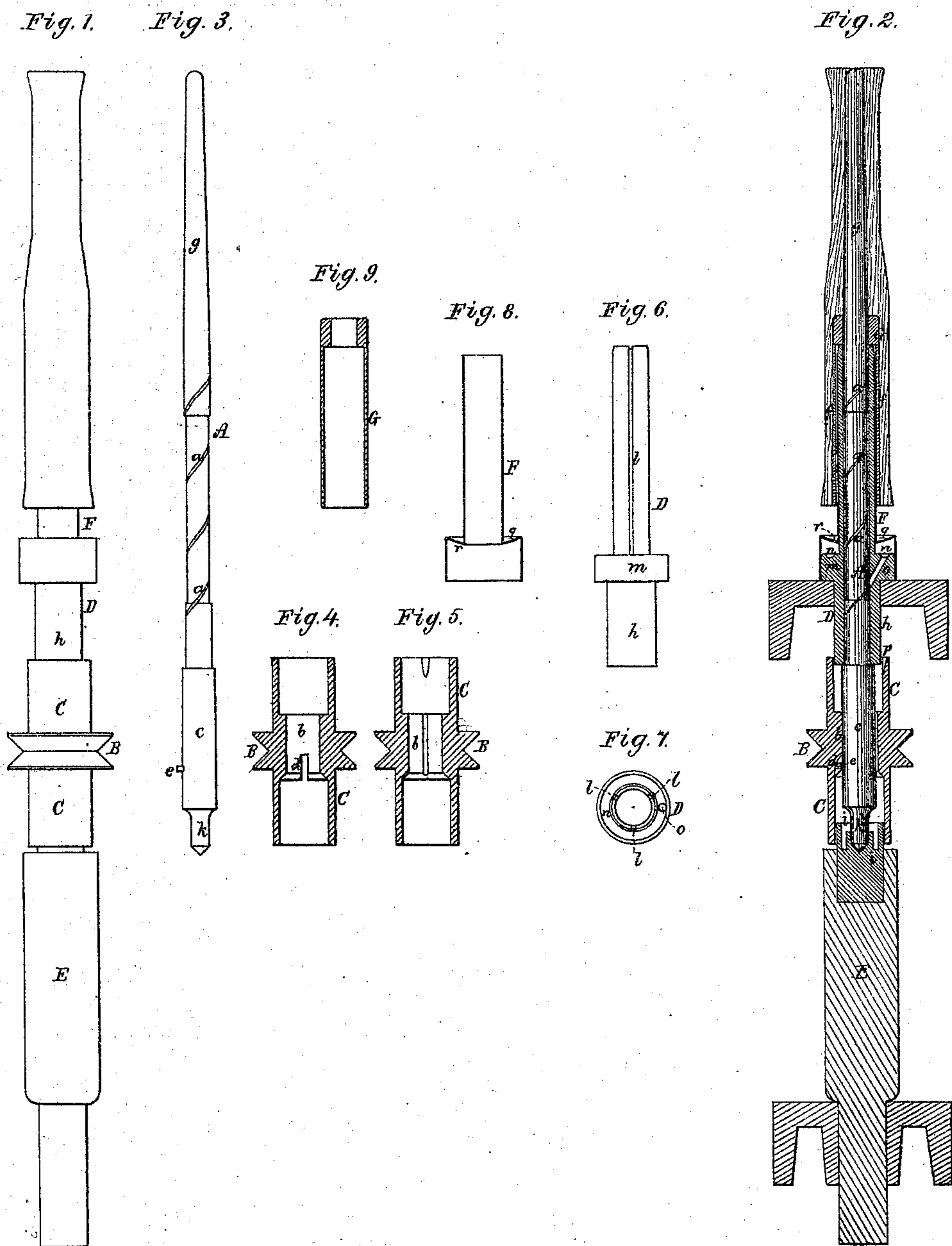
(142.)

L. CHEETHAM.

Improvement in Spindle Bearings for Spinning Machines.

No. 122,705.

Patented Jan. 16, 1872.



Witnesses

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## UNITED STATES PATENT OFFICE.

LINNEUS CHEETHAM, OF LEWISTON, MAINE.

## IMPROVEMENT IN SPINDLE-BEARINGS FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. 122,705, dated January 16, 1872.

*To all persons to whom these presents may come:*

Be it known that I, LINNEUS CHEETHAM, of Lewiston, of the county of Androscoggin and State of Maine, have made a new and useful invention, having reference to Machinery for Spinning; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a side elevation, and Fig. 2 a vertical section of a spinning-machine spindle with its supports and bobbin as provided with my invention. Fig. 3 is a separate elevation of the spindle. Figs. 4 and 5 are longitudinal sections of the whirl and its sleeve, they being taken so as to exhibit in one the locking-recess or notch of the whirl, and in the other the vertical oil-duct or passage to be hereinafter explained. Fig. 6 is an elevation, and Fig. 7 a top view of the bolster or upper bearing of the spindle. Fig. 8 is a longitudinal section of the inner oil-guide or cap of the bolster. Fig. 9 is a vertical section of the outer cap of the bolster.

My present invention has reference to what is or may be termed a stationary live-spindle, a chambered bobbin, and a bolster to extend upward on the spindle and into the bobbin, all substantially as represented in the accompanying drawing; a special object of the invention being the proper lubrication of the spindle or the wearing-surfaces of it and its bearings while the spindle may be in revolution, and to accomplish such with little or no waste of oil.

In the drawing, A represents the spindle as provided with a helical groove, *a*, extending around it. The whirl is shown at B as projecting from a tube or sleeve, C, at or near the middle thereof, such tube being separate from the spindle and provided with a cylindrical socket, *b*, to receive and fit to the cylindrical part *c* of the spindle. In the whirl-sleeve is a recess or notch, *d*, to receive a stud, *e*, projecting from the part *c* of the spindle, the said stud when in the recess serving to so lock the sleeve and whirl to the spindle as to enable it to be revolved by them when they may be in revolution. The upper bearing or bolster is represented at D as extended upward within the bobbin or into a chamber, *f*, formed there-

in, the said bobbin above the chamber being bored out lengthwise to receive and fit closely to and upon that part *g* of the spindle which extends above the bolster, or to certain portions of such part *g*, the same being so that when the spindle is in revolution the bobbin may revolve with and be revolved by it and also around the stationary bolster. This spindle, having no vertical motions while in operation, but only a rotary motion on its axis, may be termed a "stationary live-spindle," the term "stationary" being applicable to it to indicate that it has no vertical movements. The bolster is to be socketed into a supporting rail, the tenon of the bolster to fit into the socket of the rail being shown at *h*. It is to be confined to the rail by a clamp-screw screwed into the rail and against the tenon. There should be room between the bottom of the rail and the top of the whirl-sleeve to enable the latter to be raised sufficiently for oil to be poured into the step *i* by which the foot *k* of the spindle is supported. This step I arrange in the top of a standard or foot, E, which is to be tenoned into and elevated from a supporting-rail. The bolster I form with channels or grooves *l*, extending lengthwise in its outer surface, and from the top thereof down to the base-part *m*, and I provide such part *m* with a channel or groove, *n*, arranged in and about its top. From the said channel a hole or passage, *o*, leads down into the bore of the bolster. There is also another oil-passage or channel, *p*, arranged in the whirl in manner as shown. Encompassing the bolster and its base is a tubular cap or guard, F, provided at its lower part with an annular trough, *g*, out of which a hole, *r*, leads to and over the channel *n*.

On pouring oil into the trough *g* it will flow therefrom through the hole *r* into the channel *n*, and from thence through its outlet into the bore of the bolster and upon the spindle. While the spindle is revolving the oil will be elevated on it by the helical groove, and, passing over the top of the bolster, will flow down the grooves in its outside and within the cap or guard F, and thence into the trough or channel *n*. In order that such oil may not get upon the inner surface of the bobbin I place an auxiliary tubular cap or sleeve, G, on the cap

or guard F, the said auxiliary guard being formed and arranged in manner as represented.

From the above it will be seen that there will be a vertical circulation of the oil up through and down outside of the bolster, and also that oil will find its way down through the whirl-sleeve into the step of the spindle-foot.

I herein make no claim to what is termed a stationary live-spindle, a chambered bobbin, and a bolster to extend upward in the spindle and into the bobbin, all as described and shown, having embodied such in the claims of an application for a patent recently filed by me.

Having thus described my invention or improvements, having reference to the spindles of spinning-machines, what I claim as such invention may be stated as follows:

1. In combination with the bolster D provided with one or more grooves, *l*, the channel *n* and educt *o* arranged in it, substantially as set forth, I claim the tubular cap or guard F, made

either with or without the annular trough *g* and its discharging-hole *r*.

2. I also claim the combination and arrangement of the auxiliary cap or sleeve G with the tubular cap F, made as described, and with the bolster D provided with the grooves *l* and *n* and educt *o*, arranged as explained.

3. I also claim the spindle as provided with the helical groove *a*, in combination with the extended and grooved bolster and the tubular cap F, all arranged substantially in manner as represented, and so as to operate as explained.

4. I also claim the standard or post E, in combination with the whirl B, the sleeve or tube C, and the separate spindle A, arranged and applied or combined together and with the elevated bolster D, all being substantially as specified and represented.

LINNEUS CHEETHAM.

Witnesses:

W. H. WHITE,  
A. E. NAST.

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