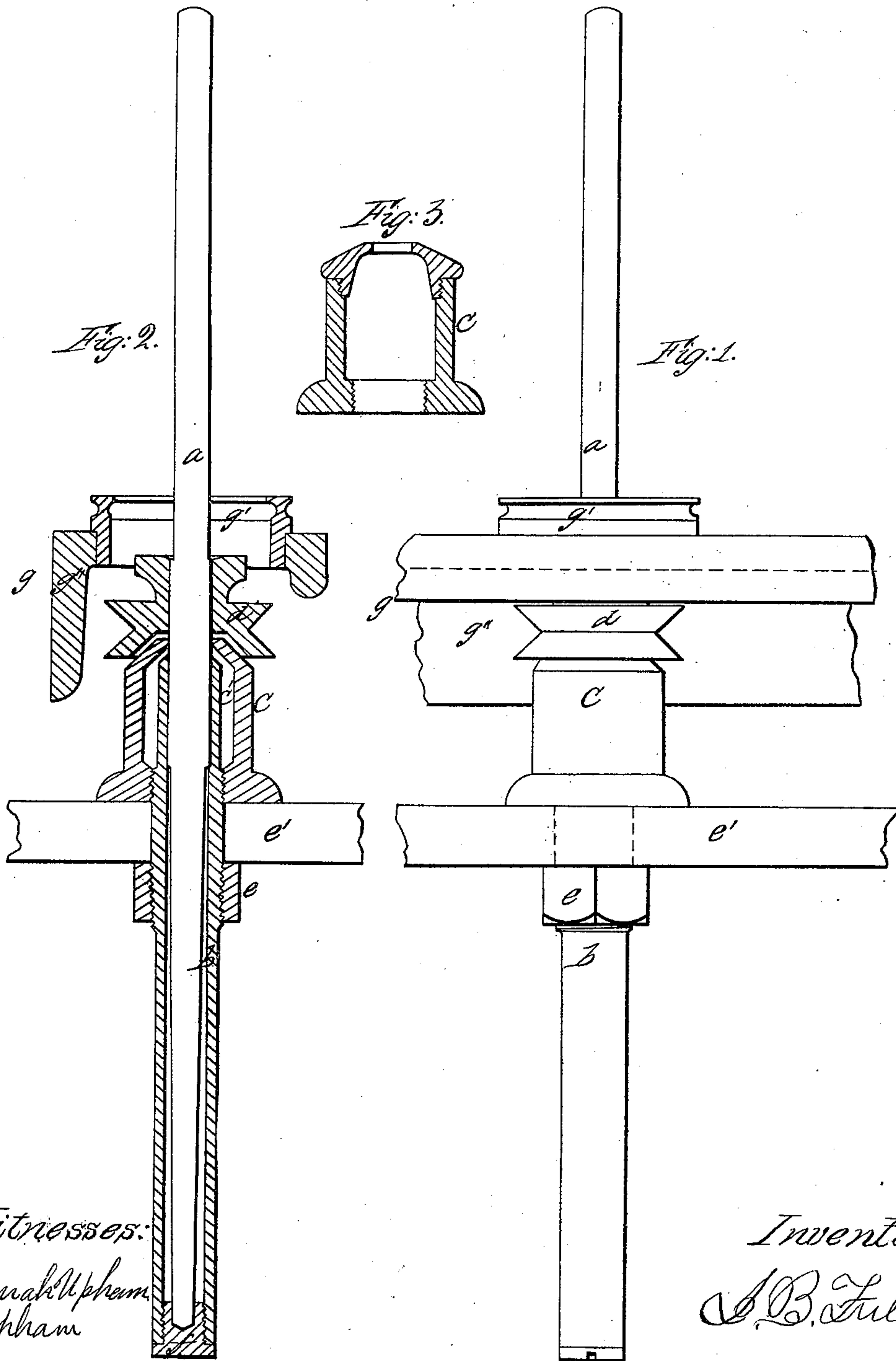


J. B. Fuller

Spinning Frame.

N^o 95,456.

Patented Oct. 5, 1869.



Witnesses:
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UNITED STATES PATENT OFFICE.

JIM B. FULLER, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN BEARINGS FOR SPINDLES IN SPINNING-MACHINES.

Specification forming part of Letters Patent No. 95,456, dated October 5, 1869; antedated September 16, 1869.

To all whom it may concern:

Be it known that I, JIM B. FULLER, of Norwich, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Spinning-Frames for Spinning Yarn; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation, and Fig. 2 is a section, of my improvement. Fig. 3 is a detached section, showing a modification of one of the parts.

The same marks of reference indicate similar parts in each figure.

My invention relates to the spindles of spinning-frames, and particularly to that class of spindles which run in tubes connected with a reservoir containing lubricating-oil.

Heretofore spindles have been constructed with reservoirs containing lubricating-oil. In some cases the reservoir has been open at the top, or closed only by a cover or shell attached to and turning with the spindle. In other cases the top of the reservoir is bored large enough to receive a bolster, which is put down through the cover, so as to dip into the oil in the reservoir. Reservoirs have also been attached to and caused to revolve with the spindle, and having a stationary bolster, which dips into the oil in the reservoir. In other cases the spindle and reservoir are both stationary, and the moving parts are attached to a sleeve, which runs around the stationary spindle and dips into the oil in the reservoir.

The nature of my improvement consists in the employment of a closed stationary annular chamber, with a stationary cover so arranged that the lubricating-oil, which is carried up the spindle and tube by centrifugal or other force, so as to flow over the top bearing of the spindle, shall be thrown off from the spindle while within the closed chamber, and there retained, to be used many times over, in a manner more effective and simple than has heretofore been done by other modes.

In the drawings, *a* represents the spindle, the lower part of which is made tapering, for reasons hereinafter set forth.

b is a tube, which forms the top bearing of the spindle. This tube reaches down a little

below the bottom of the spindle, and into the lower end is screwed the step-bearing *f*.

c' is an annular chamber or space within the case *c*. The cover of this chamber is made conical inside and outside. The case which incloses the chamber may be cast in one piece; or the top or cover may be made separate, and fastened on by screwing or otherwise. (See Fig. 3.) The upper end of the tube *b* is screwed into and through the base of the case *c*, so that the top of the tube will come within about one-sixteenth of an inch of the top of the chamber, though this may be varied with different kinds of oil. The joint where the tube is secured to the case *c* is made tight by means of a cement made of glue and white lead, or other similar substance, the glue being dissolved in water, and the lead mixed in to about the consistency of oil and white lead used in packing the joints of steam or gas pipes, and it is applied in the same manner.

d is the whir and button combined. The under side of the whir is hollowed out to fit the cover of the chamber, in order to bring the driving-band as near as possible to the bearing of the spindle.

e is a nut, by which the tube is secured to the spindle-rail *e'*.

g is a ring-rail, and *g'* is the ring on which the ordinary traveler runs. The front flange or rib, *g''*, is made deep and strong enough to support the rail. The back side of the rail should be without any flange, or a very light one may be used, the object being that the rail may be run as low as possible without coming in contact with the band.

The operation of my invention is as follows: The tube being secured to the spindle-rail, and a sufficient quantity of oil placed in it, so as to fill the tube when the spindle is in place, the spindle is carefully lowered into the tube, care being taken to allow the escape of air, that the oil may not overflow. The band is put on and the frame started in the usual manner. The lower part of the spindle being tapering, its rapid motion causes the oil to slowly ascend the tube and flow over the top, where the motion of the spindle throws it off, causing it to strike the interior inclined surface of the top of the chamber, and to run outward and downward into the annular space *c'*, thus preventing it from rising to a point where it

would be thrown off and wasted. When the spindle is at rest, the oil which has been carried up into the chamber will flow through the aperture *h* back into the tube. The ring-rail is set on the "lifting-rods" in the usual manner, and so adjusted by the operator that when the "wave" runs down the back side of the rail will just clear the driving-band.

This improvement is evidently adapted to twisting yarns as well as spinning.

I do not claim, broadly, running a spindle in a tube filled with oil; neither do I claim the employment of a reservoir containing oil for lubrication.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the tube *b* and step-bearing *f*, serving as an upper and lower bearing for the spindle, of the case *c*, when constructed and arranged substantially as and for the purpose specified.

2. In combination with the above, the whir *d*, having its lower side made to conform to the top of the case, as and for the purpose set forth.

December 8, 1868.

JIM B. FULLER.

Witnesses:

NEHEMIAH UPHAM,
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