G. D. WHITMAN.

Spindles and Bobbins for Spinning.

No. 148,534. Patented March 10, 1874.

Fig. 1.

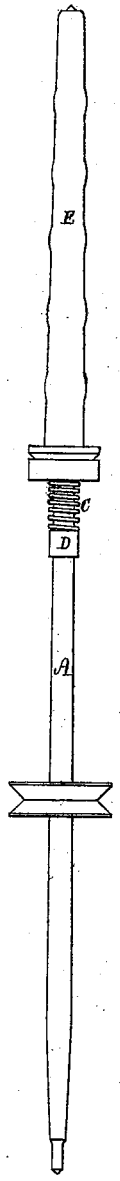


Fig. 2.

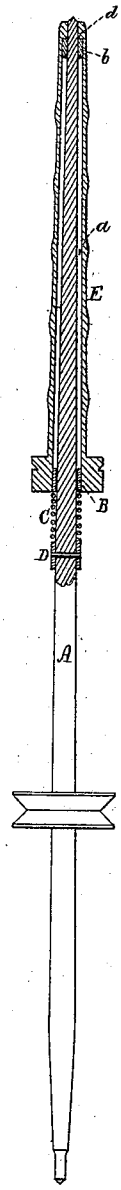


Fig. 3.

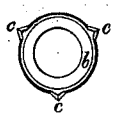


Fig. 4.

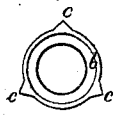
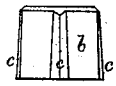


Fig. 6.



Witnesses.
S. N. Pipes.
L. N. Miller.

George D. Whitman.
by his attorney.
R. H. Eddy

AM. PHOTO-LITHOGRAPHIC Co. N. Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

GEORGE D. WHITMAN, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO HIMSELF, DAVID BASS, JR., AND BENINO HAWKINS, OF SAME PLACE.

IMPROVEMENT IN SPINDLES AND BOBBINS FOR SPINNING.

Specification forming part of Letters Patent No. **148,534**, dated March 10, 1874; application filed February 4, 1874.

To all whom it may concern:

Be it known that I, GEORGE D. WHITMAN, of Woonsocket, of the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Machinery for Spinning; 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 side view, and Fig. 2 a longitudinal section, of a jack-spindle and bobbin provided with my invention. Fig. 3 is a top view, Fig. 4 a bottom view, and Fig. 5 a side elevation, on an enlarged scale, of the metallic-winged friction-tube arranged in the upper part of the bore of the bobbin.

My invention relates to jack-spindles and their bobbins, the latter being such as are termed "filling-bobbins," for being employed in shuttles of looms for weaving. Owing to the small size or diameter of such bobbins at and near their upper ends, they are liable to, and very frequently do, become split lengthwise by being driven down upon the spindles. The steaming of the yarn on the bobbins, and the subsequent desiccation of the bobbins, causes the latter to vary more or less in shape, and especially in the sizes of their bores. While contracting the bores will be more or less changed, so as frequently to require the bobbins to be driven down with much force upon the spindles, in order that the bobbin-head shall occupy its proper position on the spindle. This causes many bobbins to be split and ruined, the daily loss of bobbins being a serious one to the manufacturers.

In carrying out my invention I provide the jack-spindle A with a conical or tapering tube or bobbin-seat, B, to encompass the spindle and rest on and be fixed to a helical spring, C, also encompassing the spindle, and fixed to and supported in place by a sleeve or short tube, D, fitted closely and fastened to the spindle, all being as represented. In the upper part of the bore *a* of the bobbin E I drive a metallic bushing or tube, *b*, provided with angular and tapering wings *c c c*. Each wing *c* is tapering lengthwise and triangular in transverse section, or made with a sharp outer edge, in order that the wing may cut its way in the wood of the bobbin. The winged tube *b* is to be inserted in the lower end of the bore and forced up within the bore to and against a shoulder or seat, *d*, at the upper part of it, all being as shown in Fig. 2.

The purpose of the winged metallic bushing (which I usually make of type-metal or other suitable composition of metals) is to prevent the bobbin at its head from being split by the spindle while the bobbin is in the act of being crowded down thereon, and also to afford friction to aid the spindle in revolving the bobbin.

The conical seat B will adapt itself to the bottom or lower part of the bore of the bobbin, the spring permitting the seat to descend, so as to bring the head of the bobbin to the proper place upon the spindle, which is a matter of great importance.

With my invention it will be seen that the danger of splitting the bobbin, whether at the top or bottom, is vastly lessened, if not entirely avoided.

I make no claim to a throttle or ring-spindle bobbin provided with one or more wooden bushings in its bore.

I claim—

1. The jack-spindle, provided with the conical or tapering bobbin-seat tube B and the supporting helical spring C, arranged together substantially as specified.

2. The sleeve D, the helical spring C, and the tapering tubular bobbin-seat B, combined and arranged substantially in the manner described, and for use with a jack-spindle, as set forth.

3. The jack-bobbin E, having the winged metallic bushing *b* arranged in and applied to its bore, and to operate with the spindle, as described.

4. The jack-bobbin E, provided with the shoulder *d* at or near the head of its bore, and with the winged metallic bushing *b* arranged in such bore and against such shoulder, as explained.

5. The jack-bobbin E, with the metallic bushing *b* in its bore, in combination with the jack-spindle A, having the tapering tubular bobbin-seat B and the helical spring C applied to it, as specified.

GEORGE D. WHITMAN.

Witnesses:
R. H. EDDY,
J. R. SNOW.