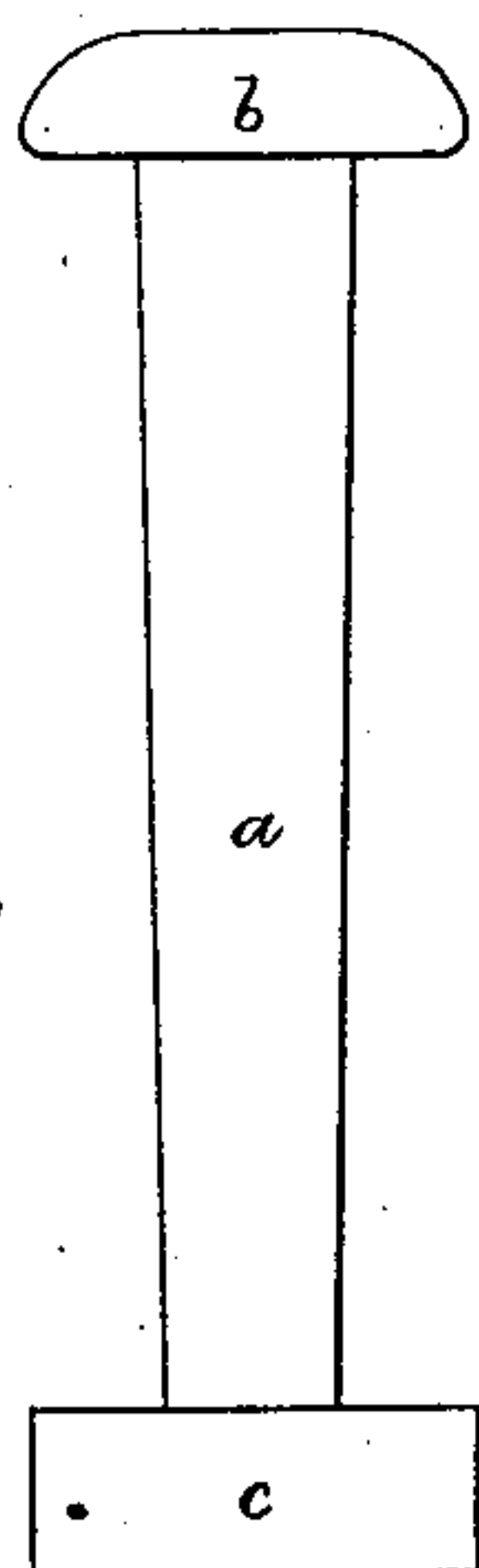


**T. B. WATTLES.**  
**Bobbins for Spinning-Frames.**

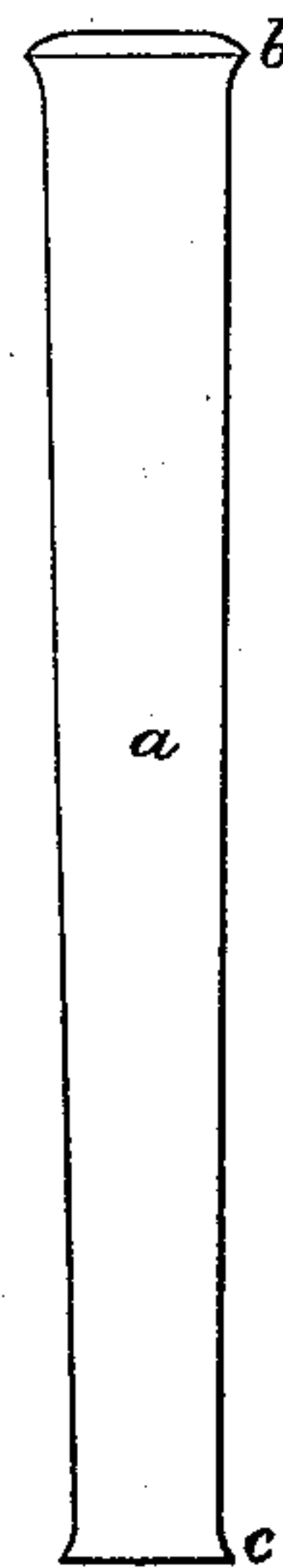
No. 164,062.

Patented June 1, 1875.

*Fig. 1.*



*Fig. 2.*



Witnesses.

S. W. Piper  
L. W. Höller.

Thomas B. Wattle.

by his attorney  
R. H. Eddy

# UNITED STATES PATENT OFFICE.

THOMAS B. WATTLES, OF CANTON, MASSACHUSETTS.

## IMPROVEMENT IN BOBBINS FOR SPINNING-FRAMES.

Specification forming part of Letters Patent No. **164,062**, dated June 1, 1875; application filed November 17, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS B. WATTLES, of Canton, of the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Bobbins for Ring Spinning-Frames; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation of a double-headed bobbin, and Fig. 2 a side view of a quill-bobbin made in accordance with my invention.

It is a fact well known to persons using ring spinning-frames that the tension or drag of the traveler is heaviest or greatest when the ring-rail is at its highest elevation, or the yarn is being laid at its highest point on the bobbin or quill; and that such drag or tension is lightest or least while the rail is so depressed as to cause the yarn to be laid at its lowest position on the bobbin or quill; also, that, in order to prevent kinking of the yarn or the throwing of the next adjacent yarns or threads in the frame into contact with each other, as the ring-rail approaches its lowest point of depression, it becomes necessary to use a traveler too heavy for the thread, when the ring-rail is at or is approaching its opposite extreme position. With such a traveler the yarn will be wound very hard on the bobbin at its upper part and very slack on it at its lower part, the tension continually varying. To overcome this difference in the tension and to effect uniformity of draft on the yarn is the principal object of my improvement, which consists in making the body of the bobbin tapering from or near one end or head to or near the other end or head, the taper being such as to cause

the said body to continually diminish in size from the upper to the lower end or head of the bobbin, the whole being substantially as represented in the drawings, in which—

*a* denotes the body, and *b c* the two heads, of each bobbin. Next the upper head the bobbin-body is largest in diameter, it being smallest at its junction with the lower head, and has a true or regular taper from one head to the other. The amount or degree of taper will depend somewhat on the length of the bobbin, but must be such as to obtain an even or approximately even tension or drag on the thread throughout each layer upon the bobbin. This admits of a lighter traveler being used than can be when the bobbin barrel or body is practically of like diameter from head to head, or tapers from each head toward the middle, so as to be there least in diameter.

Experience has shown that the degree of taper should be such as to cause the lower end of the body to have a diameter less than that of the other to the extent of from one to four sixteenths thereof. This, however, has to be determined by experiments, and will depend on the length and diameter of the bobbin, whether it be with heads, as shown in Fig. 1, or be what is termed a "quill-bobbin."

What I claim as my invention is—

The improved bobbin or quill, having its body or barrel conical or tapering from end to end, and greater in diameter at the upper than at the lower end, substantially as and for the purpose specified.

THOMAS B. WATTLES.

Witnesses:

I. W. WATTLES,  
THOS. LONERGAN.