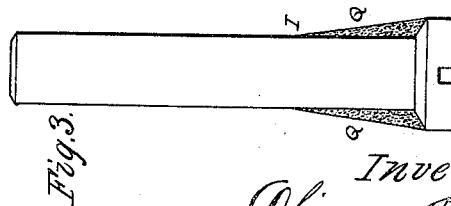
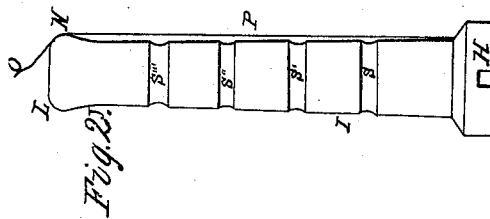
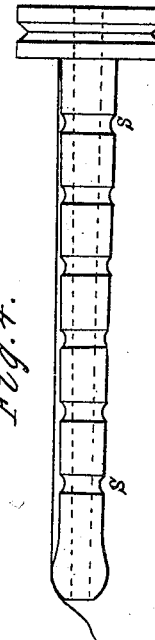
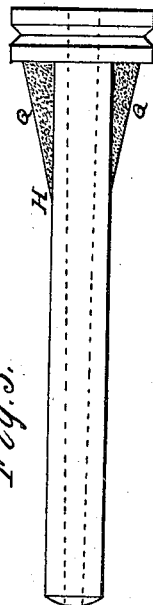
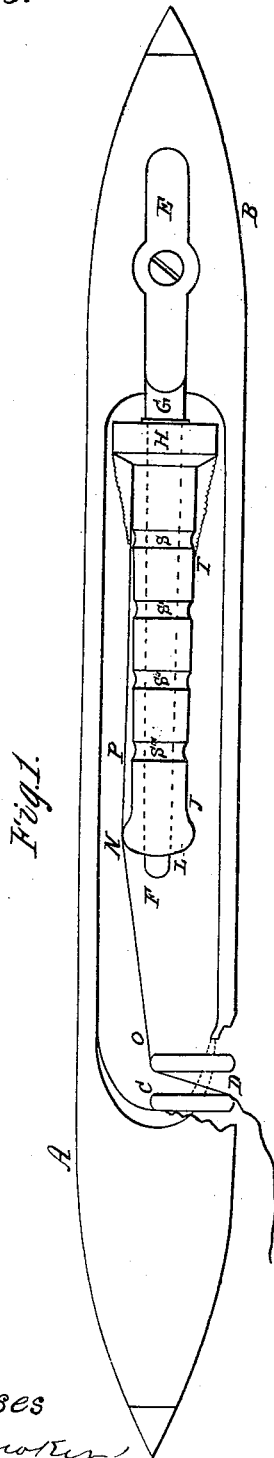


*O. Pearl
Shuttle.*

N^o 53,665.

Patented Apr. 3, 1866.



Witnesses
Jas. C. Proctor
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Inventor
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UNITED STATES PATENT OFFICE.

OLIVER PEARL, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN WEFT-BOBBINS.

Specification forming part of Letters Patent No. 53,665, dated April 3, 1866.

To all whom it may concern:

Be it known that I, OLIVER PEARL, of Lawrence, in the county of Essex and State of Massachusetts, have invented an Improvement in Bobbins for Spinning Yarn; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures marked thereon.

Figure I represents the shape of the common shuttle, having the bobbin in place at its center. Figs. II and IV represent the improved bobbin. Figs. III and V represent the common bobbin.

My improvement relates to the construction of a filling or weft bobbin, the form given to it having reference to its use in a shuttle during the operation of weaving, the result attained being this—viz., that the whole length of the yarn that is wound upon the bobbin during the operation of spinning can be woven into cloth without leaving any waste at the base or rear end of the bobbin, and also in this, that the friction of the yarn upon the surface of the barrel of the bobbin during its rapid delivery from the shuttle is very much diminished, and consequently the filling or weft is less liable to be broken.

With the bobbin in common use the difficulty in delivering the filling-yarn increases the nearer it is to the base, and usually in worsted work about fifty yards of yarn remain upon the bobbin and require to be drawn off and wound upon another bobbin before it can be woven, thus causing waste, delay, and extra cost for labor.

The space within the dotted lines Q in Figs. III and V is usually occupied by yarn that cannot be woven off; but the amount that remains upon the bobbin will depend upon various circumstances, such as the smoothness of the barrel or the strength or size of the yarn.

I will now describe the mode by which the breaking of the yarn is prevented and the whole of it delivered from the bobbin during the passage of the shuttle through the warp.

The shuttle A B is of the usual form, having at the end A an eye or thread-guider, C D,

and at the end B a spring, E, which holds the base of the central spindle, F G. Upon this spindle the bobbin H I J L is placed, and the filling thread or yarn P N O is drawn off through the eye C D as the shuttle flies through the warp.

It will be observed that the barrels of the bobbins, Figs. III and V, are cylindrical, and that on drawing off a thread or filling it remains in contact with the barrel throughout its whole length, while in my improved bobbin, Figs. II and IV, the thread P N O, after it parts from the mass of the yarn at I, touches the bobbin at the end only and passes off over the enlarged or bulbous part L. I prefer to make this part of about the same diameter that the barrel is at the point I—about one or one and a half inch from the base H—the part between I and J being turned down to a less diameter and made the smallest just below the bulb L.

About three-quarters of the filling will weave off freely from the common bobbin; but after the point I is passed the friction upon the barrel increases rapidly, the thread breaks, and a mass of yarn is left upon the bobbin, as at Q, Figs. III and V, while in my bobbin, Figs. I, II, IV, the yarn is delivered freely and all of it is woven off.

Upon the barrel of the bobbin I make several depressions or grooves, S S' S'', for the purpose of preventing the yarn from slipping upon the barrel in the direction of its axis when in rapid motion in the shuttle.

What I claim is—

1. The combination of the enlarged or bulbous end of a filling-bobbin with the barrel of the bobbin, as herein described, and for the purpose set forth.

2. In combination with the enlarged end of the bobbin, the grooves or rings cut into the barrel at intervals to prevent the yarn from slipping from the bobbin when in motion in the shuttle.

OLIVER PEARL. [L. S.]

In presence of—

A. J. SHORE,
J. C. BOWKER.