D. Hussey.

Spinning Machine Bobbin.

No. 36,782. Patented Oct. 28, 1862.

Fig: 6.

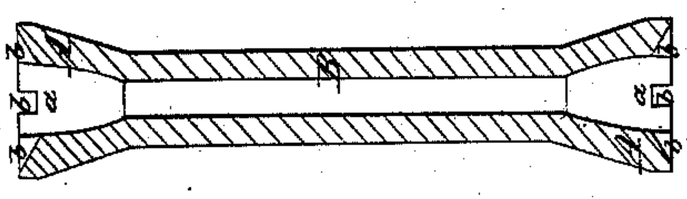


Fig: 8.

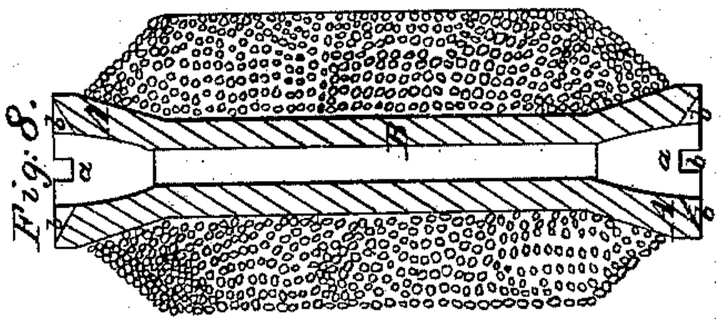


Fig: 4.

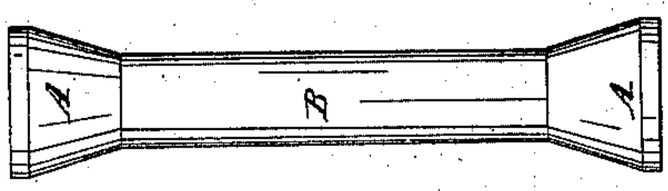


Fig: 9.

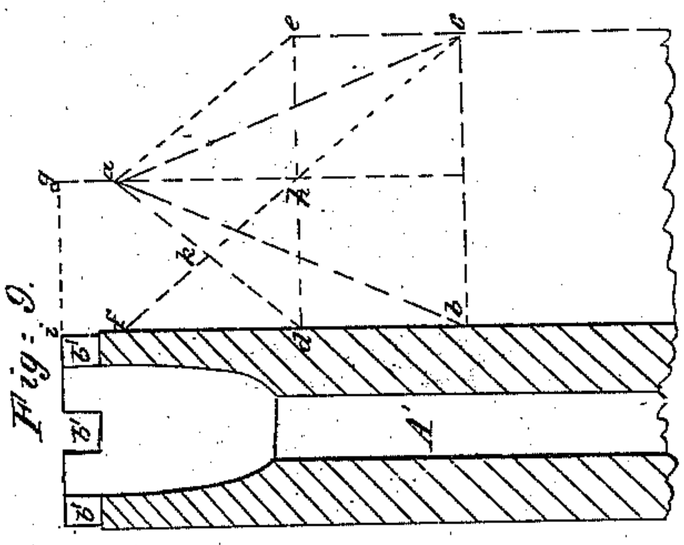


Fig: 2.

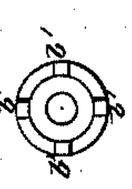


Fig: 5.

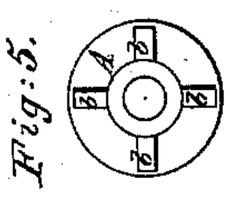


Fig: 3.

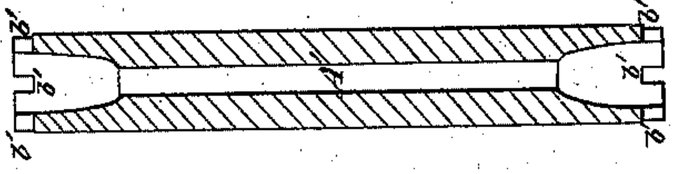


Fig: 1.

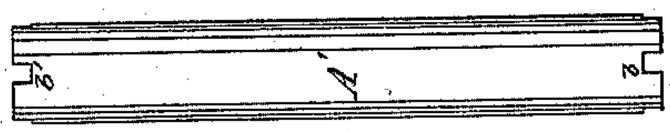
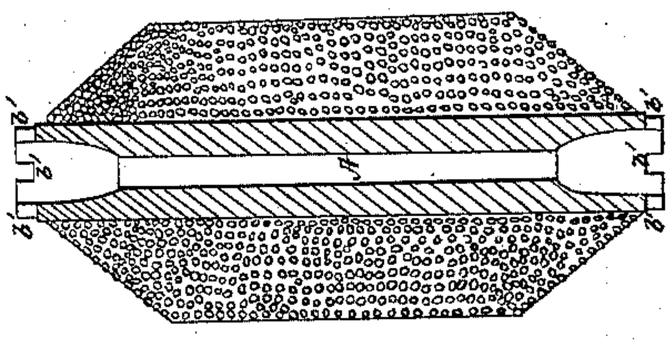


Fig: 7.



Witnesses:
L. W. Noyes
A. W. Sawyer.

Inventor:
Daniel Hussey

UNITED STATES PATENT OFFICE.

DANIEL HUSSEY, OF NASHUA, NEW HAMPSHIRE.

IMPROVEMENT IN BOBBINS.

Specification forming part of Letters Patent No. **36,782**, dated October 28, 1862.

To all whom it may concern:

Be it known that I, DANIEL HUSSEY, a citizen of the United States, and a resident of Nashua, in the county of Hillsborough and State of New Hampshire, have made a new and useful invention having reference to Bobbins and the Winding of Roving or Yarn thereon; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings.

The nature of my invention consists not only in the employment of a double-coned bobbin or spool, but in a peculiar mode of winding or laying the roving or yarn thereon, this latter consisting in increasing the width of each successive layer of the roving or yarn until the cones and the body or part of the bobbin uniting them shall be completely covered, and subsequently diminishing the width of each succeeding layer of such yarn or roving until the requisite amount thereof shall have been wound on the bobbin.

I would observe that ordinary spools for spooling roving are made cylindrical from end to end, and are provided with a recess and cross-notches at each end.

Figure 1 denotes a side view, Fig. 2 an end view, and Fig. 3 a longitudinal section, of a roving spool or bobbin so made. Fig. 4 is a side view, Fig. 5 is an end view, and Fig. 6 is a longitudinal section, of a spool or bobbin constructed in accordance with my invention.

The common cylindrical spool or bobbin (shown in Figs. 1, 2, and 3) is constantly liable to be broken at either one or both of its extremities, where it is very weak; and, furthermore, the pin-notches at the end are apt to catch and entangle the roving or yarn.

In my improved roving spool or bobbin each of the end parts, A A, is of greater diameter than the body B, and consists of a conic frustum united thereto and arranged therewith, as shown in Figs. 4 and 6. A cylindrical chamber, *a*, is made axially and concentrically in each part A, and is provided at its open end with four radial pin-notches, *b b b b*, which are formed within the base, but do not open out of its edges or circumference, as do the corresponding notches, *b' b' b' b'*, of the ordinary cylindrical spool. (Represented in Figs. 1, 2, and 3.) The said arrangement of the notches *b b b b*, which are to receive a pin or stud of the spindle, is highly beneficial to the durability of the spool or bobbin.

Fig. 7 denotes a section of a cylindrical spool and the roving as wound thereon. Fig. 8 represents one of my improved spools of the same length and diameter of body, and with roving wound on it in accordance with my invention, the cylindrical parts of the mass of roving on each spool being equal in diameter.

With my improved method of laying the roving on the spool a great saving in the amount wound thereon results in comparison with the mode of winding on the cylindrical spool. This will be apparent from Fig. 9. If we suppose A' in the said Fig. 9 to exhibit a cylindrical bobbin and *f c* the slope of the conic frustum of roving to be laid at each end of each bobbin, we shall find the said conical frustum [to be generated by the triangle *f b c* revolved about the cylinder A. Again, suppose we desire the slope of the conical frustum at each end of the improved double-coned bobbin to be the same as that of the cylindrical bobbin. In this case the conical head or frustum at the end of the bobbin A would be generally the trapezoid *a d i g* revolved about the cylinder A. The line *a e* would be parallel to the line *f c*, and instead of the triangular section *f b e* resting on the base *b c*, we should have the figures *a d b c e*. As the two triangles *f b c* and *a b e* have the same base and altitude, they measure the same area. Consequently these figures *a d b c e* will exceed the triangle *f b c* by the two triangles *a d b* and *a c e* by the parallelogram *a e c h*, which in a measure will represent the gain by the employment of the conic head and the process of winding the yarn or roving in accordance with my invention. The gain is greater, because much more yarn or roving could be wound on the triangular spaces *a k h* and *a h c* than can be on those marked *f k d* and *a d b*.

In the process of winding the layers of roving on the double-coned spool or bobbin, each successive layer is to be increased in width until the two cones are covered by the yarn

or roving, after which each successive layer laid on should diminish in width until the cylinder wound on the bobbin receives a length equal to the distance between the two cones or conical frusta composing the two heads.

I claim—

The double-coned bobbin or spool made as described and the formation of the mass of roving thereon in the improved manner, substantially as specified.

DANIEL HUSSEY.

Witnesses:

L. W. NOYES,

A. W. SAWYER.