# J. H. SAWYER.

## SPINDLE-BOBBIN.

No. 176,359. Patented April 18, 1876.

Fig. 1.

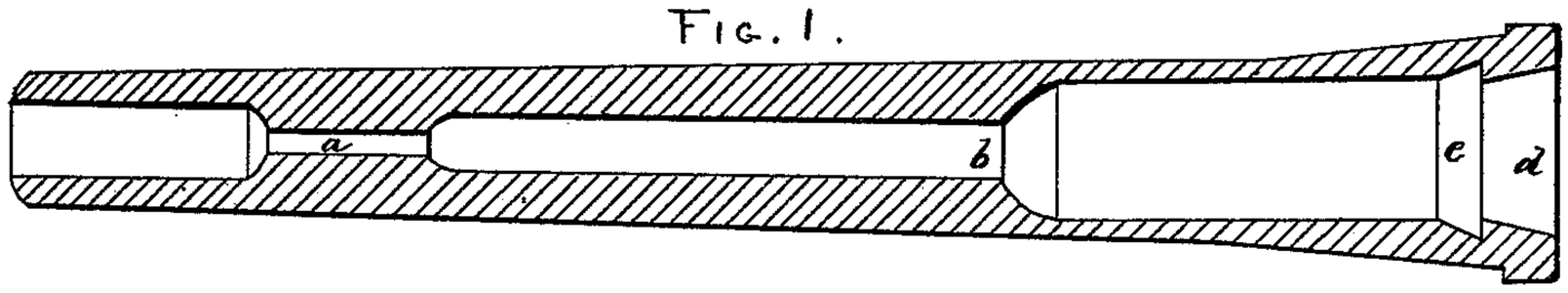



Fig. 2.

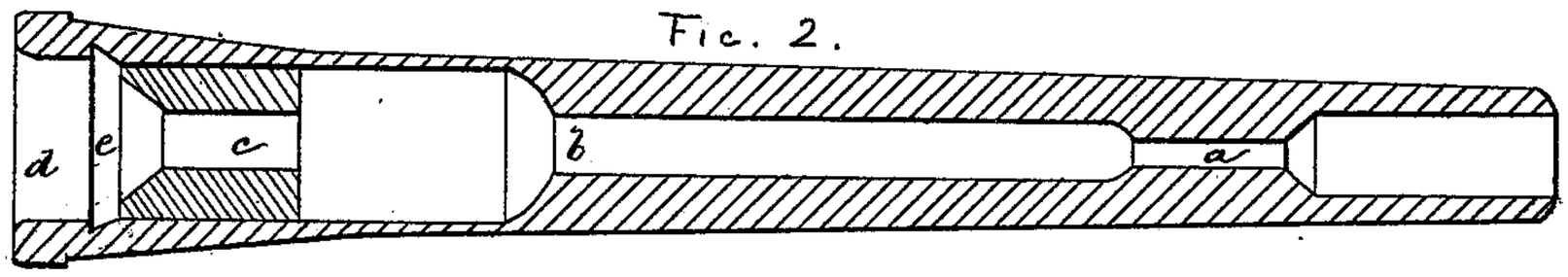



Fig. 3.

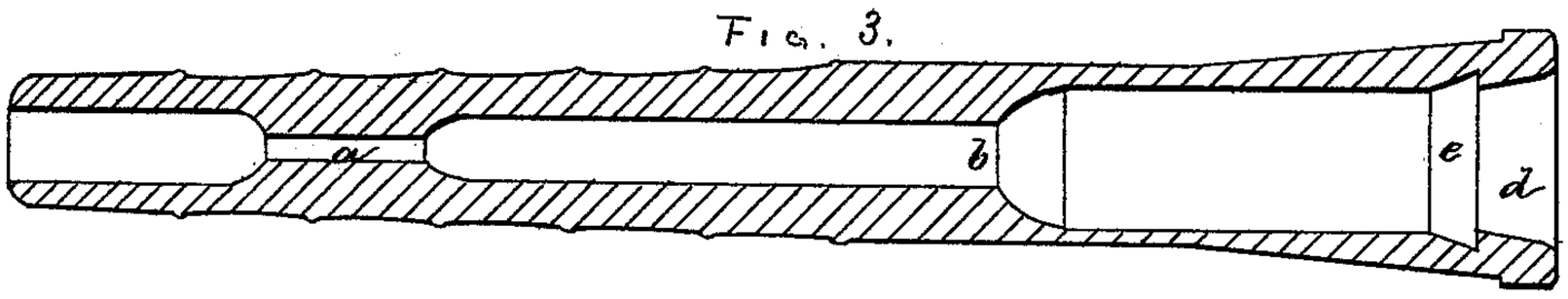



Fig. 4.

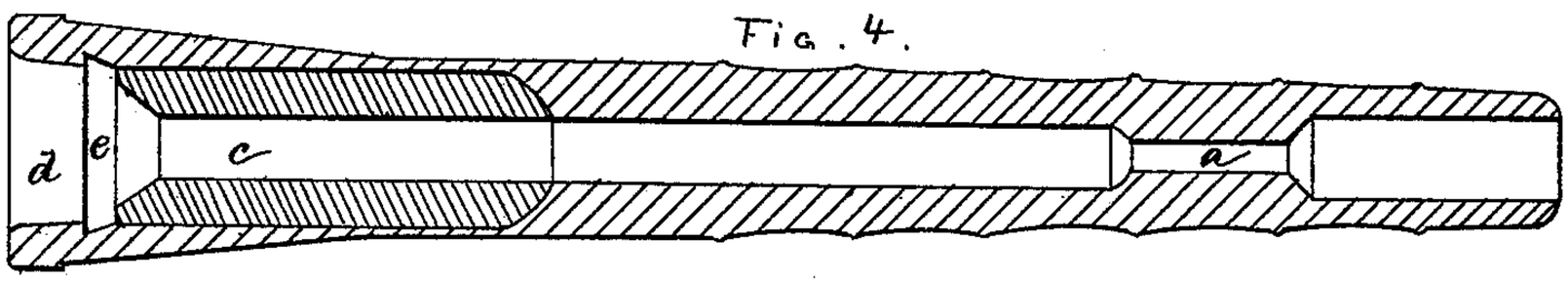



Fig. 5.

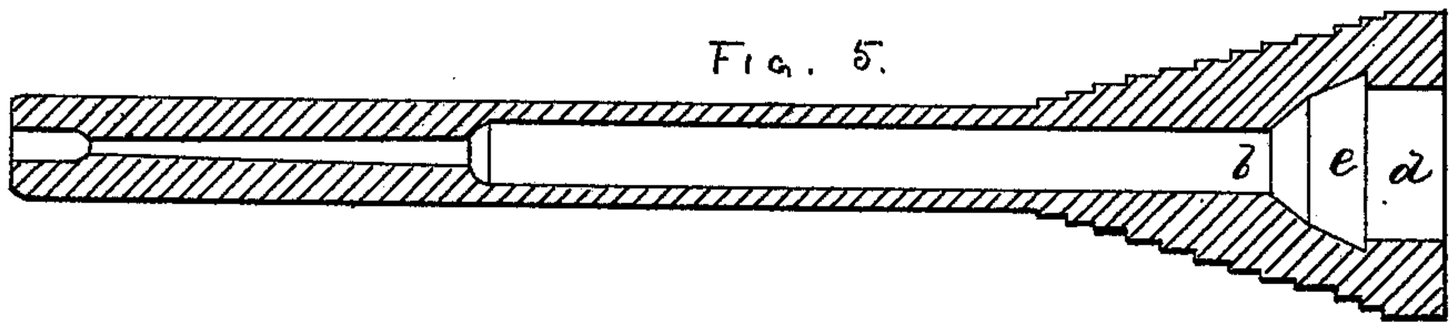



Fig. 6.

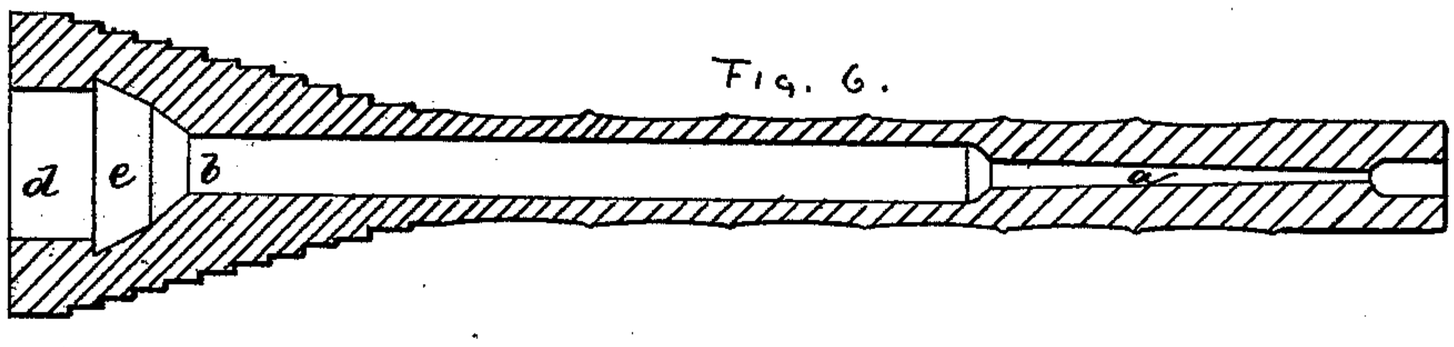
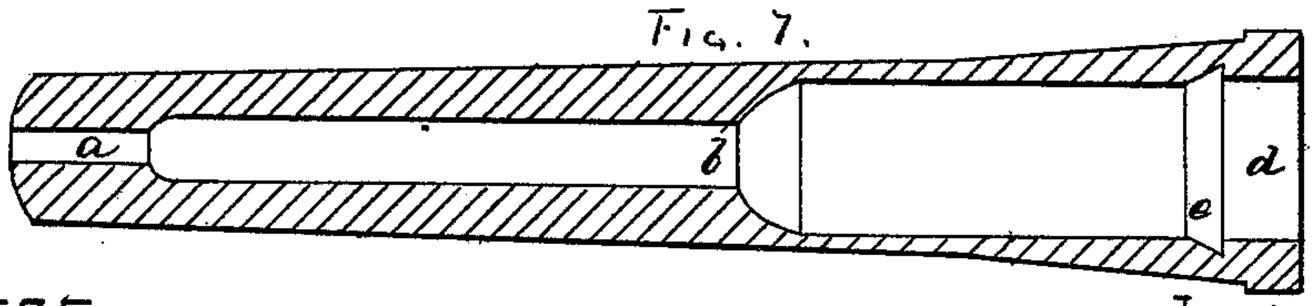



Fig. 7.




Witnesses.
L. H. Laratimer.
W. J. Pratt.

Inventor.
Jacob H Sawyer
per Crosby Gregory
Att'ys.

# UNITED STATES PATENT OFFICE.

JACOB H. SAWYER, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN SPINDLE-BOBBINS.

Specification forming part of Letters Patent No. **176,359**, dated April 18, 1876; application filed September 11, 1875.

*To all whom it may concern:*

Be it known that I JACOB H. SAWYER, of Lowell, in the county of Middlesex and State of Massachusetts, have invented Improvements in Spindle-Bobbins, of which the following is a specification:

This invention relates to bobbins on which yarn for filling is spun or wound in spinning-frames of the class known as the Sawyer frames. These bobbins may be used in loom-shuttles, and may be filled or wound with yarn by means of any well-known spinning or winding machinery.

The several figures represent sections of different forms of bobbins, showing this invention applied.

Bobbins for filling, as heretofore made, have been provided at their large or lower ends with an external annular groove to receive the bobbin-retaining catch common to loom-shuttles; and in winding these bobbins the yarn is not allowed to extend quite to the grooved portion of the bobbin, for should the filling get into this groove the bobbin-catch, which must enter this groove, will break the yarn and make it necessary to stop the loom, and in this way much time as well as yarn is lost, and besides this loss, the quantity of yarn that can be put on such a grooved bobbin is limited by such groove, for the yarn cannot be wound down at the base of the bobbin as far as it otherwise could be wound were the groove unnecessary, and by winding the yarn lower down on the bobbin, the yarn may be built out farther and the bobbin may be made to contain very much more yarn, which is a great desideratum, and prevents waste of time in stopping machinery.

This invention consists in a bobbin provided at its base with an opening larger than the bearings in the bobbin for the spindle, and with an internal groove larger than the opening in the base, to receive a catch, substantially as shown in Letters Patent of the United States granted to Daniel Wright November 2, 1875, and numbered 169,504 and 169,505, to which reference is made.

In the drawings, *a a* are the bobbin-bearings for the small or outer or upper end of the spindle, and *b b* are the spindle-bearings at the lower or large end of the bobbins, (but, instead of these bearings *b*, plug-bearings *c* may be used.) An opening, *d*, larger than the spindle-bearings, is made in the base of the bobbin, and within and near the end of this enlarged opening and within the bobbin, is a groove, *e*, adapted to receive a catch whi h extends through the opening *d*, and engages the groove.

I have shown several different varieties of bobbins, all of them well known, and instead of those shown I might use any other bobbins of well-known shape, both externally and internally, so long as such bobbins are provided with my improvement, the openings *d e* or their equivalents.

I claim—

A bobbin provided with spindle-bearing, an opening in its base larger than the spindle-bearing, and a groove in the interior of the base of the bobbin between the enlarged opening at its base and the spindle-bearing, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB H. SAWYER.

Witnesses:

D. WRIGHT,

D. E. STIMPSON.