

W. T. CARROLL.  
 Bobbin.

No. 218,428.

Patented Aug. 12, 1879.

Fig: 2.

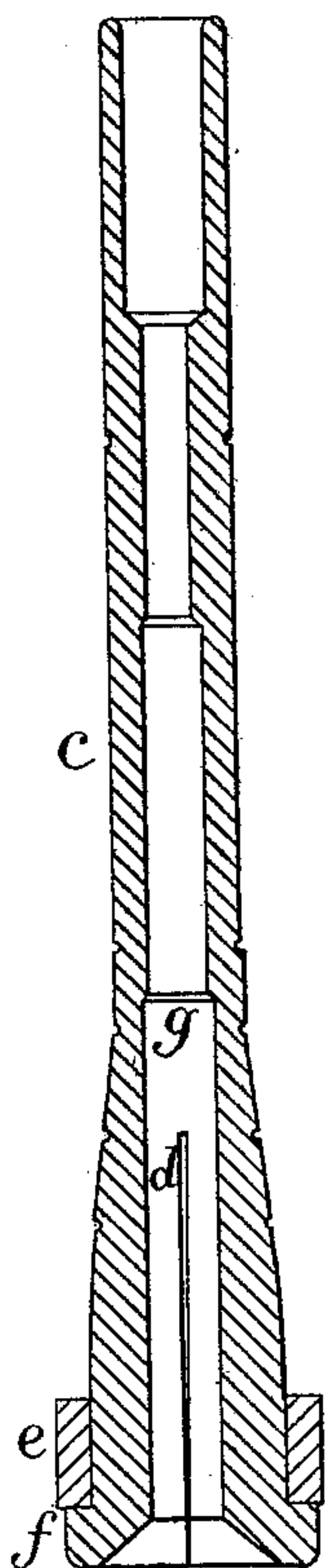


Fig: 1

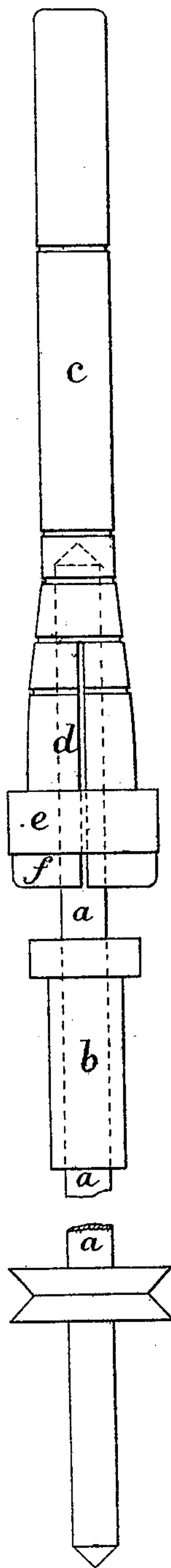
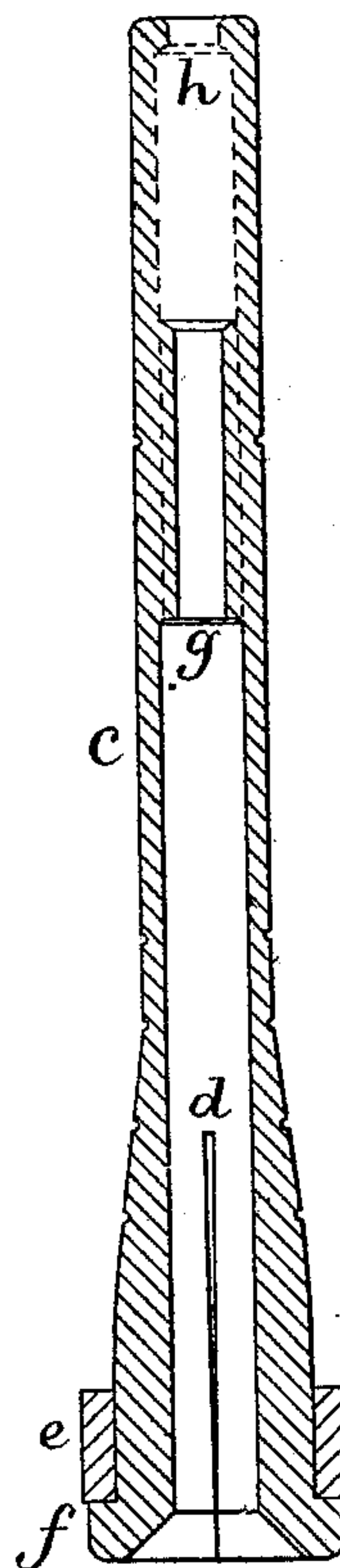


Fig: 3



Witnesses  
 Jos. P. Livermore  
 N. E. Whitney.

Inventor.  
 William T. Carroll  
 by Crosby & Gregory Attys

# UNITED STATES PATENT OFFICE.

WILLIAM T. CARROLL, OF WORCESTER, ASSIGNOR TO GEORGE DRAPER  
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## IMPROVEMENT IN BOBBINS.

Specification forming part of Letters Patent No. **218,428**, dated August 12, 1879; application filed  
June 19, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM T. CARROLL, of Worcester, in the county of Worcester and State of Massachusetts, have invented Improvements in Bobbins, of which the following is a specification.

This invention relates to improvements in bobbins for use in spinning-machines.

Spindles now used in ring-frames are commonly made tapering, and the bobbins seated upon tapering portions of the spindles are moved by reason of frictional adhesion between the bobbin and spindle. Ordinarily the bobbins have each had two bearings upon these tapering spindles, two being considered necessary to properly carry the bobbin without slip.

Making the spindle tapering reduces its strength and increases its tendency to vibration—a very serious evil in ordinary tapering spindles supported by the common short bolster.

Cylindrical spindles have been used with loosely-fitting bobbins, a suitable catch on the spindle, or on a button carried by it, engaging a portion of the bobbin and driving it positively.

In this my invention I employ a bobbin adapted to fit the cylindrical portion of the spindle closely, whereby the bobbin is driven by frictional adhesion.

My invention consists in a bobbin provided with a shouldered stop to rest upon the top of the spindle, the bobbin being split at its lower end and chambered to fit, and being provided with a spring to contract the said split end of the bobbin upon, and so as to embrace snugly a cylindrical portion of, a cylindrical spindle, all as herein described.

Figure 1 represents, in side elevation, one form of my invention, showing the bobbin and spindle, the latter being broken out to save space; Fig. 2, a section of the bobbin shown in Fig. 1; Fig. 3, a section of a modified form of bobbin.

The spindle *a* is made cylindrical from the top of the bolster *b* upward. At its lower end it will be sustained in any usual foot-step. The spindle and bobbin will extend through the ring-rail and ring in the usual way.

In order that a portion of this cylindrical surface may drive the bobbin by reason of frictional adhesion between it and the bobbin, I have made the bobbin so as to be ex-

panded when the bobbin is placed upon the spindle, so that the bobbin is made to cling closely to the spindle and move with it.

Within the bobbin I provide a suitable stop to determine the lowest position of the bobbin, and consequently I am enabled to keep the tops of the bobbins all in line.

As shown in Figs. 1, 2, and 3, the bobbin *c* is split at *d* at two or more places, and the split portions are held in contracted position by a suitable spring. In Figs. 1 and 2, I have shown for this purpose a spring, *e*, of india-rubber, made as a band, and applied to the outside of the bobbin above its base *f*.

The spring might be applied to a groove in the outside of the base; or the spring may be of wire or spring metal suitably applied to the bobbin, so as to cause the bobbin to cling to the spindle and remain in position thereon as the spindle is rotated.

In Fig. 2 the upper end of the spindle meets stop *g* within the bobbin, below its center. This stop determines the lowermost position of the bobbin. Instead of making it at such point, the stop may be made at or near the center of the bobbin, as at Fig. 3, or at the top of the bobbin, as shown in dotted lines *h*, Fig. 3.

The interior bore of the bobbin opposite the slots is of less diameter than the bore thereof at other portions of the bobbin.

It will be noticed in Fig. 2 that the diameter of the bore of the bobbin at the base is smaller than at a point a short distance above the base. The insertion of the spindle within such base expands the bobbin, causing it to cling closely to the spindle.

I claim—

As an improved article of manufacture, a bobbin provided with a shouldered stop to rest upon the top of the spindle, the bobbin being chambered and split at its lower end to fit, and being provided with a spring to contract the said split end of the bobbin upon, so as to embrace a cylindrical portion of, a cylindrical spindle, all as and to operate as herein described.

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

WILLIAM T. CARROLL.

Witnesses:

GEO. A. DRAPER,  
W. S. BANCROFT.