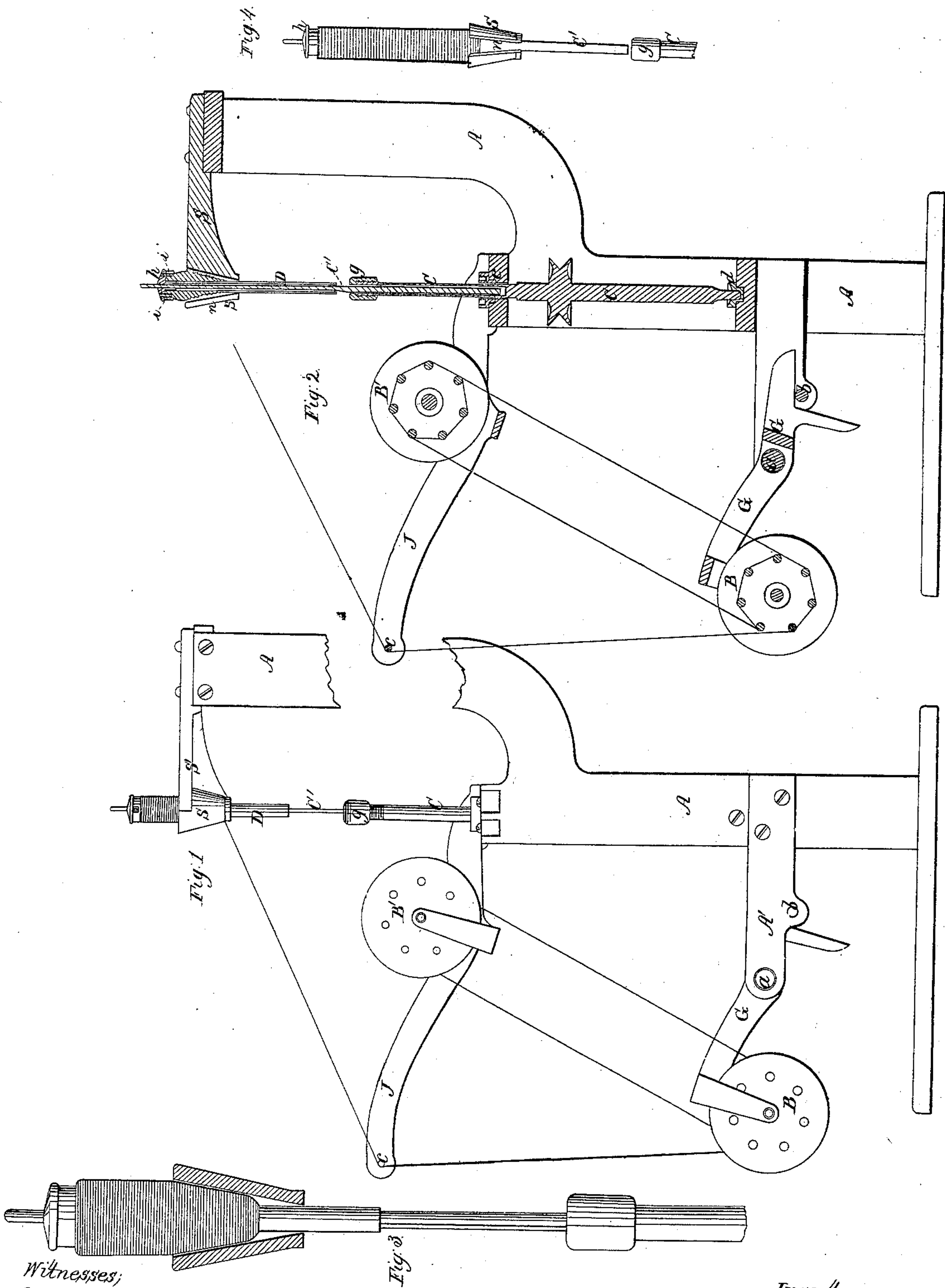


*B. H. Jenks.*  
*Winding Bobbin.*

*N<sup>o</sup> 57,330.*

*Patented Aug. 21, 1866.*



*Witnesses;*  
*R. Campbell*  
*E. Schaeffer*

*Inventor;*  
*Barton H. Jenks*  
*by Atty.*  
*Mar. Smith & Co.*



# UNITED STATES PATENT OFFICE.

BARTON H. JENKS, OF BRIDESBURG, PENNSYLVANIA.

## IMPROVEMENT IN COP-WINDING MACHINES.

Specification forming part of Letters Patent No. 57,330, dated August 21, 1866.

*To all whom it may concern:*

Be it known that I, BARTON H. JENKS, of Bridesburg, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Cop-Winding Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of one side of the winding-machine. Fig. 2 is a vertical central section through the machine, having a bobbin applied to it. Fig. 3 is an enlarged view, showing the manner of winding the yarn on the bobbin. Fig. 4 shows the bobbin-spindle elevated above the end of its driving-spindle.

Similar letters of reference indicate corresponding parts in the several figures.

My improvement consists in a spindle made hollow throughout part of its length and driven by a band from a tin cylinder, such as is used in a throstle spinning-machine, or by other proper means; and in the use of a hardened cast-steel or other metal cap upon the upper end of the spindle, through which a rectangular slot is cut, and through this slotted cap a light flattened separate spindle, carrying the bobbin and rotated by the main spindle, is introduced into the hollow portion of the spindle, so as to gear with it during its rotation to complete the filling of the bobbin with yarn, but at the same time to rise out of this hollow spindle when the bobbin is full, the rising motion going on gradually by reason of the impinging influence of a conical or V-shaped cup upon the yarn-wound bobbin, and terminating just when the bobbin is full. The devices for giving the traverse motion to lay the yarn on the bobbin may be of any well-known kind, not needing to be shown or described, and the delivery end moves vertically the length of the V-shaped cup.

The great advantage of my improvement over those plans where the whole spindle (except the pulley or driver) rises with the bobbin is this: The detachable portion of the spindle which carries the bobbin is exceedingly light and small, and, therefore, when the bobbin is being filled with yarn, this portion of the spindle, in rising, offers but little resistance, and the yarn on the bobbin will press but lightly upon the inner surface of the cone-

cup. The pressure, however, is sufficient to insure the laying of the yarn in a perfect manner. Again, the junction of the bobbin-spindle with the main spindle is made at a point above the frame which supports the hank-reels, and thus the bobbins can be very speedily and conveniently withdrawn and others substituted for them. Again, I am enabled to save considerable material in the construction of the spindles, as that portion which has the bobbin directly attached to it can be formed of light round metal flattened along a portion of its length. And, finally, my improvement can very readily be applied to old machinery of this class.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

A represents the frame of the machine, which is adapted for supporting the hank runners or reels B B', and also the spindle C, which carries the bobbin D and its spindle C'.

The hanks of yarn to be wound upon the bobbin D are applied to the runners or reels B B', the lower one, B, of which has its bearings in a vibrating frame, G, which is supported upon a horizontal transverse pin, *a*, extending across two arms, A', of frame A, as shown in Fig. 2. The reel B is supported by the outer and heaviest part of the frame G. The inner end of this frame is forked for the purpose of resting upon and being held up by a transverse rod, *b*. When a hank is applied to the reels B B' the lower edge of the upper fork will press upon the rod *b*, and when the hank is wound from the reels the outer end of frame G will drop down and be caught and held by the lower forked end coming in contact with the rod *b*. The weight of the outer end of the frame G and its reel B will keep the hanks under proper tension when applied to the reels.

The upper reel has its bearing in an arm, J, which is secured to the upper portion of the frame A, and the two reels are sustained in the same vertical plane. To the outer end of the supporting-arm J a rod, *c*, is secured, over which the yarn passes on its way from the lower reel to the bobbin, as indicated by the red lines in the drawings.

The spindle C is stepped upon a bearing, *d*, in frame A, and passed through an oil-cup



guide, *e*. This spindle is provided with a tin cylinder, *f*, similar to that used in a throstle spinning-machine, by which the spindle is driven. The upper end of the spindle is made hollow, for receiving the lower end of the spindle *C'*, which carries the bobbin, and a screw-cap, *g*, is applied to the upper end of the spindle *C*, through the end of which a rectangular hole is made for receiving loosely through it the flattened portion of the bobbin-spindle, as shown in Fig. 2. The upper portion of this bobbin-spindle may be round, and on its upper end a circular cap, *h*, is secured, from which two studs, *i i*, project, which, when the bobbin and its rod are in place in the machine, will enter cross-slots in the upper end of the bobbin, and thus cause the latter to rotate when the two spindles are rotated.

The neck, which is formed on the lower side of the cap *h*, enters the hole through the bobbin, and thus centers the latter upon its spindle.

The object of making the lower portion of the spindle *C'* flat, and passing it through the cap *g*, is that the spindle *C* shall rotate the spindle *C'* and at the same time allow the latter to rise as the work of winding the yarn upon the bobbin progresses.

The bobbin *D* may be made in the usual form for weavers' shuttles, and it is applied to the winding-machine with its largest end upper-

most, as shown in the drawings. Its upper end is guided by means of an inverted cone or cup, *S*, which is constructed with a slot, *n*, through its front side, as shown in Fig. 4, and which is supported by an overhanging bracket, *S'*, upon which the cup may be formed.

As the yarn is wound on the bobbin in said cup *S* the yarn will crowd the bobbin upward and cause it to lie evenly, and when the bobbin is thus filled it will be elevated to its highest point, and its spindle *C'* will of itself become detached from the driving-spindle *C*, as shown in Fig. 4, when the bobbin will cease to turn, and can be removed and another one substituted in its stead.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The hollow spindle *C*, in combination with the bobbin-spindle *C'*, when the same are constructed, arranged, and operate in the manner and for the purpose described.

2. The combination and arrangement of the hollow spindle *C*, bobbin-spindle *C'*, and hank-holders *B B'*, substantially in the manner and for the purpose herein described.

BARTON H. JENKS.

Witnesses:

R. M. SHOUSE,

WILLIAM DOBSON.