(No Model.) 2 Sheets—Sheet 1.

# G. CAMPBELL & J. CLUTE.

## MACHINE FOR WINDING BOBBINS.

No. 256,197. Patented Apr. 11, 1882.

Fig. 1

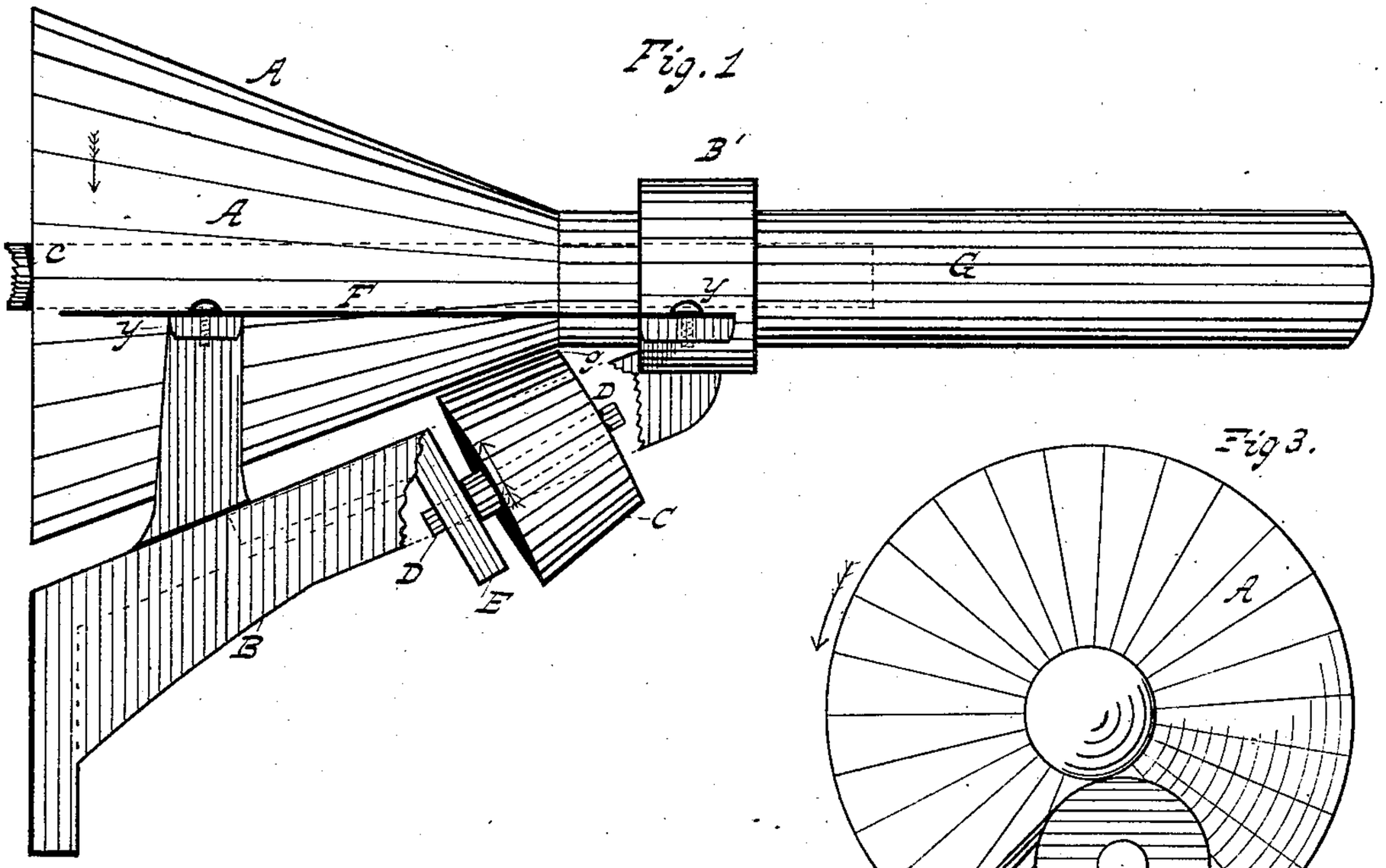
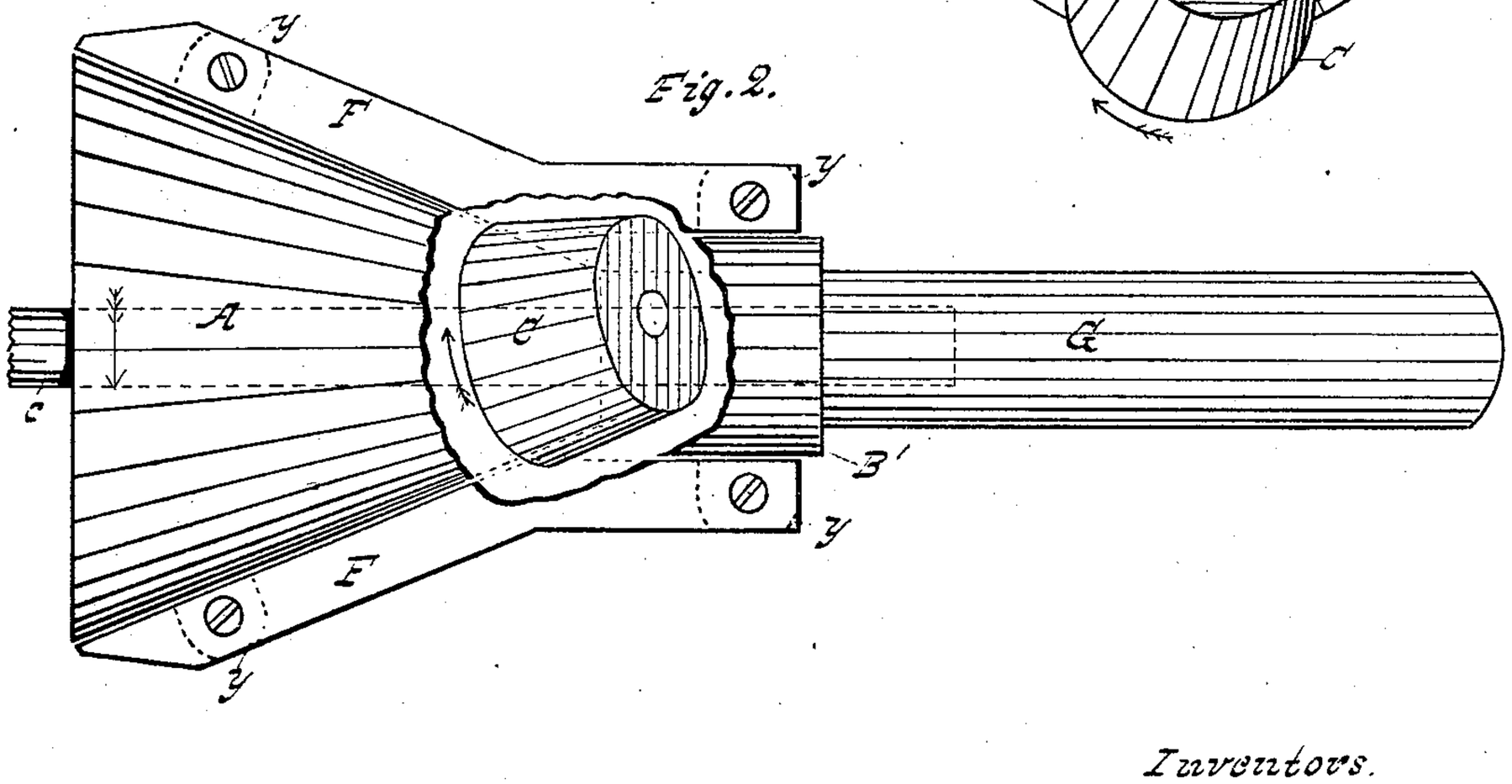



Fig. 3.




Fig. 2.




Witnesses:

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(No Model.) 2 Sheets—Sheet 2.

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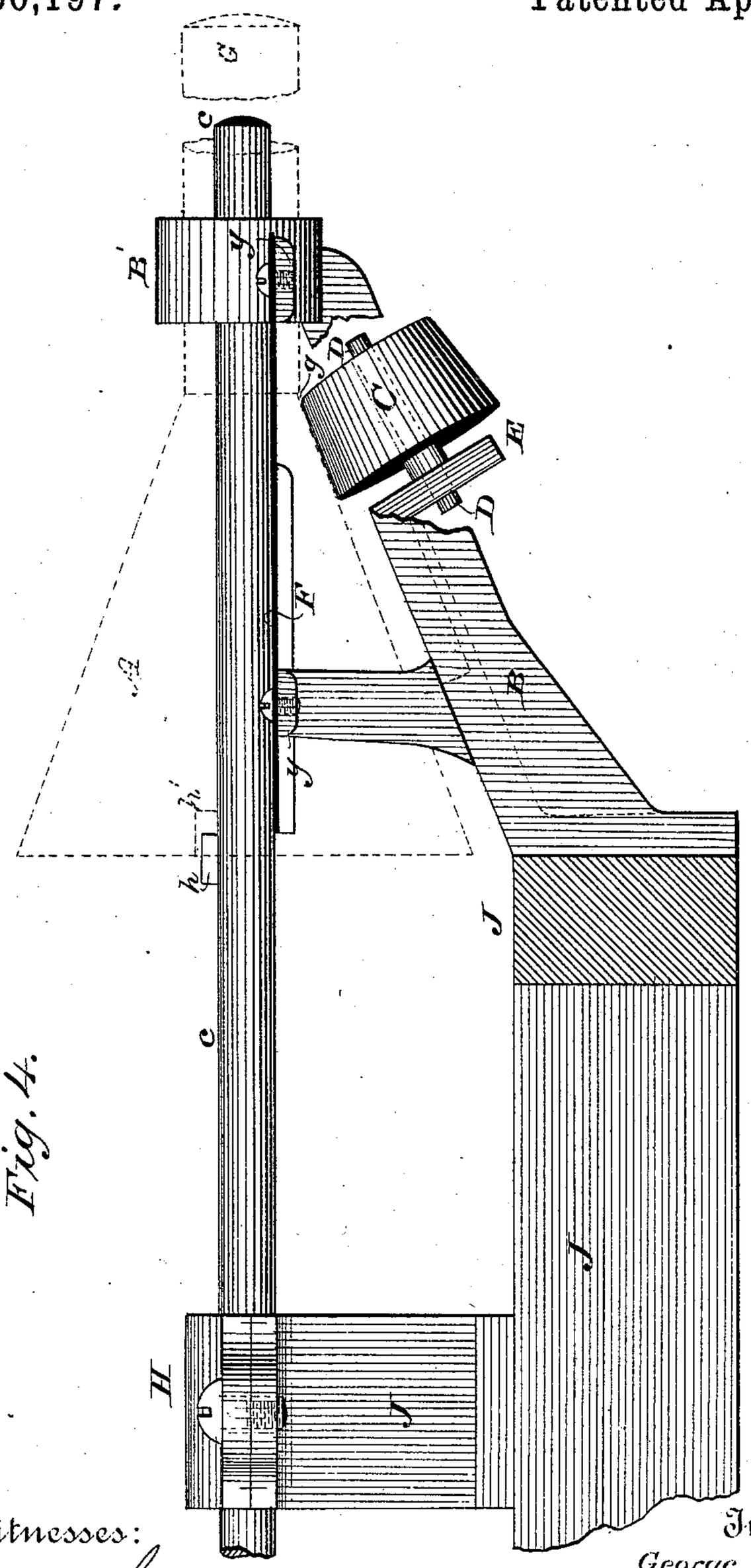


Fig. 4.

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# UNITED STATES PATENT OFFICE.

GEORGE CAMPBELL AND JOHN CLUTE, OF COHOES, NEW YORK.

## MACHINE FOR WINDING BOBBINS.

SPECIFICATION forming part of Letters Patent No. 256,197, dated April 11, 1882.

Application filed February 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE CAMPBELL and JOHN CLUTE, citizens of the United States of America, residing at the city of Cohoes, in the county of Albany and State of New York, have invented certain new and useful Improvements in Machines for Winding Bobbins; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Our invention relates to a machine for winding bobbins, and has for its object to avoid and obviate the "slubbering" of the yarn when being wound, which slubbering causes the inner portion of the yarn next to the barrel of the bobbin to be wound more loosely than the outer portion, thereby causing waste of time and loss of yarn by entanglement while being unwound for knitting, &c.

Referring to the drawings, Figure 1 is an elevation showing a bobbin and so much of a winding-machine as is necessary to illustrate our invention. Fig. 2 is a plan view of the same, the shaping-plates and bobbin being broken away to more clearly illustrate the conical wiping-roller. Fig. 3 is an end view of Figs. 1 and 2, showing the face of the bobbin and the relative position of the conical wiping-roller. Fig. 4 is a similar view to that illustrated in Fig. 1, with a portion of the frame for supporting the spindle and bracket thereon, and the bobbin being shown in dotted lines.

Similar letters of reference indicate like parts in each figure, and the arrows the direction of motion.

The bobbin A is supported in position by the spindle *c* and eye or bearing B′, and is revolved by power being communicated to the spindle *c*, in the usual way, by means of a band, as shown, for instance, in the patent issued to George Campbell, January 18, 1876, and numbered 172,298.

B is a bracket (see Figs. 1 and 4) secured to the upper front rail of the frame J, substantially as shown, and attached thereto is an angular piece, E, having permanently secured therein the pin or stud D.

C is a conical roller substantially of the form shown in Figs. 1, 2, 3, and 4 of the drawings, and is provided with a central bearing, and is placed and revolves upon the pin or stud D. The spindle *c* is supported by and revolves in suitable bearings, H, (one only of which is shown in the drawings,) secured to the frame J, which may be of any ordinary or suitable construction, the eye or ring B′ coacting with such bearings to support said spindle and the bobbin carried thereby. We place the angular piece E, which contains the pin D and supports the conical roller C, (see Figs. 1, 2, 3, and 4,) upon the bracket B at an angle of about ten degrees from a vertical plane passing through the axis of rotation of the spindle *c*, with the upper surface of the conical wiping-roller pressing against a small portion of the under surface of the conical part of the bobbin, close to the barrel G thereof, with the small end of the conical roller slightly engaging the inner end of the barrel G of the bobbin A at *g*, all substantially as shown.

F F are shaping-plates secured to lugs *y y*, two of which are formed upon the upper ends of arms projecting from the bracket B and two from the sides of the eye or ring B′, through which the barrel of the bobbin passes and in which it rests. These plates are formed of the shape shown in the drawings, (see Figs. 1, 2, and 4,) and are secured in such a relative position with respect to each other and to the spindle as to aid in building the yarn upon the bobbin in proper conical form. The conical wiping-roller, being placed below these plates and at an angle across the cone, coacts therewith and aids in properly winding the yarn upon the bobbin.

The operation of our invention is as follows: Yarn is fed to the conical portion of the bobbin in alternate layers by a thread or yarn guide in the ordinary and usual manner, as shown, for instance, in the patent above referred to. The spindle and bobbin are held pressed forward against the conical roller C and the shaping-plates F by a weighted lever,

as shown therein, or in any other equivalent manner, and as the bobbin gradually fills with yarn it recedes by the action of the pressure of the conical roller C and shaping-plates F. The conical roller C is revolved by friction with the bobbin, and, being set at the angle across the same, causes a continuous drawing or wiping motion toward the cone of the bobbin, thereby carrying or wiping inward toward the cone of the bobbin the threads as they are laid at the small end of the cone of the bobbin, and the conical wiping-roller, combined with the pressing-plates, presses the yarn into a true and perfect bobbin. We set the shaping-plates F upon the same angle with respect to the spindle, and adjust them so as to nicely clear the conical part of the bobbin.

By the peculiar movement of the conical roller, in combination with the shaping-plates, the cause of annoyance and waste occasioned by the slubbering of yarn and the consequent looseness of the internal portion of the bobbin is entirely obviated, and a bobbin is produced of an equal firmness, and unwinds without entanglement, breakage, or waste of yarn or loss of time.

In the foregoing description and in the drawings we have not thought it necessary to a clear understanding of our invention to describe and illustrate an entire working machine, as our invention may be applied to most of those now in use. We prefer, however, to apply it to that form of machine illustrated and described in the patent hereinbefore referred to.

We have shown and described two shaping-plates; but, while this is found serviceable in most instances, two are not absolutely necessary, and we may in some cases dispense with one. We do not therefore limit ourselves to the use of two of these devices.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The spindle *c*, combined with the eye or bearing B′, conical roller C, and shaping-plates F, substantially as set forth and described.

2. A spindle, C, combined with a bracket, B, provided with a conical roller, and a shaping plate or plates to press against the conical portion of the bobbin while being wound, and a bearing adapted to receive the barrel of the bobbin and permit the same to revolve therein, as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE CAMPBELL.
JOHN CLUTE.

Witnesses:
W. DAVIDSON JONES,
C. C. WINNEY.