Marcellus & Ward.

Winding Bobbin.

No. 42,861. Patented May 24, 1864.

Fig. 1.

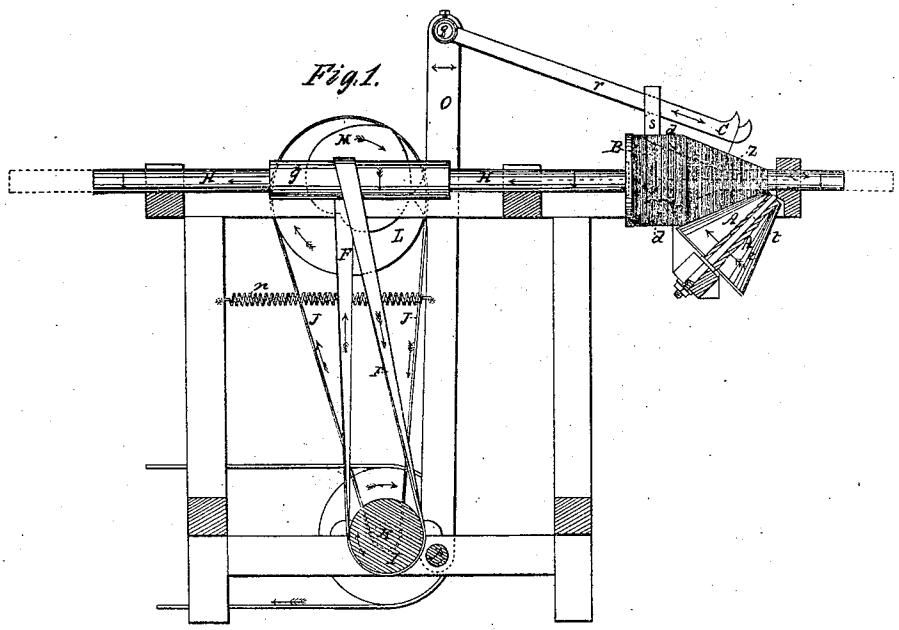
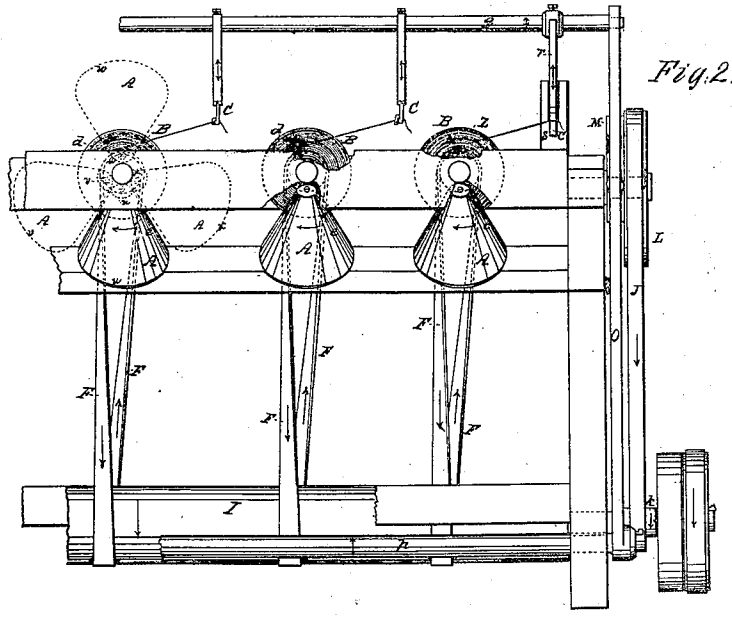


Fig. 2.



Witnesses

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HENRY MARCELLUS AND SAMUEL WARD, OF AMSTERDAM, NEW YORK.

IMPROVEMENT IN MACHINERY FOR WINDING CONICAL BOBBINS.

Specification forming part of Letters Patent No. **42,861**, dated May 24, 1864.

To all whom it may concern:

Be it known that we, HENRY MARCELLUS and SAMUEL WARD, each of Amsterdam, in the county of Montgomery and State of New York, have jointly invented a new and useful Improvement in Machinery for Winding Conical Bobbins, of which the following embraces a sufficient description, reference being had to the annexed drawings, in which—

Figure 1 is a section, and Fig. 2 a front view, of a portion of a machine embodying our invention, like parts being marked by the same letters in both figures, and the arrows therein indicating the directions in which the parts move.

In the annexed drawings, B is a conical bobbin arranged with its axis horizontal, or nearly so, and connected in a detachable manner to a driving shaft, H, arranged in line, or nearly so, with the axis of the bobbin, and mounted so that it can be freely revolved, and also slid endwise with the bobbin.

A is a conical roller arranged under and with its conical surface in contact with and tapered in the same direction as the conical surface of the bobbin, and mounted so that it will be freely revolved on its axis by its said contact with the bobbin. An endless band or belt, F, is passed around both a long pulley, *g*, fast on the bobbin-spindle H, and a driving-pulley, I, arranged at right angles, or nearly so, to and at a suitable distance from the bobbin-spindle, so that by turning the pulley I in the proper direction the belt F will be made to turn the spindle H with the bobbin B and conical roller A, and also at the same time to constantly press the bobbin endwise against the conical roller with a yielding force.

C is a yarn-carrier, so arranged and operated in combination with the conical bobbin that when the latter is revolved the yarn-carrier will then lay a thread of yarn to and fro in spiral lines on the cone of the bobbin, so as to thereby form thereon a layer of yarn of even thickness.

The aforesaid arrangement of a conical roller, A, in combination with a conical bobbin, B, arranged horizontally, or nearly so, and pressed endwise toward or against the said conical roller with a yielding force by the action of the band or belt F, by which the bobbin is revolved, constitutes the distinguishing feature of our invention.

With that arrangement of a conical roller, A, in combination with a conical bobbin, B, arranged horizontally, or nearly so, and revolved and also pressed endwise against the conical roller by a quarter-twist belt, F, there is far less rubbing friction against the cone of yarn as it is being formed on the bobbin, and consequently much less power is required to revolve the bobbin, and such tender yarn as is commonly used for knitting shirts, jackets, and drawers is far less liable to be broken while being wound on the bobbin than would be the case if the bobbin was arranged horizontally and revolved and pressed endwise with a yielding force by a quarter twist belt, F, into and against a fixed hollow cone or conical shell. And with our aforesaid arrangement of one or more conical rollers A on the under side of a conical bobbin, B, arranged with its axis horizontal, or nearly so, and revolved and pressed endwise against the conical roller or rollers by a quarter-twist belt, F, it is much more convenient to find and mend the end of a broken or run-out yarn on the bobbin in winding the latter, and the accumulating yarn on the bobbin is pressed with a more nearly equal yielding force against the conical roller or rollers from the commencement to the ending of the winding on of the yarn than would be the case if the bobbin was arranged with its axis vertical and with its largest end uppermost, and then pressed downward against one or more conical rollers by the gradually-increasing weight of the bobbin and the yarn accumulating thereon. And with our aforesaid arrangement of a conical roller, A, with a conical bobbin, B, arranged with its axis horizontal, or nearly so, and revolved, and also pressed endwise against the conical roller by a quarter-twist belt, F, the bobbin-winder is generally more convenient to use and less costly to construct than would be the case if the bobbin was arranged with its axis vertical, and the small end of the bobbin uppermost and pressed upward against a conical roller by a weighted device in addition to and independent of the belt for revolving the bobbin.

We mount the conical roller A, Fig. 1, on a fixed stud, *t*, or in any other manner which will

allow the roller to be freely turned with and by contact against the conical surface of the bobbin or the yarn Z, wound thereon. And we give the requisite movement to the yarn-carrier in the common manner, or by any other sufficient means.

In the annexed drawings, a belt, J, Fig. 1, runs from a pulley fast on the driving-shaft of the machine, around a pulley, L, which carries a cam, M, which by the aid of a spring, *n*, vibrates an arm, O, that moves the yarn-carrier C to and fro along side of the conical bobbin.

Now, what we claim as new and of our invention in machinery for winding conical bobbins, and desire to secure by Letters Patent, is—

The arrangement of a conical roller, A, in combination with a conical bobbin arranged with its axis horizontal, or nearly so, and pressed endwise toward or against the conical roller with a yielding force by the action of the belt F, by which the bobbin is revolved, substantially as herein described.

HENRY MARCELLUS.
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