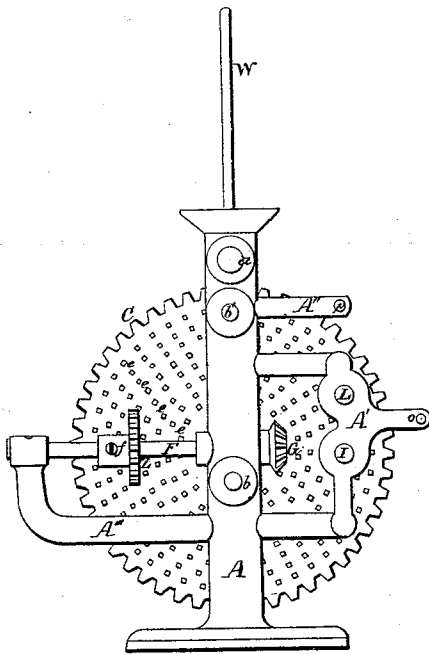


*D. F. Mellen.*  
*Spooling Mach.*

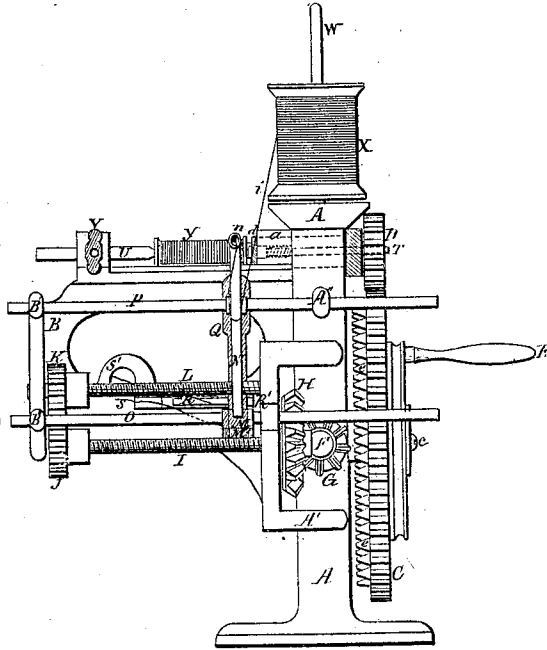
*N<sup>o</sup> 39,997.*

*Patented Sept. 15, 1863.*

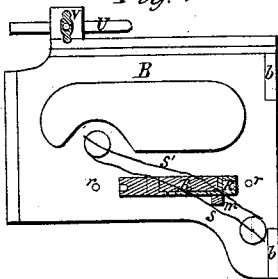
*Fig. 2.*



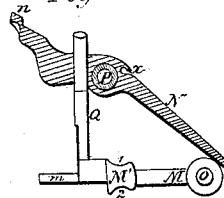
*Fig. 1.*



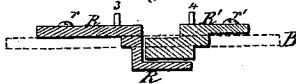
*Fig. 4.*



*Fig. 3.*



*Fig. 5.*



*Witnesses:*  
*W. M. Parker*  
*A. Ames*

*Inventor:*  
*Dustin F. Mellen*

# UNITED STATES PATENT OFFICE.

DUSTIN F. MELLEN, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND J. C. WILDER.

## IMPROVEMENT IN BOBBIN-WINDERS.

Specification forming part of Letters Patent No. 39,997, dated September 15, 1863; antedated September 7, 1862.

*To all whom it may concern:*

Be it known that I, DUSTIN F. MELLE, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented a new and useful Bobbin-Winder for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation. Fig. 2 is a side view of the machine with a portion B of the frame removed. Fig. 3 is a side view of the traversing apparatus for guiding the thread backward and forward over the bobbin or spool. Fig. 4 is a side elevation of a part B of the frame with the pinions, screw-shafts, and traversing apparatus removed; and Fig. 5 is a top view of the device for adjusting the movement of the traversing apparatus to bobbins or spools of different lengths.

Like parts are indicated by the same letters and figures in all the drawings.

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

The drawings are intended to be about the size of a working-machine for winding bobbins or spools for sewing-machines. The machine, however, may be so enlarged as to wind the largest and longest bobbins or spools that are ever required for winding thread, yarn, or roping.

A is a shaft of cast-iron provided with a pedestal, by means of which the machine may be confined with screws to any suitable form or table.

B (a detached view of which is shown in Fig. 4) is a cast-iron frame attached by means of screws in the ears *b b*, Fig. 4, to shaft A at the points *b* and *b'* in Fig. 2.

C is a toothed wheel turning on the axle *c*, projecting from the upright A.

D is a pinion actuated by toothed wheel C and fast to the end of spindle *d*, which passes through the top of the upright A and start *a*, as shown in Fig. 1. Through the spindle *d* passes another spindle T, which is pressed outward against the end of bobbin Y

by means of a small spiral spring, as represented by the dotted lines. The center of the end of T has a conical depression to receive a corresponding center projecting from the end of the bobbin. There is also a small pin projecting from the end of spindle *d* and entering a hole in the end of the bobbin or spool to keep the latter from turning on its centers.

U is an adjustable spindle, the inner end of which is provided with a conical hole to receive the projecting center of the bobbin.

V is a thumb-screw for confining the spindle U in any position required by bobbins or spools of different lengths.

One side of the wheel C is provided with concentric rows of gearing *eeeeeeee*, Fig. 2, of nineteen, twenty-three, twenty-seven, thirty-one, thirty-five, thirty-nine, forty-three, and forty-seven cogs, respectively. It is obvious, however, that the number of rows may be increased, if desired; but it is found practically that the eight rows represented in Fig. 2 are sufficient to wind the various sizes of threads in common use in sewing-machines—say, from No. 10 to No. 80—and as there can be no slipping of the cogs the motion is always reliable and positive, which is not the case where friction or belting is resorted to for driving the machinery.

A''' is an arm cast on the upright A and furnished at its end with a suitable bearing for one extremity of the shaft F, the other extremity passing through the upright A, as shown in Figs. 1 and 2, and into the beveled pinion G.

Z, Fig. 2, is a pinion adjustable on the shaft F, on which it can be moved so as to engage with any one of the concentric rows of gears *eeeeeeee*, and held in place by means of the set-screw *f*.

H, Fig. 1, is a beveled pinion actuated by the smaller one G. This pinion H is fast to the end of the screw-shaft I, the extremities of which turn in suitable bearings in arm A' and a start from the end of B. At one end of I is a pinion J, which actuates a similar pinion K, attached to the end of the screw-shaft L similar to I and directly above it, as shown in Figs. 1 and 2. Thus it will be seen that the two screw-shafts I and L will be

turned in opposite directions, and faster or slower with reference to the bobbin Y, as the adjustable pinion Z is made to engage with one of the rows *e* of gearing farther from or nearer to the center of the pinion C.

O, Fig. 1, is a rod sliding through holes in A' and B''.

M, Fig. 3, is an arm, through one end of which is passed and confined the rod O. Near the center of this arm is a block M', the upper and under surfaces of which, 1 and 2, are furnished with screw-threads to match the threads of the screw-shafts I and L.

Q is an upright continuation of M, the upper end of which is slotted, so as to receive the thread-guide N and slide over it freely as the block M is shifted from I to L.

P is a rod similar to O and sliding horizontally through holes in starts A'' and B'.

N is an arm, the shape of which is shown in Figs. 1 and 3, and fast on the sliding rod P. The lower end of this arm N rests on M and the upper end on the top of B.

*x* is a hole (see Fig. 3) in N, through which is passed the thread *i* from spool or bobbin X, which turns on pin W, projecting from the top of A.

*n* is a small hole in the top of arm M, through which the thread is passed and guided onto the bobbin or spool Y.

*m*, Fig. 3, is a continuation of arm M, and its use is to shift the block M' from screw-shaft I to L, which it does by moving round the projecting guide-pieces R and R', between them and the springs *s* and *s'*, as represented in Fig. 4. Thus in Fig. 4 we will suppose the continuation *m* to be moving from right to left under the guides R R', in which case it (*m*) will by the action of spring *s* be held up against R and R' until it reaches the end of them, when it will be instantly forced up, so that the threads 1 in the top of block M' will meet the threads on the screw-shaft L, and *m* will be carried from left to right, being forced down upon the top of R and R' by spring *s* until it (*m*) reaches the end of said guides, when it (*m*) will be instantly driven down by said spring, so that the threads 2 in

the bottom of M' will meet the threads on the screw-shaft I.

The dotted lines B in Fig. 5 represent the thickness of the piece B. Fig. 5 also shows the thickness of the guides R and R', how they are attached to D, how much they project each side of it, and how they are rendered adjustable so as to carry the thread-guide *n* over bobbins or spools of different lengths. R' is intended to be moved but little, just enough to bring the thread-guide *n* to the end of the bobbin, when it is held in place by set-screw *r*, there being a longitudinal slot in R', through which said set-screw passes. There is also a similar but longer slot in R, through which passes the set-screw *r*.

3 and 4 are pins for moving the guides.

Fig. 5 represents guide R in such a position as to wind the shortest spools or bobbins ever required. To wind a longer bobbin it is obviously only necessary to move guide R farther from R', and thereby give a longer bearing of the continuation *m* on R and R'. Thus the machine can readily be adjusted for winding spools or bobbins of any length required, and by causing the adjustable pinion Z to be actuated by the proper row of concentric gears *e* the machine can also be readily adjusted for winding threads of any desired number or size.

The machine may be driven by hand, by means of the crank-pin E, or a belt may be applied to the pulley attached to pinion C, and foot-power or any other motor employed at pleasure.

What I claim as my invention, and desire to secure by Letters Patent, is—

The toothed wheel C, the periphery of which is provided with gears to drive the bobbin or spool, and the side with concentric rows of cogs, in combination with the adjustable pinion Z, substantially as and for the objects specified.

DUSTIN F. MELLEEN.

Witnesses:

N. AMES,

J. C. WILDER.