F. PECK.

Bobbin-Winder for Sewing-Machines.

No. 162,853. Patented May 4, 1875.

Fig. 1.

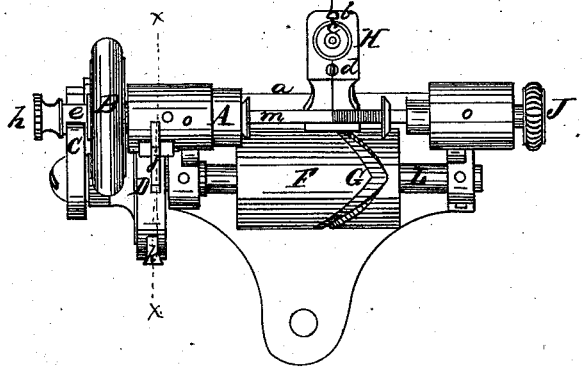


Fig. 2.

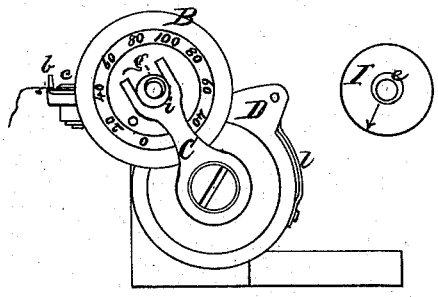


Fig. 3.

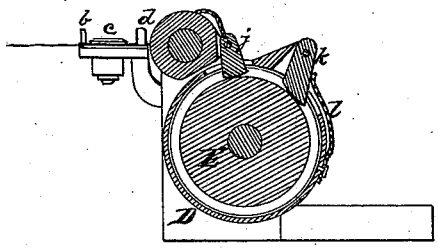


Fig. 4.

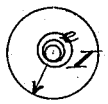


Fig. 5.

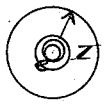
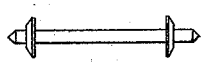


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANKLIN PECK, OF WEST CHESHIRE, CONNECTICUT, ASSIGNOR TO SILAS E. JERALDS AND EDWIN R. LAWTON, OF SAME PLACE.

IMPROVEMENT IN BOBBIN-WINDERS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **162,853**, dated May 4, 1875; application filed December 28, 1874.

To all whom it may concern:

Be it known that I, FRANKLIN PECK, of West Cheshire, in New Haven county, and State of Connecticut, have invented a new and useful Improvement in Bobbin-Winders, of which the following is a specification:

My invention relates to a new and useful improvement in machines for winding thread upon bobbins, in which the thread-carrier is made to travel back and forth parallel to the bobbin-spindle, with an intermittent movement.

The construction of the machine is such that, by any easy, simple, and instantaneous adjustment of a dial-plate or other indicator, which rests in or against the face of a friction-roller and revolves upon the end of the main shaft, the machine is made susceptible of winding thread of all the different sizes, from the coarsest to the finest grades.

The invention consists, in part, of an adjustable eccentric or equivalent device, by means of which the speed of the thread-carrier may be regulated at will, according to the size of the thread that it is desired to wind; also, of the intermediate mechanism between such adjustable eccentric and the grooved drum by means of which the thread-carrier is actuated; also, of the combination of an eccentric or its equivalent on the main shaft, a friction-wheel for revolving the shaft of the grooved drum or other device that moves the thread-carrier, and a friction latch or lever for communicating motion from the main shaft to such friction-wheel.

Referring to the drawings, Figure 1 is a plan view of the machine. Fig. 2 is an end elevation of the machine with the dial-plate removed from the face of the friction-roller to show the eccentricity of the shaft and of the sleeve on the dial-plate. Fig. 3 is a cross-section on the line X X of Fig. 1. Fig. 4 is an end view of the shaft with dial-plate in position to give the greatest eccentricity to the shaft. Fig. 5 is the same view, with the dial-plate in position to give the least eccentricity to the shaft. Fig. 6, bobbin-spindle.

A is the bobbin-shaft; B is the friction-roller. C is the forked arm of the rock-sleeve D. D is the rock-sleeve, moving on the end of the shaft L, as its arbor. E is the wheel on the drum-shaft L. F is the drum. G is the reversing-cam groove. H is the thread-carrier. I is the dial-plate. J is the tail-piece of the bobbin-spindle. L is the drum-shaft. *a a* are the horizontal parallel ways (one only being shown) on which the thread-carrier moves. *b* is a pin on the thread-carrier. *c* is a small pressure-clamp. *d* is the guide through which the thread passes to the bobbin-spindle. *e* is the eccentric sleeve projecting from the center of the dial-plate. *g* is the eccentric end of the shaft A, which is embraced by the eccentric sleeve of the dial-plate. *h* is a set-screw for adjusting the dial-plate. *i* is the forked end of the arm C, which embraces the sleeve of the dial-plate. *j* is the brake to prevent the wheel E from turning backward. *k* is the friction-latch, pressed upon the grooved circumference of the wheel E by means of the spring *l*, and which by its friction causes the wheel to move forward with the rock-sleeve D. *m* is the bobbin-spindle, adjusted in the shaft A.

By reference to Figs. 3 and 4 it will be seen that the dial-plate can be so adjusted in its position on the end *g* of the shaft A as by the eccentricity of the sleeve *e* to nearly counteract the eccentricity of the shaft, or it can be so adjusted as to nearly double the eccentricity of the shaft—*i. e.*, if the point of the greatest eccentricity of the sleeve be placed upon the point of the least eccentricity of the end *g* of the shaft A the result will be that, when the shaft A is revolved, the sleeve *e* being embraced by the upper end *i* of the arm C, only a slight movement will be communicated to the rock-sleeve D. If, however, the dial-plate I be placed on the end *g* of the shaft A in any other position than that last described an eccentricity will be produced in the shaft A, which will be greater or less according as the dial-plate I is revolved more or less from the point at which the least eccentricity is found, the point of greatest eccentricity being found opposite the point of the least eccentricity.

By reference to Figs. 4 and 5 the greatest and least eccentricity of the shaft can readily be seen.

By adjusting the dial-plate I in such a man-

ner as to produce only a slight eccentricity in the shaft A, only a slight intermittent forward and backward motion will be communicated to the rock-sleeve D at each revolution of the shaft A. The degree or extent of the backward and forward motion of the rock-sleeve D will depend upon and correspond with the eccentricity of the shaft A, which, as explained, is governed by the position of the dial-plate I in the face of the friction-roll B.

The face of the friction-roller B, which surrounds the dial-plate, may be graduated to indicate the different degrees of eccentricity which may be given to the shaft, and the different sizes of thread which can be wound at different points of adjustment.

The forward motion of the rock-sleeve D is communicated to the wheel E by means of the friction-latch *k*, which is pressed into the grooved circumference of the wheel E by the springs *l*, causing sufficient friction to move the wheel E forward with the rock-sleeve D. The backward movement of the wheel E is prevented by the brake *j*, which, by its construction, permits the forward, and prevents the backward, movement of the wheel E. The wheel E and the drum F, being both firmly attached to the same shaft, receive the forward movement imparted to the rock-sleeve D. A projection or lug on the thread-carrier H rests in the reversing-cam groove G of the drum F, and, as the drum F revolves, the thread-carrier H is carried back and forth upon the ways *a a*.

The movement imparted to the drum, and thence to the thread-carrier by the mechanism described, is intermittent, taking place only during the half of each revolution of the shaft A, when, by its eccentricity, it throws the rock-sleeve D forward. The main shaft A has its corresponding tail-piece J, which supports the farther end of the bobbin-spindle. This tail-piece is held in contact with the end of the bobbin-spindle by means of a spring, but can readily be moved longitudinally to permit the insertion or removal of the spindle. On the upper surface of the thread-carrier H is a small upright pin, *b*, and pressure-clamp *c*, adjustable by a spring beneath, for the purpose of giving the proper tension to the thread, and of removing any kinks or unequalities therefrom, so that it will lie smoothly upon the bobbin-shaft.

A rub-plate may be used to smooth the surface of the thread as it is wound on the bobbin-spindle. This rub-plate may be attached to any desired part of the machine, and pressed against the bobbin-spindle by means of a spring or otherwise.

The office of the set-screw *h* on the end of the shaft A is to retain the dial-plate I in its position in the face of the roller B.

It will be understood that, instead of sinking the dial-plate into the face of the friction-wheel, it may simply rest against the face thereof; and, in lieu of a disk, any other convenient form of indicator may be used. Neither is it by any means essential that the periphery of the friction-wheel E be grooved, since the friction latch or lever can be made to act upon a plain periphery, or even against the side of the wheel.

It is obvious that the bobbin-winder, hereinbefore described, may be used for winding yarn as well as thread, and may, of course, be driven by other means than frictional contact with the wheel of a sewing-machine.

The operation of the machine is as follows: Having ascertained what size thread is to be wound—*e. g.*, No. 40—loosen the set-screw *h*; revolve the dial-plate I till the index-finger on the dial-plate points to number 40 of the graduated scale; pass the thread around the pin *b*, or through an eye or loop similarly located, and under the pressure-clamp *c*, thence through the guide *d*, and attach the end to the bobbin shaft.

The friction-roller B may be operated by contact with the wheel of the common sewing-machine.

At each revolution of the shaft A the thread-carrier H will be moved along transversely with a gradual intermittent movement, giving to the thread a throw just sufficient to carry it clear of the wind caused by the previous revolution, and the bobbin will be closely and evenly wound throughout its entire length, when the direction of the thread-carrier will be reversed and moved to its original position, and thus back and forth till the bobbin-shaft is filled.

What is claimed as new is—

1. In combination with the main shaft of a bobbin-winder, an adjustable eccentric, for regulating the speed of the thread-carrier, substantially as set forth.

2. In combination with the main shaft of a bobbin-winder, the compound adjustable eccentric, hereinbefore described, consisting of the eccentric turned upon the end *g* of the main shaft A, and the eccentric formed upon the sleeve *e* of the adjustable disk I.

3. In combination with the adjustable eccentric, the rock-sleeve D, with its forked arm C and friction-latch *k*, spring *l*, and the friction-wheel E, constructed and arranged to operate substantially as set forth.

4. The combination of an eccentric on the main shaft, a friction-wheel on the shaft that drives the thread-carrier, and a friction latch or lever for communicating motion from the main shaft to such friction-wheel.

FRANKLIN PECK.

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