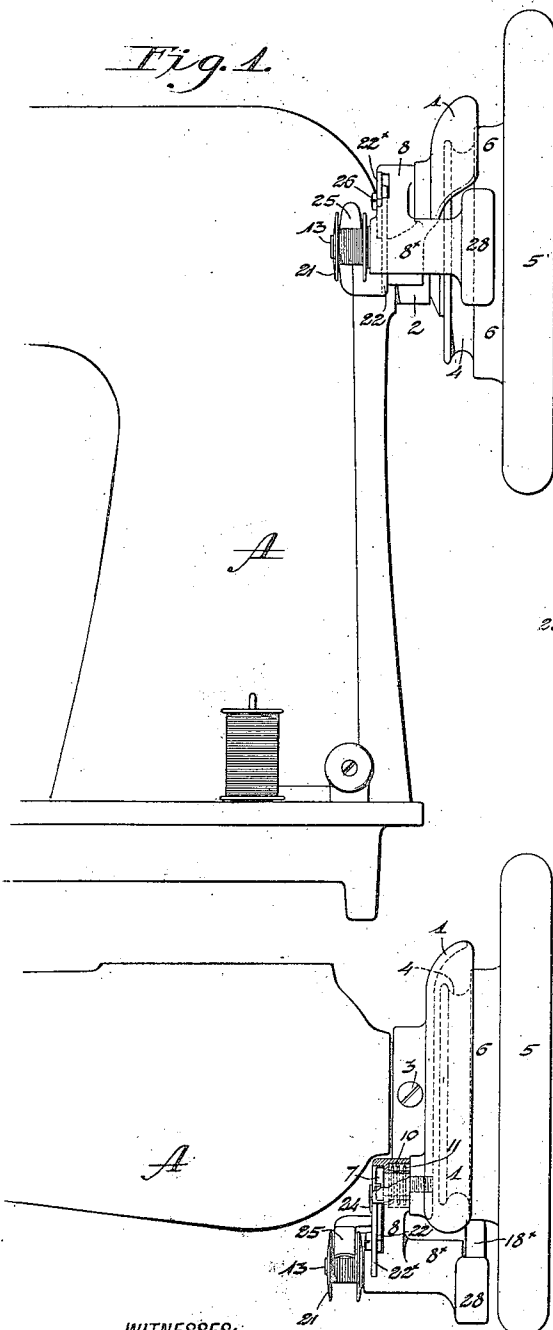
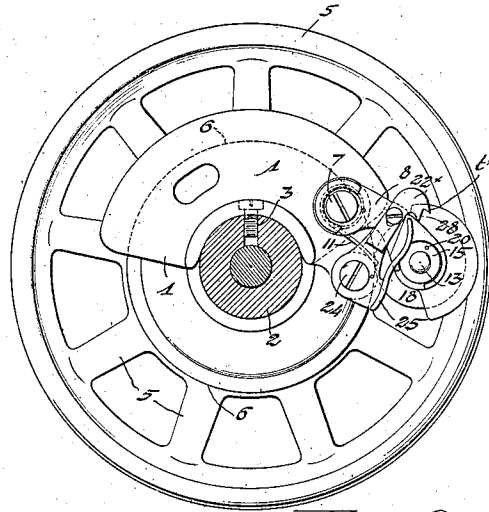
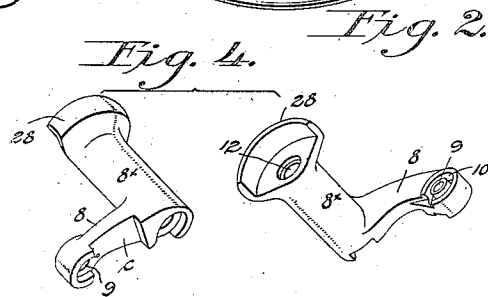
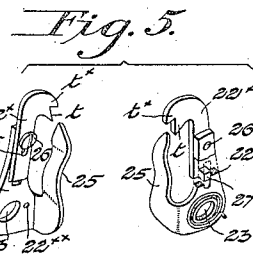
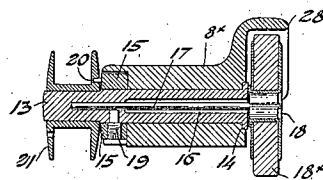


M. HEMLEB.  
SEWING MACHINE BOBBIN WINDER.  
APPLICATION FILED AUG. 18, 1914.

1,151,877.

Patented Aug. 31, 1915.



WITNESSES:

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Fig. 3.

Fig. 6.

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# UNITED STATES PATENT OFFICE.

MARTIN HEMLEB, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

SEWING-MACHINE BOBBIN-WINDER.

1,151,877.

Specification of Letters Patent.

Patented Aug. 31, 1915.

Application filed August 18, 1914. Serial No. 857,291.

*To all whom it may concern:*

Be it known that I, MARTIN HEMLEB, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machine Bobbin-Winders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to sewing machine bobbin-winding devices and particularly to that type of devices adapted to be driven through direct contact with the balance-wheel of the machine, the object of the invention being to improve the construction subject of my application filed August 21, 1913, Serial No. 785,844. In the construction of the aforesaid application, the friction-wheel for the bobbin-driving spindle may be provided with a non-resilient rim, inasmuch as the spring pressure of a latch-carrying lever is transmitted thereto to secure the necessary contact between it and the annular runway of the sewing machine balance-wheel. In the present invention the advantages of the former structure are retained, while the need for the latch-carrying lever is obviated, a latch being employed solely as a detent-member to hold the spindle and friction-wheel in position during the bobbin-winding operation.

In the present construction, the bobbin-driving spindle and friction-wheel of the device are carried by a swinging arm pivotally mounted upon a belt-guard overhanging the grooved hub of the balance-wheel and in such position that the non-resilient rim of the friction-wheel may be brought into contact with a runway formed upon the hub of the said balance-wheel. Intermediate the swinging arm and the belt-guard is a coiled spring which tends to force the arm upwardly and thereby to carry the friction-wheel out of contact with the runway. The swinging arm is held in operative position, against the action of its spring, by means of a latch which is adapted to be automatically released from said arm at the end of

the bobbin-winding operation. In practice the swinging arm is moved downwardly by hand until the non-resilient rim of the friction-wheel is pressed firmly upon the annular runway of the balance-wheel. At this point the latch, which is spring-pressed, will lock the arm in position.

As hereinafter more fully described, the friction-wheel is secured to the bobbin-winding spindle through the intermediary of a spring-steel pin, the latter being clamped at one end within an annular chamber formed in the spindle so that it may yield slightly with the friction-wheel when the latter is brought into contact with the runway. The latch for the swinging arm is so constructed that it may be adjusted to vary the operative position in which the arm is held, so that the steel pin may be deflected a greater or a less degree and its spring pressure upon the friction-wheel—which insures the firm contact of the wheel with the runway—varied at will.

In the drawings, Figure 1 is a front elevation of the improvements as applied to a sewing machine. Fig. 2 is a side elevation of the improvements showing the same mounted upon the belt-guard of the sewing machine, and Fig. 3 is a plan view of the same. Fig. 4 illustrates the swinging arm in detail and Fig. 5 illustrates the latch device in detail. Fig. 6 is a longitudinal section through the bearing boss of the swinging arm, and the spindle contained therein, showing the friction-wheel and its supporting pin in normal position.

The belt-guard 1 which affords a support for the bobbin-winding attachment is secured upon a bearing boss 2 at the rear of the sewing machine standard A, the belt-guard being held in place by set-screw 3 so that it overhangs the usual annular belt-groove 4 of the balance-wheel 5, the latter being provided with an annular runway 6 which serves as a contact surface for the friction-wheel of the bobbin-winder.

The belt-guard 1 is threaded to receive a stud-screw 7 by which the swinging

spindle-carrying arm 8 is pivotally connected to the guard. The stud-screw 7 passes through aperture 9 formed in the swinging arm, and the latter is provided with an annular chamber 10 surrounding the said stud-screw and adapted to receive a coiled spring 11, one end of the spring being held within an aperture formed in the swinging arm, and the opposite end of the spring being held by the guard, so that a spring-pressure is exerted upon the arm tending to force the same upwardly from the position shown in Fig. 2. The arm is provided with an angular boss 8\*, the bearing aperture 12 of which is adapted to receive a bobbin-driving spindle 13, the boss being provided with seats at each end to receive the flanged end 14 of the spindle and a collar 15 by means of which the spindle is held against endwise movement within the boss.

A longitudinal chamber 16 is formed in the spindle 13 and terminates in an aperture of decreased diameter in which is fitted the end of a steel pin 17 which carries at its opposite end the friction-wheel 18 through the instrumentality of which the spindle 13 is rotated by the balance-wheel 5. The pin 17 is clamped in position within the spindle 13 by means of a clamping screw 19 which serves also to secure the collar 15 upon the spindle. The collar 15 is provided with a short stud 20 which fits within an aperture formed in the bobbin 21 when the latter is placed in position, so that the bobbin will be rotated with the spindle.

In practice, the swinging arm 8 is moved downwardly until the non-resilient rim 18\* of the friction-wheel 18 is pressed firmly upon the runway 6 of the balance-wheel 5, and the steel pin 17 caused to yield and thereby to exert a spring pressure upon the friction-wheel and the runway of sufficient degree to insure the transmission of power from the balance-wheel to the bobbin-driving spindle 13. To hold the swinging arm in its operative position, and to automatically release the same at the end of a bobbin-winding operation, a latch 22 is provided. The latch is pivotally mounted directly upon the belt-guard 1 and for this purpose it is apertured at 23 to receive the stud-screw 24, and a spring (not shown) surrounding the stud-screw 24, one end of the spring being held by the belt-guard and the opposite end fitted within an aperture 22\*\* in the latch. The spring tends to move the latch downwardly so that its tooth *t* will pass over the upper face of boss 8\* when the swinging arm is moved into operative position. The latch is provided with the usual angular releasing arm 25. As the bobbin becomes filled with thread it presses outwardly upon the angular arm 25 until, at the completion of the

bobbin-winding operation, the detaching tooth *t* of the latch moves out of engagement with the boss 8\* of swinging arm 8 and the latter swings upwardly until arrested by the upper point *t*\* of the latch, in the manner described in my former application. The arm 8 is cut away at *c* to afford a clearance space for the latch device.

It will be seen that the latch 22 determines the operative position of the arm 8 and hence the degree of yield of wheel 18 against the action of the spring-pin 17. To vary the operative position of the arm and thereby to change the spring pressure of the friction-wheel upon the runway 6, the upper toothed portion 22\* of the latch 22 is adjustable upon the body portion thereof. In the present instance the toothed portion 22\* of the latch is formed with a short slot *s* to receive the threaded shank of the clamping screw 26 which is held by the body portion of the latch, the latter portion also being slotted to receive the guide-lug 27 projecting from the inner face of the toothed portion 22\*. It will be seen without further explanation that the aforesaid construction permits ample adjustment of the latch device.

Various changes may be made in the form and arrangement of the elements herein shown and described without departing from the spirit of the invention. For example the swinging arm 8 and the bearing boss 8\* are shown formed integral with a guard 28 which overhangs the friction-wheel 18. It is manifest that this construction, while desirable, may be altered without affecting the operation of the device. It is evident also that the spring-yielding support for the friction-wheel may be changed in its form without affecting its function as described.

Having thus set forth the nature of the invention, what I claim herein is:—

1. A bobbin-winder comprising a swinging arm, a spindle and a driving wheel therefor carried by said arm, a spring acting to move the arm in a given direction, a latch device for holding said arm in opposition to its spring, and a spring-yielding connection between said spindle and its driving wheel.
2. A bobbin-winder comprising a movable arm provided with a bearing boss, a spindle journaled within said boss and formed with a chamber, a spring held within said chamber, a driving wheel secured to said spring, and a detent device for holding said arm in a given position.
3. A bobbin-winder comprising a swinging arm formed with an angular extension having an upper wall overhanging a central aperture, a spindle journaled within said aperture and formed with an axial chamber, a yieldable pin held within said chamber

for lateral movement relatively thereto, a driving wheel secured to said pin below the said overhanging wall, and a detent device for holding said arm in a given position.

- 5 4. A bobbin-winder comprising a swinging arm, a spindle and a driving wheel therefor carried by said arm, a spring acting to move the arm in a given direction, a spring yielding connection between the spindle and  
10 its driving wheel, and an adjustable latch

device adapted to hold said arm in a selected position in opposition to its spring.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

MARTIN HEMLEB.

Witnesses:

W. LEE HELMS,

HENRY A. KORNEMANN, Jr.