

(No Model.)

A. MILLER.

BOBBIN CASE AND HOLDER FOR REVOLVING HOOK SEWING MACHINES.

No. 573,894.

Patented Dec. 29, 1896.

FIG. 1.

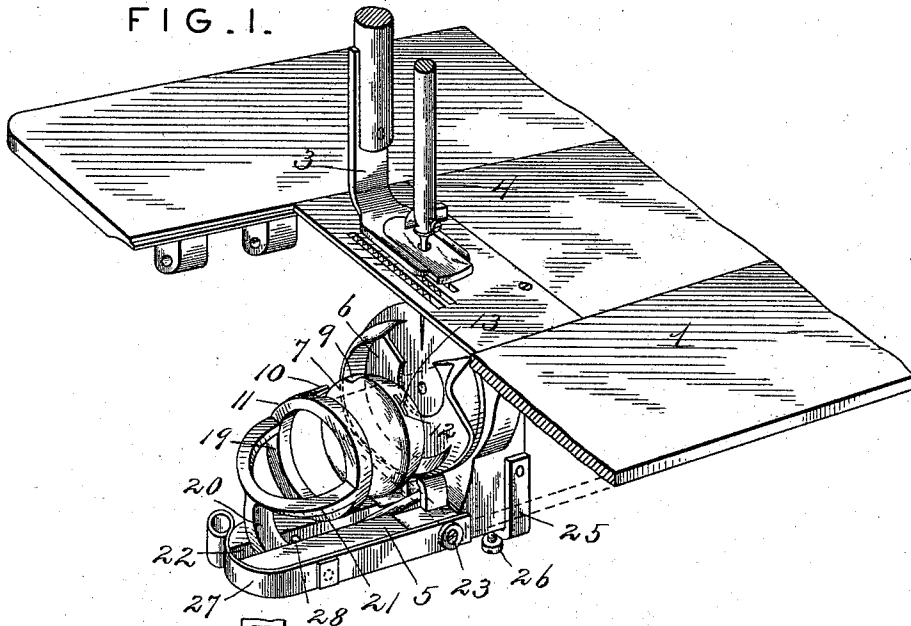


FIG. 2.

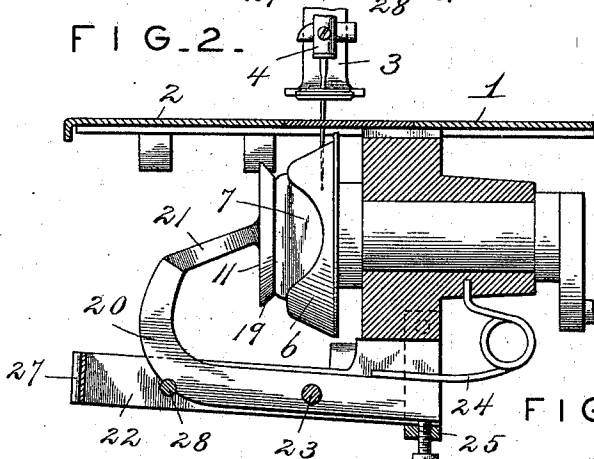


FIG. 3.

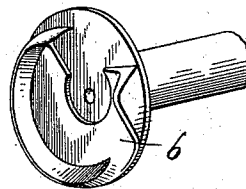


FIG. 5.

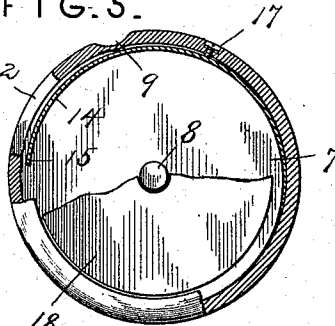
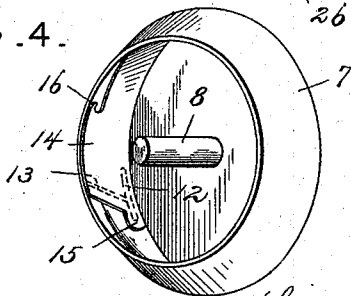


FIG. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

ANTHONEY MILLER, OF HUNTINGBURG, INDIANA.

BOBBIN CASE AND HOLDER FOR REVOLVING-HOOK SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 573,894; dated December 29, 1896.

Application filed December 31, 1895. Serial No. 573,959. (No model.)

To all whom it may concern:

Be it known that I, ANTHONY MILLER, a citizen of the United States, residing at Huntingburg, in the county of Dubois and State of Indiana, have invented a new and useful Sewing-Machine, of which the following is a specification.

This invention relates to sewing-machines of the type using a rotary hook to cause the passage of the loop of the upper thread over and around the bobbin-case in contradistinction to that class of sewing-machines in which the shuttle rotates and passes through the loop.

The chief objects of the invention are to secure a maximum amount of bobbin-space for the under thread; to reduce the friction to a minimum, whereby the machine will be light running; to facilitate the removal of the bobbin-case and the placing of the same in proper position; to obviate the tangling of the thread, and, lastly, to improve the general construction and arrangement of the bobbin-case, the hook, and the bobbin-case holder, whereby superior advantages are attained, as previously intimated, and which will appear hereinafter as the nature of the invention is disclosed.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a detail perspective view of the hook, bobbin-case, presser-foot, and the parts immediately associated therewith, the bobbin-case holder being held back in the position which it will occupy when it is required to remove or place in position the bobbin-case. Fig. 2 is a detail view of the parts shown in Fig. 1, partly in section, the holder and the bobbin-case being in working position. Fig. 3 is a detail view of the hook. Fig. 4 is a detail view of the bobbin-case. Fig. 5 is a

side elevation, partly in section, of the bobbin-case viewed from the open side thereof.

The same reference-numerals denote corresponding and like parts in all the figures of the drawings, in which—

1 indicates the bed-plate, 2 the throat-plate, 3 the presser-foot, 4 the needle-bar, and 5 a support, being ordinary parts of a sewing-machine and arranged in the usual way and illustrated simply to show the application of the present invention.

The hook 6 may be attached to either a long or a short shaft and is deeply recessed in its face or front side, so as to receive a bobbin-case 7 of comparatively large dimensions, and is arranged so as to perform the ordinary functions of hooks in sewing-machines of the character to which the present invention belongs.

The bobbin-case 7 is formed with a bobbin stud or spindle 8, and has an indenture 9 in its edge to receive a projection 10 of the bobbin-case holder 11, whereby the bobbin-case is held stationary, thereby preventing tangling of the thread when starting the machine. A peripheral slot 12 is formed in the edge of the bobbin-case, and an oblique slot 13 extends from a point midway of its ends through the edge or open side of the case and provides a passage for the entrance of the thread to the slot 12 when threading the bobbin-case. The inner edge of the bobbin-case is grooved or channeled, and a tension-spring 14 is fitted in a portion of the said groove and is secured to the edge of the bobbin-case at one end and its free end portion extends over the slots 12 and 13 and has an extension 15, which completely covers the slot 12. A point or hook 16 is formed on the tension-spring 14 immediately in the rear of the indenture 9 and engages with the thread, and serves to retain the latter in proper position when passing between the tension-spring 14 and the opposing side of the bobbin-case. A regulating-screw 17 is let into the edge of the bobbin-case and its inner end touches the spring 14, and by a proper adjustment thereof the position of the spring 14 can be adjusted to vary the tension upon the thread. By locating the tension-spring within the bobbin-case the symmetrical appearance of the latter is preserved

and projecting parts are obviated, which frequently cause trouble by engaging with the loop when the latter is passing over the bobbin-case in the formation of the lock-stitch.

Moreover, the said spring is concealed from view and is not liable to derangement and can the more readily be applied and secured to the case by brazing or soldering. The bobbin 18 is constructed to be mounted upon the stud or spindle 8 and is of such relative size that a slight space intervenes between its edge and the inner side of the bobbin-case, thereby obviating any peripheral friction.

The bobbin-case holder 11 comprises a ring 19 and an elbow-arm 20, the latter having its upper outer end forked, as shown at 21, and united to the ring 19 at diametrically opposite points. The projection 10 extends from the ring 19 and enters the indenture 9 of the bobbin-case and keeps the latter from turning, as previously described. The horizontal portion of the elbow-arm 20 operates in a slot 22 of the support 5, and is secured therein by means of a pivot 23, and a spring 24 engages with the inner end thereof, so as to hold the ring 19 in proper position to maintain the bobbin-case in working relation with respect to the hook 6. In order to prevent the clamping of the bobbin-case between the ring 19 and the hook 6, a pivoted stirrup or hanger 25 has attachment with the support 5 and a set-screw 26 is threaded into its lower end and is adapted to engage with the rear end of the arm 20, thereby limiting the downward movement thereof and the consequent forward movement of the ring 19, as will be readily understood.

A spring 27 is secured at one end to a side of the support 5, and is provided with a pin 28, which extends through an opening in the support 5 and is adapted to engage at its inner end with the forward portion of the arm 20 and secure the latter in either of its located positions, whereby the holder can be held out of the way, as shown in Fig. 1, when it is required to remove the bobbin-case or to place the same in position or in working relation against accidental displacement, as will be readily comprehended. The free end portion of the spring 27 is bent to engage with the curved end of the support 5, and its terminal portion is coiled to be engaged by the thumb or finger when it is required to disengage the pin 28 from the arm 20 to admit of the latter being moved to the required position.

From the foregoing it will be seen that provision is had for the employment of a larger bobbin than usual, and that the improvements can be applied to rotary-hook sewing-machines without requiring any material alteration in the take-up mechanism, and that the lock-stitch-forming mechanism is sim-

plified without increasing the cost to any appreciable extent in the application thereof to machines of this type already in use or upon the market.

Having thus described the invention, what is claimed as new is—

1. The combination with a rotary hook and a bobbin-case, of a holder having an elbow-shaped arm which is pivoted between its ends, a spring for maintaining the holder in operative relation, and a locking-pin to be projected across the path of the said arm to limit the outward movement of the holder without interfering with the free action of the said spring, substantially as and for the purpose set forth.

2. The combination with a rotary hook, and a bobbin-case, of a holder having an arm which is pivoted between its ends, a set-screw arranged to engage with the pivoted arm to regulate the distance between the holder and the rotary hook, a spring for maintaining the holder in working position and a locking-pin projecting across the path of the holder to prevent its outward movement without interfering with the free action of the aforesaid spring, substantially as and for the purpose described.

3. In a sewing-machine, the combination of a rotary hook, a bobbin-case, a slotted support, a holder comprising a ring, and an elbow-shaped arm pivoted within the slotted support and having its upper end forked and bearing the said ring, a spring for maintaining the holder in a normal position, a locking-pin to secure the holder in the required position, a stirrup, and a set-screw for varying the distance between the holder and the rotary hook, substantially as set forth for the purpose described.

4. The combination with a bobbin-case having a circumferential slot and an oblique slot in its peripheral edge, the oblique slot communicating with the circumferential slot intermediate of its ends and extending through the open edge of the case, of a tension-spring arranged within the bobbin-case and secured thereto and covering the circumferential and oblique slots, and having an extension 15 at its free end contiguous to its inner edge and a point or hook 16 at its outer edge a short distance from the oblique slot and diagonally opposite the extension 15, substantially as shown for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ANTHONEY MILLER.

Witnesses:

HARRY J. ROBERTSON,
LEO H. FISHER.