

L. J. CREGELIUS.  
Sewing-Machine.

No. 166,071.

Patented July 27, 1875.

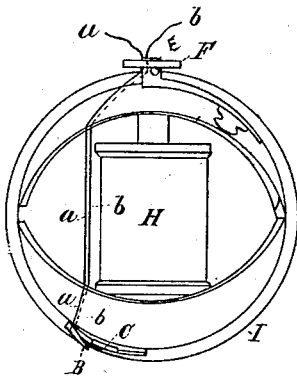


FIG. 1.

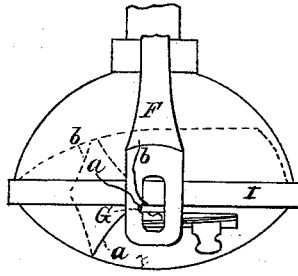


FIG. 2.

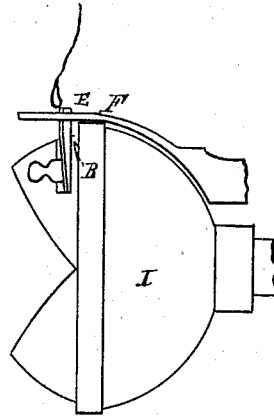


FIG. 5.

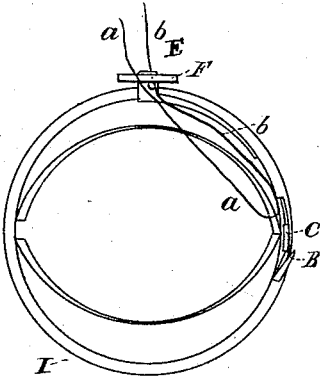


FIG. 3.

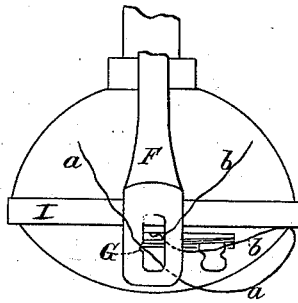


FIG. 4.

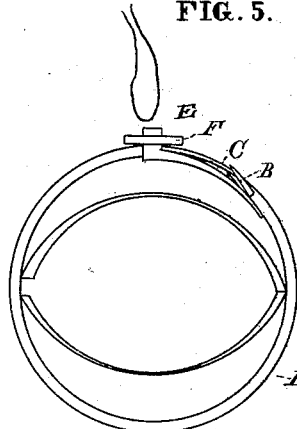


FIG. 6.

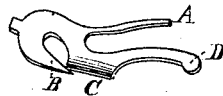


FIG. 7.

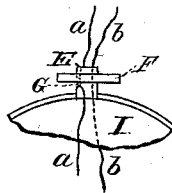


FIG. 8.

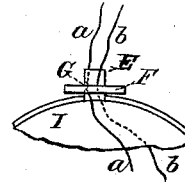


FIG. 9.

WITNESSES:

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*Chas. D. Meiner.*

INVENTOR:

*Louis J. Cregelius*

# UNITED STATES PATENT OFFICE.

LOUIS J. CRECELIUS, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **166,071**, dated July 27, 1875; application filed May 24, 1875.

*To all whom it may concern:*

Be it known that I, LOUIS J. CRECELIUS, of St. Louis, in St. Louis county, State of Missouri, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification:

The first part of my invention is a contrivance to prevent the dropping of stitches. This I accomplish by causing the hook which takes the thread off the needle to vibrate on or with the spool-case holder. By the term "hook" I wish to be understood, whenever that term is herein used, as meaning that part of the machinery, whatever its form may be, which performs the task of taking the thread off the needle. This vibration of the hook is effected by providing the same with a pliant spring, by means of which said hook is sprung in such a manner as to be always in the way to encounter the descending needle, even if the latter should accidentally deviate from its regular line of descent, which may happen by encountering hard substances, or by becoming bent, &c. This hook may be applied to any sewing-machine, and be made in any form to suit the respective machinery to which it may be attached.

The second part of my invention relates to that class of sewing-machines which are constructed like or similar to the Wardwell sewing-machine. The object of this part of my invention is, first, to lessen the strain and wear on the thread; second, to diminish the noise of the machine; and, third, to insure regularity in the stitches, and an even tension. All this I accomplish by making a notch in the spool-case stay, or, according to circumstances, in the spool-case finger. This notch I designate by the name of escape-notch.

By referring to the Wardwell machine it will be seen that the spool-case finger, while it plays in the slot of the spool-case stay, bears against one side thereof when in operation, and, as the thread has to pass on both sides of the spool-case finger within the said slot, the bearing of those two parts against each other impedes the free passage of the thread on that side.

By my invention this is avoided, for on that side I sink a notch, called escape-notch, as aforesaid, into one of said members, into which

the thread escapes during its passage around that side, and thereby avoids being rubbed by said parts. If the machine be so constructed that the motion of the spool-case stay is vertical in time with the hook, then the escape notch should be in the spool-case finger. If horizontal or rotary in such time, then it should be in the spool-case stay.

Figure I is a front view of a spool-case (as in the Wardwell sewing-machine) embodying my invention. Fig. II is a plane view of the same as seen from above. Fig. III is also a front view, showing the hook in a position different from that in Fig. I. Fig. IV is another plane view, showing the hook in position as in Fig. III. Fig. V is a side view, showing the position of the hook when the thread is drawn out of the spool-case finger. Fig. VI is a front view of the latter. Fig. VII represents the hook enlarged in form, as applicable to the Wardwell sewing-machine. Fig. VIII is a front view of a part of a spool-case of the Wardwell machine. This, as well as the next figure, represents the application of my escape-notch in a case where the motion of the spool-case stay is vertical in time with the hook, the escape-notch being in the spool-case finger in this instance. It shows here the spool-case finger with the escape-notch therein, the spool-case stay being above the escape-notch. Fig. IX is a like view, but with stay below the escape-notch.

A is the spring of Fig. VII, which causes the hook to vibrate. This spring is very pliant, yielding to a very slight pressure. B is the point of the hook, Fig. VII, by which it receives the thread; C, the guard of said hook; D, the pivot thereof, on which it hinges; E, the spool-case finger; F, the spool-case stay; G, the notch (called escape-notch) therein, it being in its place when the motion of the spool-case stay is horizontal or rotary in time with the hook. H is a spool in position. I is the revolving spool-case holder. *a a* represent the front thread; *b b*, the back thread. The dotted lines show the positions thereof on that side of the machinery which is opposite to the view presented.

The hook, Fig. VII, is fastened to the spool-case holder, or its equivalent, in such a manner that the spring A rests and presses against

a support in the part it is fastened to. The point B will thereby be made to stand out far enough to meet the descending needle if it should range outwardly of its designed line; but if it descend in its proper line, or inwardly thereof, then the needle, while sliding along the guard C, will, on account of the pliancy of the spring A, press the hook into such a position that the point B will invariably meet the needle at the proper time and take off the thread. Thus, should the needle accidentally deviate from its proper line to either side, even to its utmost limits, the point B will invariably meet it at its actual descent, take off the thread, and thus obviate the dropping of stitches.

While this vibratory hook is applicable to all sewing-machines, with such changes in the form as each particular machine will naturally suggest, the escape-notch—*i. e.*, the second part of my invention—is, as far as I am aware, only applicable to machines constructed on such or similar principles as the Wardwell machine.

Concerning this second part of my invention—the escape-notch G—I will only add to what has already been said: Assuming the motion of the spool-case stay F to be horizontal or rotary in time with the hook—*i. e.*, at the moment when the needle meets the hook—then, when the hook, Fig. VII, assumes a position about as shown in Fig. I, the front thread *a a* has entered the escape-notch G, as shown in Fig. II, and the spool-case finger E is on one side of the escape-notch G. When the hook, Fig. VII, has a position as in Fig. III, the spool-case stay F has moved forward, and the spool-case finger E, after having passed over the escape-notch G, is on the other side there-

of, as shown in Fig. IV, and the thread *a a* is carried through the escape-notch G. When the hook, Fig. VII, is in position as shown in Figs. V and VI, the thread has entirely passed out of the escape-notch G.

Figs. VIII and IX are merely to show the arrangement when the motion of the spool-case stay is vertical. Hence, there the escape-notch G is in the spool-case finger.

It is obvious that it would make no essential difference whether the escape-notch be in the spool-case stay or in the spool-case finger; and it is equally obvious that it will make no essential difference in this invention whether the hook alone, or it with the part to which it is attached, be made movable or vibratory.

I claim as my invention—

1. The combination, with a revolving spool-case holder, of a movable or vibratory hook projecting beyond the edge of said holder, and operated by spring-power, whereby the said hook is always brought in line with the path of the needle, substantially as and for the purposes described.

2. The combination, with the spool-case holder, of the spring A, point B, needle-guard C, and pivot D, as and for the purposes set forth.

3. The combination, with the spool-case stay F, provided with the escape-notch G, of the spool-case finger E, the several parts being constructed and relatively arranged as shown and described.

LOUIS J. CRECELIUS.

Witnesses:

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