

W. F. PRATT.  
Sewing Machine.

No. 25,043.

Patented Aug. 9, 1859.

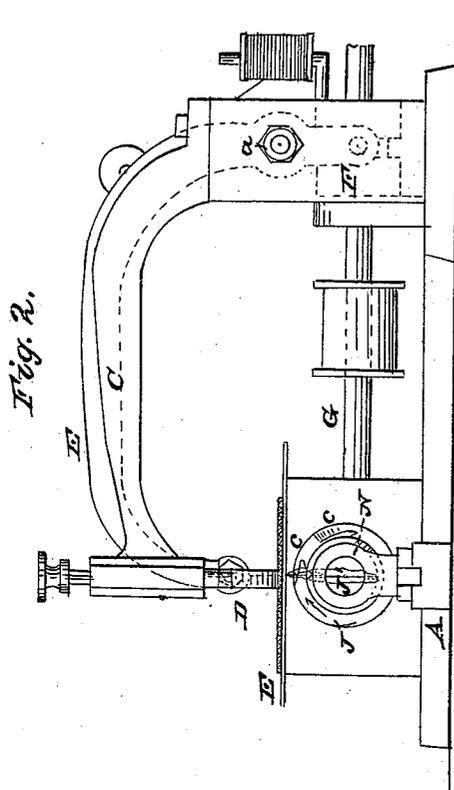


Fig. 2.

Fig. 5.

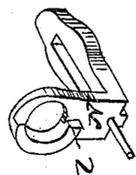


Fig. 4.

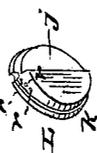


Fig. 6.

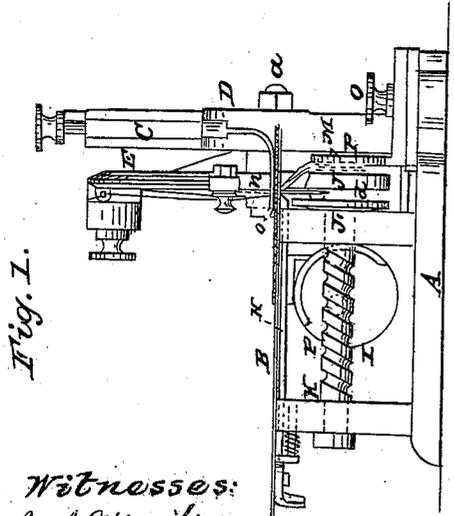
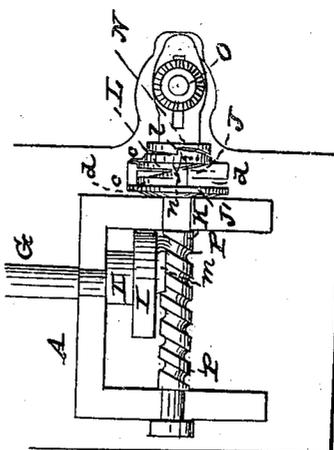


Fig. 1.

Fig. 3.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM F. PRATT, OF BRISTOL, PENNSYLVANIA.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 25,043, dated August 9, 1859.

### *To all whom it may concern:*

Be it known that I, WILLIAM F. PRATT, of Bristol, in the county of Bucks and State of Pennsylvania, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of a machine with my improvements. Fig. 2 is a side view of the same. Fig. 3 is a horizontal section of part of the same. Fig. 4 is a perspective view of the thread-case. Fig. 5 is a perspective view of the slide-ring. Fig. 6 is a horizontal section of the looper and thread-case.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to that kind of sewing-machine in which a lock-stitch is produced by means of the combination of an eye-pointed needle, an oscillating looper, and a nearly stationary thread-case.

My invention consists in a novel construction of the thread-case and of the slide-ring that is employed to hold the same in proper relation to the oscillating looper, whereby the loops of the needle-thread are properly checked and controlled in their passage over the thread-case, and the looper is prevented catching the loops that have been extended and have received the locking-thread.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the bed-plate of the machine, and B is an elevated cloth-plate upon which the work is performed.

C is the stationary arm, to which is fitted the pressure-pad D.

E is the needle-arm, carrying the needle *n*, and receiving motion on a pin, *a*, from a cam, F, on the horizontal main shaft G of the machine, which is arranged below the cloth-plate and at right angles to the axis of oscillation of the needle-arm.

I is the feed-cam on the front end of the main shaft G, operating on the sliding bar H, which carries the dog *b*.

J is the oscillating looper, carried by a disk, J', secured to a horizontal shaft, K, which is

arranged under the bed-plate at right angles to the shaft G, but with its axis in the same plane, or thereabout, with the latter shaft. This looper constitutes nearly a completer, and is pointed at one end and rounded off at the other to form a heel, *c*, and is attached at its heel to the disk J by a stem, *c'*, which leaves a parallel space, *d*, between the looper and the disk. The point *e* of the looper is formed by beveling its outer face, leaving its inner face flat, so that it may work close to the needle when the latter descends into the space *d*. Near the heel of the looper there is a notch, *f*, formed in its interior, to leave a hook, *g*, the point of which is toward the heel of the looper. The inner and outer circular surfaces of the looper are concentric with the shaft K, and the interior is turned out to form a shoulder, *h h*, as shown in Fig. 6, for the thread-case L to rest against. This looper has a regular oscillating or alternate circular motion to the extent of very nearly a complete revolution, said motion being imparted to it from the main shaft through the agency of an eccentrically-arranged projection, *m*, of semi-circular form on the front face of the feed-cam I, and a spiral groove, *p*, in the looper-shaft, said groove *p* being so pitched that as one end of the projection *m* leaves it the other will enter it in the revolution of the main shaft, and by the passage of said projection *m* into and through the said groove *p* the shaft K is caused to have an oscillating motion.

The thread-case L, which contains a bobbin, M, on which the locking-thread is wound, consists of a circular box fitting easily to the larger portion of the interior of the looper on the outer side of the shoulder *h h*, and made open on the inner side, or side next the disk J'. The bobbin M is fitted to rotate on a pin, *i*, which is secured to the head of the case, and the thread (tinted blue in Figs. 1, 2, and 3) coming from said bobbin is laced through eyes *r r* in the top of the case L to produce upon it the necessary degree of friction. The exterior of the head of the thread-case is formed with an angular vertical projection, *j*, extending from top to bottom, the edge of said projection being exactly or very nearly in the center of the head, as shown, and from the top or outer edge of this projection the exterior surface of the head is beveled off, as shown at R in Figs. 3,

4, and 6, to one side of the case. The portion of the head on the other side of the projection is flat.

N is the slide-ring by which the thread-case is held in its place within the looper, formed with an angular projection, *l*, which extends above and below the opening of the ring to fit to the projection *j* of the thread-case in the manner shown in Fig. 3, for the purpose of preventing the thread-case turning with the looper. This projection, however, admits of the thread-case oscillating sufficiently to leave space enough between the projections *j* and *l* for the loops of the needle-thread to pass between them. The slide-ring is secured to the bed-plate A by a screw, O, in the same manner as in other sewing-machines in which such a contrivance is used.

The manner in which the loops are controlled between the thread-case and slide-ring in the sewing operation is as follows: When the looper, in moving in the direction of the arrow shown upon it in Fig. 2, enters between the needle and its thread, it passes through the loop that is formed in the said thread by the ascent of the needle without extending the said loop over the thread-case till the point of the hook *g* has passed through the said loop, when the movement of the looper is reversed and the loop is received within the opening *f* of the hook and extended over the thread-case. While the looper is thus extending the loop, the thread-case, by the tendency which is given to it to move with the looper by the friction between them, has its projection *j* pressed close against the part of the projection *l* that is below the opening of the ring N, and the loop, though it passes entirely over the thread-case, is detained in the most positive manner in the condition shown in Figs. 2 and 3, by being prevented from passing between the projections *j* and *l* till the movement of the looper is changed to the direction of the arrow again to enter the new loop, when the thread-case, by its tendency to move along with the looper, has its projection *j* brought against the part of the projection *l* that is above the opening of the slide-ring, and far enough

away from the part that is below it for the loop to pass, so that the latter may be drawn up over the front of the thread-case by the opening of the next loop; but the loop when thus permitted to escape from below the opening of the ring and to be drawn up is checked at the top of the ring until the movement of the looper has been again reversed and an opening made between the projection *j* and the upper part of the projection *l*. The loops that have passed over the thread-case are thus prevented interfering with or being interfered with by the looper, the needle, or the new loops, and very perfect sewing is produced.

The within-described method of imparting the oscillating motion to the looper from the rotary main shaft possesses the advantage over other contrivances for the same purpose of being much more simple, involving, as it does, the use of fewer parts.

I am aware that an oscillating looper has been employed in combination with a thread-case which has been held stationary, or nearly so, by a slide-ring or its equivalent; but in the method or methods heretofore adopted of constructing the case and the ring no systematic method of checking or controlling the loops has been provided for. I therefore do not claim the holding of the thread-case stationary, or nearly so, by means of a slide-ring; but

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

The construction of the thread-case with an angular projection, *j*, extending across its center, and the construction of the slide-ring or its equivalent with a similar angular projection, *l*, fitting to the said projection *j*, as described, and operating in combination therewith, in the manner substantially as herein specified, not only to prevent the turning of the thread-case, but to check and control the loops in their passage over said case, thereby avoiding the use of separate thread-controlling apparatus.

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Witnesses:

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