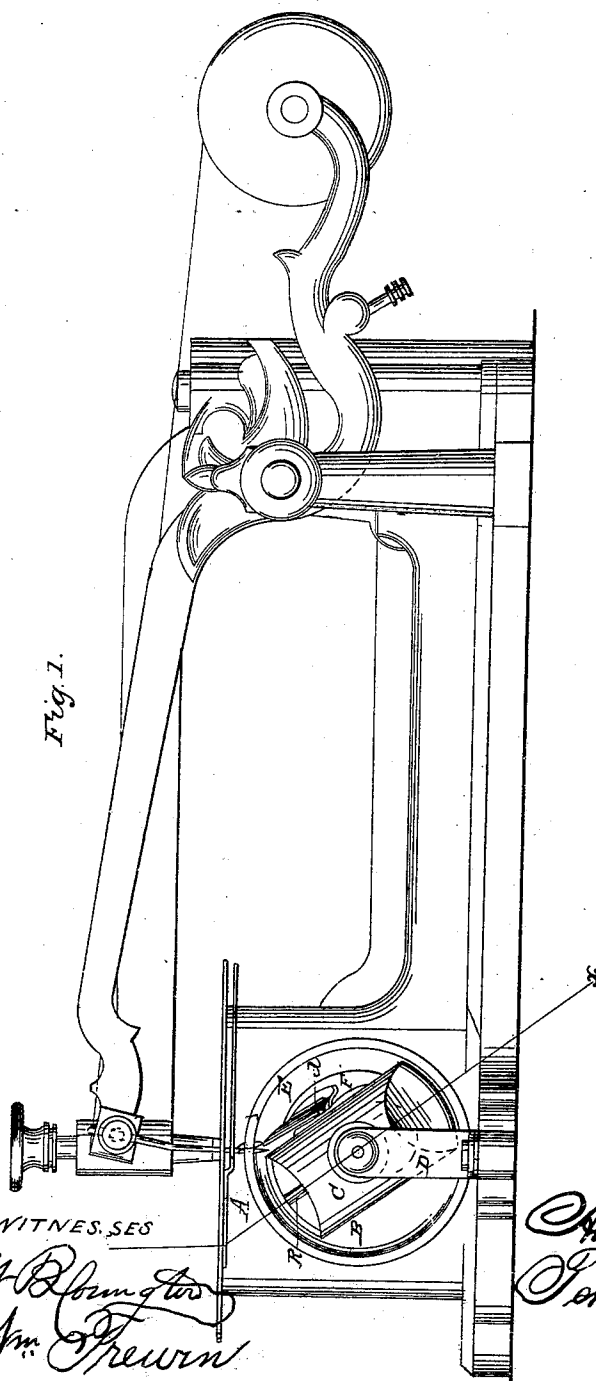


A. LEYDEN.
Sewing Machine.

No. 57,157.

Patented Aug. 14, 1866.

Fig. 1.



WITNESSES

J. H. Burdette
Wm. Frewin

INVENTOR

Austin Leyden
Per Munn & Co
Attorneys

A. LEYDEN.

Sewing Machine.

No. 57,157.

Patented Aug. 14, 1866.

Fig. 2

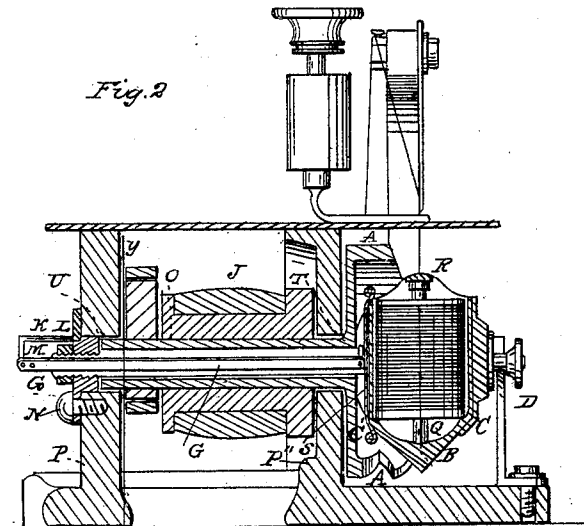


Fig. 1

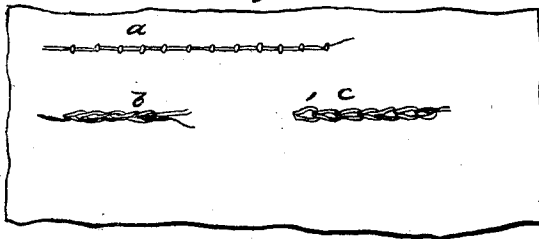


Fig. 6

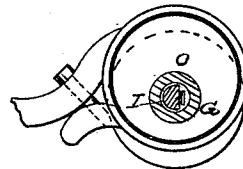


Fig. 4

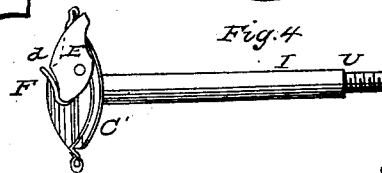


Fig. 3

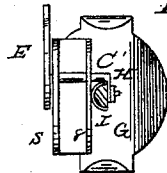
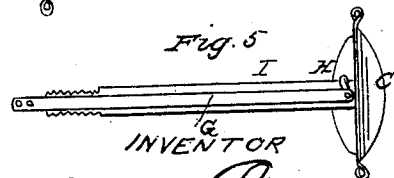


Fig. 5



WITNESSES

Wm. D. Huntington
Wm. Brewin

INVENTOR

Austin Leyden
Per Mum & Co
Attorneys

UNITED STATES PATENT OFFICE.

AUSTIN LEYDEN, OF ATLANTA, GEORGIA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **57,157**, dated August 14, 1866.

To all whom it may concern:

Be it known that I, AUSTIN LEYDEN, of Atlanta, Fulton county, State of Georgia, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a sewing-machine to which my improvement is applied. Fig. 2 is a section in the plane of the line *x* of Fig. 1. Fig. 3 is a detailed view, showing the section *C'* of the bobbin-case from the rear and the bar or rod *I* which carries it. Figs. 4 and 5 are views of the same parts from opposite sides. Fig. 6 is a section in the plane of the line *y* of Fig. 2. Fig. 7 represents examples of three styles of stitches produced on the machine.

Similar letters of reference indicate like parts.

The object of this invention is to produce a sewing-machine which will make, at the pleasure of the operator, several varieties of stitches.

The improvement can be used with an upper and lower thread or with an upper thread only. In this example it is applied to a sewing-machine frame made in the general form of that known as the "Wheeler & Wilson" sewing-machine, a rotating hook being employed, which is connected to the pulley and cam shaft. The lower thread, when one is used, is contained in a spool-holder, which takes the place of the bobbin of the Wheeler & Wilson machine, and which is of capacity enough to hold the ordinary sewing-thread spool of commerce, the hook being made wide to enable it to spread the loop of the upper thread sufficiently to pass around the spool-holder. The changes in the stitch to make the loop-stitches are produced by a lever which carries an elastic detainer that is thrown in the way of the inner side of the loop of the upper thread, so as to detain it for an instant while the needle descends into the loop and presents a fresh loop to the hook, thereby enchain- ing the successive loops with each other.

This lever is operated by a rod which passes through the cam-shaft, which is made hollow for that purpose.

By means of this improvement the sewing has the ornamental character of a chain-stitch combined with the lock-stitch when a lower thread is used; but when the lower thread is not used, which can be done without removing the spool or its holder, the sewing is then done by the needle and its thread alone, making the chain-stitch. When the loop-detaining device is put out of action and the lower thread is added the ordinary lock-stitch is produced.

In this example of my invention I have not shown devices for producing tension, or for taking up the slack of the thread in sewing, or for feeding the material, and any suitable means for effecting these objects can be applied and used in a machine containing my improvement.

The letter *A* represents the hook which, in this improvement, takes the place of the ordinary hook in machines of this class. It is attached to the right-hand extremity of the shaft *O*, that carries the pulley *J*, the ends of the shaft being supported in bearings provided in the same standards, *P P'*, that support the cloth-table. The shaft is prevented from having endwise motion in its bearings toward the right by means of the flange of the pulley *J*, which comes against the standard *P'*, while endwise motion toward the left is prevented by means of the head or shoulder *T* on the back of the hook *A*.

The spool-holder *B*, which in this improvement fulfills the office of a bobbin, is of a suitable size to receive a spool of sewing-thread of ordinary dimensions. The spool is introduced into this holder from above, its sides and bottom being closed. The bottom of the holder is solid, being made tapering or wedge-shaped, and it has a spindle, *Q*, which goes through the usual opening made through the center of such spools, and receives a cross-bar, *R*, which is tapped at its center, so that it can be screwed onto the spindle above the spool. The spool is thus held down in the holder, and is also kept from falling over against its sides.

The spool-holder or bobbin is held in a bob-

bin-case made in two parts or sections, C C', the part C', which is the inner one, being rigidly attached to a bar, I, flat on one side and rounded on the other, that extends from its rear side entirely through the hollow shaft O and through the collar L, and is secured by a nut, M, that is run up against the back of the collar. The front part or section, C, is placed on a post, D, which is secured to the base of the machine by a screw in such a way that the post can be moved in or out at pleasure, to confine or release the bobbin. The said part C is also secured adjustably to the post by a set-screw, so that it can be placed at a proper angle, so as to bring it into correspondence with the section C'. The edges of the sections C C' do not extend toward each other far enough to surround the bobbin, but only so far as to hold it in proper position, and they are so shaped on their inner faces as to prevent the bobbin-holder from being rotated, and also from slipping out either above or below, the sides of each being bent inward a little, and the bottom of each being also bent inward, as shown in Fig. 2, while the top of the section C' is also bent over, as is likewise seen in Fig. 2. By this means the spool-holder is prevented from having rotation in the case, the bent ends of the latter coming in contact with the edges or corners of the holder, both on the upper and lower ends, when any rotary movement of the holder takes place.

The collar L has a circular flange which comes against the outer side of standard P, while the collar itself fits in the standard against the shoulder U on the bar I, and is prevented from turning by means of a screw, N, which goes through its flange into the standard. The bar I is half-round on one side and flat on the other, and a screw-thread is cut on it at its end to receive the nut M, which comes up against the collar L, and both holds its flange firmly against the standard and secures the bar I, which bar is thereby supported clear of contact with the shaft O or hook A.

G is a thin bar or rod, which lies next to the flat side of the bar I, extending from near the rear side of section C' of the bobbin-case, where it is connected to a crank, H, hereinafter mentioned, through the shaft O, and beyond the end of the bar I, going through the nut M, which turns without touching it.

The back of the section C' has two ribs, S S, which furnish bearings for a short shaft that carries a plate, E, at one end, and at the other has a crank, H, to which the thin bar G is attached.

The plate E is moved forward or backward by means of the crank H, which is worked by giving motion endwise to the bar G, the latter being held in any desired position by means of a spring locking-arm, K, which projects backward from the flange of collar L. The plate E is situated on the right-hand edge of

the part or section C' of the case, (observing Fig. 1,) and it has on its front edge—that is to say, on the edge which is presented toward the observer in Fig. 1—a light flat spring, F, bent, as shown in Figs. 1 and 4, so as in its normal condition to stand off from the edge of the plate and project a little ways past the adjacent edge of the section C' when the plate E is turned by the crank H to the position shown in Fig. 4, where its lower part is pushed forward and its upper part backward.

That part of the edge of plate E which carries the spring F is cut away on a curve, as shown in Fig. 4, forming a recess or bed, into which the spring is brought when drawn in that direction by the loop, as hereinafter explained, the spring being then brought up to the edge of the plate. The upper portion of the edge of the section C' is cut away above the level of the spring, as shown in dotted outline in Fig. 4, so as to allow the loop to pass between that edge of section C' and the edge of plate E, whatever the position of the plate may be.

When the plate is in the position shown in Fig. 4 the end of the spring is forward, so as to project slightly beyond the adjacent edge of the section C', and in that position it extends across the path of the inner half of the loop of the needle-thread, as it is drawn up between the bobbin and the section C', and arrests and detains it while the hook A continues to revolve, thereby holding the loop behind and on the right-hand side of the needle (observing Fig. 4) until the needle comes down within the loop and supplies a fresh loop to the revolving hook, when the tension made on the thread will draw the spring up to the edge of the plate E, so as to allow the old loop to slip off the spring. The fresh loop will also be detained and held in the same manner, and so with each succeeding loop, while the spring-detainer F projects over the edge of the section C', that side of the loop which passes behind the bobbin or spool-holder being arrested and detained long enough to permit the needle to furnish a fresh loop to the hook before the old loop has been drawn up, whence it follows that when, afterward, the old loop is drawn up clear of the hook it encircles the new loop, thus forming a chain-stitch. If, during this operation, the lower thread is withdrawn, the stitch will be composed of the needle-thread only, presenting the appearance of the stitch seen at *c*, Fig. 7; but if the lower thread is supplied to the seam the character of the stitch will be altered by the addition of that thread, as shown at *b*, Fig. 7, where the lower thread is seen incorporated with the chain made from the upper thread.

When it is desired to sew with a lock-stitch it is only necessary to turn the plate E, by means of the crank H and rod G, so as to draw back the detainer F until it no longer projects over the edge of the section C', when the loop will escape freely over the bobbin, and

be drawn up on the outside of the hook, thereby making the regular lock-stitch, like that shown at *a*, Fig. 7.

It will be observed that the change from the lock to the chain stitch is produced merely by operating the crank *H* through the bar or rod *G*, thereby changing the position of plate *E* and its detainer *F* without stopping the machine, the bar *G* being moved from the rear end of the shaft and being locked in whatever position it is placed by the spring-bolt *K*, which enters one of a series of holes made in the bar, or by any other suitable means.

By means of my improvement I am enabled to change from one character of stitch to the other without interruption in the seam, producing in the same seam, if desired, a lock-stitch at one part and a chain or ornamental stitch with two threads at another part, and then a single chain-stitch, while in rapid motion.

When the plate *E* is turned so as to retire the detainer behind the edge of section *C'* of the case the upper front part of the plate serves to guide the old loop on its way around the bobbin and off the hook, and so aids in forming a perfect lock-stitch. It is not necessary to form the plate *E* with a wide body, as here shown, but it may be narrower, provided it has stiffness enough to support the detainer.

I claim as new and desire to secure by Letters Patent—

The combination, with the detainer *F*, of the crank *H* and bar or rod *G*, substantially as described.

The above specification of my invention signed by me this 6th day of March, 1866.

AUSTIN LEYDEN.

Witnesses:

M. M. LIVINGSTON,
ALEX. F. ROBERTS.