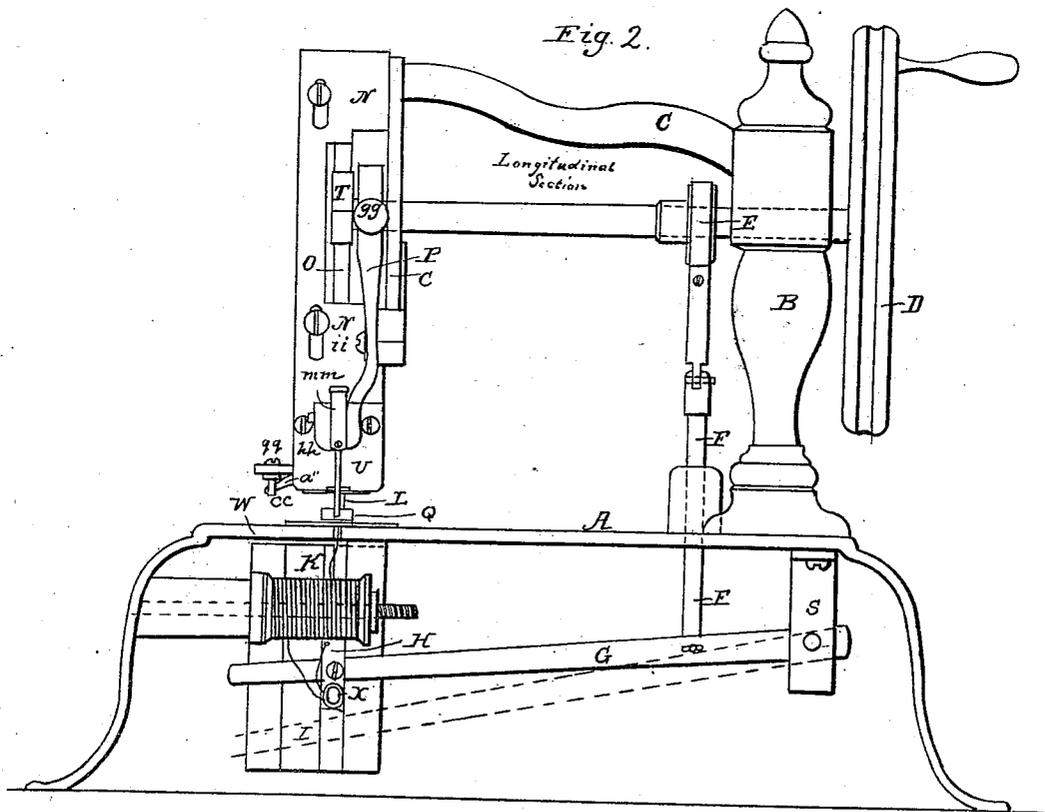
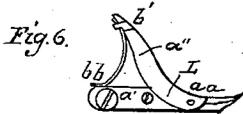
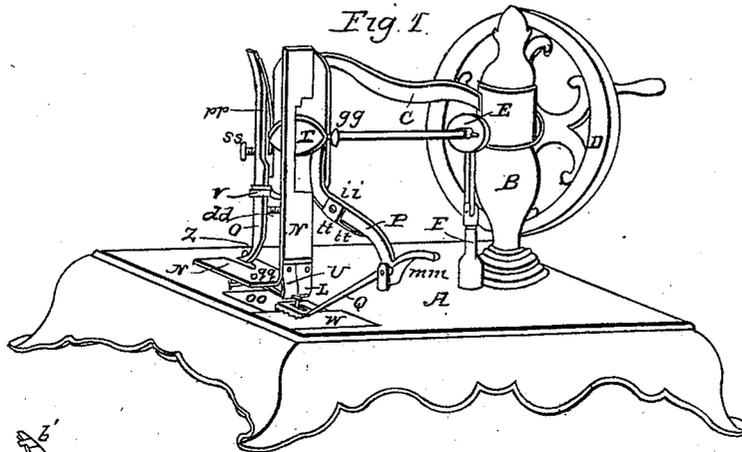


J. S. BUELL.  
Sewing Machine.

No. 25,381.

Patented Sept. 13, 1859.



Witnesses:

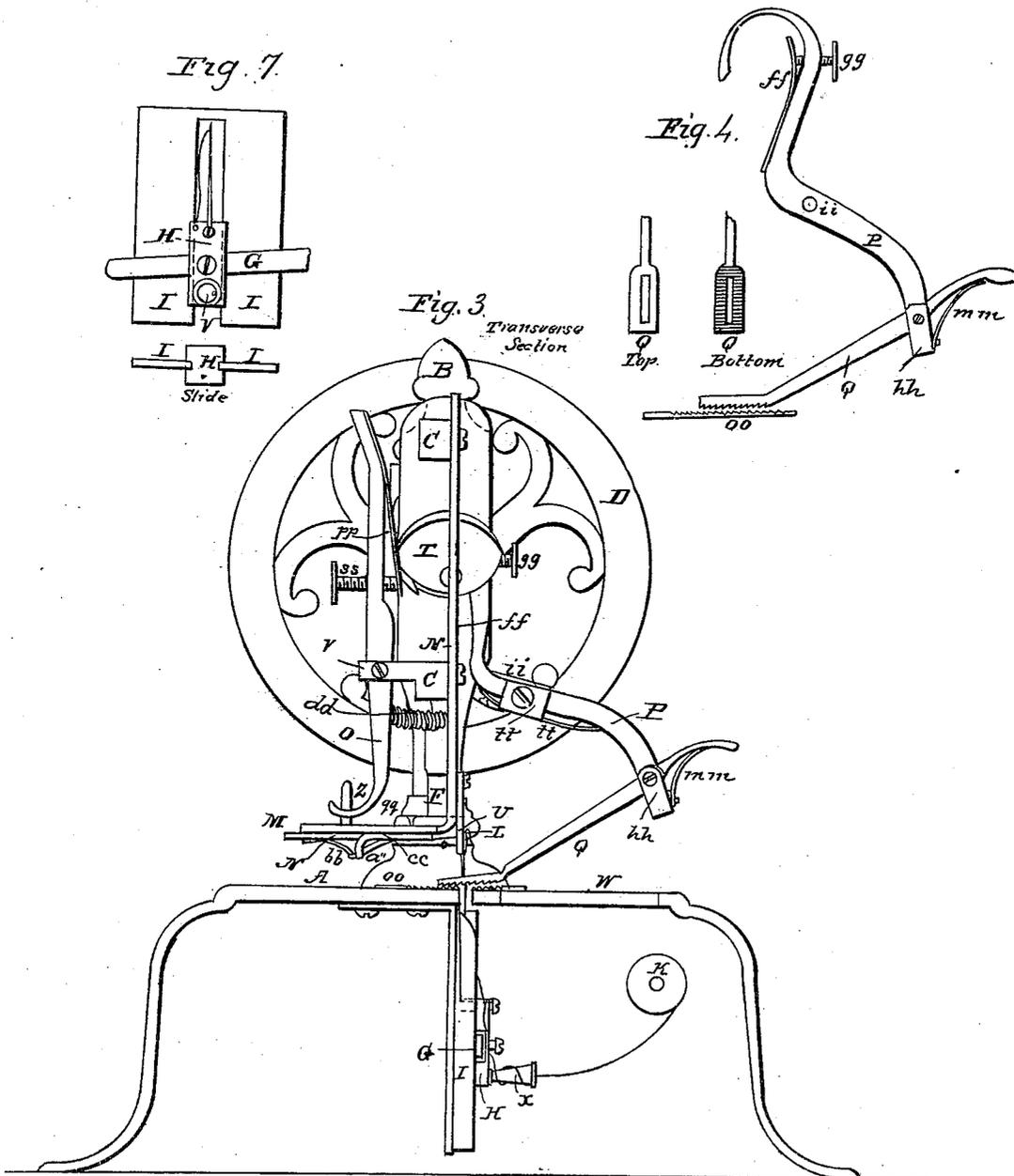
*A. C. Mayo*  
*Q. J. Fayson*

Signature of  
Inventor lost

J. S. BUELL.  
Sewing Machine.

No. 25,381.

Patented Sept. 13, 1859.



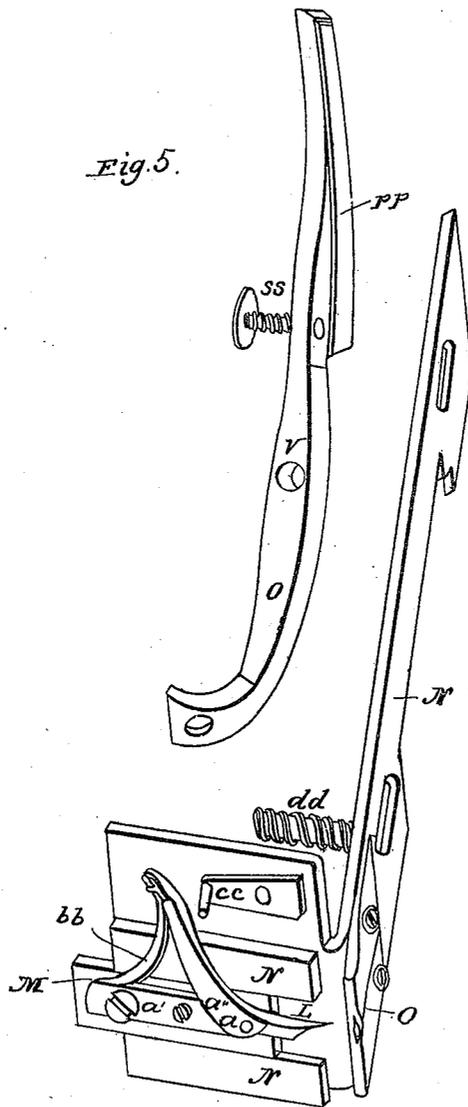
Witnesses:  
*J. C. Myers*  
*E. J. Fayson*

Signature of  
 Inventor: *J. S. Buell*

J. S. BUELL.  
Sewing Machine.

No. 25,381.

Patented Sept. 13, 1859.



Witnesses:

*H. C. Meyer*  
*E. J. Faxon*

*Signature of  
Inventor lost.*

# UNITED STATES PATENT OFFICE.

J. S. BUELL, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 25,381, dated September 13, 1859.

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

Be it known that I, JONATHAN S. BUELL, of the city of Buffalo, in the county of Erie and State of New York, 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 of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal elevation; Fig. 3, a transverse section; Fig. 4, a section of the feeding apparatus; Fig. 5, a perspective view of the looping apparatus; Fig. 6, the looper, and Fig. 7 a plan of operating the needle-slide as it may be done.

The construction of the machine is with a bed-plate, of cast-iron or other material, standing on an elevation of about three inches and a half. (I do not, however, intend to have it understood that I am to confine myself to any particular proportions in constructing the bed-plate or other parts of the machine.) Upon one end of the bed-plate is an upright post with one arm (or more arms, if desired) projecting from it, as shown in the accompanying drawings, Figs. 1 and 2.

A represents the bed-plate; B, the upright post, with arm C extending over the bed-plate; D, the wheel, with shaft running through the upright post B, and through the plate, forming a part of the arm C, in order to support the shaft and form a bearing in which the shaft revolves.

Upon the shaft is attached, near the upright post B, the eccentric E by a set-screw to make the eccentric adjustable, which operates the piston F perpendicularly, and connects through and under the bed-plate A with the lever G, which is attached at S to the bed-plate A, and made movable at the point S. The other end of this lever, as will be seen by reference to the drawings in Fig. 2, is attached to the sliding bar H, which moves perpendicularly in the groove or slot of the plate I, as shown in Figs. 2 and 7, and holding an eye-pointed needle in its upper end, so that by a movement of the wheel D the sliding bar H causes the needle to make a reciprocating motion perpendicularly through the bed-plate A, puncturing the cloth or material being sewed from the under side and carrying with it the thread from spool

K. The thread, in its passage from the spool K, moves through one end of the fixed spool X, (which is shown in Fig. 3,) and passes around the shaft of the spool to give the thread the required tension, which spool is made movable upon its center. As the needle begins to descend it causes a slack in the thread and forms a loop near the cloth or material being sewed, which loop is held in such a position by the guide U, attached to plate N by set-screws, as to make it adjustable, as may be desired, which guide U prevents the loop so formed from turning sidewise, and the loop is caught on the points of the looper L, which passes through the lower end of the guide U and holds the loop on its points until the needle has receded below the points of the looper L, which is then moved forward, and its points opening spreads the loop over the hole in the bed-plate, through which the needle passes, and holds the loop in that position until the needle rises and receives the loop upon its point, and as the needle continues to rise tightens or draws the loop down out of the way of the looper when moving forward to take the next loop. At the same time the looper recedes and closes its points, and the loop is left upon the needle. The guide U is so constructed that in case the looper fails to close its points, and should take one or more loops upon one or both points, by drawing the looper back it will clear itself of the loop and prevent the necessity of breaking the thread. The looper L is attached to the slide M, which moves horizontally in the grooved or slotted plate N, and is attached at the bottom of the plate N. This plate N is made in the shape of an L, and is attached to the upright or arm C by set-screws, with which it may be adjusted, so as to raise or lower the same with looper L at discretion, and place the looper in proper position for receiving the loop from needles of different lengths, or as the varying thickness of the material being sewed may require.

Attached to the slide M, and forming a part thereof, projecting through the slot of plate N, is the round pin Z, rising above the plate N, as seen in Figs. 1 and 3. Upon and surrounding this pin Z works one end of the lever O, which is attached at the point V (its fulcrum) to a portion of the arm C, and movable at the point V, which is operated by the cam T, or its equivalent, attached at the end of the shaft

of the wheel D. This cam during the revolution of the wheel D operates the lever O, so as to cause the slide M to move forward, to which the looper L is attached, as before described, so as to cause the looper L to take hold and spread the loop. The spring *d d*, when the lever O is not operated upon by the cam T, pushes the lever O or forces it back to its proper position, ready to be operated upon, in the same manner as before described. The shaft of the wheel D has another cam or its equivalent; or the cam T may be a double one, operating in like manner another lever, P, from the opposite side, as shown in Fig. 3, which is also attached to the arm C at the point *i i*, (its fulcrum,) upon which it moves. This lever is made with a hook or staple, as shown in Fig. 4, bent in such a manner that as the cam revolves with the shaft of the wheel D it will strike the lever P upon either side of the shaft—that is, in an opposite direction from where it first strikes the lever or the spring *f f*, which spring is attached at one end to the lever P, and near the other end of the spring it rests upon the end of the thumb-screw *g g*, passing through the lever P, so that by turning the screw *g g* the spring forms a wedge, and when the lever P is operated by the cam T, or its equivalent, it regulates the distance it may be desired to operate the lever P or the foot-piece Q, which is attached at the point *h h* to the said lever P. This foot-piece Q is so constructed as to hold the material being sewed in close proximity to the needle firmly to the bed-plate A during the reciprocating motions of the needle, but which, while it so holds the material to be sewed, shall be free to yield to its inequalities. This is accomplished by the spring *m m*, attached to the lever P or the foot-piece Q, at or near the point *h h*, thereby causing the foot-piece Q to hold the material being sewed firmly to the bed-plate A, and, by adjusting the spring *f f* by the thumb-screw *g g*, measures the length of the stitch, as may be desired. When the material being sewed is moved forward by the foot-piece Q, the foot-piece Q is so operated as to hold the material being sewed, stretched to its full tension, over the hole in the bed-plate through which the needle moves, so that the puncturing operation of the needle is freely made. This foot-piece also holds the material being sewed against the pull of any looping apparatus while drawing the thread to tighten the stitch. The foot-piece Q has a corrugated surface upon its under side, which is so constructed as to hold the material upon which it acts to move it forward. At the same as the foot-piece is drawn back it will move freely over the material.

In the bed-plate or on a plate attached firmly at its upper side over the hole and surrounding it, through which the needle passes or moves, and directly under the foot-piece Q, is another corrugated surface, as shown in Fig. 4, (designated by letters *o o*,) made in like manner as the corrugated surface upon the un-

der side of the foot-piece Q. Between these corrugated surfaces the material being sewed passes, and while the foot-piece Q is moved forward it acts in unison with the corrugated surface of the plate *o o* and allows the material to move forward freely. As the foot-piece Q is moved or drawn back the corrugated surface of the plate *o o* prevents the material from moving and holds it firmly in its proper position.

To obviate any irregularity in the length of the stitch by the loosening of the screw at the point *i i*, thereby allowing the lever P to drop or move the foot-piece Q forward, and to counteract the force of the spring *m m*, which also tends to move the foot-piece Q forward, another spring, *t t*, is attached to the projection of the arm C to hold the lever P in its proper position.

Fig. 5 represents the looper L, attached to the sliding piece M, and Fig. 6 the looper alone. By reference to Figs. 5 and 6 it will be seen that the looper L is made in two parts. One piece or part is nearly straight and the other in circular form, or the looper may be made in two circular parts. The shape of the looper's point is something in the form of a bird's bill. These parts are connected by a pin or fulcrum, *a a*. Attached to the part *a'* is the spring *b b*, which presses or acts on the other part, *a''*, or the circular part of the looper L, and is held in its position by an ear or slot, *b'*, so that the looper's points may be made straight or circular in form. The circular form is preferred when the looper moves in a straight line, and straight when it moves in a circular line, or when the points moving forward or back describe the arc of a circle. When moving in a straight line it will be seen that one of the points—that is, the part *a'*—continues in that line or in a fixed position. The other part, *a''*, as it moves forward, opens or leaves the point of *a'*, and while so opening the circular form prevents it from striking the needle, giving it time to move out of the way, and as the needle rises the looper withdraws, as before described, at the same time closing its points. The circular or bent form prevents its points from moving or twisting the needle when withdrawn from the loop and closed, the looper L being attached to the sliding piece M, which is operated by the lever O, being acted upon by a cam, crank, or other equivalent, as before described, so that when the circular arm *a''* strikes the pin *c c*, which is made adjustable by the screw *g r*, as seen in Figs. 1 and 3, and while the looper moves forward, causes the looper's points to open or the point of the looper *a''* to open or leave the point of the piece *a'*. Upon one or both points of the looper L may be a shoulder or projection to hold the loop, so as to prevent it from slipping or moving too far on the points, and thereby failing to form a loop upon the needle. On the lever O, as seen in Fig. 3, is attached a spring, *p p*, with the thumb-screw *s s*, in the same or similar manner as described on le-

ver P of the feeding apparatus, which spring *p p*, when moved by the thumb-screw *s s*, forms a wedge, so that when the lever is operated by a cam or its equivalent it regulates the position or motion of the looper L at discretion and places it in regard to time when to take the loop.

To thread the needle, which may be done from the under side of the bed-plate A, when the sliding piece or bar H and the groove or slotted plate is made, as shown in Fig. 7, or above the plate or bed, as shown in Fig. 2, by withdrawing the slide W, as shown in Figs. 1 and 3, and drawing the thread with a hook through the slot of the foot-piece Q, and placing the eye of the needle, by a movement of the wheel D, between the foot-piece Q and the looper L, then, after placing the thread through the eye of the needle, lower the needle below the bed-plate A, taking the thread with it, closing the slide W, and placing the material to be sewed under the foot-piece Q.

This machine makes what is commonly known as the "chain" or "loop" stitch, and the material to be sewed has to be so placed that the

side on which it may be desired to have the loop formed shall be uppermost. This is believed to be an advantage, enabling, as it does, the operator to discover any defect in the work as it progresses.

The wheel D has a groove by which the machine can be operated by a treadle or any mechanical device when not operated by hand.

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

1. In combination with the stationary corrugated surface *o o*, the corrugated foot-piece Q, constructed, arranged, and operating therewith, as herein set forth.

2. In combination with the needle or its thread, the conical spool X and guide U for causing the slack in the thread to form the loop, and holding said loop from turning until seized by the looper, as herein set forth and explained.

JONATHAN S. BUELL.

In presence of—

F. C. CANDEE,  
EBER CANDEE.