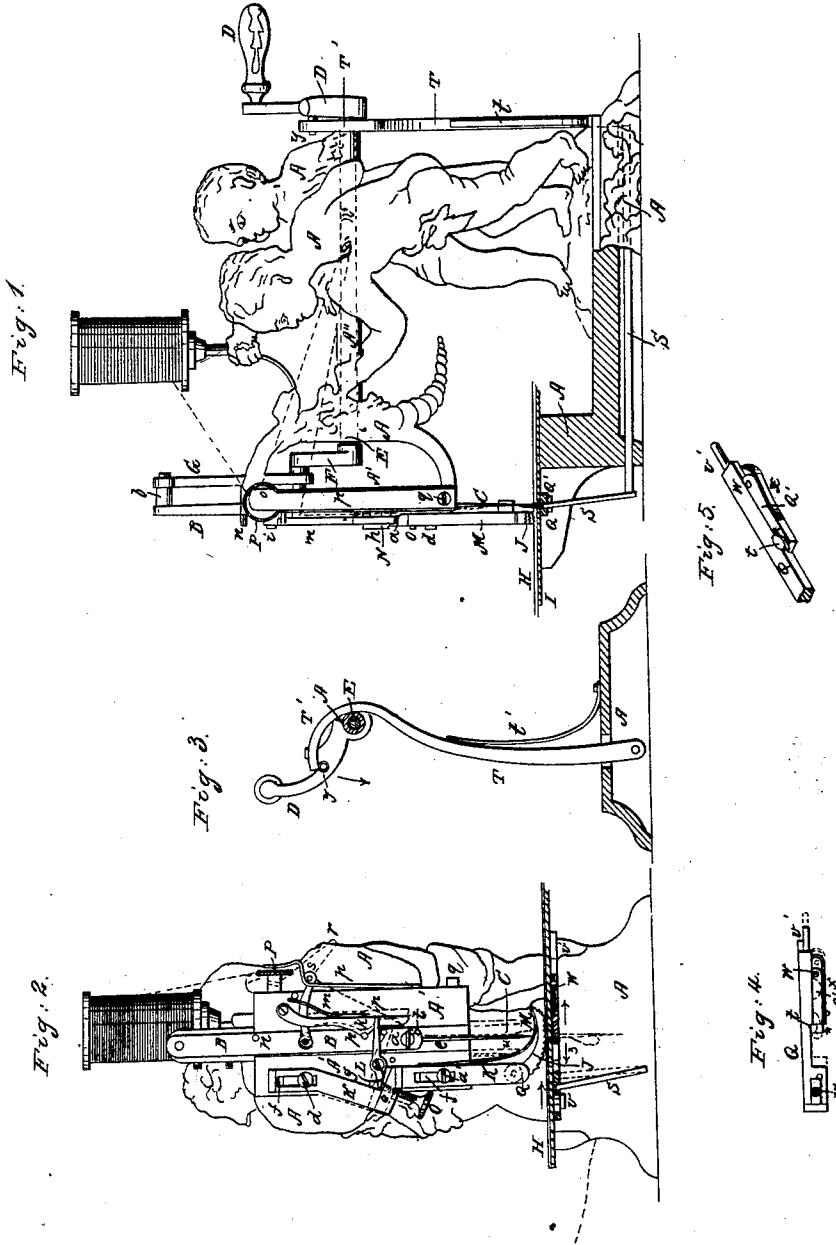


D. W. CLARK.  
Sewing Machine.

No. 19,015.

Patented Jan'y 5, 1858.



# UNITED STATES PATENT OFFICE.

D. W. CLARK, OF BRIDGEPORT, CONNECTICUT.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 19,015, dated January 5, 1858.

*To all whom it may concern:*

Be it known that I, DAVID WILLIAM CLARK, of Bridgeport, in the county of Fairfield and State of Connecticut, 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 same, reference being had to the annexed drawings, making a part of this specification.

This invention consists, first, in feeding the cloth or fabric to be sewed by means of a rocker, as will be hereinafter set forth; second, in the employment of a hinged slide in the formation of the stitch, as will be hereinafter described.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a side elevation of my improved sewing-machine; Fig. 2, a front elevation of the same; Fig. 3, a front sectional elevation, showing one of the connecting-rods which operate the slide. Fig. 4 is a plan of the slide detached from the machine, and Fig. 5 is an enlarged partial perspective view of the same.

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

This improvement is designed for the sewing and ornamentation of cloth, leather, and every description of fabric capable of being united or ornamented by thread and needle.

In the accompanying drawings, A A' A'' is the frame, which may be wrought in the ornamental form shown, or made in any other style to suit the manufacturer.

B is the needle-holder, which is a thin bar having beveled edges and sliding vertically between grooves in the front portion, A', or the frame.

C is the needle, which is inserted into the lower end of holder B and held in place by means of a screw, *a*. Vertical motion is communicated to the needle-slide B by means of the crank D, which is connected with a horizontal rod, E, (passing through the tubular portion of the frame A'') to another crank, F. The latter connects with slide B by means of the link G and stud *b*. By the rotation of crank D the slide B is correspondingly made to rise and fall.

H is the fabric to be sewed. I is the table over which it moves, and J is the rocker by which the fabric is fed along for each new

stitch. The rocker J consists of a thin circular plate, its under surface being toothed or serrated. Rocker J is hinged at *e* to the lower end of rocker-holder K. The latter consists of a flat bar having an elbow, *c*, in the middle. Rocker-holder K is held against the front surface of frame A' by means of two screws, *d d*, which pass through the slots *ff* and screw into frame A'. The slots *ff* allow of a vertical movement of the rocker-holder K, which movement is obtained by means of the button L and spring M in the following manner: Button L is pivoted at *g* to the frame A'. The longer end of button L projects across the face of slide B, which carries a projecting pin, *h*. When the slide B rises it brings pin *h* in contact with the under side of the longer end of button L, and the latter is lifted, causing its shorter end to descend and strike against the rocker-holder K and depress it. The lower end of spring M is firmly attached to the extremity of rocker J. The opposite end bears against the inner edge of rocker-holder K, but is not attached. (See Fig. 1.) When the rocker-holder K is depressed it causes the rocker J to rock upon the cloth and carry it along in the direction of arrow 1, and as by this movement the end of the rocker J (to which spring M is attached) is elevated the spring M is bent, and when the force which depressed rocker-holder K is removed the spring M straightens itself or recovers its position, and in so doing depresses the outer end of rocker J, causing it to rock back to its original position, and by this movement also to lift the rocker-holder back to its place. The cloth is prevented from being carried back by the backward rocking of rocker J by means of the needle C, which has pierced the cloth and almost reached the full depth of its thrust before the backward rocking of the rocker J takes place. In its backward movement the rocker J therefore slips over the surface of the cloth.

The button L is locked and prevented from releasing its downward pressure upon rocker-holder K by means of a latch, N, which is pivoted at *i* to frame A'. There is a notch, *k*, in the latch N which receives and holds the end of button L when the pin *h* comes up in contact with L. The position of the latch N, with its notch *k*, the button L, and pin *h*, at the time when the locking of button L takes place is

shown in Fig. 2. It will be observed that the needle is entirely withdrawn from the fabric and stands at the highest point of its ascent. The latch is pressed against the extremity of button L by a small spring, M, which is attached at one end to the latch, and has its opposite end resting against a pin.

The release of the button L, so that the rocker J may rock backward and lift its holder K, is done in the following manner: There is a projecting pin, *n*, on slide B, and when the slide descends it carries pin *n* into contact with the projection *p* on the latch N, which is thus made to move sidewise sufficiently far to release the end of button L from notch *k*, and the instant the button is released the spring M straightens itself, causing the rocker J to rock backward and lift its holder K, as before described.

The extent of rocking movement given to the rocker J, and consequently the length of the stitch taken, is regulated by means of the adjusting-screw O, which passes obliquely upward through the elbow *c* of the rocker-holder K. The short end of button L touches the upper extremity of screw O when the latter is screwed up so far as to pass through the elbow *c*, and the farther through the elbow the screw O projects the greater will be the downward movement of the rocker-holder K and the farther the rocker J will rock and carry the cloth. To lengthen the stitch it is therefore only necessary to screw up the adjusting-screw O. To shorten the stitch, withdraw the screw.

I would here remark that I do not claim, broadly, the feeding of the cloth by means of a serrated foot placed above the table; nor do I claim hinging the foot to its actuating-bar. An example of such a device may be seen in I. M. Singer's patent, February 6, 1855. In this example, and in all analogous devices with which I am acquainted, the feeding-foot moves horizontally across the table in order to feed the cloth; but it will be observed that my rocker J has no horizontal movement across the table, but simply rocks, and by its rocking movement feeds the cloth.

The stitch formed by this machine is the well-known "tambour" or "chain" stitch. It is done in the following manner: The thread, drawn from a spool located as shown, or in any other suitable position, passes first through and around a perforated tension-button, P, (which is of the usual construction, and has a flat spring, *p*, pressing against it, and secured by screw *q* to the side of A',) thence through guide-pin *r* to guide *s*, (which is attached to slide B,) thence through a hole, *t*, at the extremity of slide B, and through the eye of the needle *u*, entering the eye on the back side of the needle. The method of conducting and threading the needle is indicated by the red thread in the drawings.

Q Q' is a thin slide held up against the under surface of the table by means of a screw, *v*, at one end, and by the frame A at the other

end, this end *v* of the slide being rounded and passed through a hole drilled in the frame A. The screw *v* passes through a slot in the slide Q, the object of the slot being to allow a reciprocating movement of the slide Q. One portion of the slide Q', as will be seen by reference to Figs. 4 and 5, is pivoted at W to Q. The other portion, *x*, is a flat spring attached to slide Q', which tends to keep the latter closed.

Reciprocating motion is communicated to slide Q Q' by means of the vibrating shaft S, the front end of which, S', is bent upward, so as to connect with slide Q, while the horizontal portion of shaft S extends back and passes through the base of the frame A to the rear portion, where it connects with the perpendicular vibrating rod T T', which rises vertically through the base, as shown in the drawings. The upper extremity of this rod T is curved so as to present a cam formation, and upon the inner surface of crank D there is a projecting pin, *y*, which by the rotation of crank D is brought against the curved surface T' of the rod T. The latter is thus caused to vibrate at each revolution of crank D, and to communicate a corresponding reciprocating movement to slide Q Q'. The spring *t*, attached to the frame A, presses against the rod T and causes the curved surface T' to hug the pin *y*. The front end of slide Q' has a notch at \*, (see Figs. 4 and 5,) through which the needle and thread pass when they descend through the fabric and table. After the needle has reached its lowest point of thrust, and before it begins to rise, the slide Q is moved (by the rotation of the crank D, as before described) in the direction of arrow 2, and the notch \* of the slide Q' comes in contact with the needle, which movement opens the slide Q' and withdraws it from the needle and thread. As soon as the slide Q' has been sufficiently withdrawn the spring *x* causes the slide to close again, leaving the needle and thread opposite to the front end of the slide Q'. The needle C now begins to rise, leaving the slack of its thread or loop behind, in the usual manner, and just as the needle passes above the surface of the table it begins to draw up its slack or loop, and at this moment the slide Q Q' moves back in direction of arrow 3 and carries the front end of the slide Q' against the loop, the effect of which is to flatten the loop and press it up against the under surface of the table I, the needle continuing to rise and drawing the loop, in a flattened or opened state, between the upper surface of the slide Q' and the under surface of the table I until the loop (the size of which has been diminished by the upward drawing of the needle) has been drawn into a small nest or cavity, *z*. This cavity is hollowed out of the upper side of the slide Q Q', and just around the notch therein through which the needle passes in its descent, as before described. The slide Q Q' completes its movement in the direction of arrow 3 just as the loop has been drawn into nest *z*, and the

loop remains at rest within the nest, in an open state, until the needle descends again and passes, with its thread, through the open loop and through the notch. After entering the loop the needle, by its continued descent, tightens the said loop and draws it up toward the table to the lower surface of the cloth. The slide then moves again in direction of arrow 2, as before described, and the same movements for the taking of another stitch are again accomplished.

It will be observed that the action of the slide is to flatten the loop and to hold it in a proper position for the needle to enter the loop, as in other machines.

There are many modifications under which my improvements may be practically applied. For example, the rocker J may be placed below the table and made to press upward against a foot-piece, the cloth being interposed. The

rocker J, for feeding the cloth, may be also operated in many different ways both above and below the table.

If desired, the needle may be rendered vibratory, and it would then be unnecessary to reciprocate the slide Q.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. Feeding the cloth in sewing-machines by means of a rocker, J, arranged and operating substantially as herein described.

2. The employment of a hinged slide, Q, to flatten and hold the loop, substantially as and for the purposes herein set forth.

October 23, 1857.

D. W. CLARK.

Witnesses:

W. TUSCH,  
W. HAUFF.