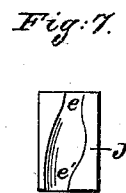
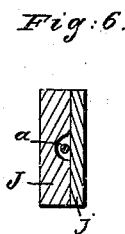
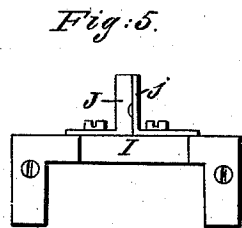
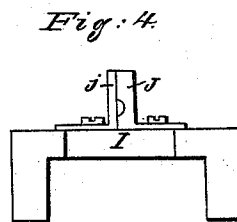
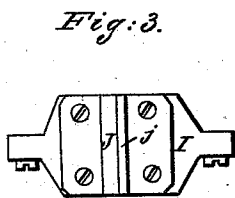
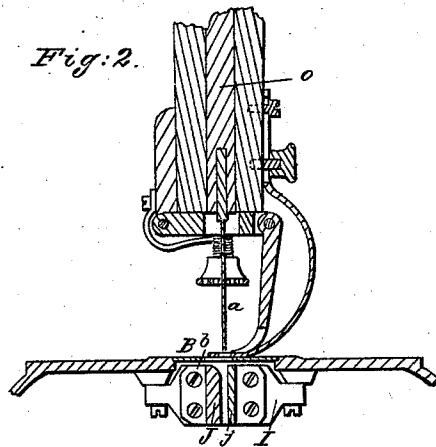
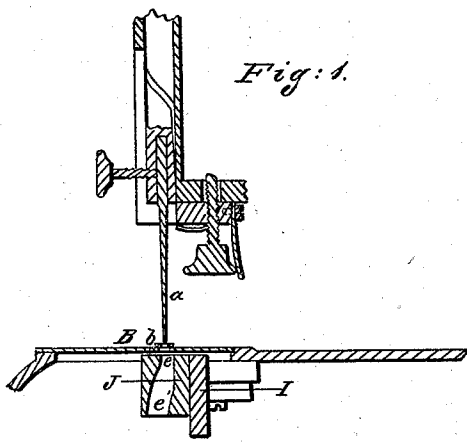


B. ATWATER.
Sewing Machine.

No. 21,402.

Patented Sept. 7, 1858.



UNITED STATES PATENT OFFICE.

B. ATWATER, OF BERLIN, CONNECTICUT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 21,402, dated September 7, 1858.

To all whom it may concern:

Be it known that I, BRYAN ATWATER, of Berlin, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Machinery for Sewing Cloth or other Material with the Chain-Stitch; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 exhibits a vertical and longitudinal section, and Fig. 2 a vertical and transverse section, of the needle-bed and those parts of a sewing-machine containing my invention. Fig. 3 is a front elevation. Fig. 4 is a top view, and Fig. 5 an under side view, of the two looping-guides or formers and their supporting-bracket. Fig. 6 is a horizontal section of such guides and the needle when between them. Fig. 7 is an elevation of the inner working-face of that one of the said two guides which is recessed.

On the 5th day of May, A. D. 1857, Letters Patent of the United States of America were granted to me for certain improvements in sewing-machines, the principal one of which was for the purpose of forming a loop from the slack of the thread of the needle, and guiding or directing such loop to a proper position for the needle during its next or succeeding downward movement to pass through such loop, the same being effected by a combination and arrangement of a stationary recessed guide, a notched plate or edge, (placed over such guide and between it and the bed-plate for supporting the cloth or material to be sewed,) and two separate stationary horns or guides projecting from the notched plate. Furthermore, a separate guide-plate arranged alongside of the recessed guide, and bent at top toward the needle, was also employed in connection with the recessed guide, its notched plate or edge, and the curved horns or projections. In my present invention I entirely dispense with the curved horns and the separate notched plate, and employ a single recessed guide-plate and a plain guide-plate constructed without any bend at top. Furthermore, I arrange the last-mentioned guide-plate close against the path of the needle, and place the recessed guide-plate at a short distance from the bed-plate, in order

that there may be a space between them, and so that when the loop is carried forward by the cloth it may be held at its bow by the two guide-plates, and be bridged across the upper part of the groove or recess of one, or so as to cause the needle on descending to pass through the wider part, and close to the middle of the bow of the loop. The advantage gained by my present invention over the other is that by the former much finer chain-stitch sewing can be performed; and, furthermore, I not only get rid of the separate curved horns or projections of the notched plate, but I am also able to dispense with the bent part or projection heretofore used at the upper part of the adjacent plate or guide and used in connection with the horns, in order to support the loop in an inclined position when bent over the notched plate. I still employ (if occasion may require it) a notch for the loop to pass into, such notch being in the top or upper edge of the recessed plate, but between the top of the notch and the bed-plate is an open space or distance. In my former or first machine, during the act of feeding the cloth along, the cloth drew the loop against the edge of the notch of the notched plate, and as the lower part of the loop was loose and free to move upward, the loop was tripped or bent, so that its elasticity forced it upward into nearly a horizontal position, or against the horns and the projection of the plane plate. In order to insure such an upward movement of the loop by its elasticity, as described, the thread-hole of the cloth had to be moved a sufficient distance beyond the notched plate to cause the loop to fly up into the horizontal or nearly horizontal position. In consequence of this movement no stitch could be formed with certainty of a length less than this distance, and therefore, although the machine could make stitches of greater length, it could not with certainty perform those of a less length. In my present machine the loop is held or supported at one or its lower end, while it is vibrated through the space over the recessed guide, the loop not being bent over an edge so as to cause the bow part in front of the edge to spring upward by its elasticity. Consequently the length of stitch is not limited, but can be taken with any degree of fineness.

In the drawings, *a* denotes the needle; B, the bed-plate, or that which supports the cloth. I is the bracket, extending downward from the table or frame of the machine, and having the guide-plates *J j* affixed to and projecting from it in manner as shown in the drawings. The thread-recess in the guide-plate *J* is shown at *e e'*, while the space between the plate *J* and the bed-plate is seen at *b*. The machine makes the chain-stitch, and should operate in further or other respects substantially as does my patented machine, the needle-carrier and its actuating mechanism, as well as the feeding apparatus, not being exhibited in the drawings, as they constitute no part of my present invention.

I do not herein claim an arrangement of the guide-plates together and with respect to the bed-plate, whereby the loop is bent over a rest or plate so as to cause its bow to spring upward into a position to receive the needle, as

described, such being incident to my machine as heretofore patented; but

What I claim is—

The improved arrangement of the guide-plates *J j* with respect to one another, the needle *a*, and the bed-plate B—viz., so that there may be a space, *b*, between the bed-plate and the upper end or notch of the guide-plate *J*—and the two guide-plates be placed so close together as to hold the middle of the bow of the loop in position, and bridged across the recess of the plate *J*, substantially in manner for the reception of the needle by the loop, and to effect advantages as hereinbefore set forth.

In testimony whereof I have hereunto set my signature.

B. ATWATER.

Witnesses:

R. H. EDDY,
JOHN C. BROOKS.