

H. W. LITTLE.

Improvement in Sewing-Machines.

No. 114,573.

Patented May 9, 1871.

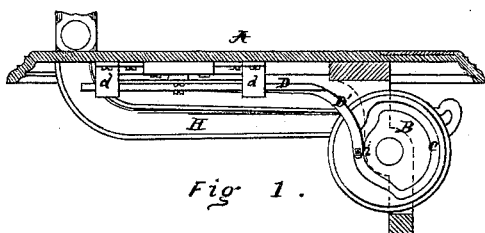


Fig. 1.

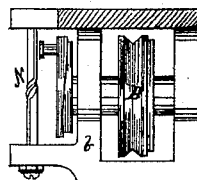


Fig. 3.

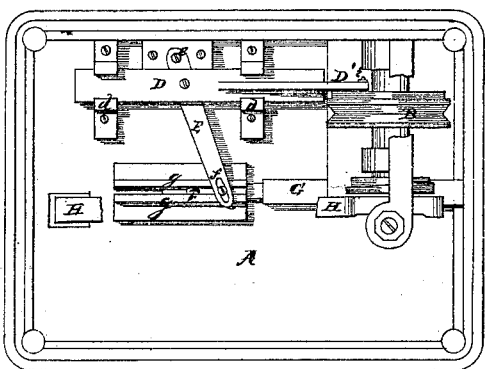


Fig. 2.

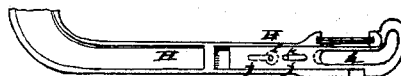


Fig. 4.



Fig. 5.

Witness

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# UNITED STATES PATENT OFFICE.

HALSTED W. LITTLE, OF MUNCIE, INDIANA, ASSIGNOR TO HIMSELF, JOHN L. LITTLE, AND WILLIAM L. LITTLE, OF SAME PLACE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **114,573**, dated May 9, 1871.

I, HALSTED W. LITTLE, of Muncie, in the county of Delaware, State of Indiana, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification:

This invention relates to that class of sewing-machines which makes the Grover & Baker stitch; and consists in the attachment and combination of additional devices to the Grover & Baker machine in such a manner that the said machines may also make a shuttle-stitch, the object being to enable the said machine to be readily and easily changed, at pleasure, to make either the Grover & Baker stitch or the shuttle-stitch, as may be desired.

In the drawing, Figure 1 is a longitudinal section of the bed-plate of the machine, showing the mode of attaching the shuttle-race and device for operating the shuttle in combination with the driving-pulley of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a view of the driving-pulley, crank-wheel, and crank-pin detached. Fig. 4 is a side view of the needle-arm, showing the curved slot and manner of extending the arm. Fig. 5 is a plan view of the same, the extension portion being in section.

A, Figs. 1 and 2, represents a bed-plate of a sewing-machine, a portion (in section) of which only is shown.

My improvements pertaining to the under side, the works on the upper side are left off in the drawing.

B is the driving wheel or pulley, set in a frame, *b*, secured to the under side of the bed-plate A. In the side of the pulley B is made a cam-groove, C.

D is a bar, attached to the bed-plate A by means of two brackets, *d d*, which are secured firmly to the bed-plate, the bar D sliding in grooves made in the brackets for the purpose.

One end of the bar D is connected to the driving-pulley by an arm, D', reaching down to the groove C, and having a pin, *i*, on it, provided with a small roller playing in the said cam-groove. By this means a reciprocating motion is given to the bar D.

To the bar D is pivoted a lever, E, which is also pivoted to the bed-plate A at *e*, the other end of said bar E being connected with a shut-

tle-bar, F, by a slot and pin, (seen at *f*, Fig. 2,) the said bar F playing in slides *g g*, secured to the bed-plate A, the bar F being driven by the lever E, which derives its motion from the bar D.

G is the shuttle-race, secured to the under side of the bed-plate.

The end of the needle-arm H (seen in detached view, Figs. 4 and 5) is provided with an extension, H', which has a slot, *h*, curved upward at the outer end, the purpose of which is to make a pause in the motion of the needle-arm, giving time for the shuttle to pass through the loop of the upper thread. The object of making the needle-arm extensible is so as to extend the curved part of the slot beyond the throw of the crank-pin, which will then have no pause in the movement of the needle-arm.

The extension part of the arm is secured to the main arm by means of two slots, *j j*, a pin, *k*, and a set-screw, *l*.

When the machine is to be employed in making the lock-stitch the bar D is to be detached by taking the pin and roller *i* out of the cam-groove and extending the arm H, the devices for carrying the shuttle then remaining idle, the hook for making the Grover & Baker stitch being in place in the revolving bar N.

When the machine is to be employed to make the shuttle-stitch the bar D' is put into gear with the cam C of the pulley B, the arm H shortened, and the hook removed from the bar N.

By the combination and arrangement of the above-described devices with a Grover & Baker sewing-machine it is capable of making either that stitch or the lock-stitch by making the slight change in the adjustment, as before stated.

Having thus described my invention, I claim—

The needle-operating arm H, provided with the adjustable and slotted extension H', as and for the purpose set forth.

HALSTED W. LITTLE.

Witnesses:

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