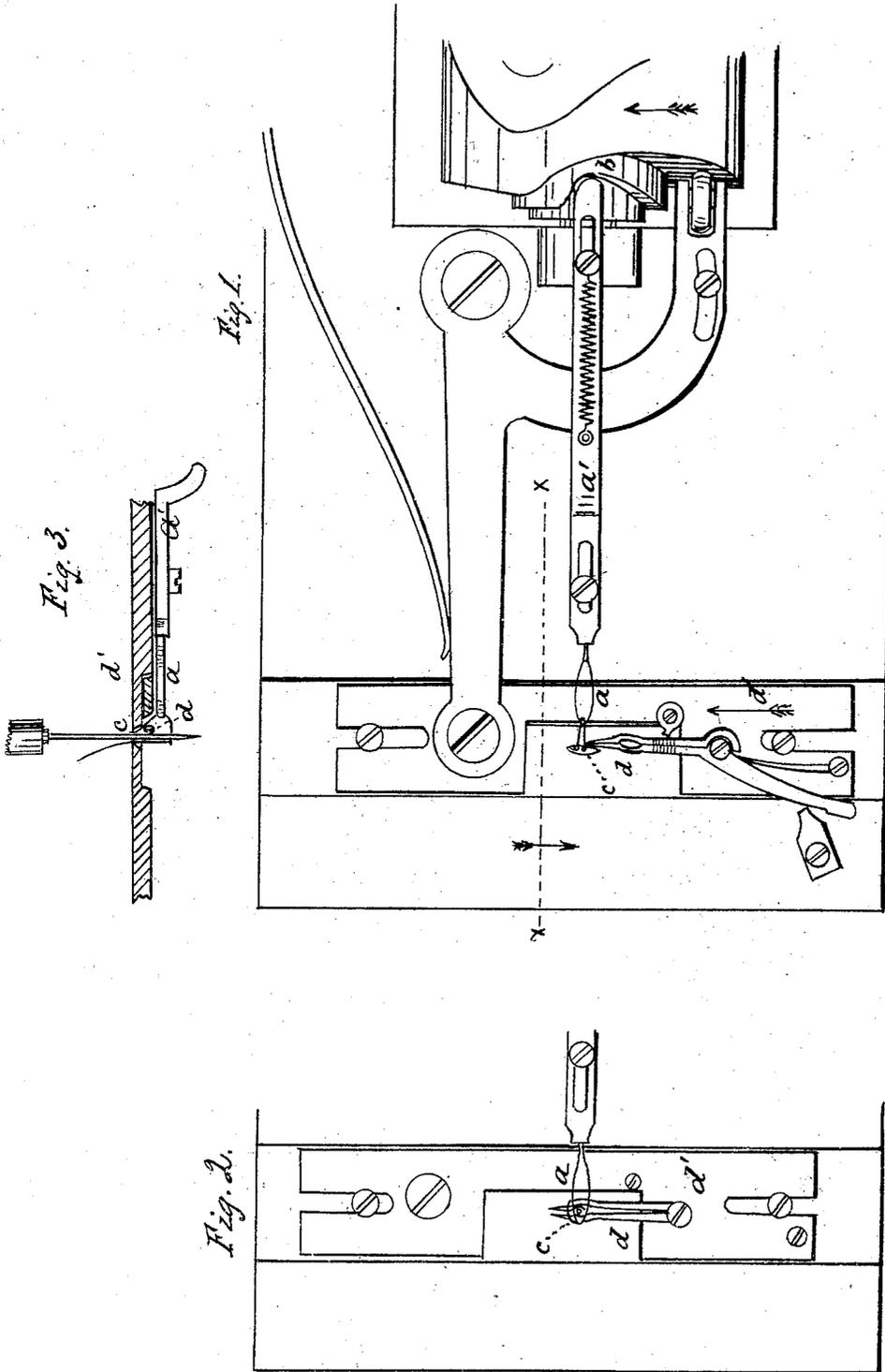


M. DIMOCK.
SEWING MACHINE.

No. 20,413.

Patented June 1, 1858.



UNITED STATES PATENT OFFICE.

MARTIAL DIMOCK, OF MANSFIELD, CONNECTICUT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 20,413, dated June 1, 1858.

To all whom it may concern:

Be it known that I, MARTIAL DIMOCK, of Mansfield, county of Tolland, and State of Connecticut, have invented certain Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description the same, reference being made to the annexed drawings, making a part of this specification, in which—

Figure I is a view of the under side of the machine. Figs. II and III are parts in detail, and similar letters indicate similar parts throughout.

My invention is intended to increase the certainty of action in the single-thread or chain-stitch machines, in that part which has to do with the catching of the loop. It is a well-known defect in this class of sewing-machines that the loops frequently fail of being caught upon the looper, and a great variety of devices has been proposed to remedy said defect. This is all the more important, because a stitch dropped in one of these constitutes a serious damage to the seam, consequent upon the easy raveling of the same. In addition to all this there are other niceties required in order to put and keep the said class of machines to work, especially as to the care necessary in the setting of the needles and the exactness of direction of the eye. In my improvement these defects are obviated by means of a device made to act in conjunction with the looper and needle, so as to catch and open the loop by a forcible seizure of the same, then drawing it out into a bow, and keeping it so drawn until the looper has entered and caught it up. This result is accomplished irrespective of any particular exactness in the set of the needle, or in the direction of the eye of the needle, provided only that it be at the proper height in the needle-stock for its stroke.

I am aware that several forms of grippers, having this result in view, have been already employed; but these have been neither as simple in construction nor as certain in their action as that which I have devised, and which consists of a pair of spring-grippers attached to a stock, reciprocating back and forth at a right angle, or nearly so, to the direction of the course in which the looper vibrates, and also in such direction as to cross the path of the needle. These grippers are seen at *a*, and consist of a couple of bows of spring-steel, or

other suitable material, of the shape seen in Figs. I and II. They are attached to a stock or bar, *a'*, which is so set under the bed of the machine as to receive action, to give the necessary reciprocations, by a cam, *b*, on the main shaft, as shown in Fig. I. The place where the needle comes through the bed is seen at *c*, and is directly in the way of the grippers *a* as they move back and forth. The points of these would therefore strike the needle if it were below the table when the gripper-stock rides up on its cam. The timing of the cam which drives the needle and that which drives the gripper, is so adjusted that at the moment when the end of *a'* rides up on *b* the needle will be above the table, and consequently out of the way. The looper is seen at *d*, placed upon a reciprocating plate, *d'*, driven by a lever connected with the main cam, as shown. A more particular description is not deemed necessary here, as there is a variety of loopers equally applicable. Neither is it necessary to describe the other parts of the machine, as none are required for this which are not already well known in sewing-machines.

The operation is as follows: The needle being threaded and the other well-known parts in order for working, the needle standing above the table, the gripper will be at that time in the position shown in Fig. II, so that the bow will inclose the hole through which the needle descends, and in which position it will remain until the descent of said needle, which will of course pass through or between the grippers. The deepest part of the cam *b* now arrives opposite to the end of *a'*, and the latter is drawn into it by the recoil-spring shown, drawing along the grippers, the ends of which grasp the needle as they pass, and are forced open by it in order that it may pass out. In doing this the thread is also gripped; but, being loose at that moment, it is carried along with the grippers and made to bow out, as seen in Figs. I and III, and which position is thus kept until the looper has entered and taken the same upon it. The retreating of the needle now draws up the slack of the thread, and the latter is therefore pulled out of the grippers and thus released therefrom. The looper, continuing on, holds the loop thus taken and spreads it in the path of the needle, ready for that to go through on its next stroke,

and as seen in Fig. II, such holding and spreading being, as is well known, required in all kinds of loopers for chain-stitch machines. The needle now descends, passing through the loop, when the looper will be withdrawn, as in Fig. I, the grippers then drawing off a loop, as before, and so on successively.

It is obvious that a pair of grippers of this construction may also be applied to draw off the loop in a shuttle-machine for the purpose of insuring the entrance of the point of said shuttle, there being space enough between the bed and the upper part of the shuttle for the grippers to move in.

I claim—

The gripping apparatus, operating, substantially as described, in combination with the needle and the thread, for the purpose of drawing the loop into the path of the looper, as set forth herein.

In witness whereof I have hereunto subscribed my name.

MARTIAL DIMOCK.

In presence of—

S. H. MAYNARD,
THOMAS DUCEX.