2 Sheets—Sheet 1.

T. C. PAGE.

Sewing Machine.

No. 74,584. Patented Feb. 18, 1868.

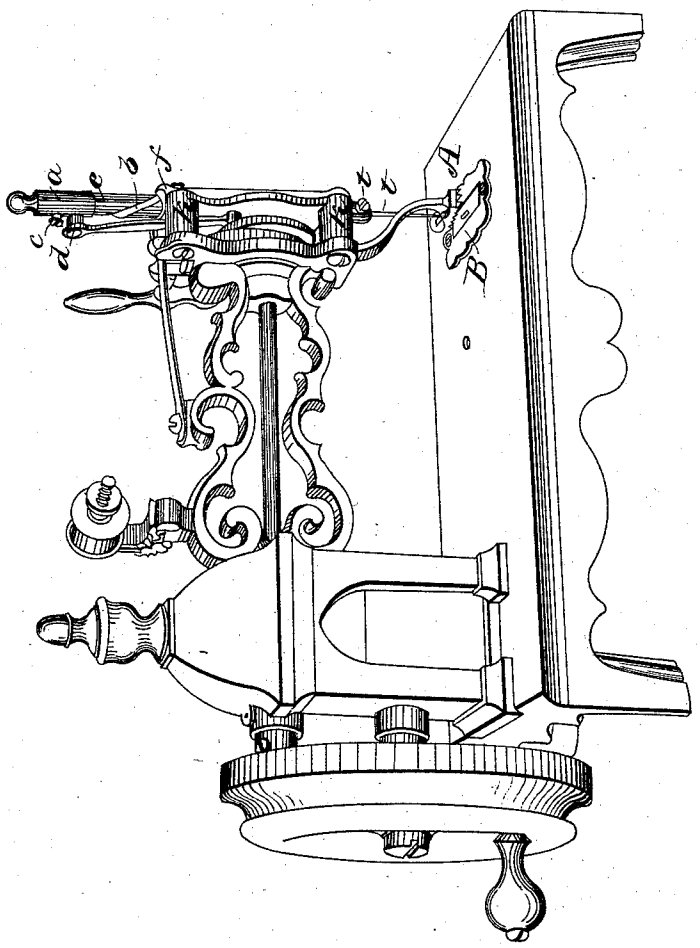

Fig. 1.

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2 Sheets—Sheet 2.

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Sewing Machine.

No. 74,584. Patented Feb. 18, 1868.

Fig: 1.

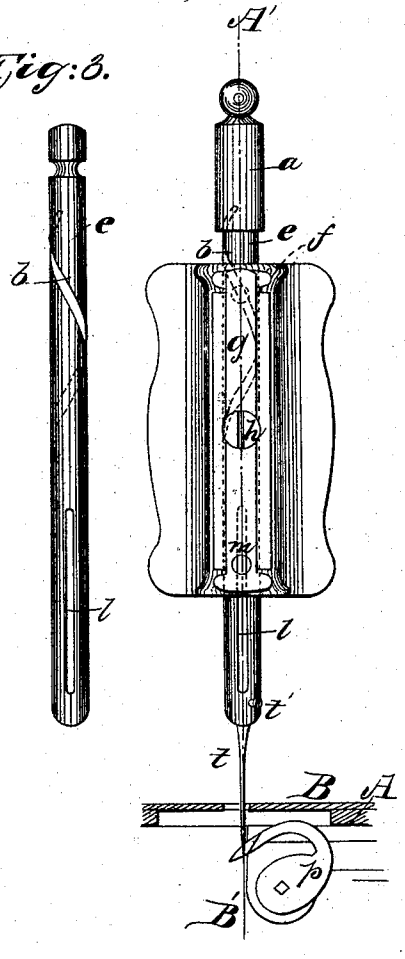

Fig: 3.

Fig: 2.

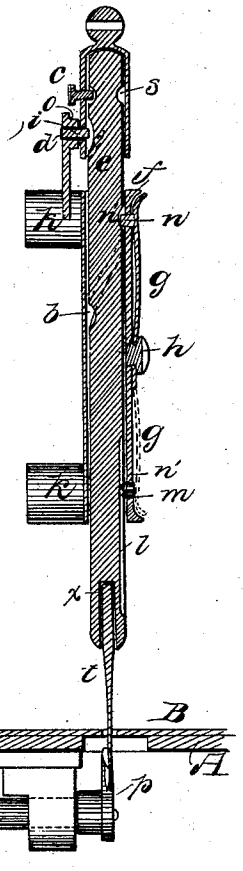

Fig: 4.

Fig: 5.

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T. C. PAGE, OF CHICOPEE, MASSACHUSETTS.

Letters Patent No. 74,584, *dated February* 18, 1868; *antedated February* 7, 1868.

IMPROVEMENT IN SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, T. C. PAGE, of Chicopee, in the county of Hampden, and Commonwealth of Massachusetts, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, whereof, in plate 1,

Figure 1 is a perspective view of a sewing-machine having my improvement applied thereto, and, in plate 2,

Figure 1 is an end elevation of the needle-bar of a sewing-machine, with the parts adjacent and pertaining to such bar, and showing a section of the bed of the table, and the position of the looper.

Figure 2 is a vertical section through the line A′ B′, fig. 1.

Figure 3 is an end elevation of the needle-bar, showing the vertical slot or groove therein, and a portion of the spiral slot or groove.

Figure 4 is an elevation of the cap of the needle-bar; and

Figure 5 is a reverse plan of the same.

My invention consists in constructing a sewing-machine in such a manner that a twisted loop-stitch can be formed thereon, instead of an ordinary chain-stitch, by the combined action of a looping-device and a needle-bar, (and needle,) having a reciprocating rotary motion; and also so that the same machine can be readily adjusted to form the latter stitch, if desired.

The axis of rotation of the bar is in a line drawn from the point of the needle to the middle point of the top of the needle-bar, and the rotation may be made to turn the needle-bar once around, and cause it to perform an entire revolution, or the bar may make a part of a revolution. For the purpose of forming a twisted loop-stitch, the turning of the needle-bar to make about one-third of a revolution is found to be a sufficient rotation.

My invention, therefore, has reference to the means which I employ to form the stitches as described, and not to the nature or configuration of those stitches. A looper, or some equivalent device, beneath the bed-plate of the machine, is necessary to enter and hold the loop of thread brought down by one thrust of the needle, until a second loop is brought down by a second thrust of the needle. It is evident that the thread from the loop first seized by the looper will be crossed above the looper by the turning of the needle-bar and needle, and that this thread will remain thus crossed until the needle descends again, and inserts a second loop through the first crossed one, and thus secures the twist or crossing of the thread made in the first loop. The thread of this second loop will, in like manner, be crossed by the turning of the rotating needle-bar, and the twist or crossing of the thread in it will be secured by the insertion of a third loop, and the same process will be continued so long as the machine remains adjusted for the forming of a twisted loop-stitch.

The construction of my invention is as follows: A is the bed-plate of an ordinary sewing-machine, supporting the customary parts of an operative single-thread machine. *e* is the needle-bar, which is fitted to slide, in the direction of its length, in a socket, *f*, which may be denominated the needle-bar holder, which said holder is attached to the machine by screws turning into the posts *k k*. The straight needle, *t*, is inserted in a cylindrical opening, *x*, formed concentrically in the lower end of the needle-bar, and is secured in place by a small set-screw, *t′*. As it is necessary to impart to the needle-bar both a reciprocating vertical motion and a rotary motion, I apply the crank-rod *d* and crank-pin *i*, not directly to the needle-bar *e*, but to a head or cap, *a*, which has a cylindrical opening for receiving the upper end of the needle-bar. A set-screw, *c*, passes through the side of *a*, and enters the groove *s* cut upon the needle-bar. The reciprocating motion of the head *a* will, therefore, be imparted to the needle-bar *e* by means of the set-screw *c*, while the bar will be left free to rotate and produce the twisted loop-stitch. A spiral slot, *b*, shown in figs. 1 and 3, plate 2, by full and dotted lines, is formed in the needle-bar *e*, as shown. A straight longitudinal slot, *l*, is also formed in the lower part of the needle-bar, as shown in figs. 1, 2, and 3, plate 2. To guide the needle-bar by means of the spiral slot, and cause its rotation, or by means of the straight slot, a thin strip of steel, *g*, is fastened by the screw *h* to the socket *f*, and left free to turn around *h* as a centre. A small stud, *n*, projects from the inner face of this spring, *g*, through the opening *n′*, and enters the spiral slot, *b*, in the needle-bar *e*, or the strip *g* may be turned, so that the stud *n* will enter the straight slot *l* through the lower opening *n′*. The entering end of the stud *n*, and the surfaces

of the slots *b* and *l* are smoothly finished, and adjusted to one another, so as to obviate friction, as far as possible, when the stud is engaged in either slot. The strip *g* is made elastic, so that it can be retracted to release the stud from either opening, *n'*, and will also hold the stud securely in either slot of the needle-bar when inserted therein.

If it be desired to produce a twisted loop-stitch, the operator will turn the strip *g*, so that the stud *n* will enter the spiral slot, as shown by the black lines in fig. 2, plate 2; or if a plain stitch be desired, the strip *g* will be turned so as to occupy the position shown by the red lines in the last-named figure. When adjusted for either style of stitch, the machine is operated in the usual manner.

I do not limit myself to the method herein described of imparting a reciprocating motion to the needle-bar by means of the crank-rod and pin and the head *a*, as various devices for the same purpose are readily applied. The essential parts of my invention are the means by which I am enabled to impart a reciprocating rotary motion to the needle-bar.

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

1. A needle-bar and needle, having a reciprocating rotary motion, in combination with a looping-device, working beneath the bed-plate of the machine, substantially as described.

2. The combination of the spiral slot *b* and straight slot *l*, formed in the needle-bar *e*, substantially as set forth.

Witness my hand, this first day of June, A. D. 1867.

T. C. PAGE.

Witnesses:

J. P. BUCKLAND,

W. H. SPENCER.