

C. N. FARR.  
Sewing Machine.

No. 25,004.

Patented Aug. 9, 1859.

Fig. 2,

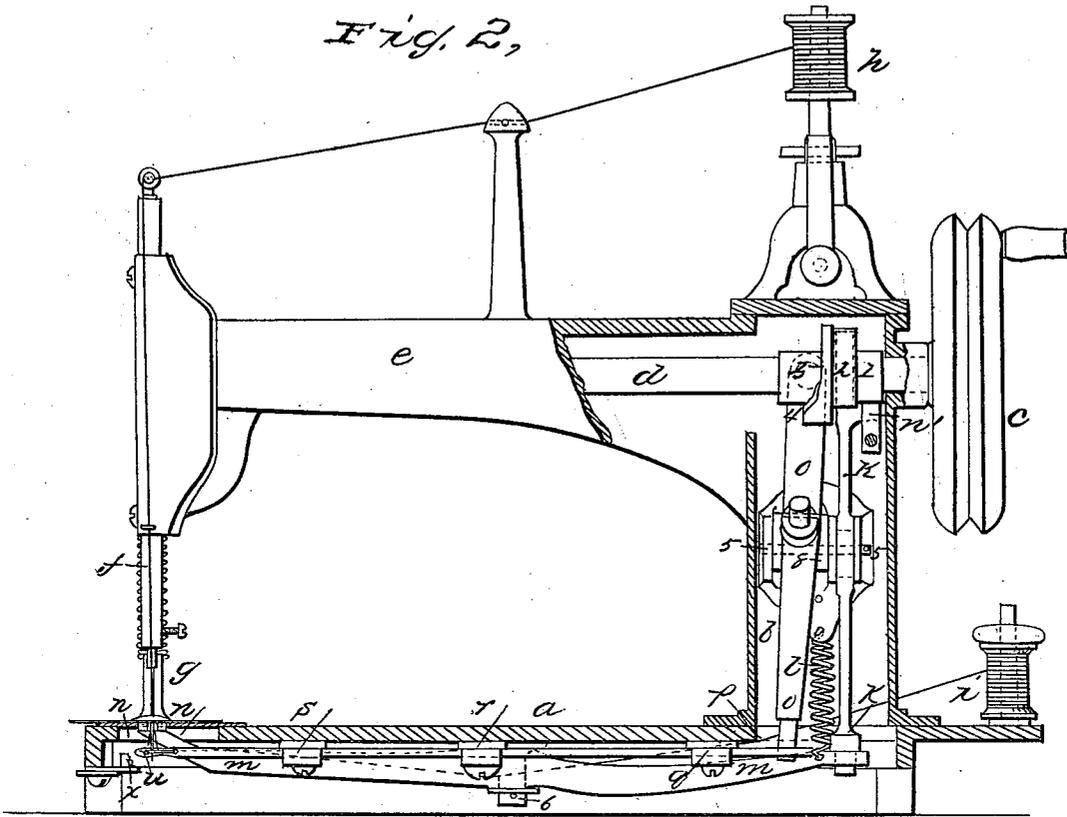


Fig. 1,

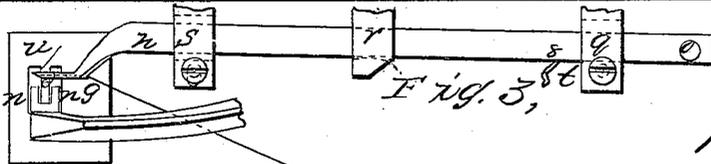
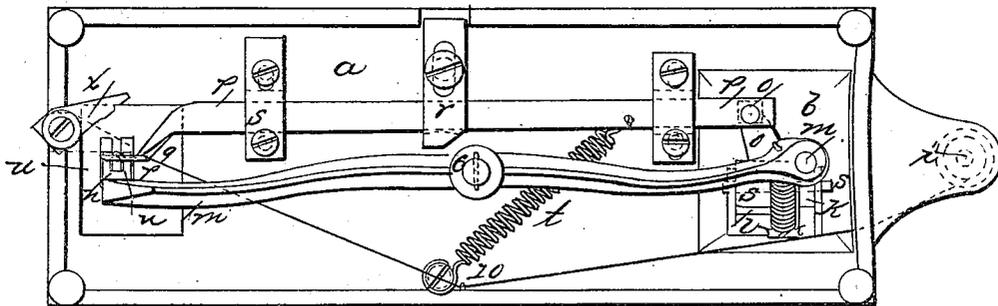


Fig. 3,

WITNESSES:

J. C. Todd Jr.  
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# UNITED STATES PATENT OFFICE.

CHESTER N. FARR, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 25,004, dated August 9, 1859.

*To all whom it may concern:*

Be it known that I, CHESTER N. FARR, of Philadelphia, in the State of Pennsylvania, have invented and applied to use certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is an inverted plan of my sewing-machine, and Fig. 2 is a side view of the same with the bed and cam-box in section.

Similar marks of reference denote the same parts.

My said invention relates to the manner of adjusting and controlling the motions of a looper which enters the loop of needle-thread and then crosses the needle's path when said needle has risen, so that on the needle again descending it takes a loop of second thread on the opposite side of the looper, and said looper, retiring, drops the loop of needle-thread around the loop of second thread and then moves laterally, and again passes on the other side of the needle and takes a loop, and proceeds as before.

In the drawings, *a* is the bed; *b*, the cam-box; *c*, the fly-wheel to which power is to be applied to rotate the main shaft *d*. *e* is the arm though which said shaft *d* passes and gives motion by a cam or crank to the needle-bar *f*. *g* is the presser-foot, and *h* is the spool of needle-thread. These parts may be of any desired construction, as my invention does not relate to them.

On the shaft *d* four cams, 1 2 3 4, are provided, the first two acting on the feeding device and the last two on the looper.

*k* is a lever set on a fulcrum-pin, 5, at which point a slot in said lever allows of a vertical as well as vibrating motion. The lower end of this lever enters a lever, *m*, beneath the bed *a*, which lever is on a center pin, 6, the hole for which is slightly elongated to allow the hereinafter specified motions to be given said lever.

*n n* are the feeding-fingers, with teeth on their surfaces working through slots in the bed *a*, to feed the cloth.

*l* is a retracting-spring, tending to keep the fingers *n* away from the cloth. In revolving the shaft *d* the cam 1 comes in contact with

the arm *n'*, sliding the lever *k* on its fulcrum 5 and striking the fingers *n* against the cloth. The cam 2 then gives a sidewise movement to the levers *k* and *m*, feeding the cloth. The cam 1 then ceasing to operate, the spring *l* first draws the fingers *n* away from the cloth, and then brings the parts back to the place of beginning as the cam 2 ceases to act. A screw, *x*, acting at the end of the arm *n'*, regulates the approach of the lever *k* to the cam 2, and consequently the length of the stitches.

*o* is a lever on a fulcrum-pin, 7, that passes with a rocker-piece, 8, that is also on the fulcrum-pin 5, so that the upper end of the lever *o* receiving a compound motion from the cams 3 and 4, said lever is free to move forward and back or sidewise, or both, on the pin 5 and stud 7. The lower end of this lever passes into the looping-bar *p*, that is retained and adjusted by the fulcrum piece *r* and stops *q s*.

*t* is a retracting-spring that keeps the upper end of the lever *o* against both cams 3 and 4.

*u* is the looper at the end of the bar *p*.

*i* is the spool of second thread, which leads through a hole in the cam-box *b*, and an eye or guide, 10, to the eye 9 of the looper; and *x* is a guide-plate, against which the needle passes to steady the same. This is shown as turned back in Fig. 1 to show the looper.

The operation of these parts is that the cam 4 vibrates the lever *o* on the fulcrum-stud 7, and gives the looper and bar a sliding motion through the guides *q r s*, and the cam 3 gives the looping-bar *p* a vibrating motion on the guide *r*, which becomes a fulcrum, causing the looper *u* to cross the needle's path. The shape of the cams 3 4 is such that the looper passes into a loop of needle-thread, as seen in Fig. 1, the needle draws up, the looper crosses its path, leading the loop of second thread into the position shown in Fig. 3, (blue lines,) to be taken by the needle on its next descent. Then the looper draws back, dropping the loop of needle-thread (shown in red lines) around the loop of second thread, crosses to its former position, and then goes forward and takes a new loop of needle-thread, and proceeds as before. The fulcrum-slide *r* is to be properly adjusted and then the stop *q* so placed that when the spring *t* draws the looping-bar *p* back against said stop *q* the looper *u* shall be in position correctly, as seen in Fig. 3, and when the said lever *p* comes in contact with the stop

*s* the looper shall be correctly in position to take the loop of needle-thread, as seen in Fig. 1, so that by this very simple arrangement of devices the looper is adjusted with great facility and regulated in its motions so as to take the loops of needle-thread and properly place the loop of the second thread to be taken by the needle.

I do not claim a looper that crosses the path of the needle, so as to work on opposite sides of said needle, as that has before been used.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of the fulcrum-slide *r*, stops *q* and *s*, and looping-bar *p*, for regulating and adjusting the motions of the looper, as set forth, and in combination with said looping-bar, adjusted as described, the rocking-lever *o*, fitting and acting as specified.

In witness whereof I have hereunto set my signature this 14th day of October, 1858.

CHESTER N. FARR.

Witnesses:

ALVAN FARR,  
JOHN W. TAGGART.