

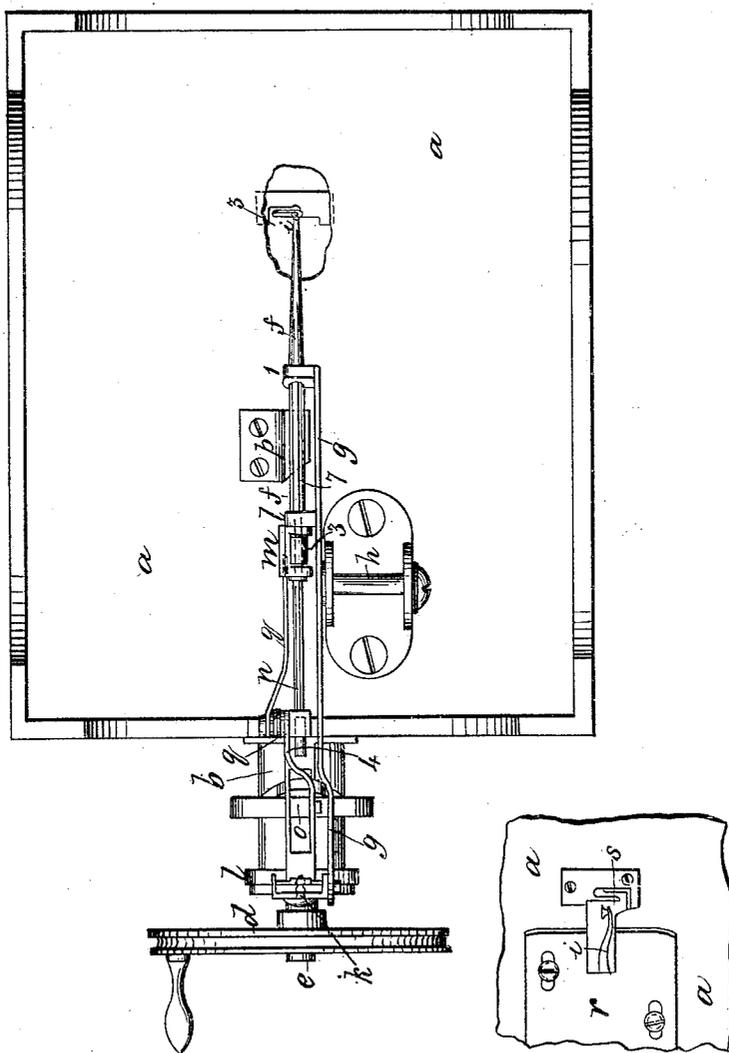
J. L. FREY.  
Sewing Machine.

2 Sheets—Sheet 1.

No. 49,745.

Patented Sept. 5, 1865.

Fig. 1.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JACOB L. FREY, OF NEW YORK, N. Y.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 49,745, dated September 5, 1865.

*To all whom it may concern:*

Be it known that I, JACOB L. FREY, of the city and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is an inverted plan of my improvement. Fig. 2 is a section through the bed, representing the looping device and parts actuating the same in elevation; and Fig. 3 is a plan representing the bed near the hole for the needle, and also the looping device.

Similar marks of reference denote the same parts.

The nature of my said invention consists in a looping device that takes a loop of needle-thread from below the cloth and draws said loop up over the edge of the fabric, and presents it to the needle as it descends the next time, so that the needle passes through the same, and the bed is provided with a hook or finger, around which the loop of thread is drawn, so that the fabric is not lifted at its edge in the act of carrying the loop up over the edge of the cloth and pulling up the previous stitch tightly at the same time. The motion of the fabric as it feeds along causes the loop to draw off the end of this finger formed in the bed.

This machine is particularly adapted to sewing carpets, sails, furs, and similar articles, because the stitch produced will open out flat, there being two threads through each perforation and the loop of one stitch around the threads at the point of perforation of the next stitch, so that each stitch shows with two threads on each side when opened out flat; but this machine might be employed to form button-hole sewing, if desired.

In the drawings, *a* represents the bed of the sewing-machine; *b*, the arm, at the end of which a needle-bar and eye-pointed perforating needle, *c*, is to be fitted, the same being moved by any well-known means, and, supplied with thread as usual, does not require any further description.

The shaft *e*, that works the machine, is to be propelled by a belt to the wheel *d*, or any other convenient means.

The looper *i* has three movements, the first a forward and back movement to take the loop of needle-thread below the cloth, said loop of thread being taken by a deep groove around the end of the looper, said looper being formed like an eyelet, notched on one edge, and attached to a small bar or rod extending off from one side. The second motion of the looper is a vertical one which brings the looper from below the cloth and carries it and the loop it has taken above the cloth, the forward and back movement again projecting the looper toward the path of the needle. The third motion is a rotary one of the looper itself, which turns the eyelet-shaped looper into a position for the needle to pass through it and take the loop of thread that is contained in the groove around said looper. The reverse movements then are given to the looper. It turns back again on its own axis. It moves from above to below the bed, and goes forward so as again to take a loop of thread as it draws back horizontally and performs the movements as before mentioned. These movements are effected as follows: The looper *i* is on a rod, *f*, in bearing 11 on a lever, *g*, which lever has the short shaft *h* for its fulcrum. This lever *g* is acted upon by a slide, *k*, having a pin that takes into a notch in the end of said lever *g*; and *l* is a cam on the shaft *e*, acting upon projecting studs or rollers 22 from this slide *k*. The shape of this cam *l* is such that the lever *g* will be moved at the proper time to give the second or vertical movement before mentioned to the looper.

At the end of the looper-rod *f* is a yoke, *m*, in which is the knuckle 3 of the connection *n*, that extends to a link, 4, that unites the connection *n* to the lever *o* on the fulcrum 5, at the upper end of which lever *o* is a fork, acted upon by the cam-groove 6 in a sleeve that surrounds and revolves with the shaft *e*. This cam-groove 6 gives to the looper *i* the forward and back movement first before named by sliding the rod *f* in the bearings 11. The third or partially rotary movement is given by a pin, 7, on *f*, taking against a diagonal stationary cam, *p*, as the looper is slid forward above the edge of the cloth; but when the outer end of lever *g* has been raised, thus bringing the looper *i* below the bed and in position to be moved forward below the cloth, said pin 7 is too far away from the under side of the bed to

come in contact with the diagonal cam *p*; hence said looper is not revolved in its movements below the cloth. The yoke *m* and knuckle 3 allow of this rotary movement, the yoke *m* turning around the knuckle against the action of the spring *q*, which spring *q* causes the edge of the yoke *m* to press against the side of the lever *g*, and thereby retain the looper in position as it moves back and forth, except when the pin 7 causes a partial turn of the looper to present the notch on the end thereof for the needle to pass through and take the loop from said looper, as aforesaid, after which the looper draws back out of the loop and descends to take another loop.

If the opening in the bed through which the looper rises were made with a notch for the needle to pass into, the drawing out of the loop of thread and the raising of the same above the cloth would be likely to move said cloth horizontally, as well as to lift its edge up from the bed. I therefore provide the finger *s*, that is a part of it and nearly on a level therewith, the end of the finger standing in the direction of the feed, so that the loop of thread is below and around the side of this finger in passing from below the cloth up over its edge, and the movement of the cloth as it is fed along causes the loops last formed to pass beyond the end of this finger and be discharged therefrom, so as to draw up tightly, said finger only requiring to be about the length of one or two stitches.

A gage may be employed, as at *r*, against which the edge or edges of the cloth or other material being sewed may be guided.

It will be evident that my looping instrument, being formed like a notched eyelet on the side of the lever or rod *f* that carries it, in drawing back takes the loop of needle-thread into its groove on the side opposite to the notch. Then the rising of said looper and its projection forward over the bed cause the loop to draw toward the notched side of the eyelet-looper, and then said looper will still hold the loop of thread open and ready for the needle to pass into it, although the looper is rotated to turn the eyelet portion downward to allow of the looper drawing back freely out of the loop and descending below the bed to take another loop, as set forth.

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

1. A looping instrument formed in the manner specified, and to which the movements described are communicated to draw a loop of thread from below the cloth and present it to the needle above the cloth, as set forth.

2. The finger *s*, around which the loops are laid in performing the sewing, and from which they are discharged as the material moves, as and for the purposes set forth.

3. The levers *g* and *o*, the rod *f*, and the diagonal cam *p*, in combination with the looper *i*, for imparting to the same the required movements, as specified.

In witness whereof I have hereunto set my signature this 4th day of May, A. D. 1865.

JACOB LOUIS FREY.

Witnesses:

THOS. GEO. HAROLD,  
CHAS. H. SMITH.