

G. H. MALLARY.  
Sewing Machine.

No. 31,897.

Patented April 2, 1861.

Fig. 1,

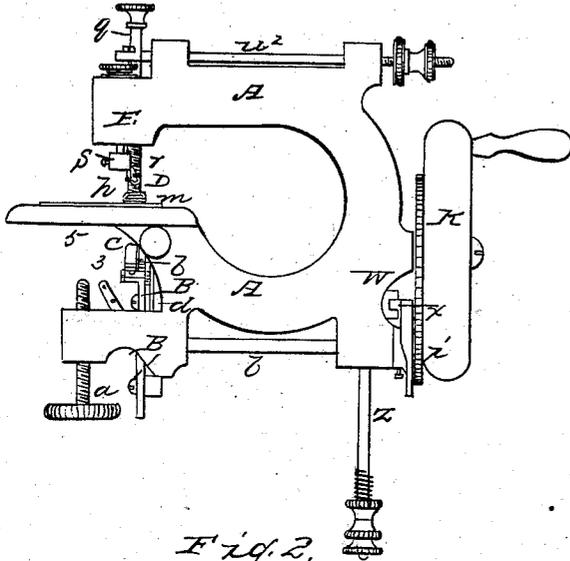


Fig. 2,

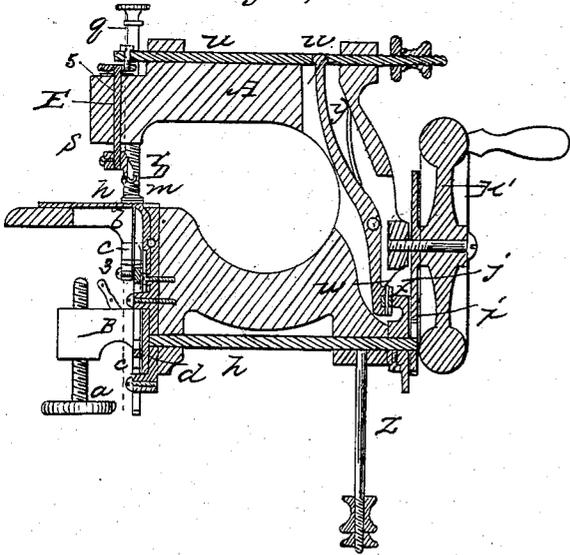
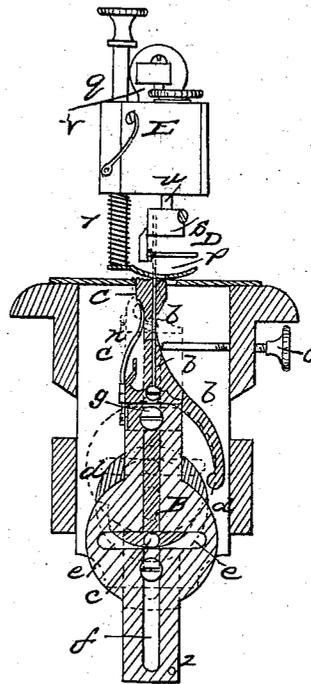


Fig. 3,



WITNESSES:

J. P. Litch  
S. F. Lemmon

INVENTOR:

Geo. H. Mallary

# UNITED STATES PATENT OFFICE.

GEORGE H. MALLARY, OF NEW YORK, N. Y.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 31,897, dated April 2, 1861.

*To all whom it may concern:*

Be it known that I, GEORGE H. MALLARY, of the city of New York, in the county of New York, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

Figure 1 is a side view of the entire machine. Fig. 2 is a central sectional view of my invention. Fig. 3 is a transverse sectional view of the same, section being made at right angles with that in Fig. 2, and through the plane represented by the red line in said Fig. 2.

The same letters of reference refer to similar parts in the several figures.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the frame or body of the machine, designed to be fastened to the edge of a table-top by means of set-screws *a*, and operated by hand; or it may be placed in a suitable opening on the top of a table and operated with the foot by a treadle.

The needle *b* is attached to and carried by the needle-plate B, being designed to pierce the cloth from below upward, the said needle-plate B having a vertical reciprocating motion communicated to it by means of the pin *c* in the cam *d* moving in the transverse slot *e*, the vertical slots *f f* and pins *g g* permitting such motion. Motion is given to the cam *d* by means of the shaft *h*, the gear-wheels *i j*, and the crank or pulley *k*. The feeding of the cloth is accomplished by means of the feed-lever *l*, the upper end, *m*, of which has a broad serrated surface. The feed-lever is operated by means of the cam *d*, and the spring *n* giving to it a vibrating motion when the cam *d* is rotated. The feed is regulated by the screw *o*.

To one of the upper corners of the needle-plate B is attached a holder or dog, C, the top end or surface of which, when the needle-plate has reached the limits of its upward movement, as represented by the red lines in Fig. 3, is pressed firmly against the cloth, holding it securely at rest between itself and the top pressure-plate, *p*, at the instant that the feed-lever is upon its backward vibration. The upper

pressure-plate, *p*, is connected with the rod *g*, and pressed down by the spring *r*.

The looper D is attached to the projection *t* of the head *s* of the shaft *u*, which passes through the head E of the frame A. The upper end is furnished with a small crank, *v*, connected with the rod *u*<sup>2</sup>. To this rod *u*<sup>2</sup> a reciprocating motion is given by means of the lever *w*, which is operated by the cam *x* and the spring *y*. By this arrangement a half-rotary reciprocating motion is given to the shaft *u*, and consequently to the looper D. The spool containing the lower thread is placed on the rod Z, and the tension secured by means of a spiral spring. The thread from this spool is passed through a small hole, 2, in the lower end of the needle-plate B, then up through another hole, 3, near the lower end of the needle, and then threaded into the eye of the needle. The spool with the upper thread is placed on a similar rod attached to the side of the upper part of the frame A, then passing through a hole in the spring 4, and then through the eyes of the looper.

From the description now given the operation of my sewing-machine will be readily comprehended.

I deem it necessary to direct attention specially to only the two features of the machine in which I claim some novelty.

First, the feed-works. It will be observed that the movement of the cloth is effected by two motions only of the under feeding surface—viz., the backward and forward motion—the surface remaining all the time in contact with the cloth. It is therefore necessary that the cloth should be held firmly at rest while the feed-surface is moving backward, otherwise it would be carried back with it. It has been found by experience that the needle does not adequately serve this purpose. It necessarily holds the cloth only at a single point, and the sliding of the feed-surface against the cloth gathers it up against the forward side of the needle, causing a gathered seam. To obviate this result I have provided the needle-plate B with the dog C, as above described, which fully effects the desired object. I am aware that a cloth-holder for accomplishing this purpose has been before used; but it constitutes a mechanical device by itself, and requires separate machinery to operate it, so that

its action is neither so sure as that of the dog C, nor is it inseparably connected with the action of the needle itself, so as to perform its function always, and only when the needle does its office. Besides, the dog C, by being thus secured or formed on the needle-plate B, has the advantage of greater simplicity and cheapness.

Second. The placing of the looper D on the upper instead of the lower side of the table or plate on which the cloth is laid to be sewed. There is a manifest advantage in this arrangement. Experience has shown that whenever there is a failure in the double-thread machine to make a perfect stitch the derangement is in the looping-thread. It is important therefore that this thread should be constantly in view of the operator, in order that any failure that may occur to form the loop may be instantly detected. Another important advantage in placing the looper above the cloth-plate arises from the fact that the looper-thread makes an ornamental stitch; and it is very desirable that it should be formed on the top or right side of the cloth or garment, so that it may be accurately guided and formed thereon. I am also aware that a looper of another kind has been before placed above the cloth-plate;

but not with a similar arrangement of means for operating it, it being a matter of considerable nicety and consequence to effect this by a compact arrangement, so as not to interfere with the management of the machine. I disclaim therefore the employment of a cloth-holder to enable a simple reciprocating feed-lever to make its backward movement without disturbing the cloth, and also, broadly, the placing of a thread-looper above the cloth-plate; but

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

1. Placing the dog U upon the needle-stock B, for the purpose described, in combination with the presser-plate *p* and feed-lever *l*, substantially as herein specified.

2. The looper D, when placed above the cloth-table or plate 5, in combination with a vertical needle, *b*, piercing the cloth upward from below, with the looper-head S, shaft *u*, crank *v*, rod *u*<sup>2</sup>, lever *w*, and cam *x*, for communicating a rotary reciprocating motion to said looper, as herein specified.

GEO. H. MALLARY.

Witnesses:

I. P. FITCH,  
S. F. EDWARDS.