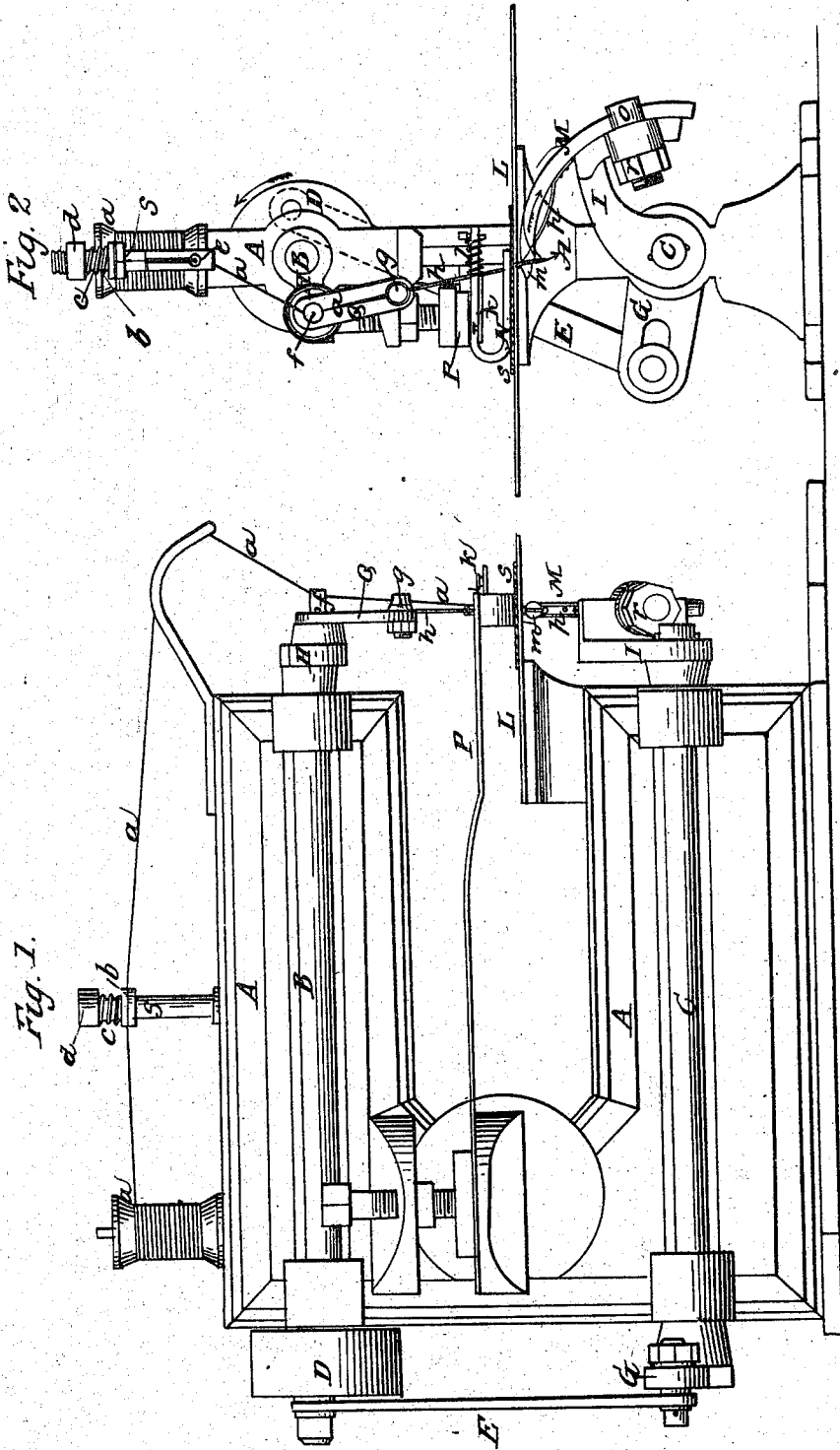


G. W. STEDMAN.
Sewing Machine.

No. 12,573.

Patented March 20, 1855.



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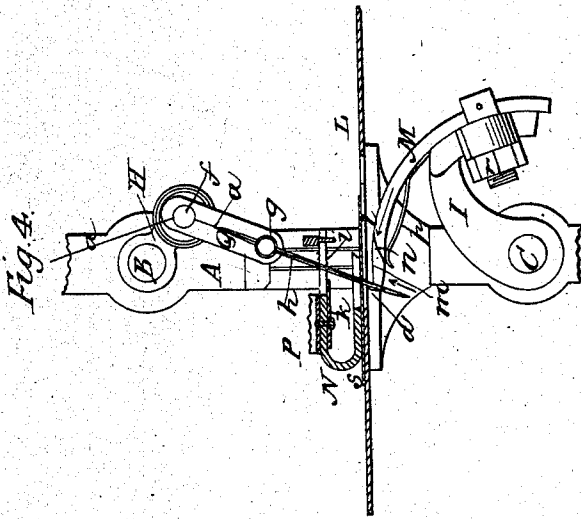


Fig. 4.



Fig. 6.

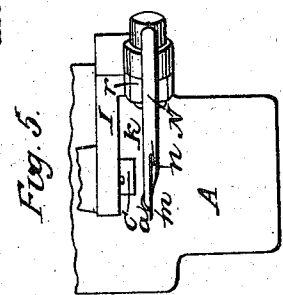
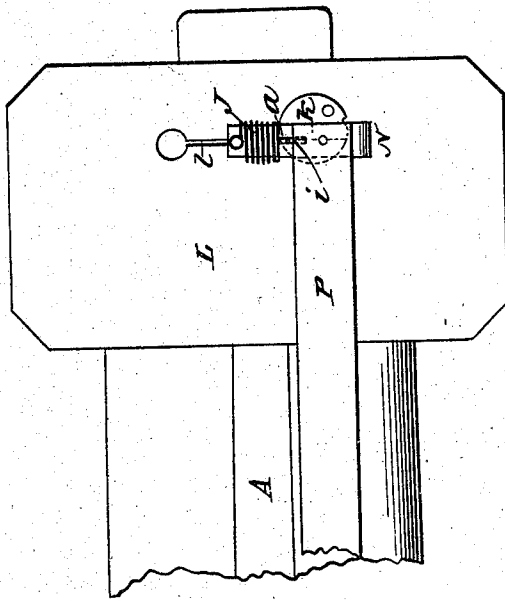


Fig. 5.

Fig. 3.



UNITED STATES PATENT OFFICE.

GEO. W. STEDMAN, OF VIENNA, NEW JERSEY,

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 12,573, dated March 20, 1855.

To all whom it may concern:

Be it known that I, G. W. STEDMAN, of Vienna, in the county of Warren and State of New Jersey, have invented a new and Improved Sewing-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side elevation of my improved sewing-machine; Fig. 2, an end elevation; Fig. 3, a top view of a portion detached; Fig. 4, an elevation of a portion detached, showing a different position of the needle and other parts; Fig. 5, a top view of certain parts detached in the same position; Fig. 6, a section of a portion detached.

Like letters designate corresponding parts in the several figures.

The nature of my invention consists first, in feeding the cloth along by means of the needle acting as a lever against it over a fulcrum, the needle-carrier being driven for the purpose with a crank motion or its equivalent, while the length of stitch is regulated by the length of the slot in which the needle is allowed to vibrate at the fulcrum; secondly, in forming the stitch, in connection with the needle, by means of a finger having a reciprocating motion nearly at right angles to that of the needle, and provided with a beak-like extremity for entering between the thread and needle, and with a wedge-shaped shoulder on one side, in combination with a slight retaining-spring, for forming a loop through which the needle passes in its turn, the whole being arranged substantially as hereinafter set forth.

The frame A may be of any dimensions or design for convenience or to suit the fancy. I make use of a single thread, *a*, forming a chain-stitch therewith. It is taken from a spool, *a*, situated in some convenient place, and passes thence through a device for regulating its tension. This is simply a standard or rod, S, through which the thread passes over a shoulder thereon. A ring, *b*, around said standard, is pressed down upon its shoulder by the action of a coiled spring, *c*, and thus pinches the thread. The force of pressure is regulated by screwing up or down a nut, *t*, against said coiled spring. By thus regu-

lating the tension of the thread, the tightness of the stitch is varied at pleasure. The thread next passes over and through the eye of an arm, *e*, projecting out before the machine sufficiently to bring the thread free from any part of the frame which might catch or entangle it.

The needle-carrier Q is suspended on a wrist, *f*, attached to a crank, H, which is secured to the driving-shaft B and made to revolve by power applied to a pulley, D, or by any other desirable means. The needle *h* is secured to the carrier by means of a binding-head, *g*, through which the needle is inserted, and which is provided with a screw-shank passing through the carrier, and, being held by a nut, thereby presses the needle into a groove in said carrier. This head bears only at the shoulders *w u*, Fig. 6, which press the needle against the carrier itself, and not over the hole through which the shank passes. By this device no strain comes upon the needle to break it. The thread passes down through eyes in the wrist *f* and binding-head *g*, and is finally put through an eye near the point of the needle in the usual manner. The needle moves in a slot, *i*, formed in the cloth-holder N, and also in a slot, *l*, in the supporting-plate L. The cloth *s* is inserted beneath said cloth-holder, which is pressed down upon the supporting-plate by a spring, P, of sufficient strength to retain the cloth in place, but to allow it to be fed forward by the needle. This is done in the following manner: The crank H revolves in the direction indicated by the arrow in Fig. 2, where the needle is represented as descending through the cloth. In this position the needle is pressed forward to the left-hand extremity of the slot *i*, Fig. 4, by a slight spring, *j*. As the crank descends and travels toward the right hand, the needle is brought toward the other end of the slot till it reaches the right extremity at *t*, as seen in Fig. 4, which represents the cloth supporter and holder as cut in the plane *x x*, Fig. 3. Then, as the crank ascends and tends farther to the right, said end *t* of the slot acts as a fixed fulcrum and compels the lower end of the needle to move toward the left, and consequently to move the cloth or other material forward. The length of stitch is regulated by an eccentric, *k*, (or its equivalent,) by turning which on its pivot the slot *i* is lengthened or shortened. When

the slot is shortened, the lower end of the needle is carried farther to the right, and thus reaches farther back and takes a longer stitch, and by lengthening the slot the needle reaches back a less distance, and consequently takes a shorter stitch. The stitch is formed by the combined action of a reciprocating finger or rod, M, and the needle. This finger is attached to an arm, I, projecting from a rocking shaft, C, which has a vibratory motion communicated to it by means of a connecting-rod, E, passing from a crank-pin on the driving-pulley D to an arm, G, on its other end. The parts are of course so proportioned and arranged as to give the desired extent of reciprocating motion to the finger M, which is bent into the form of an arc concentric with the axis of its motion, and is secured to its arm I by a binding-head, o, and nut r, as represented, or by any other suitable means. It is evident that the finger may have a rectilinear reciprocating motion, instead of a circular motion, if desired, and that any other convenient device may be adopted to give the motion. The motion is so timed as to recede when the needle is descending, as indicated by arrows in Fig. 2, and to advance when the needle is ascending, as indicated in like manner in Fig. 4. The end m, which I denominate the "beak," is flattened vertically to about half the thickness of the rod, as seen in Figs. 1 and 5, and is pointed so as to enter between the needle, by the side of which it moves in contact, or nearly so, and the thread, as shown in Figs. 4 and 5; hence when the rod or finger advances it takes the thread and forms a loop therewith. At some distance from the extremity of said beak a sort of enlargement or shoulder, n, is formed on the needle side of the finger. This shoulder is made wedge-shaped or receding at the top, and rounded so that the needle will be free to pass down while the finger is receding without coming in contact, and yet reach below the beak before it recedes entirely back therefrom. The form of the shoulder and beak can be best understood by inspecting the drawings. A slight spring, p, presses up against the lower side of the finger, touching it under the shoulder n, and thence curving downward to its extremity

under the beak, so that the thread will pass above it, when the finger advances, and slides in beyond the point of contact. Consequently as the finger recedes the loop is retained by said spring, as seen in Fig. 2, till the needle descends between it and the beak m just in front of the shoulder n, which spreads the loop open for that purpose. As the finger recedes farther the loop is pulled away from the spring p and is drawn up to the cloth tightly or loosely according to the tension of the thread.

It will be observed that the motion of the crank H allows the thread to be slack at the moments when the loops are forming, and straightens it again when the stitch is to be closed.

All the parts of the machine are so arranged as to be open to the view of the operator, thus enabling it to be observed if anything should get out of order.

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

1. Feeding the cloth along by means of the needle acting as a lever against it, over a fulcrum, t, the needle-carrier being driven, for the purpose, with a crank motion, or its equivalent, substantially as herein set forth.

2. In connection with the above motion of the needle, regulating the length of stitch by the combined action of the slot e, of adjustable length, and the slight spring j, or its equivalent, for throwing the needle away from the fulcrum when disengaged from the cloth, substantially as described.

3. The construction of the finger M with a thin pointed beak, m, for entering the loop, with a wedge-shaped shoulder, n, for spreading the loop open to receive the needle in turn, and with a spring, p, for retarding the motion of the loop, arranged and operating in combination with the needle, substantially in the manner and for the purposes herein set forth.

The above specification of my new and improved sewing-machine signed by me this 11th day of January, 1855.

GEO. W. STEDMAN.

Witnesses:

J. S. BROWN,