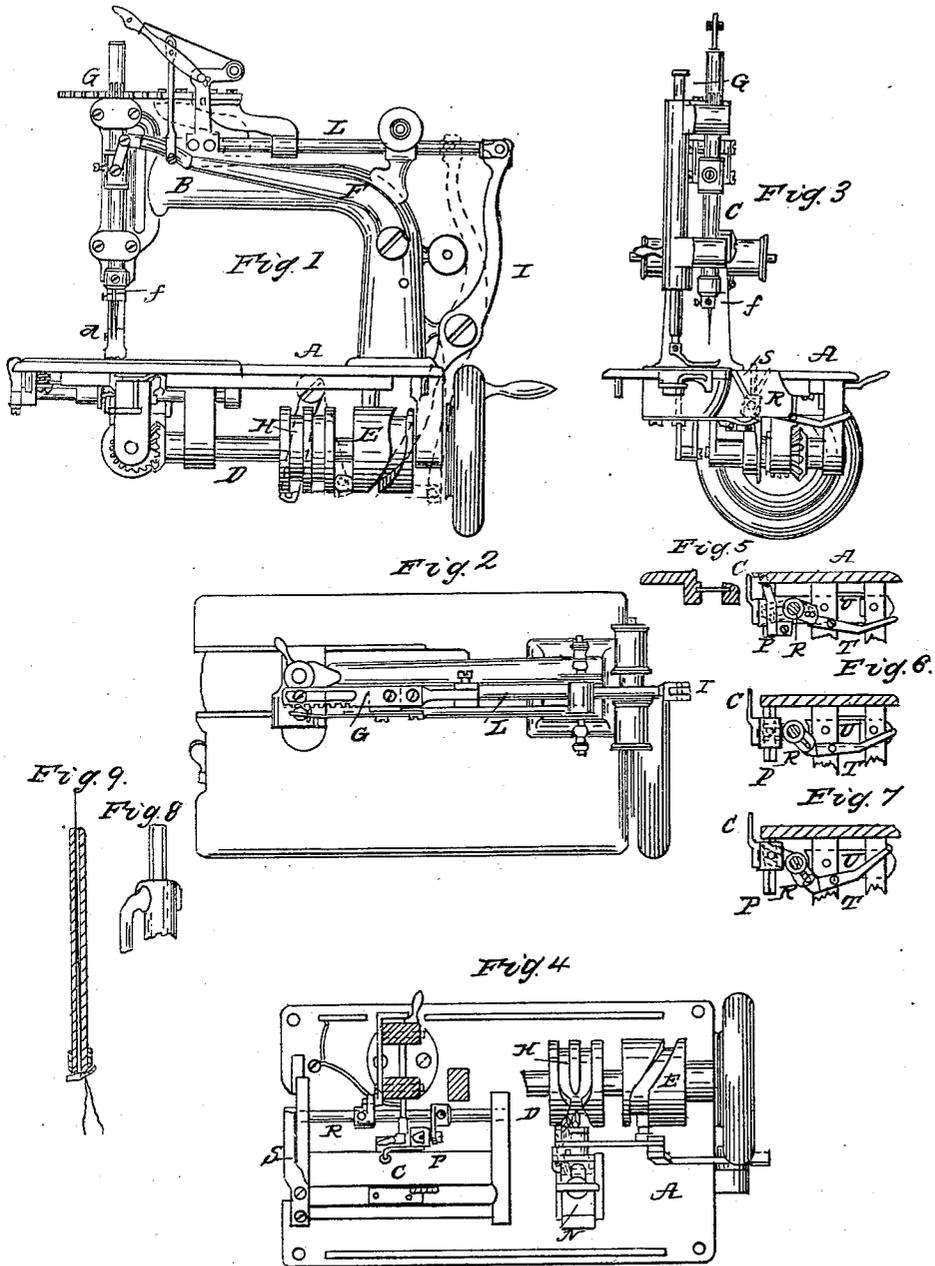


J. GUTMANN.
Sewing Machine.

No. 90,528.

Patented May 25, 1869.



witnesses
J. H. Manning
A. J. Tibbitts

Inventor
Julius Gutmann
By his attorney
John E. Case

UNITED STATES PATENT OFFICE.

JULIUS GUTMANN, OF BERLIN, PRUSSIA.

IMPROVEMENT IN SEWING-MACHINE.

Specification forming part of Letters Patent No. 90,528, dated May 25, 1869.

To all whom it may concern:

Be it known that I, JULIUS GUTMANN, of Berlin, in the Kingdom of Prussia, have invented a new Improvement in Sewing-Machines; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a top view; Fig. 3, a front-end view; Fig. 4, an under-side view, looking up; and in Figs. 5, 6, 7, and 8, detached views.

This invention relates to an improvement in sewing-machines such as use a straight needle, the object being to adapt the machine to various kinds of work, as for button-holes, embroidery, &c.; and the invention consists in providing the needle-bar with two or more needles, and imparting to the said bar while the needles are above the cloth a full rotary movement, and while the needles are through the cloth the shuttle passes through the loops of the several needle-threads, and interlaces with the said needle-threads; also, in a mechanism for guiding the work, especially adapted to button-hole making.

To enable others to construct and use my invention, I will fully describe the same as illustrated in the accompanying drawings.

A is the bed-plate; B, the needle-arm; C, the needle-bar; D, the driving-shaft, on which is the cam E, connected with the needle-bar lever F, so as to operate the needle-bar in the usual manner.

The shuttle and feed are operated and driven in the usual manner for this class of sewing-machines.

Into the needle-bar C is placed one needle, *a*, centrally or concentric with the bar, and so that when this needle only is inserted in the bar the machine will operate in like manner as a common sewing-machine.

Upon one side of the needle *a*, I arrange a second needle, *d*. These two needles stand in the same relative position to the shuttle, and are provided each with an independent thread, and so that the shuttle passes through the loop of both needles, by which operation two seams

are formed from the thread of two needles and one shuttle, the stitch being that known as the "herring-bone."

To the needle-bar C, I impart a rotary motion by means of a rack, G, the teeth of which operate in the toothed upper end of the needle-bar, the said rack being moved by the cam H on the driving-shaft through the lever I and connecting-rod L, so that when the needles are raised to the highest point the rack is driven forward and causes a full revolution of the needle-bar, carrying the eccentric needle entirely around the central needle. Then the needles are driven through the cloth, the double stitch formed, the needles withdrawn from the cloth, and when again raised to their highest point the rack returns, and with it the eccentric needle is returned around the central needle to its first position, again passes through the cloth, a double stitch formed, and so continuing, the eccentric needle turning and carrying its thread around the thread of the central needle at one stitch, returning at the next, and so on, which presents upon the surface of the fabric a neat embroidery-stitch; and this manner of stitching is applicable to other uses, as stitching the two edges of a fabric together, edge to edge.

It will be readily seen that it is necessary in thus revolving the needle-bar to arrange the thread so that it will not become entangled in the machinery. To this end I make the needle-bar of a hollow tube, as seen in Fig. 9, the thread passing down therethrough, as denoted in red. By this arrangement the thread is carried directly to the needle, protected by the tubular bar, and is in no wise affected by the turning of the bar.

At the lower end of the tube I arrange a finger, *f*, which separates the two threads, one from the other—that is, the thread from one needle passing down to one side of the said finger, and the thread from the other needle passing down to the other side of the said finger.

For stitching a button-hole, the hole having been cut in the fabric, it is placed beneath the needles in such manner that the central needle, *a*, will always pass through the hole cut in the fabric, while the other needle will always pass through the fabric, and thus form

a stitch over the edge of the button-hole similar in appearance to the ordinary hand-made button-hole.

When it is not desired to rotate the needle-bar I disconnect its operative mechanism from the cam H by means of a slide, M, and set-screw N. (See Fig. 4.) The said slide, when moved back, as denoted in red, withdraws the shoe from the cam, so as to entirely disconnect it from the needle-bar. This being done, it is necessary that the needle-bar be grooved, as seen in Fig. 8, in order that the bar may pass up and down through the teeth of the rack.

To form a guide for the button-hole, I arrange a finger, *c*, (see Fig. 5,) in position in line with the central needle, so as to slide up and down upon a guide, P, as from the position in Fig. 5 to that in Figs. 6 and 7, and this is done from a shaft, R, which extends out to the forward end of the machine, while a lever, S, is fixed to the said shaft, so that by turning the said lever to the position in red, Fig. 3, the finger *c* will be raised to the position denoted in Fig. 6; and by turning farther to the position in blue, Fig. 3, the finger will be raised to the position denoted in Fig. 7.

In connection with the said finger is a lever, T, which is operated by the same lever S, its end moving in the opposite direction.

U is the feed-bar, its outer end arranged so that the lever T, in its passage from the position in Fig. 5 to that in Fig. 7, will pass over the end of the bar, but when left as in Fig. 6 will bear against the end of the bar, and there prevent the feed from operating upon the fabric.

Commencing at one end of the button-hole, the finger is raised to its full height, as in Fig. 7, when the other end is reached; then throw down the finger *c* by turning the lever S to the position in red, Fig. 3, which also raises the lever T to the position in Fig. 6, and prevents the operation of the feed; then work the

button-hole around its end, moving the cloth by hand, and when the end is completely turned again raise the finger *c*, and stitch the other side of the button-hole.

I have thus far described the invention as using two needles, the one placed centric and the other eccentric in the needle-bar.

For button-holes it is essential that one needle be centric; but for embroidery, or for over-casting, two needles may be placed equidistant from the center; and, if desired, additional needles may be inserted, producing an additional improvement in the work performed.

For making eyelets the position in Fig. 6 is the proper position.

It is needless here to mention other uses to which this machine is adapted, the foregoing being sufficient to fully illustrate the invention.

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

1. The rotary and vertically - reciprocating needle-bar C, having two or more needles, substantially as and for the purpose herein set forth.

2. In combination with the above, the mechanism for operating the bar *a*, substantially as set forth.

3. In combination with the tubular needle-bar C, the separating - finger *f* for the two threads, substantially as set forth.

4. The movable finger *c*, in combination with the supporting-table, operating substantially as described, so as to form a guide for the work.

5. In combination with the finger *c*, the lever T, arranged so as to arrest the feed, substantially as set forth.

JULIUS GUTMANN.

Witnesses:

H. KREISMANN,
LEOPOLD LOEWE.