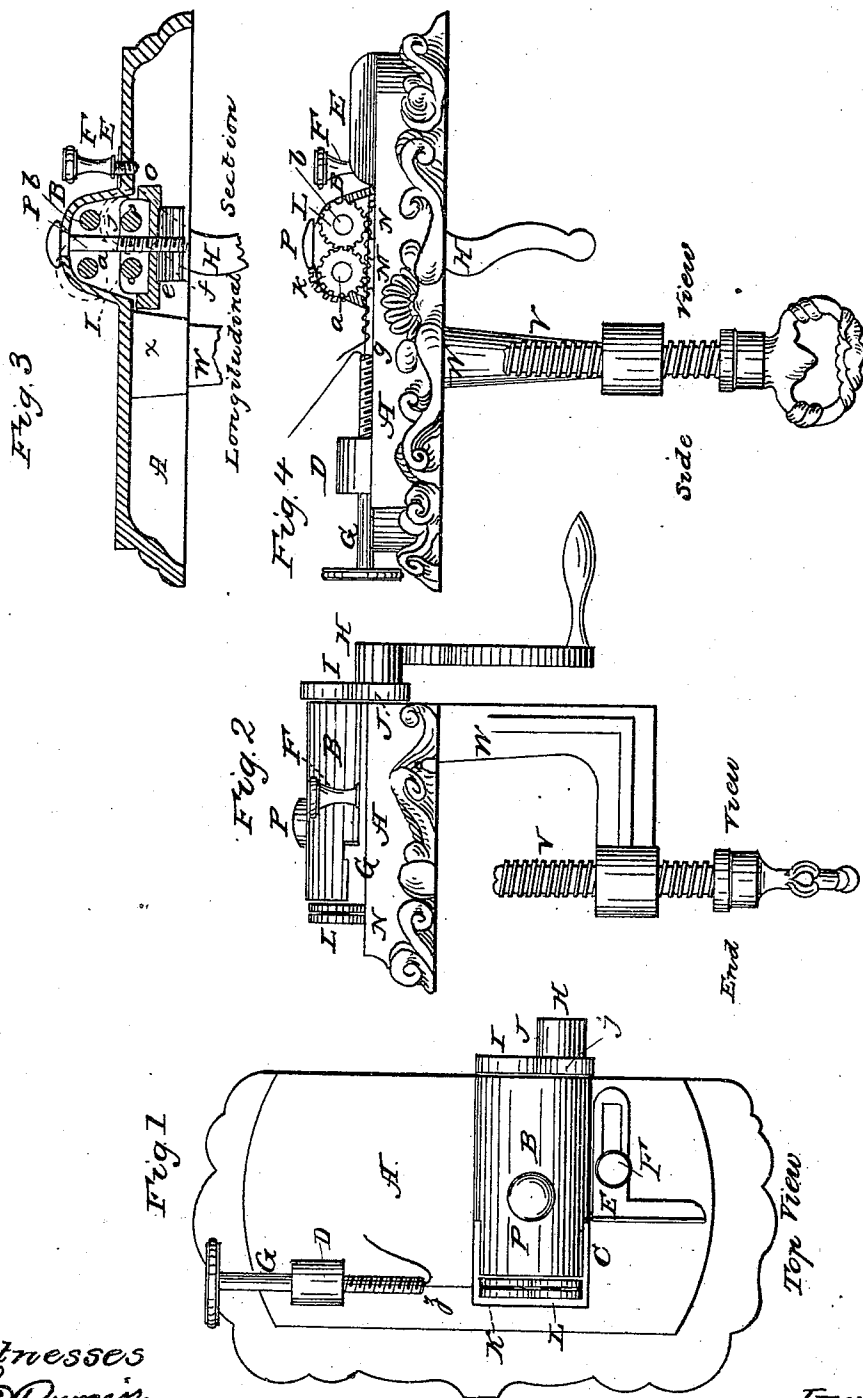


A. PALMER.
Sewing Machine.

No. 38,837.

Patented June 9, 1863.



Witnesses
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UNITED STATES PATENT OFFICE.

AARON PALMER, OF BROCKPORT, NEW YORK.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 38,837, dated June 9, 1863.

To all whom it may concern:

Be it known that I, AARON PALMER, of Brockport, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sewing-Machines for Running Seams; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, figures and letters thereon, making part of this specification.

Of the said drawings, Figure 1 shows a top view. Fig. 2 is an end elevation. Fig. 3 is a longitudinal section, and Fig. 4 a side elevation.

Similar letters of reference indicate like parts in all the drawings.

My said invention relates to that class of sewing-machines wherein the cloth is corrugated and runs upon a common needle by means of a pair of crimping-wheels; and it consists of several improvements in the construction and arrangement of the parts, whereby I am enabled to run seams with a fine sewing-needle upon light goods—such as delaines, bareges, muslin, and other light goods of which ladies' and children's clothes are made.

The first part of my invention consists in combining with the crimping and feeding wheels a horizontal screw with a countersink in one end thereof, said horizontal screw being in itself both an adjusting and holding device, and in the combination performs the office both of holding and adjusting the needle in proper position with respect to the crimping-wheels.

The second part of my invention consists in adjusting the crimping-wheels and feeding-wheels simultaneously at one operation by means of a set-screw and a movable frame, in which latter the mandrel of the lower crimping-wheel and the lower feed-wheel are secured and run freely in suitable bearings, the set-screw being connected with that part of the frame which holds the upper crimping-wheel and upper feed-wheel, so that when it is turned the crimping-wheels and feed-wheels are simultaneously adjusted. Hitherto in this class of machines motion has been imparted from the crimping-wheels to the feed-wheels by means of a pinion driven by the crimping-wheels and gearing into the feed-wheels; but such mode of communicating power and mo-

tion from the crimping-wheels to the feed-wheels is only adapted for heavy machines for coarse work. The small crimping-wheels and feed-wheels used in my machine would soon become injured and unfit for working upon delicate material if connected in such a manner, and, besides, the teeth are too small and not of a proper shape to work well or durably with a pinion.

The last part of my invention consists in combining with the feed-wheels and crimping-wheels and the mandrels a pair of cog-wheels—one of them placed upon the mandrel of one of the crimping-wheels and the other upon the mandrel of one of the feeding-wheels, both being geared together, so that motion being communicated by a crank or other suitable device to either of the mandrels drives both the crimping and feed wheels in the right direction, substantially as hereinafter described.

To enable those skilled in the art to make and use my improved machine, I will proceed to describe the construction and operation thereof.

A represents the bed of the machine, of iron or other metal, having projections B and D cast thereon for properly mounting parts of the machine, and to the under side there is cast a lug, X, which is bored and tapped for the clamping-bar W, and screw V to clamp the machine to a common work-table.

The part B is bored to receive the mandrels *a b d*, while the mandrel *c* has its bearing entirely in the box or bar O, which also forms the bearing at one end of *d*, the other end being in the side of the bed A. To the mandrel *d* there is secured outside of the machine a driving-pinion, J, and a crank, H, while the other end is provided with a small grooved gear-wheel, N, which meshes into and drives a corresponding grooved gear-wheel, L, on the shaft or mandrel directly above it, and these two grooved gear-wheels L and N form the crimping or corrugating wheels for running the cloth upon the needle. On one end of the mandrel *a* is a pinion, I, which meshes into and is driven by the pinion J, while the other end is provided with a small grooved gear-wheel, which meshes into and drives a corresponding grooved gear-wheel directly below it, which grooved wheels K and M feed the cloth forward on the needle after it has been corru-

gated thereon. These two sets of wheels are grooved so as to hold properly a common sewing-needle for the material to be corrugated and fed thereon, and the grooves in the feeding-wheels M and K are wider for the increased size of the needle where it is grasped by them, which prevents any lateral deflection or spring of the needle.

The needle is held and adjusted at its eye end by the screw G, which works in the projection D, and has a countersink for the eye end of the needle, while the other end of the screw is provided with a head for readily adjusting the needle to the desired position—that is, so that the point of the needle shall be on a vertical line with the center of the corrugating-wheels L and N. The screw G, with its countersink *g*, as will be readily seen, forms both a holding and adjusting device for the needle.

The projection B is cast so as to form a bight or space, as seen at C, Fig. 2, for the passage of material beyond the seam. Passing through this projection B is a screw, P, (provided with a square shank to prevent it from turning,) which also passes through the box or holder O, and a piece of rubber tubing, *e*, or other spring is placed thereon, and a thin metal washer and nut, *f*, on the screw P serves to adjust simultaneously the crimping and feeding wheels. As the nut *f* on the screw is loosened the spring will force the wheels apart, and as the spring is tightened they will be brought in closer contact with each other.

The box O, the upper part of which comes flush with the bed of the machine, and forms part of the table under the bight or space C, slides vertically between lugs projecting downward cast to the bed of the machine.

Attached to the bed of the machine there is a slotted guide, E, provided with a clamping-screw, F, the office of which is to guide the edge of the material to be sewed, and thereby regulate the width of the seams.

The operation will be as follows: The operator takes a common sewing-needle of the proper size, which is threaded, and, running back the screw G, inserts the point in the grooves in the feeding-wheels and turns the crank backward, which impinges the needle and forces the point to the center of the crimping-wheels. The screw G is then run forward until the eye end of the needle rests in the countersink there-

of. The cloth is then passed to and crimped by the wheels L and N and forced upon the needle until the feeding-wheels K and M grasp and feed it forward upon the remaining part of the needle until full, as shown by the blue line in Fig. 4. The screw G may then be eased up a little to relieve the eye end of the needle, and the material pulled from the needle onto the thread, and the screw returned to its original position; or the crank may be backed up, which will withdraw the eye of the needle from the countersink in the screw G (the spring *e* readily yielding to accommodate the increased sized of the needle,) and the material drawn upon the thread. The crank being started in the forward direction for a fresh needleful carries the eye end of the needle directly into the countersink in the end of the screw G, which forms a holder for that end of the needle, and slight practice will enable a person to run up seams rapidly.

I would remark that in order to leave as much as desirable of a common sewing-needle unobstructed and free from the machine the feeding and crimping wheels must be as small as can be made of sufficient strength to work well. I make them about three-eighths of an inch in diameter, and cut the teeth of such depth that the stitches will be, say, one-sixteenth of an inch apart, or thereabout, which is near the ordinary distance for running stitches.

Having thus fully described my improved machine, what I claim, and desire to secure by Letters Patent, is—

1. A horizontal screw having a countersink for the eye end of the needle, in combination with the feeding and crimping wheels, when constructed and arranged substantially as described, so that the horizontal screw is in itself both an adjusting-screw and holder for the eye end of the needle.

2. In combination with a feed-wheel and crimping-wheel, the movable frame in which the mandrels of the lower feed-wheel and corrugating-wheel are sustained, and the set-screw, substantially as described, and for the purpose of simultaneously adjusting both the corrugating-wheels and feed-wheels, substantially as described.

AARON PALMER. [L. s.]

Witnesses:

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