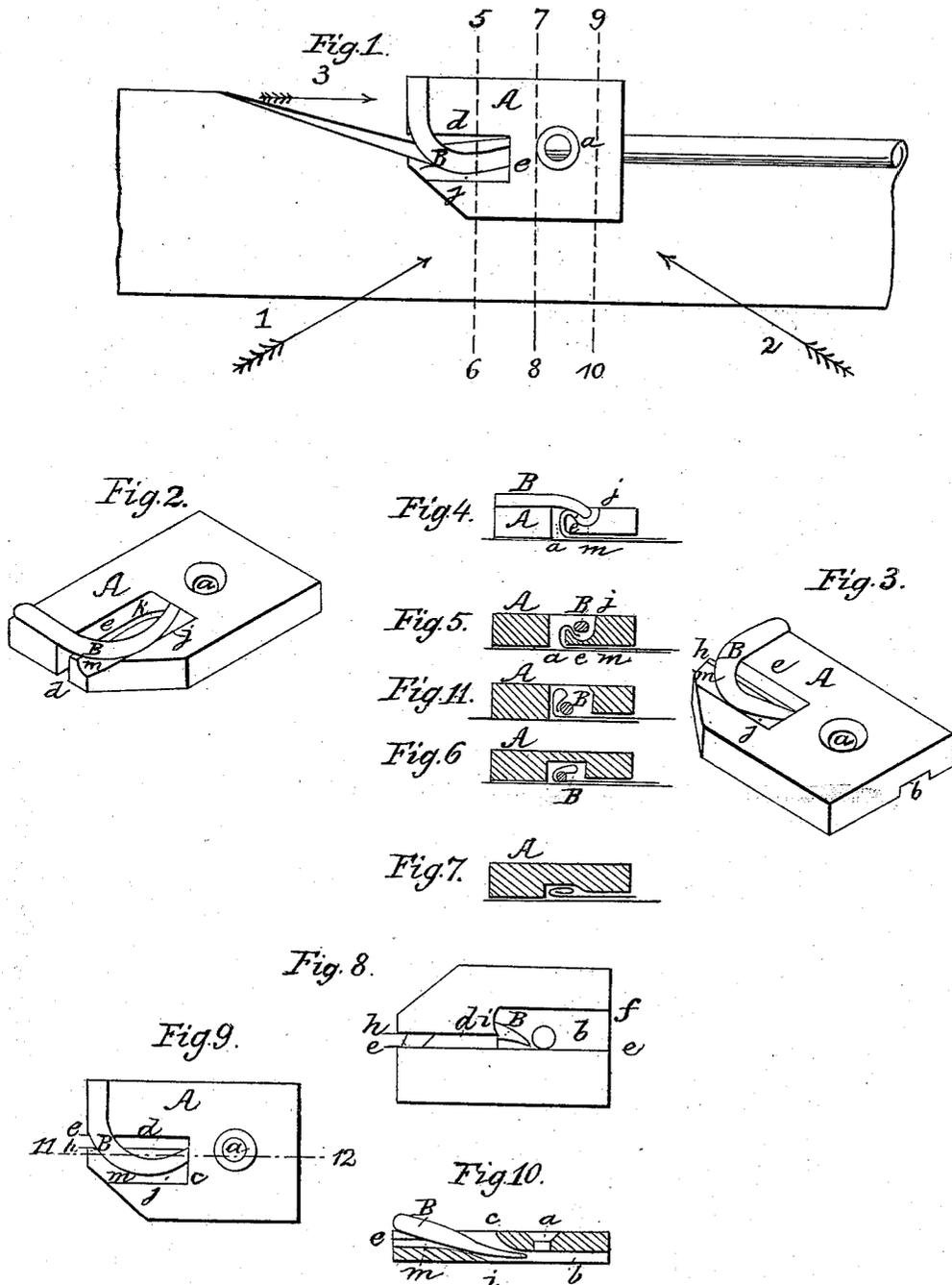


H. B. ODIORNE.

Hemming Device for Sewing Machines.

No. 21,355.

Patented Aug. 31, 1858.



UNITED STATES PATENT OFFICE.

HENRY B. ODIORNE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HEMMING-GUIDES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 21,355, dated August 31, 1858.

To all whom it may concern:

Be it known that I, HENRY B. ODIORNE, of the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Hemming Device for Sewing-Machines; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in constructing the pressure-pads of sewing-machines with certain recesses, formed and arranged substantially in the manner fully set forth hereinafter, and in combining with the same a curved tongue or a projecting curved lip, in order that by the joint action of the said recesses and curved tongue, or their equivalents, the edge of the fabric may be turned over, and the two folds necessary for producing the required hem formed as the fabric is moved forward by any of the usual feeding devices of sewing-machines.

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

On reference to the drawings which form a part of this specification, Figure 1 is a plan view of my improved hemming-guide; Fig. 2, a perspective view, looking in the direction of the arrow 1, Fig. 1; Fig. 3, a perspective view, looking in the direction of the arrow 2, Fig. 1; Fig. 4, an end view of the instrument, looking in the direction of the arrow 3, Fig. 1; Fig. 5, a section on the line 5 6, Fig. 1; Fig. 6, a section on the line 7 8, Fig. 1; Fig. 7, a section on the line 9 10, Fig. 1; Fig. 8, an inverted plan view of the hammer; Fig. 9, a plan view with the fabric removed; Fig. 10, a longitudinal section on the line 11 12, Fig. 9; Fig. 11, a diagram illustrating the formation of the folds.

In the whole of the above views, which are drawn to a scale of double the actual size, similar letters refer to similar parts.

A is a metal plate, either secured to or otherwise forming a part of the pressure-pad of any ordinary sewing-machine, and in this plate is a hole, *a*, for the passage of the needle. In the underside of the plate is a recess, *b*, Figs. 3, 8, and 10, communicating with the needle-hole *a*. Now, this recess *b*, as will be ob-

served on reference to Fig. 10, is straight, and parallel with the top and bottom of the plate throughout a portion of its length. From a point near the edge of the needle-hole *a*, however, it is rounded off with a gradual curve, which terminates abruptly at an edge, *c*, on the upper surface of the plate, this edge being situated midway, or thereabout, between the opposite ends of the plate. A narrow slot, *d*, is cut entirely through the plate, and this slot, on the under side of the plate, communicates with the recess *b*, one edge, *e*, Fig. 8, of the slot *d* being continued in a straight line and forming one edge of the recess *b*, the opposite edge, *f*, of the latter being separated from the opposite edge, *h*, of the slot *d* by an abrupt shoulder, *i*, Fig. 8. The edge *h* of the slot *d* does not extend to the upper surface of the plate, but is a short distance below it, as best observed on reference to Figs. 2, 4, and 5. A longitudinal concave recess, *m*, is formed in the upper surface of the plate A, and of this recess the line *j* forms one edge and the edge *h* of the slot *d* the opposite edge. The bottom of this concave recess is not straight, but, as seen in Fig. 10, is rounded off gradually until it terminates at the shoulder *i*. It will thus be seen that there is a direct communication between the concave recess *m* and the recess *b* on the under side of the plate, the point of communication being between the rounded termination of the concave recess toward the lower surface of the plate and the rounded termination of the recess *b* toward the upper surface of the plate. It will also be seen that there is a direct communication between the slot *d* and the recess *b*.

To the upper surface of the plate A, I secure a tongue, B, which is bent to a peculiar form, and which is peculiarly situated as regards the above-described parts. From the point where it is secured to the plate it is bent with a gentle curve across the slot *d* and the edge *h* of the latter, (see Fig. 9,) and assumes a position above the concave recess *m*. From the point where it crosses the edge *h* it is bent downward and follows in the course of the concave recess. (See Fig. 10.) Before it reaches the point *c* it is bent inward toward the common edge *e* of the slot *d* and recess *b*, and, passing downward with a curve into the space between the rounded termination of the concave recess *m* and that of the recess *b*, terminates with a

point near the edge of the needle-hole *a*, and near that of the recess *b*, as seen in Fig. 8. It should be understood that this curved tongue, from the point where it is secured to the plate A to its termination, is entirely free from contact with the plate, and from all of the above-described parts of the same.

The tongue B, as it appears when removed from the plate, may be described as an irregular helix. The edge *h*, above alluded to, and which forms the separation between the slot *d* and the concave recess *m*, is rounded off downward toward the shoulder *i*, in a similar manner to the bottom of the said recess.

Having now described the method of constructing my improved hemming-guide, I will now proceed to show the manner in which it accomplishes the formation of the two folds of the hem on the edge of the fabric. In the first instance the latter is placed beneath the plate A and the cloth-plate of the sewing-machine, as seen in red lines, Fig. 4, the edge of the fabric being turned up into the slot *d*, down into the concave recess *m*, and between the latter and the tongue B, the amount of fabric within the slot *d* thus turned into the said concave recess being sufficient to form the two folds. When the fabric has been drawn beneath the plate in the direction of the arrow 3, Fig. 1, as far as the point indicated by the line 5 6, the edge will have assumed the form represented in Fig. 5—that is, it will have a sharper bend, consequent upon the downward inclination of the bottom of the concave recess, that of the tongue B, and that of the edge *h*. When the fabric arrives at the point *c*, Fig. 1, the edge *h* has terminated and ceases to control the fold, which has assumed the form represented in the diagram Fig. 11. Now, at this point *c* commences the recess *b*, into which the fold must enter as the fabric is drawn in the direction of the arrow 3. As the fold is confined laterally in one direction by the edge *e* and in the other by the tongue, and as the tongue is bent until its point nearly touches this edge, it is evident that the fold, as it is drawn within the rounded inclination, must be pressed on the top by the latter, and must, when arriving at the line 7 8, Fig. 1, have assumed the position within the recess *b* represented in Fig. 6—

that is, two folds are formed, and these two folds, as they are drawn forward into the shallower portion *b*, and after leaving and ceasing to be in any way controlled by the point of the tongue, become compressed into a compact mass, as seen in Fig. 7, in which state they pass in the form of a complete hem from underneath the plate. Prior to this, however, the needle, operating through the hole *a*, has, in conjunction with other parts of a sewing-machine, securely stitched the hem. It will now be seen that as the edge of the fabric is drawn through the instrument in the direction of the arrow 3, Fig. 1, a gradual curling or turning over of the edge takes place, beginning with the simple turn shown in Fig. 4 and terminating with a complete hem, as seen in Fig. 6. This turning over of the edge of the fabric is performed gradually throughout, and in this respect differs from the device for which a patent was granted to S. P. Chapin, February 19, 1856, which may be said to consist of two devices similar to each other, one for forming the first fold and the other for the second, the formation of the second fold commencing abruptly after that of the first.

Instead of the curved tongue for assisting to form the folds, a curved projecting lip may be used with equal effect. In fact, the whole device may be considerably modified in appearance without altering the principle of its performance or the accomplishment of the result.

I lay no claim to any device described in the aforesaid patent of S. P. Chapin, or to that of S. C. Blodgett, granted January 3, 1854; but

I claim and desire to secure by Letters Patent—

Constructing the pressure-pad of a sewing-machine with recesses arranged and formed substantially as herein described, in combination with the curved tongue B or its equivalent, for the purpose specified.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

H. B. ODIORNE.

Witnesses:

HENRY HOWSON,
HENRY ODIORNE.