BARNUM & TYLER.

Sewing Machine Hemming Guide.

No. 24,088.

Patented May 24, 1859.

Fig. 3

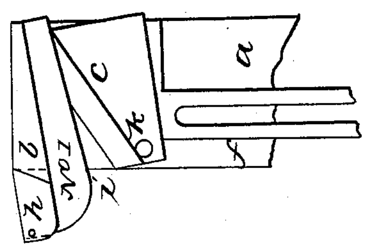


Fig. 2

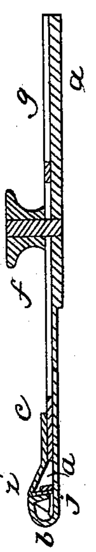


Fig. 4

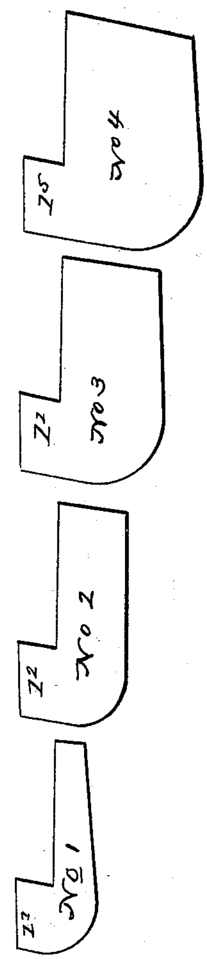
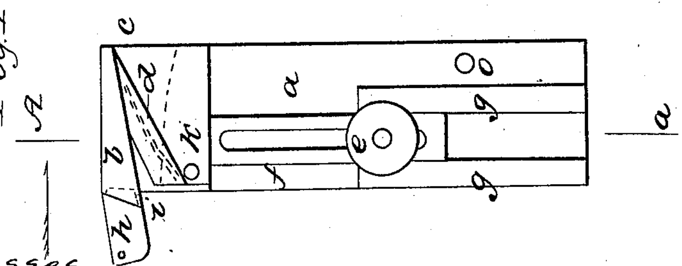


Fig. 1



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UNITED STATES PATENT OFFICE.

DANIEL BARNUM, OF JERSEY CITY, N. J., AND S. G. TYLER, OF QUINCY, ILL.

IMPROVEMENT IN HEMMING-GUIDES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **24,088**, dated May 24, 1859.

To all whom it may concern:

Be it known that we, DANIEL BARNUM, of Jersey City, in the State of New Jersey, and STEPHEN G. TYLER, of Quincy, Adams county, in the State of Illinois, have invented new and useful improvements in machinery to be used as auxiliaries to aid the hands in determining the width of hems on the edges of flexible material, and at the same time to turn in the raw edge or last fold for completing the hem to be stitched with a sewing-machine, (the first fold having been turned by hand before the material entered the machine,) which we verily believe were not known or used before our invention; and we do hereby declare the following to be a full and clear description of the same, reference being had to the accompanying drawings, which make part of this specification.

Figure 1 is a plan view; Fig. 2, a section through the line A *a*, Fig. 1. Fig. 3 is a plan, with No. 1, Fig. 4, in its place for work; and Fig. 4 shows adjusting-plates No. 1, No. 2, No. 3, No. 4, to be used in Fig. 1, as shown in Fig. 3, for making hems of different widths.

The nature of our invention consists in making a hemmer of a U-shaped hollow conical tube with a slot, in which that part of the edge of flexible material designed to form the second fold of a hem is technically "turned in" on the under side of the material, (the main fold of the hem having been turned under by the hand before the material entered the tube,) and in constructing and combining therewith a horizontal plate with a vertical lip, bearing (by means of a spring) against the slot and U side of the conical tube, to aid the hand in keeping the said portion of the edge to be turned in within the tube and against the interior concave surface of the tube, causing the same to deflect and roll or double over on itself as it approaches the apex or small end of the cone, and turning the edge in between the sides of the folds made by the hand while passing through and out of the small end of the tube, where the feed-foot presses the folds down and holds them while the needle is stitching and completing the hem, leaving the fair-stitch upon the right side of the garment—a most important improvement. The hemmer is therefore auxiliary, and cannot be used except to complete a hem previously commenced by the hand.

Heretofore all hemming apparatus known has required the hem to be turned or folded upon the upper or wrong side, and of course the fair-stitch is made upon the wrong side of the garment, and necessarily leaving the right side without a good finish, especially with single-thread machines. This difficulty has, through necessity, been submitted to, for the reason that no means have been known heretofore by which to turn the folds on the under side and stitch them properly on the right side.

Our improvements furnish a complete remedy for all the difficulties heretofore experienced in the use of hemming machinery, and they are so simple that any person acquainted with sewing-machines can at once make the preparatory fold by the hand and use them with perfect success, giving a complete finish by turning the hem under and leaving the fair-stitch upon the right side, this last being an important feature of our invention.

To enable others to make and use our invention, we refer to the drawings with letters and numbers of reference, the same letters and numbers referring to the same parts in the different figures.

a, Figs. 1 and 2, shows the bed plate of the hemmer, and *b* a U-shaped hollow conical tube, with a slot, *j*, Fig. 2, for the cloth to slide through edgewise, with the edge in the hollow of the tube.

c is a horizontal plate with a pivot, *k*, at one corner, said plate being raised at *i*, with a vertical lip or edge bearing against the flat side of the tube in Fig. 1 and against the edge of the adjustable plate No. 1 in Fig. 3.

d, Figs. 1 and 2, is a spring bearing against the vertical portion of the plate *c*, causing the same to turn on the pivot *k* and act as a spring to keep the edge of the material within the tube *b*, causing the edge to deflect and roll or double over on itself as it moves through the tube *b*. The plate *c* is attached to a slotted slide, *f*, fitted into corresponding slides, *g*, and fitted also with a set-screw, *e*, for the purpose of adjusting the spring-plate *c* to the different adjusting-plates Nos. 1, 2, 3, and 4, Fig. 4.

h, Figs. 1 and 2, is a solid piece of metal applied to the mouth of the tube *b*, with a slot made horizontally to receive *l'* of Nos. 1, 2, 3, or of Fig. 4, as shown in Fig. 3 by the dotted lines, for the purpose of making differ-

ent widths of hems, as may be desired. The solid metal *h* also closes up the upper part of the mouth of the tube *b*, leaving a slot on the under side extending to the center of the concave of the tube, and thus determines the amount or width of the edge of the material to be received within the tube *b*, and as the diameter or depth of the tube at its mouth is about twice that of its small or delivery end, that portion of the material within the tube is deflected and caused to roll or turn over upon itself, so that it passes out of the tube double, the edge turned over constituting the second fold, which is thus brought between the upper and lower portions of the fold made by the hand previous to the material entering the mouth of the tube *b*.

In operating the hemmer a sufficient portion of the material should be folded by rolling under a sufficient portion of the edge (the body of the material or garment being in front of the tube *b*) to reach the center of the concave portion of the mouth of the tube *b*, and inserted by placing the edge under *h*, with the double of the main fold toward the hollow of the hand, extending back to *i*, with the body of the material over *h* and *b*, when the spring-plate *c* will press gently against that portion of the main fold within the slot and tube, and tend to force the edge against the lower side of the convex surface of the tube, causing it to deflect upward and roll over on itself as it passes through the tube *b*, without any intervening substance to act as a guide upon or against the interior or convex surface of the fabric, when the material will pass easily through *b*, with the raw edge turned in, and as it leaves the tube *b* the pressure-pad or feed-foot presses that portion of the hand-fold (passing over *b*) down, inclosing the raw edge and holding it firmly between the upper and lower portions of the hem which were folded by the hand until the needle stitches them together, completing the hem. When a hem of greater width is desired, the set-screw is loosened and the spring-plate *c* is moved back by means of the slot and slide *f* and *g*, when either 1, 2, 3, or 4, Fig. 4, may be inserted in *h* and the spring-plate *c* adjusted, so as to bear against their edges, as shown in Fig. 3.

The hemmer is to be attached to a sewing-machine with the flat side of *b* nearly in line with the needle, or with the line of travel of the work. *o*, Fig. 1, shows a hole for a fastening-screw.

We are aware that various devices have been made for binding hats and cording and hemming umbrellas, as well as for turning hems upon the edges of flexible materials, in all of which cases, however, folding-guides of angular plates, or doubling-guides, or their equivalents, are placed upon both sides of the material, so as to arbitrarily direct and control the whole folding or doubling operation; and we do not therefore claim as new the folding of flexible material either for binding hats or shoes, or hemming umbrellas, or for forming hems by folding-guides which support and control the flexible material upon both of its sides at the time of and at the points where turned, as has been the case in all attempts heretofore made to turn hems that have been successful; nor do we claim the adjustable spring-plate *c*, or any of its parts separately, except as they are arranged and combined substantially as specified; nor do we claim to have invented a hemmer capable of turning all the folds necessary to make a hem or of any fold except to roll over the raw edge and turn it in between the upper and lower sides of the hem-fold previously made by the hand; but

What we claim as new, and which we desire to secure by Letters Patent of the United States, is—

The manner, substantially as specified, and shown in the drawings, Fig. 2, of arranging and constructing a hollow conical U-shaped tube and a slot, *j*, in combination with a horizontally-acting spring-plate, *c*, or its equivalent, bearing against the stud *j* and tending to press the edge of the flexible material, when the same is placed within the slot, into the tube *b* and against the lower side of the concave surface thereof, for the purpose of aiding the hand in turning the hem on the under side and leaving the fair-stitch upon the upper or right side of the garment, as specified.

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