

(No Model.)

C. H. WILLCOX.

MACHINE FOR FORMING WELTS OR HEMS ON FABRICS.

No. 263,640.

Patented Aug. 29, 1882.

Fig. 1.

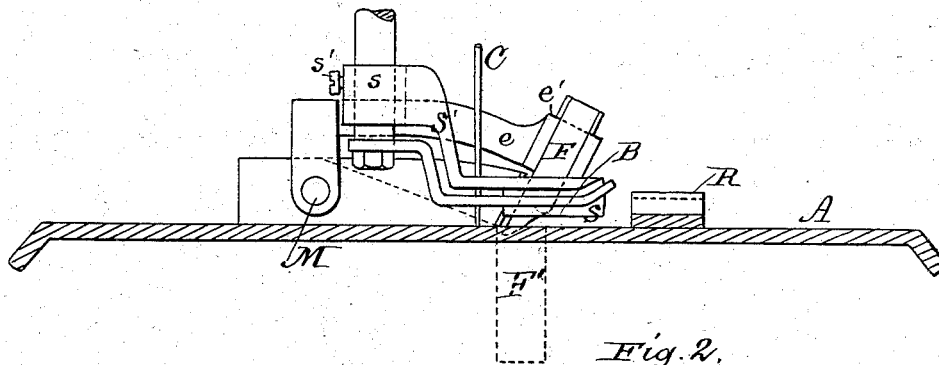


Fig. 2.

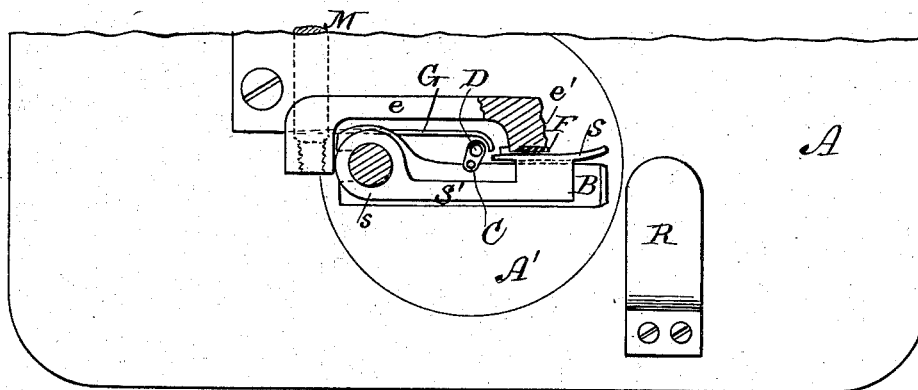


Fig. 3.

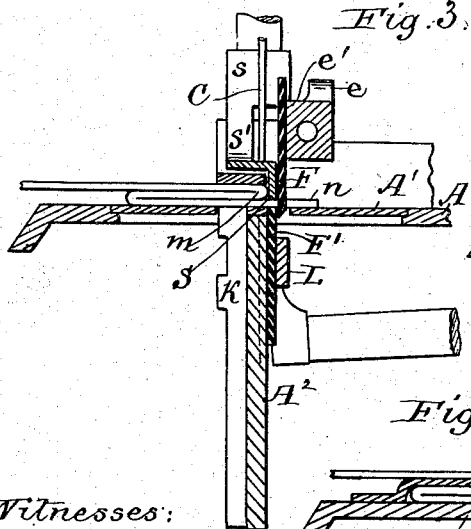


Fig. 5.

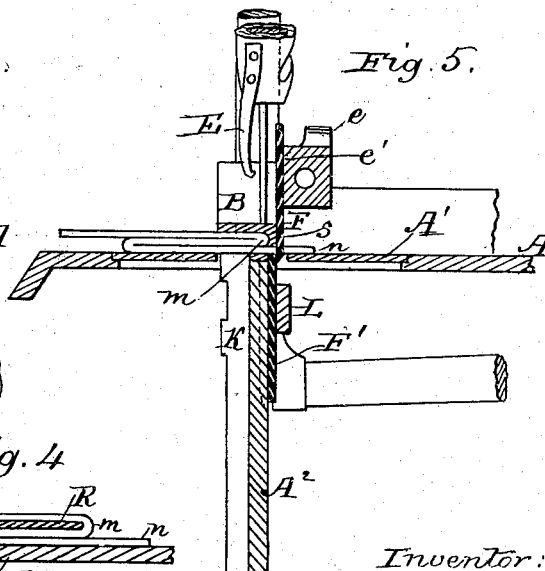


Fig. 4.

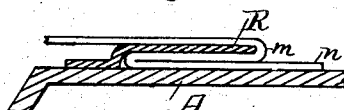
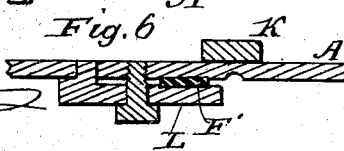


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES H. WILLCOX, OF NEW YORK, N. Y.

MACHINE FOR FORMING WELTS OR HEMS ON FABRICS.

SPECIFICATION forming part of Letters Patent No. 263,640, dated August 29, 1882.

Application filed July 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WILLCOX, of New York city, in the county and State of New York, have invented a new and useful Improvement in Machines for Forming Welts or Hems on Knit Goods and other Fabrics, which improvement is fully set forth in the following specification.

This invention has reference more particularly to a guide to be used in connection with a combined overseam sewing and trimming machine for the formation of welts or hems on knit goods and other fabrics. In another application of even date herewith, numbered 66,380, such a guide is shown and described in combination with the sewing and trimming mechanism. The present invention is in part subordinate to the claims therein; and it consists in a particular form of guide—to wit, a guide supported from above and adapted to co-operate with the overseam sewing and trimming mechanism—and in the manner and means of supporting the said guide, and to the combination thereof with other elements. In the accompanying drawings, which form a part of this specification, the improved guide is shown in connection with so much of a sewing machine as is necessary to illustrate the invention, Figure 1 being an end view, partly in vertical section; Fig. 2 a plan partly in horizontal section; Figs. 3 and 4, vertical sections, and Fig. 5 a view similar to Fig. 3 of another variety of guide. Fig. 6 is a detail view illustrating the means for holding in position the stationary blade or cutter of the trimmer.

A is the cloth or work plate, A' the detachable throat-plate, B the presser-foot, C the needle, D E the overseaming devices, and K the feed-bar, of an "American" button-hole or overseam sewing-machine.

F is the vibratory cutter, F' the stationary cutter, and G the diverting-guide, of the trimmer, which is or may be constructed as described in my aforesaid application. The vibratory cutter is carried by the arm *e*, attached to the rock-shaft M, and is adjustable in the head *e'* of said arm, and capable of ready removal therefrom for grinding or other purposes. The stationary cutter F' is held in position between the clamp-plate L and the plate

A², forming part of the machine-frame. It may therefore be readily adjusted in a vertical direction or removed.

The edge-guide for the folded fabric, instead of being formed by the projecting end of the stationary cutter F', is independent of the trimming mechanism. It is lettered S, and, as shown in Figs. 1 to 3, is attached to the presser-bar of the sewing-machine, while in Fig. 5 it is represented as made in one piece with the presser-foot. The arrangement shown in Figs. 1 to 3 is preferred, as it allows of adjustment. For this purpose the guide S has a supporting-piece, S', which is provided with a boss, *s*, that encircles the presser-bar, and is secured thereon by a set-screw, *s'*. By loosening the set-screw the guide S and its support can be moved up and down, so that said guide projects more or less below the presser-foot; or they can be turned on the presser-bar as a center, so as to move the guide nearer to or farther from the line of needle-punctures. A vertical and a lateral adjustment are thus secured. In both forms of edge-guide shown the operating part of the guide extends alongside of the cutting portion of the trimmer between the line of trimming and the line of needle-punctures, the said operating part being thin, so that the margin left need not be excessive. Preferably, also, the guiding-edge is made oblique to the line of feed, so as to crowd the fold toward the needle. It is arranged above the stationary cutter or blade, so as to clamp the fabric between itself and said blade or cutter.

R is an overhanging guide adapted to enter the fold in the fabric and to determine or control the width of the welt or hem, as shown in Fig. 4. It is secured to the cloth-plate.

For welting or hemming the fabric is folded, as shown in Figs. 3, 4, 5, with the folded edge *m* against the guide S and the free edge *n* projecting under the said guide between the edges of the cutters F F'. The depth of the guide S below the presser-foot should be equal to two thicknesses of fabric, so that the bottom of said guide will bear upon the third or under layer of fabric. For fabrics of different thickness the depth of the projecting portion can be increased or diminished by adjusting the guide on the presser-bar, when the arrangement shown in Figs. 1 to 3 is adopted.

With thick goods it is desirable that the line of needle-punctures should be farther from the folded edge than for thin goods. The arrangement shown in Figs. 1 to 3 permits a lateral adjustment useful for this purpose.

With the edge-guide integral with the presser-foot, as shown in Fig. 5, a separate presser-foot can be used for each of the several grades of fabric; but this is not necessary for every variation, for by adjusting the stationary blade up or down the clamping of the under layer can be secured, although the depth of the guiding-edge may be somewhat more or less than it should be. After the fabric has been folded and inserted under the presser-foot the machine is started, and the trimming and overseaming proceed simultaneously, the fabric being automatically folded and guided thereto by the guides R S.

It is obvious that the stationary cutter or blade F', being vertically adjustable, can be used as an edge-guide, in connection with the edge-guide or the presser-foot or presser-bar, should such use be desirable, by setting up the said blade or cutter so that it projects the proper distance above the cloth-plate.

Modifications may be made in the details of construction without departing from the spirit of the invention, and portions thereof may be used separately. For example, the guides are believed to be new in themselves, as well as in connection with an overseaming and trimming machine, and they may evidently be used with any suitable machine, whether overseaming or not, and with or without a trimmer attached. The edge-guide, instead of being carried by the presser-bar or presser-foot, could be supported from above either by attachment to the head of the machine or by an overlying plate attached to the cloth-plate. Instead of adjustably attaching the edge-guide to the presser-bar, it could be attached to the presser-foot by suitable means, which would permit the desired adjustments.

The overseam sewing-machine and the trimmer illustrated are shown by way of example, the invention being applicable, in whole or in part, to any known or suitable form of sewing-machine or of trimmer. A sewing-machine forming a zigzag seam partly within and partly beyond the edge of the fabric is included within the term "overseam sewing-machine."

An edge-guide independent of or separate from the trimmer, and arranged alongside the cutting portion of the trimmer, between the line of trimming and the line of needle-punctures, could be formed on the cloth-plate and allowed to extend over the top of the stationary blade or cutter. With such an edge-guide the fabric would be reversed, the fold *m* being below and the layer with the free edge *n* on top, as shown in my application of even date herewith.

Having now fully described my said invention and the manner of carrying the same into effect, what I claim is—

1. The combination, with overseam sewing mechanism and a trimmer arranged to act in advance of said mechanism, of an edge-guide supported from above, between the line of needle-punctures and the line of trimming, and adapted to allow the fabric to extend under the same into the path of said trimmer, substantially as described.

2. The combination, with overseam sewing mechanism and a trimmer arranged to act in advance of said mechanism, of an edge-guide carried by the presser-bar of the sewing-machine and extending alongside of the cutting portion of said trimmer, between the line of trimming and the line of needle-punctures, substantially as described.

3. The combination, with the edge-guide carried by the presser-bar and adapted to guide the outer edge of a fold, of the overhanging guide supported on the cloth-plate and adapted to enter the fold guided by the aforesaid edge-guide, substantially as described.

4. An edge-guide attached to the presser-bar above the presser-foot by means of a set-screw, so as to be vertically adjustable thereon, substantially as described.

5. The combination, with the trimming mechanism, of an overhanging guide supported on the cloth-plate and adapted to enter a fold, and an edge-guide supported from above and adapted to allow fabric to extend under the same into the path of the trimmer, substantially as described.

6. The combination, with the stationary cutter or blade, of a presser-foot and an edge-guide extending below said foot, and adapted to clamp the fabric between itself and said cutter or blade, substantially as described.

7. The combination, with a sewing-machine and a trimmer arranged to act in advance of the stitching mechanism, of the edge-guide supported from above and arranged alongside the cutting portion of the trimmer, between the line of trimming and the line of needle-punctures, and the overhanging guide adapted to enter the fold guided by said edge-guide, substantially as described.

8. The combination, with a presser-foot and an edge-guide projecting below the bottom thereof, of a vertically-adjustable plate beneath said edge-guide, substantially as described.

9. The combination, with the sewing mechanism and the trimmer arranged to act in advance of said mechanism, of an edge-guide separate from the trimming mechanism and arranged alongside the cutting portion thereof, between the line of trimming and the line of needle-punctures, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHAS. H. WILLCOX.

Witnesses:

PHILIP MAURO,
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