A. H. DE VOE.

HEMMER.

APPLICATION FILED APR. 22, 1907.

**955,950.** **Patented Apr. 26, 1910.**

2 SHEETS—SHEET 1.

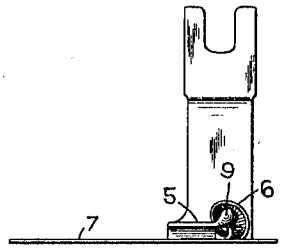


Fig. 1.

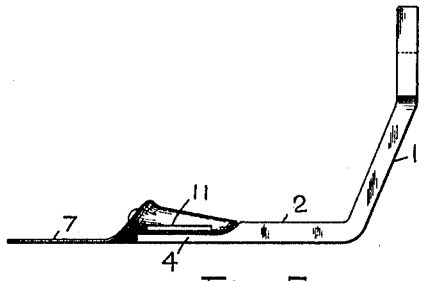


Fig. 2.

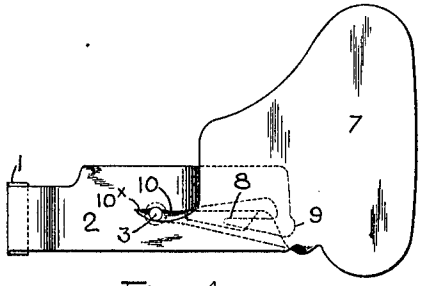


Fig. 4.

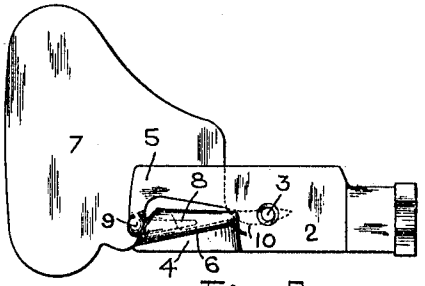


Fig. 3.

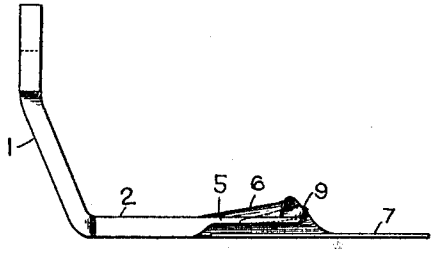


Fig. 5.

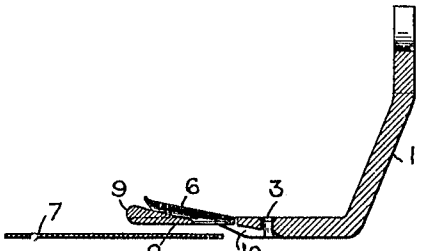


Fig. 6.

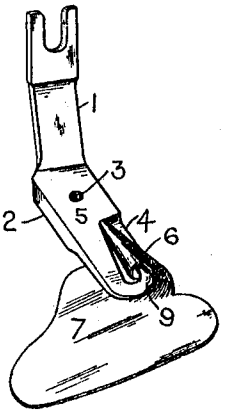


Fig. 8.

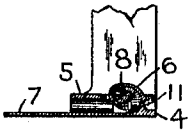


Fig. 7.

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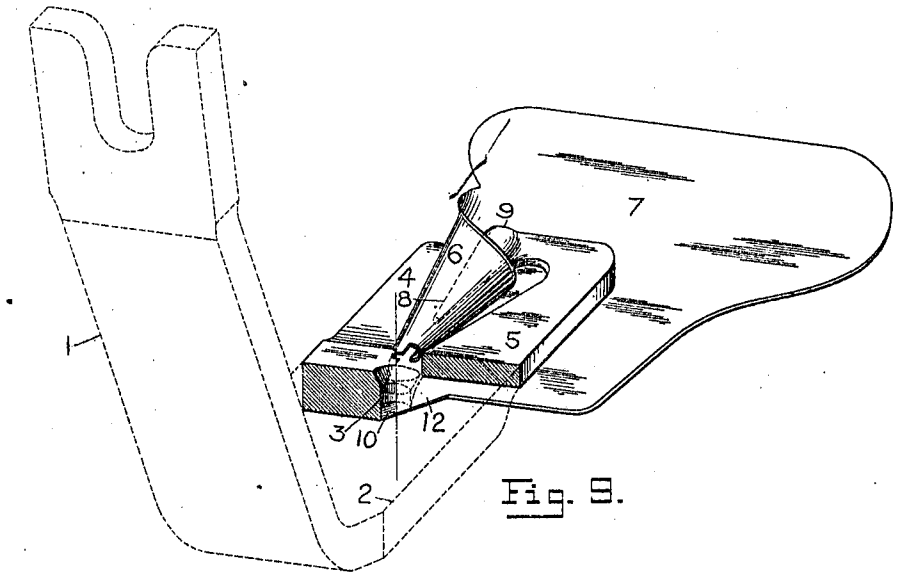


Fig. 9.

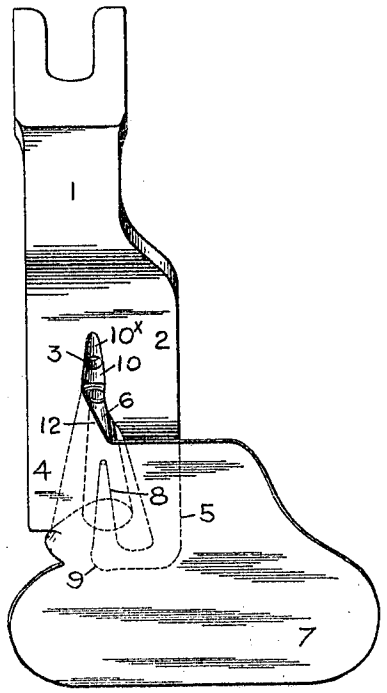


Fig. 10.

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# UNITED STATES PATENT OFFICE.

ALBERT H. DE VOE, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

## HEMMER.

955,950. Specification of Letters Patent. **Patented Apr. 26, 1910.**

Application filed April 22, 1907. Serial No. 369,464.

*To all whom it may concern:*

Be it known that I, ALBERT H. DE VOE, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Hemmers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in that class of hemming devices usually applied to sewing machine presser-feet, and it has for its object to provide an effective attachment of this character more particularly for the production of very narrow hems requiring great uniformity in width to avoid impairing the appearance of the work. As actually constructed, the attachment comprises a presser-foot having a heel-portion provided with the usual needle-hole and having one side of its forward or toe-portion upwardly offset therefrom, an edge-turning scroll attached to the unoffset toe-portion and having continuous with the work-turning edge thereof a work-supporting plate extending laterally beneath and beyond and spaced from the offset toe-portion, the work-supporting plate extending forwardly in advance of the scroll and backwardly to a point near the forward end of the heel-portion of the presser-foot. The offset toe-portion of the presser-foot carries a tongue projecting into the scroll and having an enlargement at the mouth of the scroll, and the heel-portion of the presser-foot has a hem-guiding channel forming a continuation of the scroll and leading to the needle-hole, whereby a continuous guiding shoulder is presented to the edge of the hem from the receiving end of the scroll to the needle-hole, and the hem is thus accurately guided to the needle. The work-supporting plate serves to sustain the material when the presser-foot is raised for introduction of the same, the operator being enabled to readily introduce the forward edge of the material by a slight pressure of the fingers upon the material in front of the scroll while resting upon such plate, while the disposition of such plate spaced slightly beneath the forward portion of the presser-foot and continuous with the scroll prevents the formation of any fold of surplus material beyond the edge-turning side of the scroll, as has been common heretofore with other forms of hemmers, and insures against the production of a fullness and consequent formation of folds upon the opposite side of the hem occasioned by the lowering of the presser-foot into working position, the material introduced into the hemmer being insured from displacement in the lowering of the foot to operative position by the support of the material upon the laterally extending work-supporting plate.

The invention will be understood by reference to the accompanying drawings, in which—

Figure 1 is a front elevation, and Fig. 2 an elevation of the right-hand side of a right-hand foot-hemmer embodying the present invention. Fig. 3 is a top plan view and Fig. 4 a bottom plan view of the same. Fig. 5 is an elevation of the left-hand side of the hemmer and Fig. 6 a longitudinal sectional elevation through the needle-hole and the center of the scroll, viewed from the right-hand side. Fig. 7 is a transverse sectional elevation of the hemmer with the presser-foot shank partly broken away, the section being taken slightly in advance of the middle length of the scroll. Fig. 8 is a perspective view of the hemmer. Fig. 9 is an oblique view of the foot hemmer upon a greatly enlarged scale, in transverse section upon a broken line passing from the right-hand edge of the foot portion to the center of the needle-hole, thence forwardly, and again toward the left in line with the advance edge of the work-supporting plate 7, the forward portion of the foot containing the edge-turning members being shown in full lines and the rearward foot portion and the shank of the presser-foot being indicated in dotted lines. Fig. 10 is a bottom view of the hemmer in slightly oblique position to show the relation of the mouth of the scroll with the channel in the bottom of the foot. Each of the figures excepting Fig. 8 is drawn upon a greatly enlarged scale.

As represented in the drawings, the hemmer comprises a presser-foot having the shank 1 and the foot-member having a heel-portion 2 provided with a needle-hole 3 and a toe-portion comprising a right-hand member 4 recessed in its upper side and a left-hand member 5 reduced in thickness and having its lower face offset from that of the adjacent heel-portion. To the reduced right-hand member 4 of the toe-portion is applied

the downwardly-inclined, conical edge-turning scroll 6 directed toward the lower or operative face of the foot at the lower end of the needle-hole 3 and having arranged in continuation of its attached edge the work-supporting plate 7 which extends laterally beneath the offset member of the toe-portion substantially flush with the bottom of the heel-portion and materially beyond the same, and also forwardly in advance of the scroll and backwardly beneath the foot-member 5 nearly to the upturned forward end of the heel-portion with which it forms a slit or flat opening to permit the passage of the body of the material adjacent the hem beneath the heel-portion of the foot. The member 5 has at its forward end a lateral projection carrying a similarly inclined conical-tongue 8 entering the forward end of the scroll and provided at the mouth of the scroll with an enlargement 9. The heel-portion 2 of the foot is formed with a longitudinal channel 10 extending from the needle-hole to the delivery end of the scroll, the primary edge-turning side, or that acting upon the margin of the work opposite that in which the body portion extends, being slightly undercut to form an underhanging lip 12 for the support of the hem previous to stitching, as represented in Fig. 4, so as to sustain the lower side of the hem and insure its presentation to the needle in the required relation, the compression of the hem between the presser-foot and the throat-plate or the feed-dog previous to stitching, being prevented by the provision of the channel 10, and the adjacent body portion of the material being clamped in the usual manner by that portion of the foot intermediate the channel and the edge opposite the outer edge of the hem. The channel 10 has a downwardly tapering extension $10^x$ beyond the needle-hole to discharge the stitcher hem beneath the flush face of the presser-foot heel-portion.

By reference to the drawings, and particularly Figs. 9 and 10 thereof, it will be observed that the supporting lip 12, provided adjacent the delivery end of the scroll 6, affords practically a bottom for the hem-guiding channel 10 and is arranged flush with and constitutes a continuation of the work-supporting plate 7.

The primary edge-turning side of the scroll is provided with a longitudinal slit 11 for introduction of a suitable implement for advancing the initial end of the material into the attachment in a manner well-known.

In the use of the attachment above described, the presser-foot is elevated above the throat-plate and the margin of the fabric introduced in the channel intermediate the toe-member 5 and the supporting-plate 7, by pressure of the fingers of the operator upon the goods resting upon the plate 7, moving the same laterally along the supporting plate and into the scroll 6. It is then advanced toward the needle-hole 3 by moving the body of the material along the plate 7 and the partially turned margin by the introduction of a suitable sharp implement, as the point of a knife, introduced through the slit 11, until the forward edge of the material reaches the needle-hole 3, when the presser-foot is lowered and the machine started to feed the material to the needle. As the plate 7 in conjunction with the toe-member 5 forms substantially a continuation of the scroll, it is evident that any surplus of material adjacent the margin to be turned is afforded no space in which it may form itself into an extra fold on either side of the hem in the line of the heel or pressure portion of the foot so as to ultimately mar the appearance of the work, while the margin of the material is subjected to such complete control that it is positively turned and directed up to the actual stitching position, so that the width of hem is maintained absolutely uniform at all times without any liability whatever to variation, such as is involved in other hemmers of different construction.

In the formation and presentation to the stitch-forming mechanism of comparatively wide hems, it is evident that slight variations in width have very little effect upon the general appearance of the work, but as the desired width of hem is reduced for the finer classes of work, the proportion of such variations is greatly increased and the changes in width become very noticeable and therefore objectionable in the finished work. In hemmers for ordinary work heretofore constructed and introduced into general use, an interval has existed between the delivery end of the edge-turning member and the needle-hole of the pressure member through which interval the feed-dog has been permitted to act intermittently upon the previously formed but unstitched hem which has tended to disturb the latter through the constant distortion produced by the rising and falling of the material in its passage to and beneath the presser-foot by reason of the corresponding movements, as well as the advance movements, of the feed-dog. It is one of the chief aims of the present improvement to so control the presentation of the hem to the stitch-forming mechanism that, not only shall the hem be confined along both edges to maintain uniform width preparatory to stitching, but that it shall be shielded from the full action of the feed-dog in crushing or flattening it from the tubular form in which it leaves the scroll until it is secured in proper form by the line of stitching.

As indicated in the drawings, the part of the work-supporting plate 7 to receive the

pressure of the operator's finger in introducing and controlling the passage of the material to the scroll, which is herein termed for convenience a "finger-portion", extends wholly across the front of the mouth of the scroll and in advance of the same a distance exceeding the width of the scroll. The length of this forwardly extending portion of the plate 7 for proper performance of its described function is necessarily such that the operator may be enabled to engage with the finger sufficient material to control both the position and the direction of introduction into the scroll of the marginal portion of the material, which would be impracticable with a smaller area of "finger-portion" directly in front of the mouth of the scroll.

Having thus set forth the invention, what I claim herein is:—

1. A hemmer comprising a presser-foot having a heel-portion provided with the needle-hole and a toe-portion having one side upwardly offset with its lower face substantially parallel with that of the heel-portion, an edge-turning scroll at the inner edge of the offset toe-portion with its delivery orifice directed toward said needle-hole, a tongue carried by said offset toe-portion of the foot and extended within said scroll, and a work-supporting plate with one edge forming a continuation of said scroll and extending laterally therefrom beneath and beyond the offset toe-portion of the foot from which it is spaced to form a work-receiving channel and backwardly beneath said toe-portion to a point near the forward end of the heel-portion of the presser-foot with which it forms a throat of a depth corresponding substantially with the spacing of the upper face of said plate from the offset toe-portion.

2. A hemmer comprising a presser-foot having a heel-portion provided with the needle-hole and a toe-portion having one side upwardly offset with its lower face substantially parallel with that of the heel-portion, an edge-turning scroll at the inner edge of the offset toe-portion with its delivery orifice directed toward said needle-hole, a tongue carried by said offset toe-portion of the foot and extended within said scroll, and a work-supporting plate with one edge forming a continuation of said scroll and extending laterally therefrom beneath and beyond the offset toe-portion of the foot from which it is spaced to form a work-receiving channel, also forwardly in advance of said scroll and directly in front of the mouth of the scroll a distance exceeding the width of the latter, said plate extending also backwardly beneath said toe-portion to a point near the forward end of the heel-portion of the presser-foot.

3. A hemmer comprising a presser-foot having a heel-portion provided with the needle-hole and a hem-guiding channel in its lower side leading into said needle-hole, and a toe-portion having one side upwardly offset with its lower face substantially parallel with that of the heel-portion, a cone-shaped, edge-turning scroll at the inner edge of the offset toe-portion with inner and outer hem-turning portions along the opposite sides continuous substantially throughout the length of said scroll and formed with a longitudinal slit beneath the inner hem-turning portion, said scroll having a delivery orifice of equal width and leading into said hem-guiding channel of the heel-portion of the presser-foot, a tongue carried by said offset toe-portion of the foot and extended within said scroll, and a work-supporting plate with one edge forming a continuation of said scroll and extending laterally therefrom beneath and beyond the offset toe-portion of the foot from which it is spaced to form a work-receiving channel and backwardly beneath said toe-portion to a point near the forward end of the heel-portion of the presser-foot.

4. A hemmer comprising a presser-foot having a needle-hole and a longitudinal hem-guiding channel leading into the same, an edge-turning scroll having its delivery end opening into said hem-guiding channel, and a work-supporting plate with one edge forming a continuation of said scroll and extending laterally therefrom beneath the presser-foot, the hem-guiding channel being undercut to produce a supporting lip forming a continuation of said work-supporting plate and adapted to confine the hem within said channel up to the operative or work-pressing portion of the presser-foot.

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

ALBERT H. DE VOE.

Witnesses:
HENRY J. MILLER,
HENRY A. KORNEMANN.