O. A. HINDERER.

SEWING MACHINE.

APPLICATION FILED DEC. 16, 1908.

1,135,691. Patented Apr. 13, 1915.

Fig. 1.

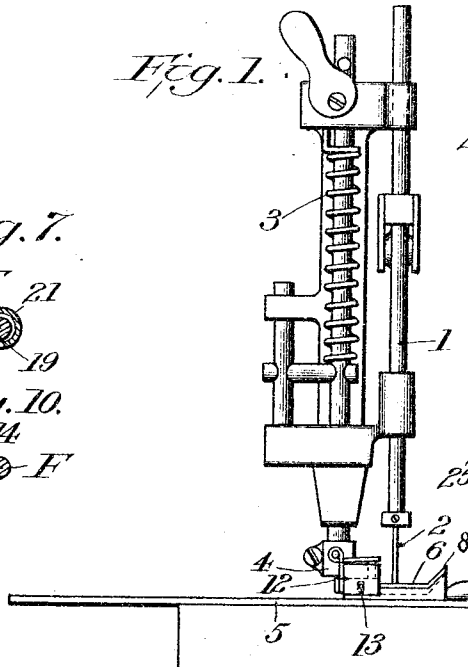


Fig. 6.

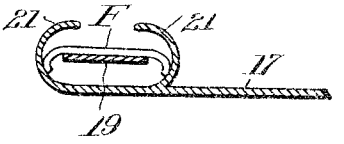


Fig. 7.



Fig. 10.

Fig. 5.

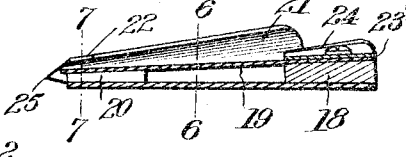


Fig. 8.

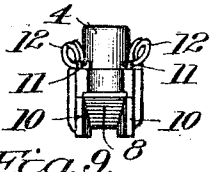


Fig. 9.

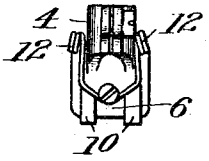


Fig. 11.

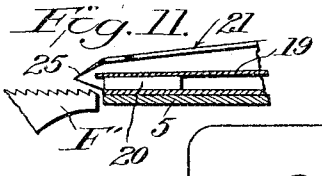


Fig. 3.

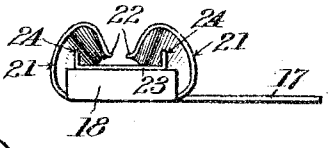


Fig. 4.

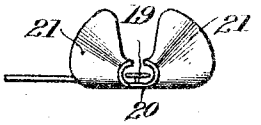
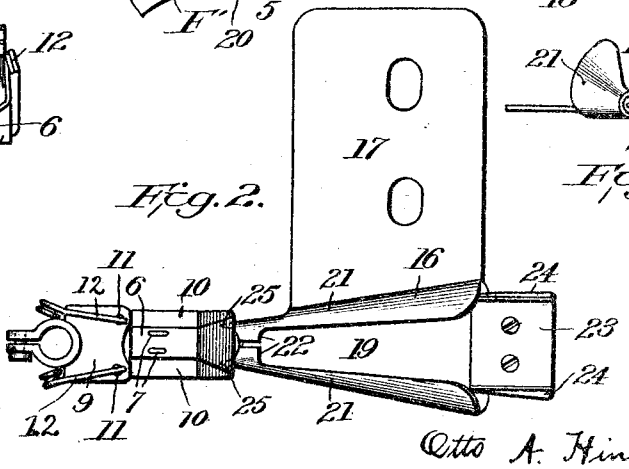


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE.

1,136,691. Specification of Letters Patent. **Patented Apr. 13, 1915.**

Application filed December 16, 1909. Serial No. 467,860.

To all whom it may concern:

Be it known that I, OTTO A. HENDERER, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon.

This invention relates to new and useful improvements in sewing machines.

An object of the invention is to provide a sewing machine which shall fold accurately strips of material so that the edges thereof are brought substantially together, which strips of material are guided to a stitch forming mechanism operating to pass two lines of parallel stitching through said folded strip, which lines of stitching are connected across the folded in edges of the strip, by cross stitching.

A further object of the invention is to provide a presser foot which shall receive a folded strip of the above character, and guide the same to a multiple needle stitching mechanism, which presser foot is provided with means for maintaining accurately the width of the finished strip.

A further object of the invention is to provide a folder through which short strips of fabric may be passed and folded, so that the edges of the strip are brought substantially together on the under side of the strip.

A still further object of the invention is to provide a combined presser foot and folder for a sewing machine which shall receive and fold short strips of fabric, so that their edges are brought substantially together on the under side of the strip, which folded strip is positively guided underneath the presser foot, and the width thereof accurately maintained, until after the strip has been stitched.

These and other objects will in part be obvious and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention: Figure 1 is an end view of part of a sewing machine having my improved presser foot and folder applied thereto. Fig. 2 is a top plan view of the folder and presser foot detached. Fig. 3 is an end view of the folder as viewed from its receiving end. Fig. 4 is an end view of the folder as viewed from its delivery end. Fig. 5 is a longitudinal sectional view through the folder. Fig. 6 is a sectional view through the folder on the line 6—6 of Fig. 5, showing a strip of fabric being folded. Fig. 7 is a sectional view on the line 7—7 of Fig. 5. Fig. 8 is a front view of the presser foot detached. Fig. 9 is a rear view of the presser foot detached. Fig. 10 is a sectional view of a belt loop stitched on the machine. Fig. 11 is a detail showing guide and feed dog.

The sewing machine herein illustrated, is of the usual two needle type and includes a needle bar 1, carrying a plurality of needles 2—2. The needle bar may be reciprocated in any well known manner.

The presser bar 3, reciprocates in the head of the machine, in the usual manner, and carries a presser foot 4, at its lower end. Said presser foot 4, normally rests upon a work support 5. The presser foot 4, comprises a central portion 6 which contains two needle holes 7, 7. The front part of the portion 6 of the presser foot, is turned upward as at 8, as shown in dotted lines in Fig. 1, and in front view in Fig. 8. The central portion 6 of the presser foot is rigid with the presser bar 3, and moves up and down therewith to accommodate varying thicknesses of fabric. The shank portion 9 of the presser foot 4, is slotted to receive the side portions 10, 10, which extend along side of the portion 6. The side portions 10, 10 are duplicates of each other, and a description of one will answer for the other.

Each of the side portions 10, carries a pin 11 which extends up through an opening in the shank 9 and a spring 12 secured to the shank rests upon the upper end of the pin 11. A stud 13 passes through a slot in the members 10, as shown in dotted lines in Fig. 1, and serves to limit the downward movement of the members 10, through the influence of the spring 12. The forward part of the central portion 6 tapers outwardly as

shown in Fig. 2. The side portions 10, 10, are also tapered outwardly as shown in this figure and as also shown in Fig. 8 of the drawings.

The outwardly tapering portions of the parts 10, and the upwardly tapering portion of the part 6, form a wide mouth to receive the folded strip of fabric. The machine herein designed is especially adapted for folding narrow strips of fabrics for making what is known in the art as belt loops. The strip of fabric at each side is folded and its folded edges are brought substantially together as shown in Fig. 10, wherein the fabric is indicated at F.

The edges of the fabric as herein shown lie substantially in the central part of the folded portion of the fabric. Two lines of stitching 14, 14 are then passed through the folded strip which lines of stitching are connected by cross stitching 15, which lies across the meeting edges of the folded strip, thus covering the same.

In order to properly fold the short strips of fabric the folder 16 is provided, which consists of a shank portion 17 secured to the bed plate in the usual manner. Said folder 16, consists of a raised block 18, to which is secured a forwardly projecting supporting tongue 19, around which the strips of fabric may be folded. The tongue 19 at its forward end is supported by a rib 20 which is secured to the base portion of the folder. In order to fold the strip of fabric around the tongue 19, the folder is provided with outwardly, upwardly and inwardly curved side portions 21, 21, which gradually taper toward the delivery end of the folder. The upper edges of the side portions 21, 21, are widely spaced, and are provided with projecting portions 22, 22, near the delivery end of the folder, which substantially bridge said delivering end.

The widely spaced side portions allow very short strips of fabric to be fed to the folder as access may be had to the strip throughout a greater portion of the length of the folder. The folder is provided at its receiving end with the guiding member 23, which has upwardly turned edges 24, forming a guiding channel for the strip of fabric.

The forward end of the side portions 21 are extended to form projecting members 25, 25. Said members 25, are located within the mouth portion of the presser foot, and serve as a guiding means for the folded strip of fabric after leaving the folder, so that the width of the folded strip may be maintained accurately until said strip has been received by the presser foot and stitched. The folder is preferably of such a width that the folded strip is of the same width as the portion 6 of the presser foot, so that the side portions 10 of the presser foot will extend down on each side of the folded strip, and serve as a means to guide said strip to the needles.

It will readily be seen that the members 10 of the presser foot will remain upon the work support, guiding the edges of the folded strip, while the central portion 6 of the presser foot will yield to accommodate varying thicknesses of fabric.

In Fig. 11, I have shown a detail view illustrating the position of the folding guide relative to the feed dog F′ of the sewing machine. It will be noted that the folding guide is cut away at the bottom so as to avoid an interference between the folder and the feed dog, while the folding tongue 19 and the projecting members 25 extend over the feed dog so as to properly hold and guide the fabric until it has well entered beneath the presser foot of the machine.

Having thus particularly described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A sewing machine including in combination, spaced needles, a presser foot having a guiding recess on its under face for a folded strip of fabric, and a folder for folding the edges of said strip underneath the body portion of the srip so that said edges substantially meet centrally of the folded strip, said folder comprising a tongue around which the strip is folded, said tongue at the forward end thereof being supported by a rib extending longitudinally of the folder, and side portions which extend around the outer edges of the tongue for folding the edges of the strip around the said tongue.

2. A sewing machine including in combination, spaced needles, a presser foot having a guiding recess on its under face for a folded strip of fabric, and a folder for folding the edges of said strip underneath the body portion of the strip so that said edges substantially meet centrally of the folded strip, said folder comprising a tongue around which the strip is folded, said tongue at the forward end thereof being supported by a rib extending longitudinally of the folder, and side portions which extend around the outer edges of the tongue for folding the edges of the strip around the said tongue, said side portions being supported beneath said tongue and having their upper edges spaced throughout the greater portion of the length of the folder a considerable distance to facilitate the feeding of the strip through the folder by the hand of the operator.

3. A sewing machine including in combination, spaced needles, a presser foot having a guiding recess on its under face for a folded strip of fabric, and a folder for folding the edges of said strip underneath the body portion of the strip so that said edges substantially meet centrally of the folded

strip, said folder comprising a tongue around which the strip is folded, said tongue at the forward end thereof being supported by a rib extending longitudinally of the folder, side portions which extend around the outer edges of the tongue for folding the edges of the strip around the said tongue, and means located in front of the folder for engaging each edge of the strip for positioning the same relative to the folder, so that the edges will be symmetrically disposed relative to the folded strip.

4. A sewing machine including in combination, spaced needles, a presser foot having a central portion through which said needles pass, independent yielding portions at each side of said central portion of the presser foot and carried thereby, said yielding portions being adapted to extend below the central portion to form edge guides for a folded strip at each side of said strip, and a folder for folding the edges of a strip underneath the body of the strip so that said edges substantially meet centrally of the strip, said folder including a flat tongue underneath which the edges of the strip are folded, means for supporting the tongue, side portions supported beneath the tongue and extending around the edges thereof and over the tongue for folding the edges of the strip, said side portions above the folder being spaced a considerable distance to facilitate the insertion of the strips into the folder by the operator, and means located in advance of the folder for guiding the strips so that the folded edges will be symmetrically disposed relative to the strip.

5. A sewing machine including in combination spaced needles, a presser foot having a central portion through which said needles pass, independent yielding portions at each side of said central portion of the presser foot and carried thereby, a folder independent of said presser foot and located in advance thereof, said folder having means for folding a strip of fabric with its edges substantially meeting underneath the strip at the center thereof, said folder having its upper face cut away forming a recess extending to a point adjacent the delivery end thereof, whereby short pieces of strips may be fed through the folder, and means for guiding the folded edges of a strip underneath the presser foot and between the yielding portions thereof.

6. A folder including in combination, a supporting block, a folding tongue carried thereby, a rib for supporting the forward end of said tongue, curved side portions extending upwardly and inwardly, over said tongue, said curved portions being widely spaced to a point adjacent the delivery end of the folder, where they are provided with projecting portions substantially bridging said folding tongue.

7. A folder including in combination, a supporting block, a folding tongue carried thereby, a rib for supporting the forward end of said tongue, curved side portions extending upwardly and inwardly over said tongue, said curved portions being widely spaced to a point adjacent the delivery end of the folder, where they are provided with projecting portions substantially bridging said folding tongue, said curved portions having forwardly projecting members for guiding the edges of the folded strip as it leaves the folder.

8. A sewing machine including in combination, a stitch-forming mechanism, a presser foot having a groove in its under face extending rearwardly from its front end to the stitch-forming mechanism, a folder independent of the presser foot located in front thereof and arranged substantially in line with the groove of the foot, the front end of said groove being flared upwardly and laterally to receive the delivery end of said folder, whereby the folded strip will be guided directly into the groove of the foot past the stitch-forming mechanism in a straight line.

9. A sewing machine including in combination, a stitch-forming mechanism, a presser foot including a main portion and spaced vertically yieldable side portions forming a longitudinal groove, the front end portion of said main portion being flared upwardly and the front end portions of said side portions being flared laterally to conjointly form a receiving mouth, and a folder located in front of said foot and having its delivery end disposed within the receiving mouth of said foot, whereby the folded strip will be guided directly into the groove of the foot and past the stitch-forming mechanism.

10. A sewing machine including in combination, a stitch-forming mechanism, means for folding a strip of fabric across the body of said strip with the edges thereof substantially meeting at the center of the strip, a presser foot having a groove in its under face extending rearwardly from the front end thereof to said stitch-forming mechanism for guiding the folded strip to said mechanism, the delivery end of said folding means projecting into the front end of said groove, and a feed dog located directly in rear of the delivery end of said folding means for engaging the initial edge of the folded fabric.

11. A sewing machine including in combination, a stitch-forming mechanism, means for folding the edges of a strip of fabric across the body of said strip with the edges thereof substantially meeting at the center of the strip, a presser foot having a groove formed in its under face for guiding the folded strip to the stitch-forming mechanism, the front end portion of said groove

being flared upwardly and laterally to receive the delivery end of said folding means, whereby the folded strip will be guided directly into the groove of the foot and past the stitch-forming mechanism, and a feed dog arranged in alinement with said groove and having the front end of its feed surface located in the receiving mouth of the foot and directly in rear of the delivery end of said folder.

In testimony whereof I affix my signature, in presence of two witnesses.

OTTO A. HINDERER.

Witnesses:
CHESTER MCNEIL,
F. S. NORTH.