Oct. 25, 1932. K. MAIER 1,884,033

MACHINE FOR EDGING FABRIC SECTIONS

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FIG. 1.

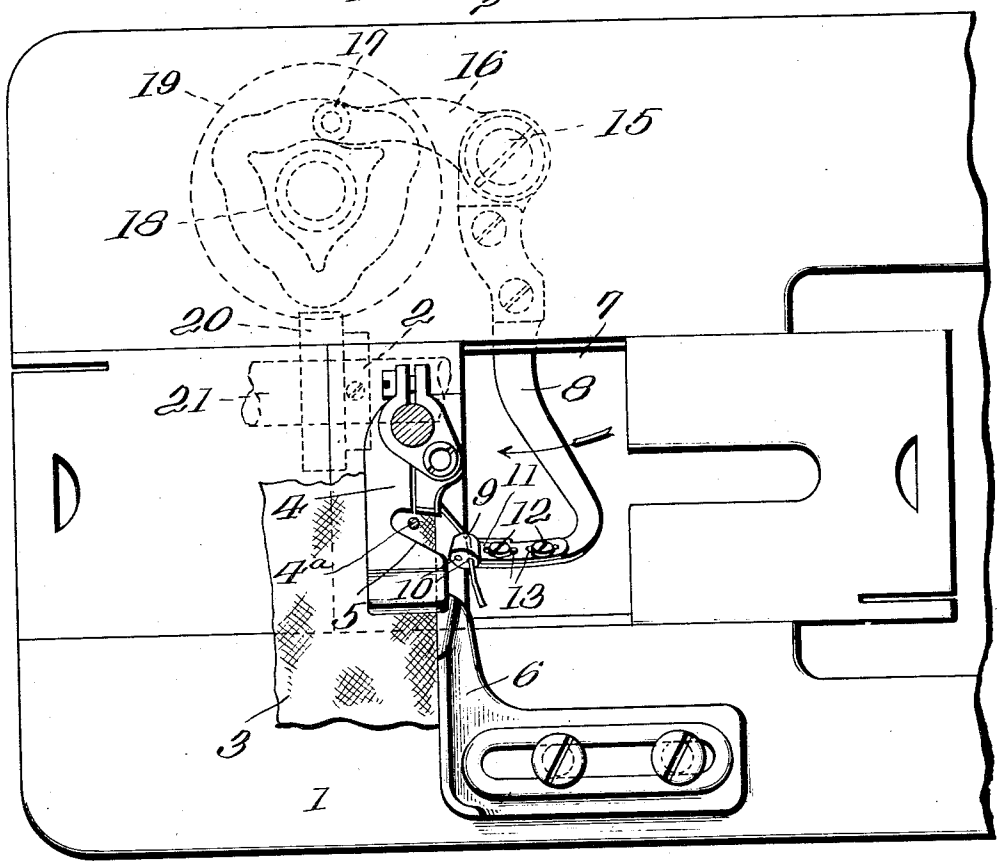


FIG. 3.

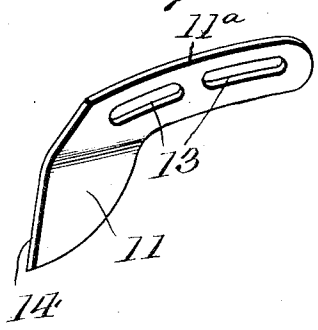


FIG. 2.

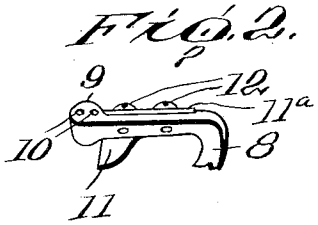
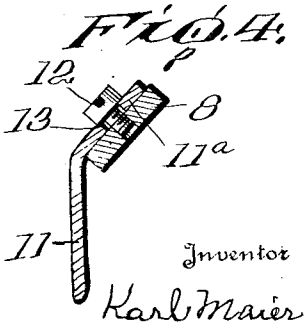


FIG. 4.



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Fig. 5.

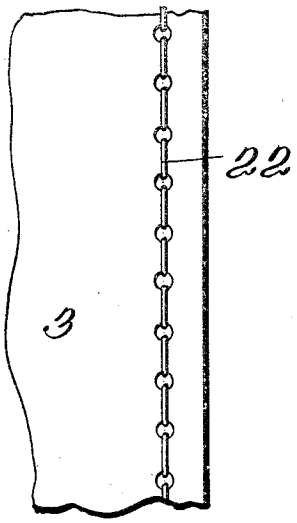


Fig. 6.

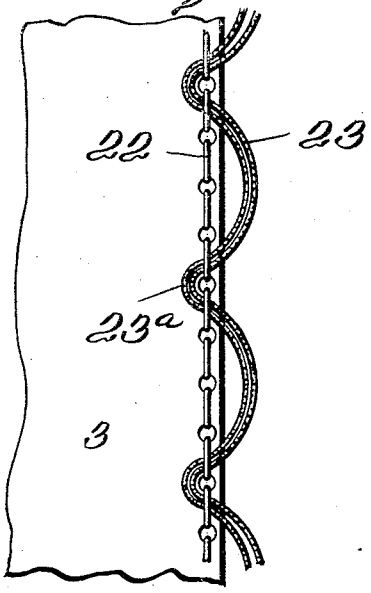


Fig. 7.

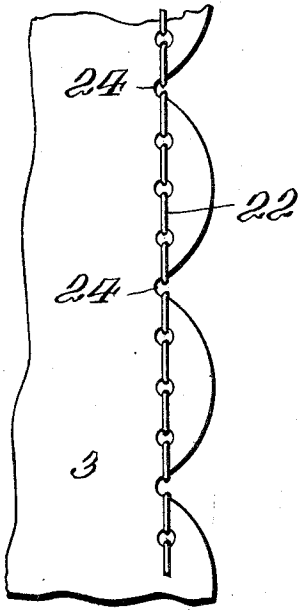
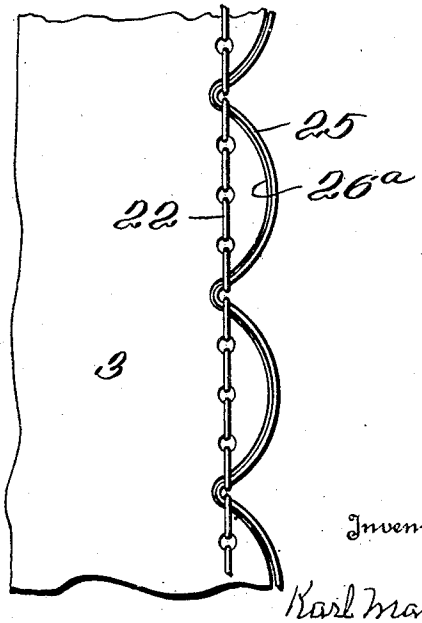


Fig. 8.



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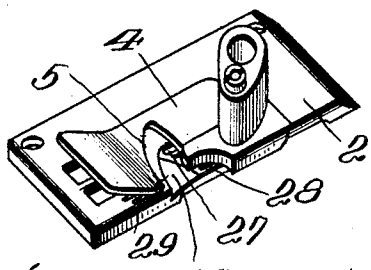


FIG. 9.

FIG. 11.



FIG. 12.

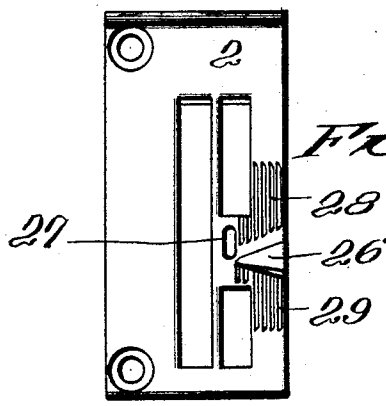


FIG. 10.

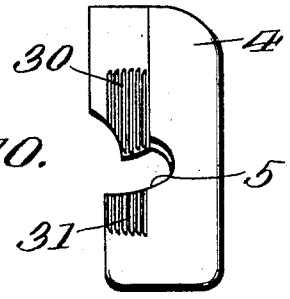




FIG. 13.

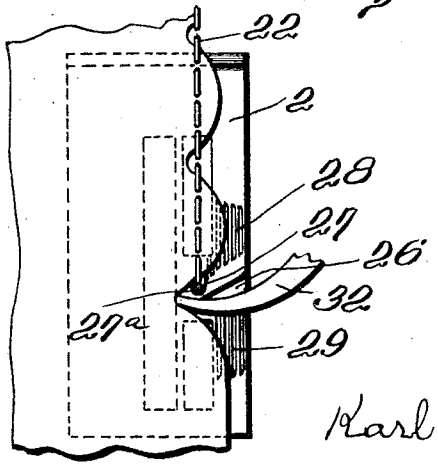


FIG. 14.

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UNITED STATES PATENT OFFICE

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MACHINE FOR EDGING FABRIC SECTIONS

Application filed November 14, 1930, Serial No. 495,708, and in Germany December 3, 1929.

The invention relates to new and useful improvements in a sewing machine and more particularly to a mechanism for edging fabric sections. The invention has to do particularly with a device operated step by step for positioning the edge of the fabric so as to form a scallop and also with a device for laying a cord along the scalloped edge and for securing said cord by the stitches which hold the fabric edge as shaped by the pusher.

An object of the invention is to provide a device which may be either employed for shaping the edge or for attaching a cord in scalloped form to the fabric edge whereby the edge may be shaped without attaching a cord, or a cord attached without shaping the edge, or the edge shaped and a cord attached thereto.

A further object of the invention is to provide a device of the above character wherein the fabric pushing device may be adjusted and shifted relative to the cord presenting device.

A still further object of the invention is to provide a device of the above character with retaining ribs formed on the throat plate and presser foot for holding the fabric edge in shaped position as it is acted upon by the pusher.

In the drawings:

Fig. 1 is a plan view showing a portion of a sewing machine with the invention applied thereto.

Fig. 2 is a perspective view of the device for pushing and shaping the edge of the fabric and for presenting a cord to the stitching mechanism.

Fig. 3 is a perspective view on an enlarged scale of the fabric pushing device.

Fig. 4 is a sectional view through the operating arm showing the attachment of the fabric pusher thereto.

Fig. 5 is a view showing a stitched pattern which can be made on the machine when neither the pusher or cord presenting devices are active.

Fig. 6 is a view showing a stitched pattern wherein the cord laying device is active, laying two cords in scalloped form along the edge of the fabric.

Fig. 7 is a view showing a stitched pattern wherein the edge pusher alone is active and the cord presenting device inactive.

Fig. 8 is a view showing a stitched pattern when both the fabric pushing device and the cord presenting device are active.

Fig. 9 is a perspective view of a throat plate and presser foot having a slightly modified form of construction for use in connection with the pusher and cord presenting device.

Fig. 10 is a plan view of the throat plate.

Fig. 11 is a sectional view through the throat plate on a line at right angles to the line of feed.

Fig. 12 is a bottom plan view of the presser foot.

Fig. 13 is a sectional view transversely through the presser foot.

Fig. 14 is a plan view showing the throat plate, the fabric pusher and a fabric section and the manner of holding the shaped edge by the ribs on the throat plate.

The invention is directed to a mechanism used in connection with a stitching device for forming a straight line of stitching whereby the edge of a fabric being stitched may be shaped into scallops and whereby a cord may be attached when desired which is laid so as to conform to the scallops. The invention will best be understood by a detailed description of the embodiment of the invention illustrated in the drawings.

In the drawings the work support of a sewing machine is indicated at 1. Attached to the work support 1 is a throat plate 2, and the fabric being stitched which is indicated at 3 is fed over the throat plate in the usual manner. The fabric is held onto the work support by a presser foot 4. The presser foot 4 has a cut-away portion 5 exposing the edge of the fabric passing beneath the same and the needle 4*a* stitching the fabric passes down through this opening. An edge guide 6 attached to the cloth plate serves as a means for directing the fabric section to the stitching mechanism. Located beneath the work support and projecting upwardly through the opening 7 at one side of the throat plate is an arm 8. Attached to this arm 8 is a cord

guide 9, said cord guide as shown has two openings 10, 10 through which separate cords may be guided. Also attached to the arm 8 is a fabric pusher 11, said fabric pusher 11 is provided with a shank portion 11*a* slotted at 13, 13 so that screws 12, 12 passing through these slots may be used for adjustably securing the pusher to the arm 8. The edge 14 of the pusher is adapted to engage the fabric section and force it beneath the presser foot gradually as the stitching proceeds and thus scallops are formed in the edge of the fabric section. The arm 8 is mounted on a supporting shaft 15 which carries a second arm 16, carrying a roller 17 which runs in a cam groove 18 in a disc 19. The disc 19 is provided with a gear meshing with the spiral gear 20 on the shaft 21, and thus it is that the cam is continuously rotated and this causes said arm 8 to move slowly back and forth.

In Fig. 5 of the drawings, the fabric section is shown as stitched by a line of stitching 22, which is well back from the edge of the fabric section 3. The fabric pusher 11 may be readily removed from the arm 8 and when so removed and the cord is directed through each cord guide, then the two cords will be laid in scalloped form as indicated at 23 in Fig. 6 of the drawings. The arm is moved gradually inward toward the line of stitching as the stitching progresses and when the cord reaches the position indicated at 23*a* it will be attached to the fabric section by the stitching and as the cord guide again moves away from the fabric section a scallop or cord festoon is formed. The fabric pusher may be attached to the arm 8 and cords omitted from the cord guides and when the machine is operated the stitched pattern illustrated in Fig. 7 will be formed. The pusher engaging the edge of the fabric will gradually force the same inwardly, sliding along the same as the fabric section is fed beneath the presser foot by the feed of the machine. When the point 24 is reached the stitches will pass outside of the edge and thus fasten the edge in the shape to which it has been formed by the pusher. The pusher then moves outward for a time and then again inward and then another point 24 is secured. Thus it is that the edge of the fabric section is shaped into the form of scallops.

In Fig. 8 of the drawings both the cord guide and the pusher are active and a cord 25 is laid along the shaped edge 26*a* of the fabric section conforming to the shape of the edge and the fabric is secured in its shaped condition by the cord attached to the fabric by the stitching.

In Figs. 9 to 14 I have shown a slightly modified form of throat plate and presser foot. In this form of the invention the throat plate is provided with a recess portion 26 adjacent the needle hole 27 through which the needle 27*a* reciprocates. The presser foot has a cut away portion 5 directly over this recess 26. The throat plate is provided with a series of grooves forming ribs or teeth 28. These grooves extend in a direction parallel with the edge of the throat plate and the line of feed. The grooves terminate on a line which is inclined to the line of feed and passes through substantially the stitching point, said line inclines rearwardly towards the edge of the throat plate. In advance of the recess 26 there are also grooves 29 which extend parallel to the edge of the throat plate and the line of feed, thus forming ribs or teeth. On the underside of the presser foot 4, there are grooves 30 which are parallel with the line of feed and which are located in rear of the stitching point and directly over the grooves 28. This forms ribs or teeth on the surface of the foot. There are also grooves 31 on the under side of the presser foot located in advance of the opening 5, which grooves form ribs or teeth extending in a direction parallel with the line of feed. The fabric pusher is illustrated at 32 in Fig. 14 of the drawings. When this fabric pusher engages the edge of the fabric it will gradually crowd it towards the line of stitching and to a point inside of the needle. Meanwhile the fabric is moving as the feed advances the fabric after each stitch. The ribs or teeth in the underface of the presser foot and in the upper face of the throat plate will hold the fabric so as to prevent its slipping back when the pusher moves outward and this causes uniform scallops to be made.

Having thus described the invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. In a sewing machine a needle, a throat plate, a presser foot and a fabric pusher for engaging the edge of the fabric for forming scallops therein during the stitching of the fabric section, said throat plate having grooves formed therein adjacent the needle and extending in a direction parallel with the line of stitching for providing ribs for gripping and retaining the fabric in the form given thereto by the pusher.

2. In a sewing machine a needle, a throat plate, a presser foot and a fabric pusher for engaging the edge of the fabric for forming scallops therein during the stitching of the fabric section, said presser foot having grooves in its underface forming ribs substantially parallel to the line of stitching for gripping and retaining the fabric section in the form given thereto by the pusher.

3. In a sewing machine the combination of a needle, a cord laying device having a guiding eye for a cord, a fabric pusher attached to the cord laying device and having a fabric engaging face adjacent said eye, means for moving said cord laying device and pusher gradually toward and from the line of stitch-

ing during the stitching of the fabric section for shaping the edge of the fabric section into scallops and for laying cord along said scallops.

4. In a sewing machine the combination of a needle, a cord laying device having a guiding eye for a cord, a fabric pusher attached to the cord laying device and having a fabric engaging face adjacent said eye, means for moving said cord laying device and pusher gradually toward and from the line of stitching during the stitching of the fabric section for shaping the edge of the fabric section into scallops and for laying cord along said scallops, and means for detachably connecting said fabric pushing device to said cord laying device.

5. In a sewing machine the combination of a needle, a cord laying device having a guiding eye for a cord, a fabric pusher attached to the cord laying device and having a fabric engaging face adjacent said eye, means for moving said cord laying device and pusher gradually toward and from the line of stitching during the stitching of the fabric section for shaping the edge of the fabric section into scallops and for laying cord along said scallops, and means for adjustably connecting said fabric pushing device to the cord laying device whereby the relative position of the cord guide and fabric pusher may be varied.

In testimony whereof, I affix my signature.

KARL MAIER.