April 25, 1933. R. J. SAILER 1,906,104

STRIP GUIDING MEANS FOR SEWING MACHINES

Filed Aug. 2, 1930 3 Sheets-Sheet 1

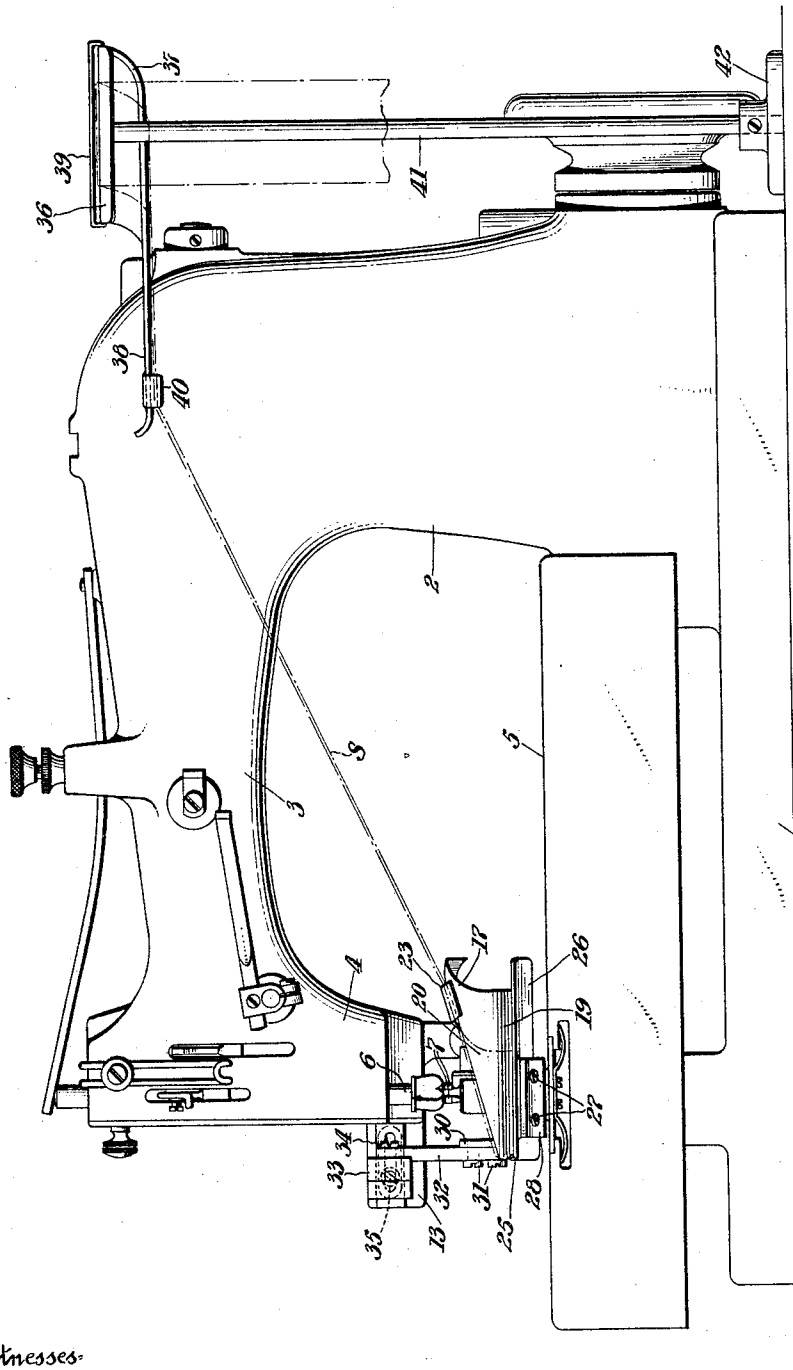

Fig. 1.

Witnesses.
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Filed Aug. 2, 1930 3 Sheets-Sheet 2

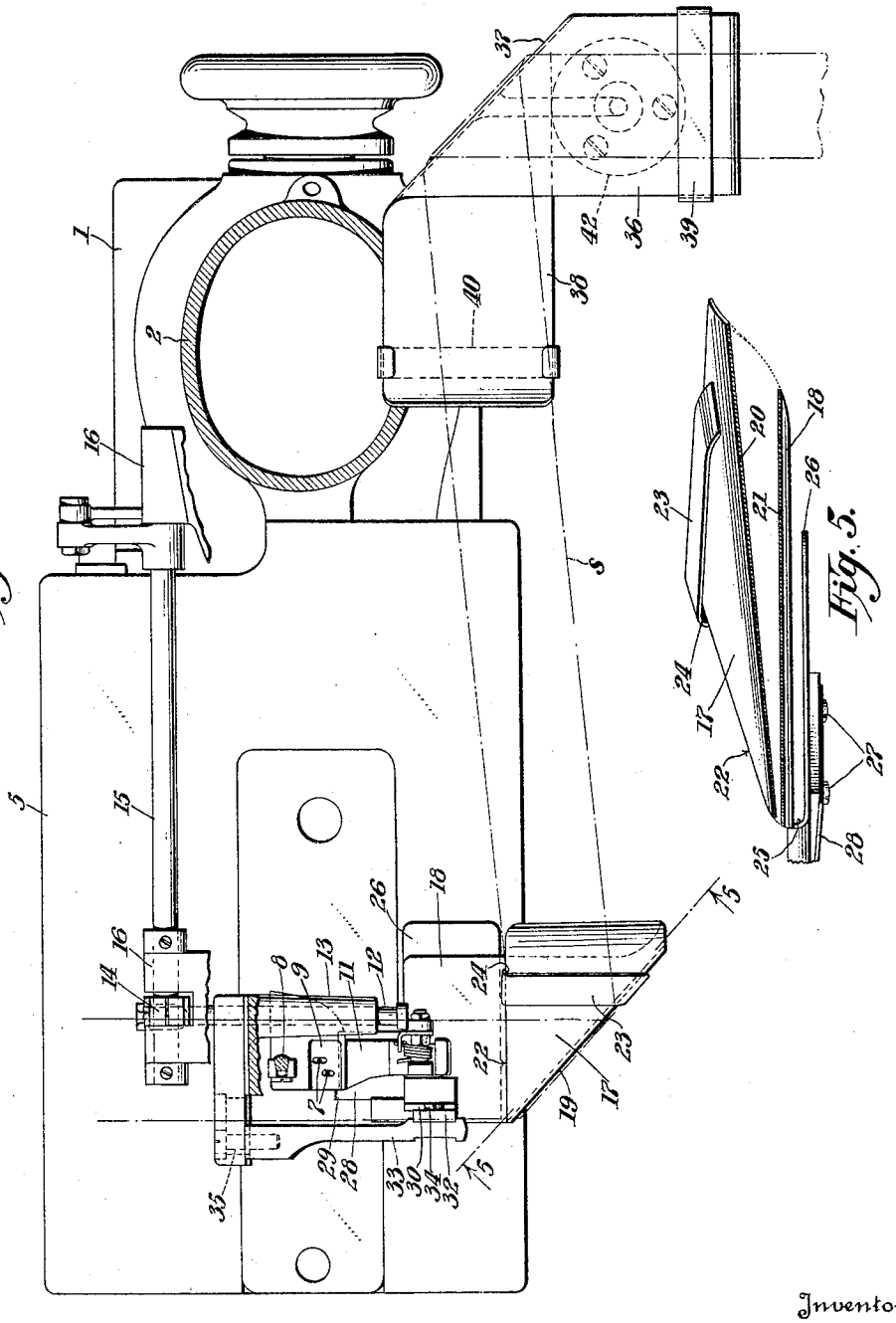

Fig. 2.

Fig. 3.

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STRIP GUIDING MEANS FOR SEWING MACHINES

Filed Aug. 2, 1930 3 Sheets-Sheet 3

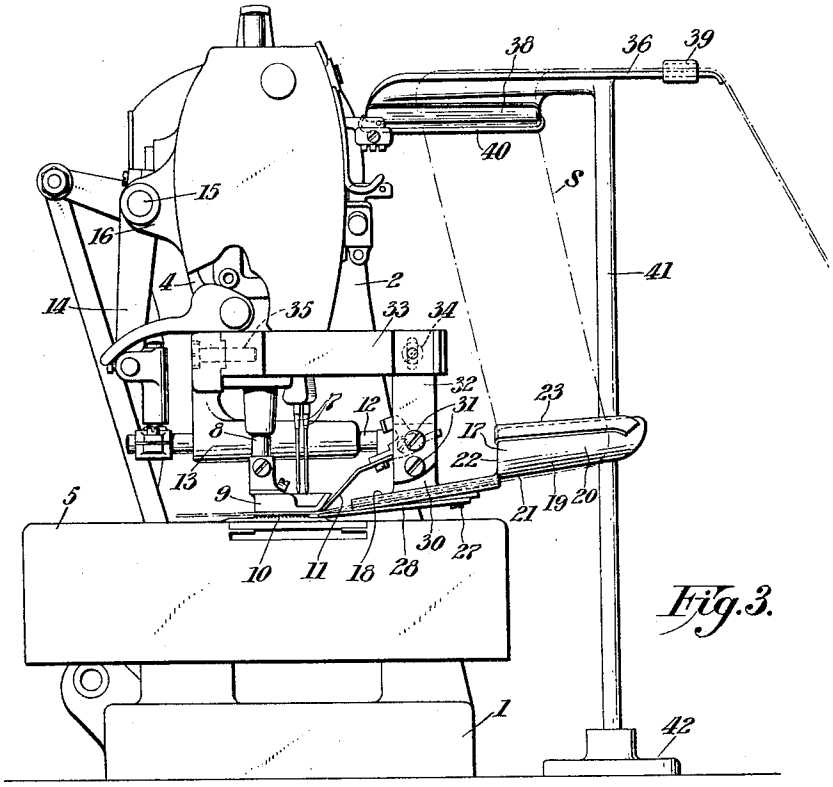

Fig. 3.

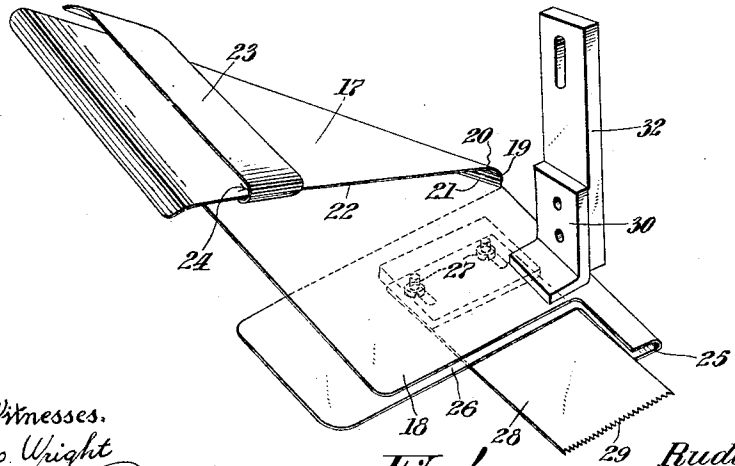

Fig. 4.

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UNITED STATES PATENT OFFICE

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STRIP-GUIDING MEANS FOR SEWING MACHINES

Application filed August 2, 1930. Serial No. 472,557.

This invention relates to improvements in strip-guiding devices for sewing machines and has for its primary object to provide a device of this character which will automatically insure a definite position of one edge of a strip of fabric, in its passage to the stitch-forming mechanism of the sewing machine, regardless of the width of the strip.

The foregoing and other objects and advantages in view, together with means whereby the same may be carried into effect, will best be understood from the following description of a preferred embodiment thereof illustrated in the accompanying drawings, in which:

Fig. 1 is a front side elevation of a ruffling sewing machine in connection with which the present improved strip-guiding devices are employed. Fig. 2 is a top plan view of the strip-guiding devices and the sewing machine cloth-plate, the overhanging bracket-arm of the machine being shown in section. Fig. 3 is a front end elevation of the machine. Fig. 4 is a perspective view of the combined strip-inverting and strip-edge directing guide. Fig. 5 is a sectional view of the strip-inverting guide substantially on the line 5—5 of Fig. 2.

The sewing machine illustrated in the drawings has a frame comprising a bed-plate 1 from which rises the standard 2 of a bracket-arm 3 terminating in a head 4, said bracket-arm overhanging a cloth-plate 5 supported upon the bed-plate.

Journaled for endwise, vertical reciprocation in the head 4 is a needle bar 6, in the present instance carrying two needles 7. Any suitable looper or loop-taker mechanism may be employed for cooperation with said needles in the formation of stitches. Also journaled for endwise movement in the head 4 is a vertically disposed presser-bar 8 carrying at its lower end a presser-foot 9 opposed to a feed-dog 10 which acts to advance the work past the stitch-forming mechanism.

Operating in front of the presser-foot 9 is a ruffling blade 11 carried in a well known manner by the forward end of a horizontally disposed bar 12 journaled for endwise reciprocation in a suitably apertured guide-bracket 13 secured upon the bracket-arm head 4. At its rearward end, the bar 12 is suitably connected with a vibratory arm 14 carried by a rock-shaft 15 journaled in bearing brackets 16 at the rear side of the machine bracket-arm. The rock-shaft 15 may be actuated in any usual or well known manner to impart properly timed work-gathering movements to the ruffling-blade 11.

The sewing machine herein described in general terms and having the present improved guiding devices is employed primarily for attaching a ruffled strip of fabric to a body material, although it is to be understood that the invention is not limited to this class of work. In prior machines for effecting the same kind of product, it has been a common practice to employ fabric-strip guides requiring adjustment of said guides for different widths of fabric-strips.

To obviate this requirement, there is employed a guide comprising a strip-receiving guide-plate 17 transversely overlying a strip-delivering guide-plate 18, intermediate which guide-plates is disposed a strip-inverting guide 19 inclined to the lengths of both of said guide-plates. The strip-inverting guide 19 has upper and lower walls 20 and 21 which converge in a direction toward one of the side edges of the strip-delivering guide-plate 18, whereby a strip of fabric passed over the guide-plate 17 is not only inverted in its passage about the guide 19 and under the guide-plate 18, but the strip also has a tendency to creep laterally in the general direction of convergence of the strip-inverting guide-walls 20 and 21. In the present embodiment of the invention, the strip-inverting guide is made by bending a flat blank over upon itself on a line inclined substantially 45° from one side edge of the blank, the curved wall 19, 20, 21 constituting the bent portion of the blank being somewhat sharply compressed at the inner end thereof and gradually flaring toward its opposite end whereby the plate portions 17 and 18, which constitute transversely overlying fabric runs, are relatively inclined. While the embodiment of the invention illustrated in the drawings is the preferred form thereof, it is ob-

vious that the converging, strip-inverting walls may comprise a construction separate from the fabric runs or be otherwise than integrally connected therewith.

Rising from the inner edge 22 of the guide-plate 17 is a guide-loop 23 providing a fabric-strip edge-guide 24 substantially parallel with said plate-edge 22, said guide-loop extending crosswise over the plate 17 in spaced relation thereto and serving to direct the fabric-strip lengthwise over said plate 17. At its end opposite to the edge-guide 24, the guide-loop 23 is preferably free of the guide-plate 17, whereby fabric-strips may be inserted laterally between the guide-loop and guide-plate.

Means is also provided for directing the fabric-strip lengthwise of and under the guide-plate 18, comprising, in the present instance an edge-guide 25 and a strip-supporting plate 26 underlying the guide-plate 18 in slightly spaced relation thereto. This strip guiding means is formed by bending under a lateral extension of the guide-plate 18 into substantial parallelism therewith, the curved wall constituting the bent portion providing said edge-guide 25 which is disposed substantially parallel with the line of seam formation and transverse to the edge-guide 24, with its strip-receiving end directly adjacent the compressed portion of the strip-inverting wall 19. The overlying plates 18 and 26 are partly cut away whereby the curved wall constituting the edge-guide 25 extends rearwardly beyond said plates to properly direct a fabric-strip passing between the plates into the path of the needle or needles. Adjustably secured, by screws 27, to the underside of the strip-supporting plate 26 is a yielding stripper- or separating-blade 28 projecting rearwardly beyond said plate 26 adjacent the extended portion of the edge-guide 25. The serrated, rearward end 29 of said stripper-blade extends under the toe of the presser-foot 9 and performs its usual function of holding the gathered fabric-strip against following the return movement of the ruffling blade 11, it being understood that said ruffling blade during its advancing movement acts only upon the fabric-strip which is separated by said blade 28 from a body material to which the strip is to be attached.

Rising from the guide-plate 18 is the shank 30 of the strip-guide described, said guide shank being fixed by screws 31 to an arm 32 depending from a supporting-arm 33 upon which the arm 32 is secured for vertical adjustment by a screw 34. The supporting-arm 33 projects forwardly from the ruffler-bracket 13, being secured to said bracket by a screw 35 for adjustment crosswise of the line of seam formation.

The fabric-strip is directed to the described strip-reversing guide by a strip-reversing conductor which may be of the usual construction, and in fact any other suitable guide may be employed for this purpose. The conductor referred to comprises a plate 36 initially extending substantially parallel with the line of seam formation and bent downwardly and under on a line inclined to a side edge of said plate 36 to provide a strip-reversing wall 37 terminating in a plate portion 38 extending crosswise of the line of seam formation. A guide-loop 39 spaced from the upper side of the plate 36 and a similar guide-loop 40 at the underside of the bent-under plate-portion 38 confine the fabric strip to travel about the inclined reversing wall 37 in the usual manner.

The strip-reversing conductor is secured upon the upper end of a supporting rod 41 rising from a base 42 which may be suitably secured upon the usual power-table, the position of the strip-reversing conductor being preferably such that the strip-delivery portion thereof is slightly rearward of the strip-receiving end of the edge-guide 24, whereby the lead of the fabric-strip delivered by the strip-reversing conductor is in a direction inclined laterally to said guide to maintain an edge of the fabric-strip continuously in engagement with the edge-guide 24. As indicated in dot-dash lines in the drawings, a strip S of fabric directed over the guide-plate 17, by the edge-guide 24 is inverted in its passage over the inclined guide 19 and is directed under the guide-plate 18 by the edge-guide 25, with the same face of the strip next to both guide-plates 17, 18. As the strip-inverting guide-walls 20 and 21 converge toward a point directly in advance of the work-receiving end of the edge-guide 25, the edge of the fabric-strip S directed by the edge-guide 24 is maintained in contact with the edge-guide 25 by reason of the tendency of the fabric-strip to creep laterally toward the point of convergence of the strip-inverting walls 20, 21. Consequently, fabric-strips of different widths are accurately directed to the stitch-forming mechanism by the improved guide described and if it is desired to change the position of the seam line with respect to the strip width it is only necessary to adjust the strip-guide bodily crosswise of the line of seam formation.

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

1. Strip guiding means for sewing machines comprising transversely overlying fabric-strip receiving and delivering runs, and guiding means disposed between said runs having strip-inverting guide-walls converging toward a side edge of the strip-delivering run.

2. Strip guiding means for sewing machines comprising an edge-guide, and guiding means disposed in advance of said edge-

guide having strip-inverting guide-walls converging toward said edge-guide.

3. Strip guiding means for sewing machines comprising edge-guides disposed to direct a fabric strip in transverse directions, and strip-inverting guide-walls disposed intermediate said edge-guides converging to a point directly in advance of the strip-receiving end of one of said edge-guides.

4. Strip guiding means for sewing machines comprising an edge-guide disposed to direct a fabric-strip in a direction substantially parallel with the line of seam formation, strip inverting guide-walls inclined to the line of seam formation and converging to a point directly in advance of the strip-receiving end of said edge-guide, and means providing for adjustment of said edge-guide and strip-inverting guide-walls in a direction crosswise of the line of seam formation.

5. Strip guiding means for sewing machines comprising transversely overlying strip-receiving and-delivering guide-plates having adjacent ends terminating in a curved strip-inverting wall inclined to the direction of the lengths of the guide-plates, the side portions of said curved wall converging toward one side edge of the strip-delivering guide-plate.

6. Strip guiding means for sewing machines comprising converging strip-inverting walls, means for directing a fabric-strip over said walls, and means for directing a fabric-strip to said walls in a direction inclined laterally thereto.

7. Strip guiding means for sewing machines comprising converging strip-inverting walls delivering a strip in the direction of the line of seam formation, means for directing a fabric-strip over said walls, and means comprising a strip-inverting guide for directing a fabric-strip to said walls.

8. Strip guiding means for sewing machines comprising edge-guides disposed to direct a fabric strip in transverse directions, guiding means having strip-inverting walls disposed intermediate said edge-guides and converging toward the strip-receiving end of one of said edge-guides, and means for directing the fabric-strip with a longitudinal edge thereof in contact with the other of said edge-guides.

In testimony whereof I have signed my name to this specification.

RUDOLPH J. SAILER.