July 31, 1923. 1,463,258

J. J. DRAKE

GUIDE FOR SEWING MACHINES

Filed June 16, 1921 2 Sheets-Sheet 1

Fig. 1.

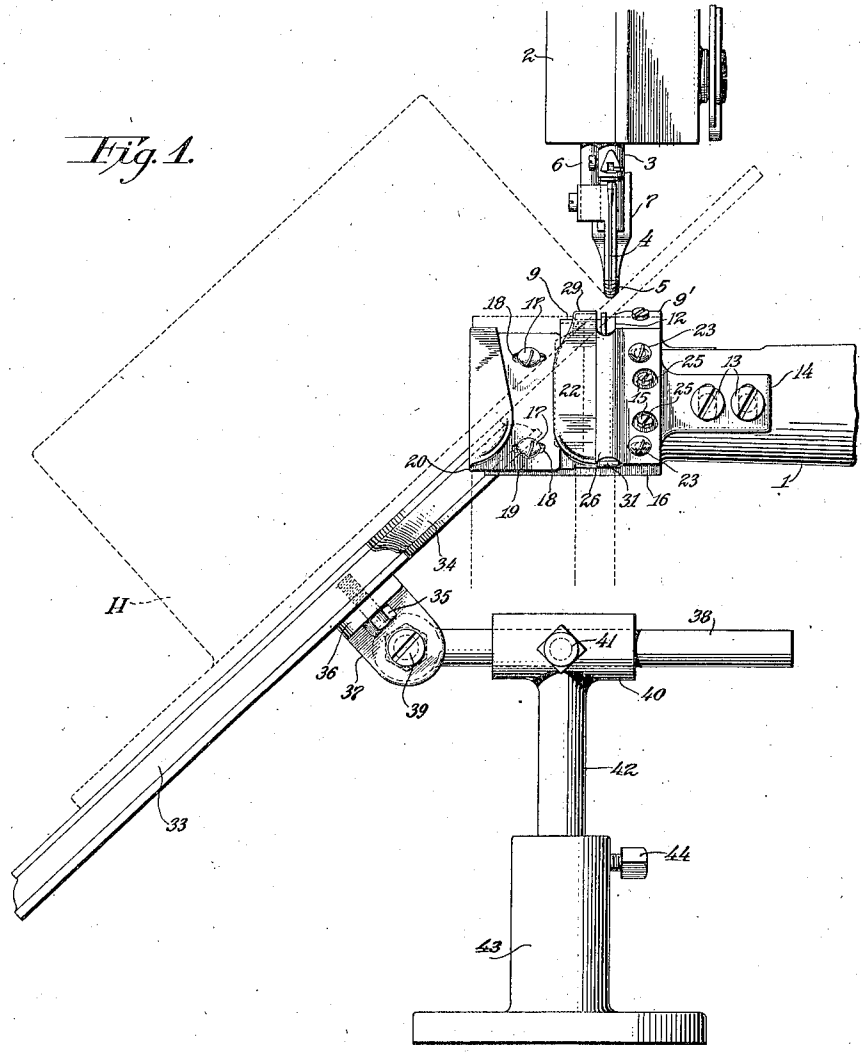
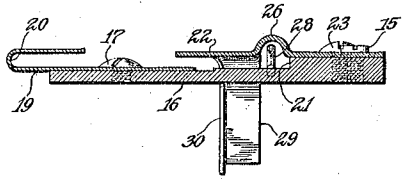


Fig. 5.



WITNESSES:
Godfrey Picina
F. C. P. Stewart

INVENTOR
John J. Drake
BY
F. N. Dobson
ATTORNEY

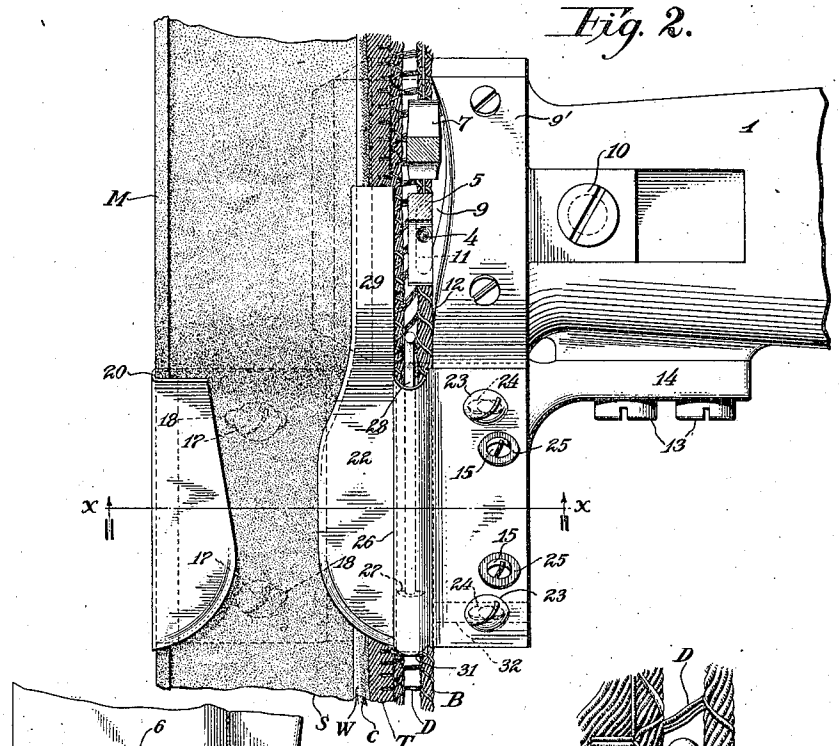
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Fig. 2.



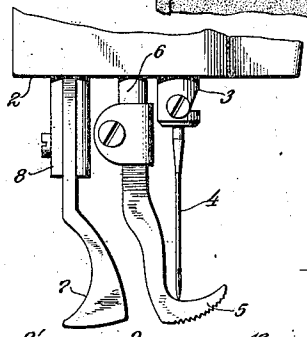
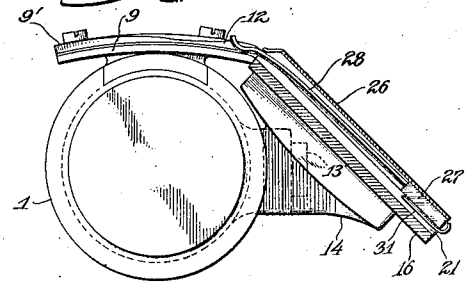


Fig. 3.



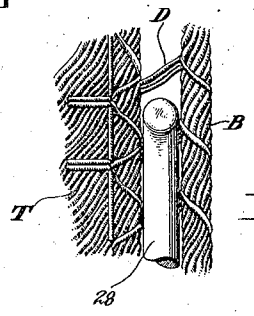


Fig. 4.

WITNESSES:
Godfrey Picina
W. P. Stewart

INVENTOR
John J. Drake
BY F. N. Oshorn
ATTORNEY

Patented July 31, 1923. 1,463,258

UNITED STATES PATENT OFFICE.

JOHN J. DRAKE, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF ELIZABETH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

GUIDE FOR SEWING MACHINES.

Application filed June 16, 1921. Serial No. 477,870.

To all whom it may concern:

Be it known that I, JOHN J. DRAKE, 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 Guides for Sewing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in guides for directing cross-bar edging to the stitch-forming mechanism of sewing machines and more particularly for guiding the cross-bar edging forming part of what are commercially termed "Bon-Ton-Ivy" sweat-bands.

The Bon-Ton-Ivy sweat-band consists of a sweat-strip of leather or other suitable material to one edge of which is secured a braid having along one of its margins a cross-bar edging projecting beyond the sweat strip. A welt-strip for enclosing an elastic cord may or may not be stitched to the sweat-strip simultaneously with the braid, the primary feature of these sweat-bands being the cross-bar edging which projects beyond the sweat-strip and the free bead of which is secured to a hat at the juncture of the side and brim portions thereof in such a manner that the sweat-strip affords a cushioned grip upon the head of the wearer and also affords a ventilating device. These sweat-bands are well known commercially and their application to hats was described in the U. S. patent to J. Taylor, No. 760,087, dated May 17, 1904. Difficulty has been experienced, however, in stitching the sweat-edging to hats, as will be appreciated when it is borne in mind that the free bead of the edging is extremely narrow and that consequently it is a difficult problem to guide the edging so accurately as to correctly secure the free bead thereof to obtain the desired effects. This difficulty, as heretofore experienced, necessitated the stitching of these sweat-bands to hats by hand, which so retarded the work of attaching these sweats to hats as to make the attaching process slow and tedious and making the manufacture of these hats comparatively costly.

The present invention has primarily for its object to provide an improved guide for cross-bar edging, whereby the cross-bar uniting cord or bead is directed to the needle of a sewing machine with great rapidity and accuracy, thereby lowering the cost of manufacture to a substantial degree of articles to which cross-bar edgings are stitched and increasing the sightliness and wearing qualities of the product.

The invention further contemplates the provision of an edging guide of this character for Bon-Ton-Ivy sweat-bands in connection with a sweat-band guide adjustable for different widths of sweat-bands and the provision of an uncurling device for the cross-bar edging.

Another object of this invention is to provide a Bon-Ton-Ivy sweat-band guide having means for firmly guiding the band past the point of seam-formation to avoid disturbing the stitching position of the band by the turning movement of the hat while the sweat-band is being stitched thereto.

Other objects of this invention will be apparent from the following description and claims.

In its preferred embodiment, the present invention has been applied in the form of an attachment to a sewing machine having an edging feed-device comprising the combined action of a feeding-needle and four-motion upper feeding-foot. The attachment is adjustably secured to the cylindrical work-support of the sewing machine and comprises an adjustable edge-guide for one of the sweat-band margins, an edge-guide for the free bead of the cross-bar edging, an edge-guide for the welt-strip, a resilient finger adapted to ride upon the cross-bars of the edging between the edge of the braid and the free bead, and also resilient means bearing upon the edging, for uncurling purposes, as it enters the guide.

In the accompanying drawings, Fig. 1 is a side elevation of portions of the cylindrical work-support and overhanging arm of a sewing machine to which the improved guide has been attached, together with a similar view of the hat-support and showing in dot-dash lines a position occupied by the hat during the operation of stitching a Bon-Ton-Ivy sweat thereto. Fig. 2 is an enlarged top plan view of the sewing machine cylindrical work-support and attached guide and illustrating its guiding action upon the sweat-band. Fig. 3 is an end elevation, somewhat enlarged over Fig. 1, of a portion of the

sewing machine and guide. Fig. 4 is an enlarged plan view of the cross-bar edging of the sweat-band, together with the resilient finger, to better illustrate its guiding action. Fig. 5 is a sectional view of the guide substantially on the line x—x of Fig. 2 and omitting the sweat-band.

Referring to the drawings, only so much is shown of the sewing machine to which the present improvement has been applied as is necessary to understand its application. There is, however, shown a cylindrical work-support 1 and the usual head 2 of the overhanging arm, in which head the needle-bar 3 is mounted for vertical reciprocation and lateral vibration in the direction of the line of seam-formation to assist in the feeding of the fabric being stitched by the action of the needle 4 carried by the needle-bar. Cooperating with the needle 4 in the feeding of the work is a four-motion upper feeding-foot 5 carried by a feed-bar 6 to which operative movements may be imparted in any usual manner. It is not deemed essential to herein specifically describe the actuating mechanisms for the feeding-foot and the needle as any well known mechanism constructed for the purpose may be employed. A presser-foot 7 carried by a presser-bar 8 serves the usual function in machines of this character, while a throat-plate 9 and its carrying plate 9′ suitably attached thereto are secured upon the cylindrical work-support 1 by means of a screw 10. The throat-plate in the present instance is provided with an elongated needle-aperture 11 while the edge of the plate 9′ affords an edge-guiding shoulder 12 partly cut away adjacent and rearward of the needle-aperture 11 to provide clearance for the presser-foot 7 and also to permit the hat to be properly positioned during the stitching operation.

Adjustably secured to the front side of the cylindrical work-support 1, by means of screws, as 13, is a bracket 14 to which is secured by screws, as 15, a supporting-plate 16 sustaining the primary elements of the present improved guide. Adjustably secured to the supporting-plate 16 by means of screws, as 17, passing through elongated apertures, as 18, is the base of a sweat-band guide 19 looped at one edge to afford an edge-guide 20 for one of the sweat-band margins M. The supporting-plate is provided with a guiding shoulder 21 in substantial alinement with the shoulder 12 of the plate 9′.

Overhanging the shoulder 21 and spaced from the work-supporting portion of the plate 16 is a sweat-band retaining-plate 22 adjustably secured upon the supporting plate 16 by means of screws, as 23, entering elongated apertures, as 24, in the plate 22. The screws 15 for securing the supporting-plate 16 to the bracket 14 are accessible through enlarged apertures, as 25, formed in the retaining plate. The retaining-plate is formed adjacent the shoulder 21 with a flute or corrugation 26 closed at its outer end by a block 27 in the present instance soldered therein, although it may be otherwise secured or formed integrally therewith. Projecting from the block 27 is a resilient finger 28 having a rounded free end yieldingly urged by the resiliency of the finger to contact with the throat-plate at a point in advance of and at one side of the line of seam-formation. The flute 26 affords clearance for the resilient finger 28, permitting the free end of the latter to move in transverse directions. The retaining plate 22 terminates at its delivery end or rearwardly of the flute 26 in a narrowed portion 29 having along one edge a downwardly depending edge-guiding flange 30. The portion 29 extends beyond the point of seam-formation and overlies the throat-plate, being spaced from the latter to afford a guiding passageway for the sweat-band.

A tension-shoe or edging uncurling device is provided in the form of a flat-spring 31 curved upwardly at its outer end to facilitate entrance to the guide of the edging. The flat-spring 31 is located at the entrance to the guide under the flute 26 of the retaining-plate 22 and is formed with a laterally projecting shank 32 secured upon the supporting plate 16 by means of one of the screws 23.

As shown more particularly in Fig. 2, the Bon-Ton-Ivy sweat-band, as commercially known, comprises a sweat-strip S to one of the margins of which is secured a welt-strip W in which there is inserted an elastic cord C. In the manufacture of the Bon-Ton-Ivy sweat-band the welt-strip is secured to the sweat-strip by means of stitches which also secure a cross-bar edging. This cross-bar edging comprises a braid T from one margin of which project cross-bars D supported at their free ends by a uniting cord B. The free edge of the braid T and the outer uniting-cord B together form in effect parallel beads joined by the cross-bars. The resilient-finger 28 is positioned to yieldingly bear upon the cross-bars and guide the beads referred to, said finger as previously stated being positioned in advance and at one side of the line of seam-formation to properly direct the outer bead B to the needle. In some instances the bead B is secured to the hat by stitches penetrating the bead itself while in other instances, particularly when the bead is too small for penetration by the needle, the stitches lie closely adjacent the inner edge of the outer bead B, and overlie the cross-bars. This condition is necessary to obtain the desired cushioning and ventilating effect. The finger 28 being also resilient in a direction transverse to the line of seam-formation, it is capable of adapting

itself to inequalities in the edging, but by reason of its tendency to assume its normal untensioned position, the bead of the edging is accurately guided to the needle. As the edging lies on the throat-plate in its passage to the needle the pressure of the finger 28 is sustained by the throat-plate, thereby properly tensioning the edging. Cooperating with the resilient finger is the yielding tension-shoe 31, which serves to uncurl the edging as it enters the guide. Also cooperating with the finger are the shoulders 12 and 21 which together serve as an edge-guide for the bead B of the cross-bar edging. The welt-strip is guided by the depending flange 30 on the sweat-retaining plate 22 and as the portion 29 and flange 30 extend beyond the point of seam-formation, the turning movements of the hat while the sweat-band is being stitched thereto are ineffective to distort the sweat-band edging at the point of seam-formation.

In connection with this guiding arrangement there is provided a hat-support comprising a plate 33, partly cut away as at 34 to provide clearance for the cylindrical work-support 1 of the sewing machine. Secured to the under side of the plate 33 by screw-bolts, as 35, is a pivot-bracket 36 having depending spaced ears, as 37, entered by the head of a rod 38, upon which the pivot-bracket 36 is adjustably secured by means of the screw-bolt 39. The rod 38 is slidingly mounted in a bearing-sleeve 40 and is adjustably secured therein by means of the set-screw 41. The bearing-sleeve 40 is carried by a supporting rod 42 adjustably secured in a base 43 by means of a set-screw 44. It will be apparent that by means of this construction of hat-support, the angular, horizontal and vertical positions of the hat supported thereby may be readily accommodated in accordance with the different requirements of varying sizes and shapes of hats.

The feeding foot 5 and the presser-foot 7 act upon the hat at the juncture of the side and brim portions as illustrated in Fig. 1, and the needle 4, which partakes of the feeding movements of the feeding foot, acts upon the cross-bar edging to assist in feeding the same forwardly in timed relation with the feed of the hat during the stitching operation.

It is to be understood that the term "Bon-Ton-Ivy" as herein employed refers to a general type of sweat-band as commercially known and is not to be understood as merely the product of any particular manufacturer.

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

1. In a sewing machine, the combination with stitch-forming mechanism including a needle, feeding means, a work-support, and a presser-foot disposed to engage one side of a hat sustained by said work-support, of a device for guiding a sweat-band having a cross-bar edging to said needle to secure the free bead of the edging to the hat upon the side opposite to that engaged by said presser-foot, said device including a guide for the free bead of the cross-bar edging comprising a resilient finger having a rounded portion disposed with respect to said work-support and said needle to tensionally engage the cross-bars of the edging adjacent the free bead thereof.

2. In a sewing machine, the combination with stitch-forming mechanism, of a device for guiding to said stitch-forming mechanism for attachment to a hat a sweat-band having a cross-bar edging at one side thereof, said device including a resilient finger supported to have a floating work-engaging free end capable of yielding in transverse directions for tensionally directing the free edging bead to said stitch-forming mechanism.

3. In a sewing machine, the combination with stitch-forming mechanism, of a device for directing to said stitch-forming mechanism a sweat-band having a cross-bar edging at one side thereof, said device including a resilient cross-bar edging guide-finger and a sweat-band edge-guide arranged in spaced and parallel relation.

4. In a sewing machine, the combination with stitch-forming mechanism including a needle, a work-support, work-feeding means, and a presser-foot, of a device for guiding a cross-bar edging to said stitch-forming mechanism including a resilient finger positioned to tensionally bear upon the cross-bars of the edging in advance of said presser-foot to guide a bead of the edging to the needle, an edge-guide for said edging, and a yielding tension-shoe for uncurling the edging preparatory to the action of said finger upon said edging.

5. In a sewing machine, the combination with stitch-forming mechanism including a needle, of a device for directing to said stitch-forming mechanism a sweat-band having a cross-bar edging at one side thereof, said device including a resilient finger positioned to yieldingly bear upon and guide said edging to said needle, an edge-guide for the side of the sweat-band opposite to the edging, and yielding means for uncurling the cross-bar edging preparatory to the action of said finger upon said edging.

6. In a sewing machine, the combination with stitch-forming mechanism, of an attachment for guiding a sweat-band to said stitch-forming mechanism for attachment to a hat, comprising means for uncurling a cross-bar edging of the sweat-band, a resilient cross-bar edging guide-finger, and a welt-strip edge-guide.

7. In a sewing machine, the combination with a stitch-forming mechanism, of an attachment for guiding a sweat-band to said stitch-forming mechanism for attachment to a hat, comprising a sweat-band edge-guide, a cross-bar edging edge-guide, and a resilient finger constructed and arranged to tension a cross-bar edging of said sweat-band.

8. In a sewing machine, the combination with stitch-forming mechanism, of a device for guiding a sweat-band to said stitch-forming mechanism for attachment to a hat, said device including a welt-strip edg-guide having an edge-guiding surface effective beyond the point of seam-formation to prevent distortion of that portion of the sweat-band stitched to the hat, and a resilient finger for tension-guiding a cross-bar edging of said sweat-band to said stitch-forming mechanism.

9. An attachment for sewing machines for guiding a sweat-band to the stitch-forming mechanism of said machine, comprising a supporting plate, a sweat-band edge-guide adjustably secured upon said supporting plate, a welt-strip edge-guide also adjustably secured upon said supporting plate, a resilient cross-bar edging guiding finger, and a spring-shoe for uncurling the edging preparatory to the action of said finger upon said edging.

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

JOHN J. DRAKE.