Dec. 9, 1930. R. J. SAILER 1,784,614

SEWING MACHINE ATTACHMENT

Filed Aug. 13, 1929 2 Sheets-Sheet 1

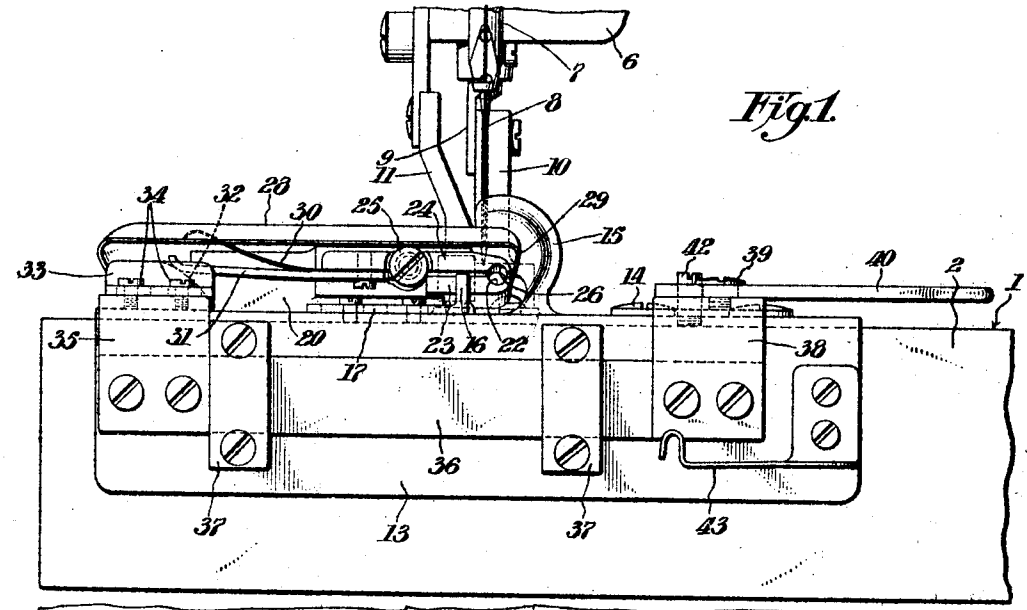


Fig. 1.

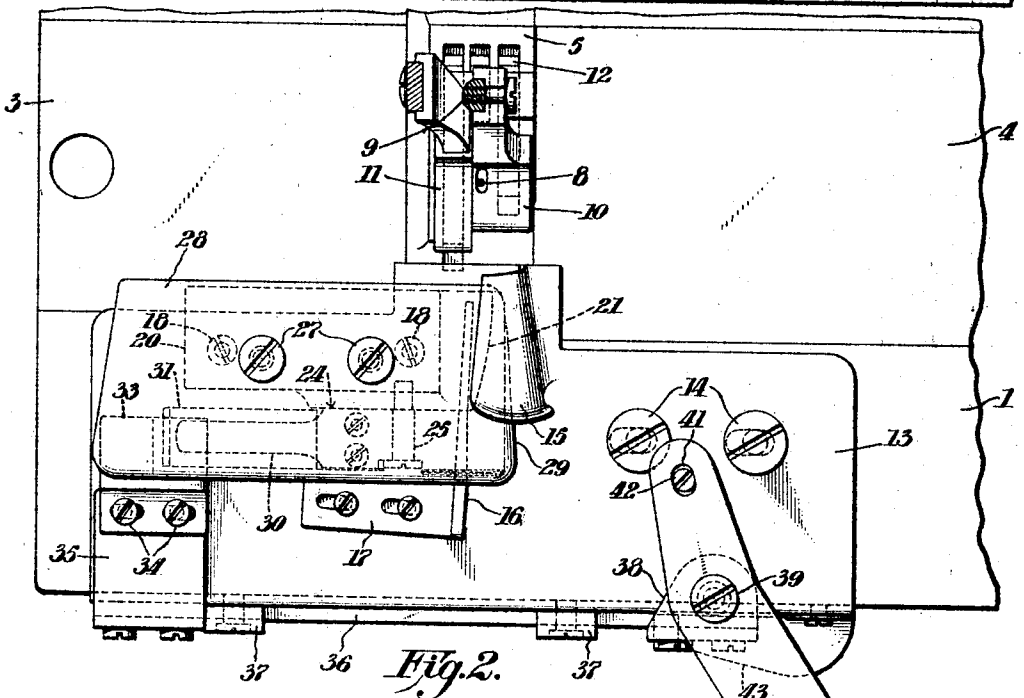


Fig. 2.

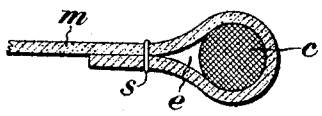


Fig. 5.

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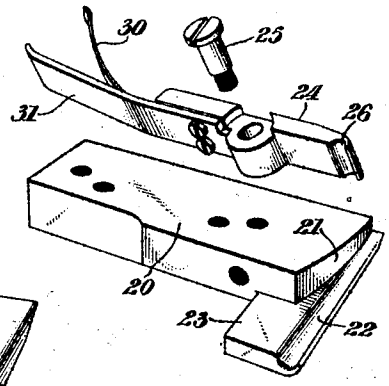


Fig. 4.

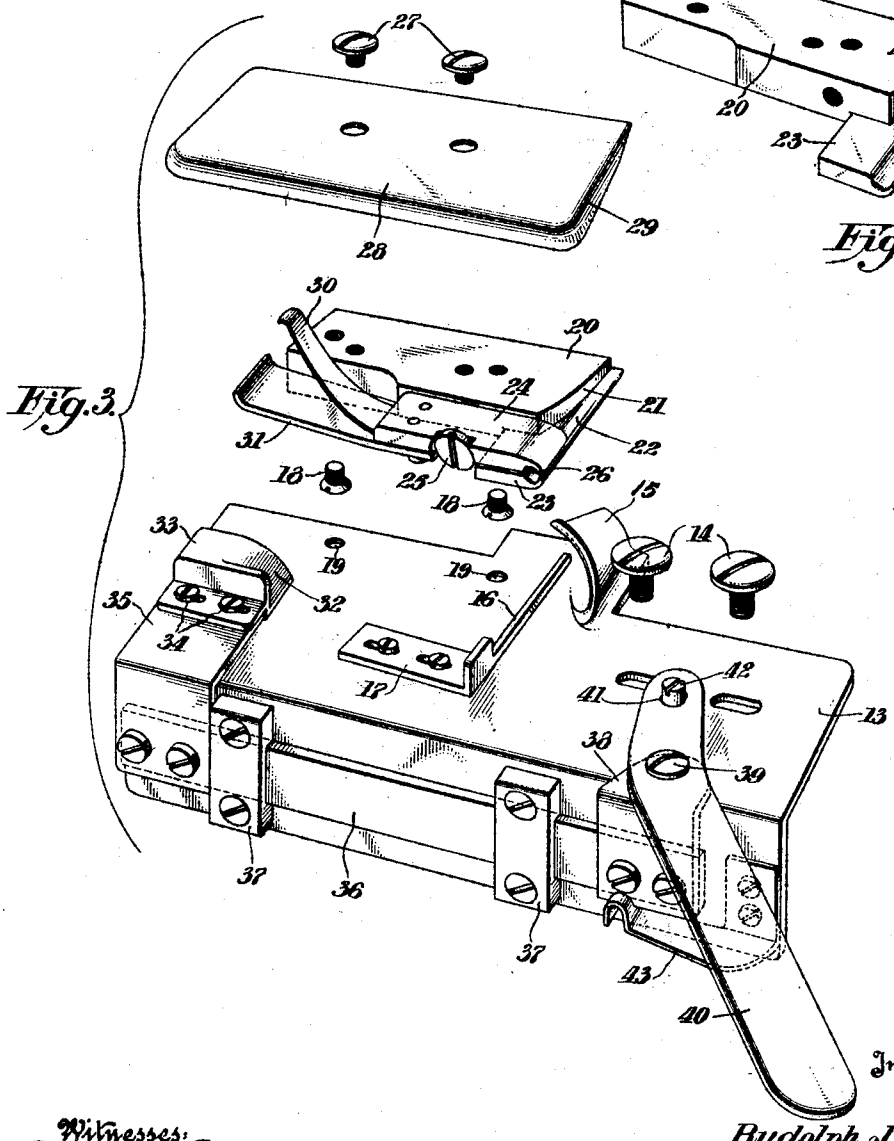


Fig. 3.

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UNITED STATES PATENT OFFICE

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SEWING-MACHINE ATTACHMENT

Application filed August 13, 1929. Serial No. 385,553.

This invention relates to improvements in work-guiding attachments for sewing machines and has for its object to facilitate handling of the work in the operation of inserting an endless elastic-cord within an edge-fold of a circular article, such a tire-cover, etc., during the operation of forming and stitching said edge-fold.

In a commercial embodiment of the invention, the work-guiding attachment comprises a supporting bracket provided with a turn-down edge-folding scroll and a body-material supporting apron having a fold-defining edge extending within said scroll. Disposed below said apron is a cord-guide having separable jaws, including a fixed jaw secured upon the supporting bracket and a movable jaw hinged upon said bracket to overlie the fixed jaw. These jaws are formed, in the direction of the line of seam-formation, with complemental cord-guiding grooves which in the closed position of the jaws together define a cord-pasageway of such a depth that the jaws frictionally bear upon an elastic-cord passed therebetween, thereby tensioning the elastic-cord. The movable jaw is yieldingly urged into open position, but is normally held in closed position by means manually controllable during the operation of the machine to permit the jaws to assume their open position.

In arranging the work prior to a stitching operation, the cord-tensioning jaws are permitted to occupy their open position so that the endless cord may be laterally introduced between said jaws. The body material is inserted in the edge-folding scroll and the folded edge thus formed, together with the cord embraced by the edge-fold, is clamped under the sewing machine presser-foot. The jaws are now closed to retard the passage of the cord as the stitching operation is begun. As the stitching of the circular body material proceeds toward completion, the stitches initially formed approach the cord-gripping jaws, whereupon the latter may be manually opened during the stitching operation, the cord removed laterally from the jaws and the stitching of the edge-fold completed.

In the accompanying drawings, Fig. 1 is a front side elevation of the present attachment and of a portion of a sewing machine to which it has been applied. Fig. 2 is a top plan view of the same. Fig. 3 is a perspective of the complete attachment, with superposed parts thereof in detached relationship. Fig. 4 comprises separate perspective views of the cord-tensioning jaws. Fig. 5 is an enlarged section of the work.

Referring to the drawings, a sewing machine to which the present improvement has been applied comprises a cloth-plate 1 having a front depending apron 2 and supporting the usual slide-plates 3 and 4 upon opposite sides of a throat-plate 5. Overhanging the cloth-plate is a bracket-arm terminating in a head 6 affording a journal for a vertically reciprocatory needle-bar 7 carrying a needle 8.

Also journaled for vertical movements in the head 6 is a presser-bar 9 to the lower end of which is secured a presser-foot 10 preferably provided in its tread surface with a cord-clearance groove (not shown) extending in the direction of seam formation in the usual manner. Adjacent to the presser-foot 10 is a feeding-foot 11 of the upper four-motion type, said presser-foot and feeding-foot being opposed to a lower four-motion feed-dog 12 intermittently projected through suitable slots in the throat-plate 5. Any suitable looper or loop-taker mechanism may be employed to cooperate with the needle beneath the throat-plate in the formation of stitches.

The improved attachment, as shown in the drawings, comprises an angular bracket 13 secured by screws, as 14, upon the cloth-plate 1 for adjustment transversely of the line of seam-formation. Rising from the bracket 13 in front of the needle is a turn-down edge-folding scroll 15 for a body material, the extent of fold being determined by an edge-guide 16 having a lateral shank 17 suitably secured upon the bracket 13 for adjustment toward and from the scroll 15.

Fixed upon the bracket 13, by screws as 18, passing from underneath said bracket through apertures, as 19, therein, is a cord-guiding and -tensioning jaw-block 20. This

jaw-block 20 is shouldered at its end adjacent to the scroll 15 to provide an upright cord-guiding surface 21 at one side of a cord-groove 22 formed in the upper face of a fixed jaw 23 projecting forwardly beyond the front side of the block 20. The cord-groove 22 extends in the direction of feed of the work at the side of the line of seam-formation containing the work-turning portion of the scroll 15. Overlying the fixed jaw 23 is a movable jaw 24, pivotally supported upon the front side of the block 20 by means of a stud-screw 25. The movable jaw 24 is provided in its under face with a cord-groove 26 complemental to the cord-groove 22 of the fixed jaw, said complemental grooves in the closed position of the jaws together defining a cord-aperture smaller than the diameter of the elastic-cord when relaxed thereby imposing a frictional drag upon said cord and stretching it.

Secured upon the jaw-block 20 by screws, as 27, is a work-supporting apron 28 of which the downwardly curved end 29 extends within the scroll 15 and coacts therewith in the edge-folding of a body material supported upon said apron. The curved end 29 of the apron overlies the cord-groove 22, but provides sufficient clearance to permit lateral insertion into or removal of the cord from the groove 22.

Extending from the tail of the movable jaw 24, is an upwardly curved blade-spring 30 of which the rounded free end bears against the underside of the apron 28 and therefore, when permitted, yieldingly acts to open the jaws 23, 24. However, the jaws are normally held in their closed, cord-gripping position by a jaw-extension plate 31 suitably secured upon the tail of the jaw 4. The underside of the free end of the extension-plate 31 is slidingly engaged by the curved face 32 of a cam-block 33, thereby lowering the grooved end of the jaw 24 into cord-gripping position. The cam-block 33 is adjustably secured by screws, as 34, upon an angular carrier-plate 35 suitably fixed upon one end of a slide-bar 36. The slide-bar 36 is shiftable endwise in ways provided in spaced guide-blocks, as 37, secured upon the depending portion of the angle-bracket 13. Another angle-plate 38 secured upon the slide-bar 36 is pivotally connected by a screw 39 with a shift-lever 40 provided with an elongated slot 41 entered by a fulcrum-pin 42 rising from the bracket 13. The angle-plate 38 is notched to receive the rounded end of a spring-latch 43 suitably secured upon the bracket 13, whereby the slide-bar is held by the yieldable latch in a position such that the cam-block 33 maintains the jaws 23, 24 in their closed or cord-gripping position. By adjusting the cam-block 33, upon its carrier plate, toward and from the fulcrum of the jaw 24, the cord-gripping action of the jaws may be correspondingly regulated.

It will be apparent from the foregoing description that the present sewing machine attachment is particularly well adapted for inserting an elastic cord *c* within a pocket *e* formed by folding the margin of a circular body material *m*, as illustrated in Fig. 5 of the drawings, the edge-fold being secured by a line of stitches *s* in the operation of inserting the cord within the edge-fold. The elastic cord *c* is stretched by the frictional action of the cord-guiding jaws as the work is advanced past the stitch-forming mechanism. Beyond the feeding mechanism, the stretched cord is permitted to relax, thereby shirring the folded margin of the body material.

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

1. A sewing machine attachment having a cord-guide comprising separable jaws in their closed position together defining a cord-receiving aperture, means for holding said jaws in their closed position, manually controlled means for opening said jaws, and an edge-folder disposed to fold the margin of a body material about a cord passed between said jaws.

2. A sewing machine attachment having a cord-guide comprising a fixed jaw provided with a cord-guiding groove, a pivotally mounted jaw having a cord-guiding groove complemental to the groove of the fixed jaw, a spring yieldingly urging the pivotally mounted jaw into jaw-open position, means effective against the action of said spring to urge the jaws into their closed position, manually controlled means for releasing the jaws from the jaw-closing means, and work-guiding means for forming a body-material pocket to receive a cord passed between said jaws.

3. A sewing machine attachment having a turn-down edge-folder comprising an edge-folding scroll and a work-supporting apron extending within said scroll, and a cord-guide disposed within said scroll comprising separable jaws frictionally bearing upon an elastic-cord passed therebetween, thereby stretching the elastic-cord.

4. A sewing machine attachment having a body material edge-folder, a cord-guide comprising separable jaws disposed to direct an elastic-cord within the body-material edge-fold produced by said edge-folder, a cam-member acting to close said jaws to frictionally resist the passage of and thereby stretch the elastic-cord, and adjustable means for regulating the pressure of the jaws upon said cord.

5. A sewing machine attachment having a body-material edge-folder, a cord-guide comprising separable jaws disposed to direct an elastic-cord within the body-material edge-fold produced by said edge-folder, a cam-

member acting to close said jaws to frictionally resist the passage of and thereby stretch the elastic-cord, adjustable means for regulating the pressure of the jaws upon said cord, and means for releasing said jaws from the effective action of said cam-member.

6. A sewing machine attachment having a turn-down edge-folder comprising an edge-folding scroll and a work-supporting apron extending within said scroll, means for adjustably determining the width of the fold produced by said edge-folder, and a cord-guide disposed within said scroll comprising separable jaws frictionally bearing upon and thereby stretching an elastic-cord passed between said jaws.

7. A sewing machine attachment comprising a base-plate provided with an edge-folding scroll, a cord-guide carried by said base-plate having separable jaws together defining a cord-passageway disposed within said scroll, and means for relatively moving said jaws comprising a cam-member, a slide-bar supported by said base-plate carrying said cam-member, and manually operable means for shifting said slide-bar.

8. A sewing machine attachment comprising a base-plate provided with an edge-folding scroll, a cord-guide carried by said base-plate having separable jaws together defining a cord-passageway disposed within said scroll, yielding means acting to relatively move said jaws in one direction, a shiftable cam-member for relatively moving the jaws in a direction opposite to the action of said yielding means, and manually operable means for shifting said cam-member into and out of its operative position.

9. A sewing machine attachment comprising a base-plate provided with a turn-down edge-folding scroll, a work-supporting apron extending within said scroll, a cord-guide having separable jaws together defining a cord-passageway directing a cord within the scroll, means for opening said jaws to permit removal of a cord laterally from between said jaws, and means acting to close the jaws to frictionally resist the passage of an elastic-cord and thereby stretch said cord.

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

RUDOLPH J. SAILER.