April 6, 1954 O. C. LOPEZ 2,674,213

WORK-GUIDING ATTACHMENT FOR SEWING MACHINES

Filed Dec. 20, 1950 4 Sheets-Sheet 1

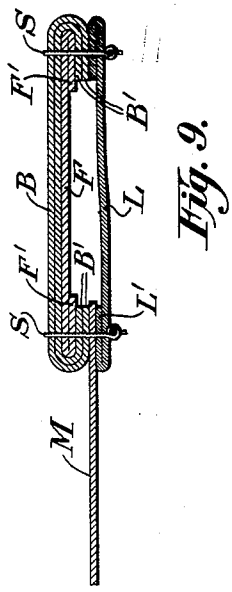


Fig. 9.

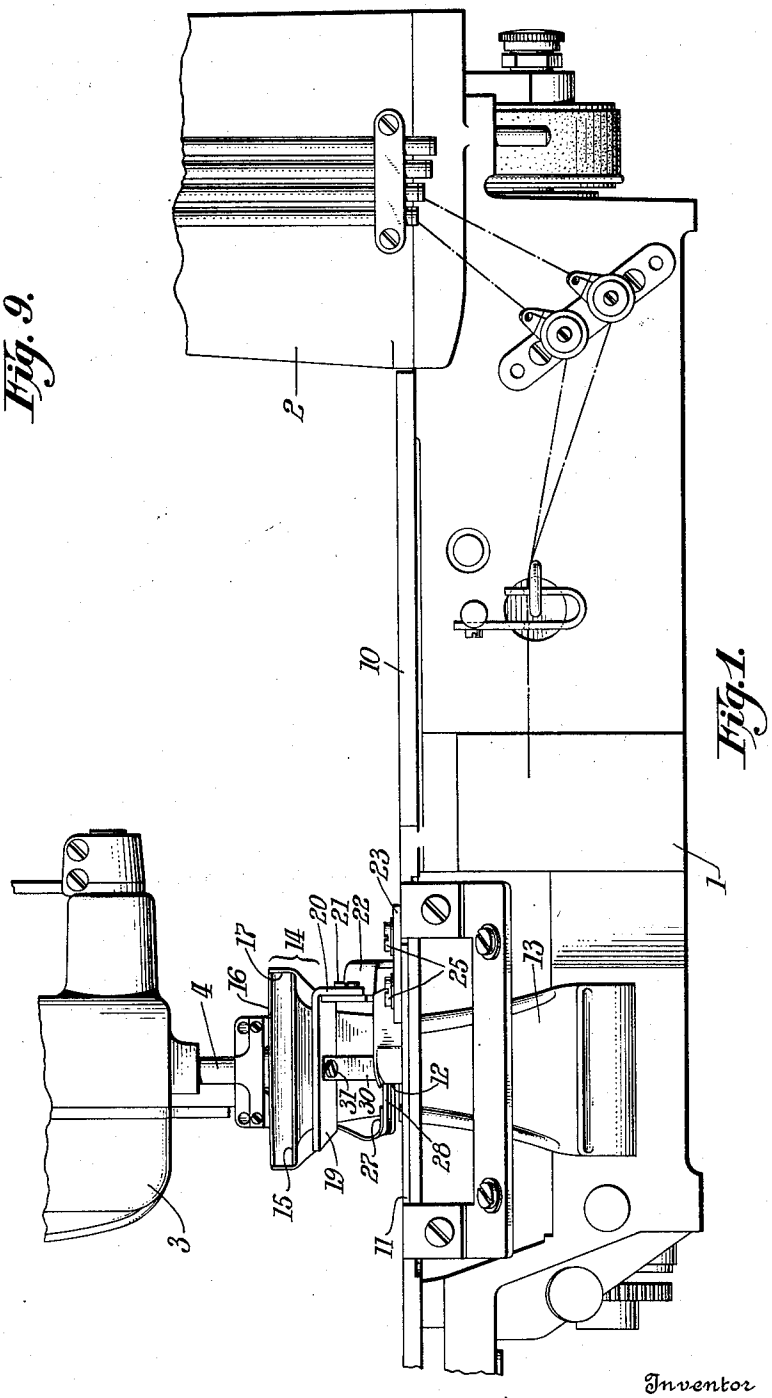


Fig. 1.

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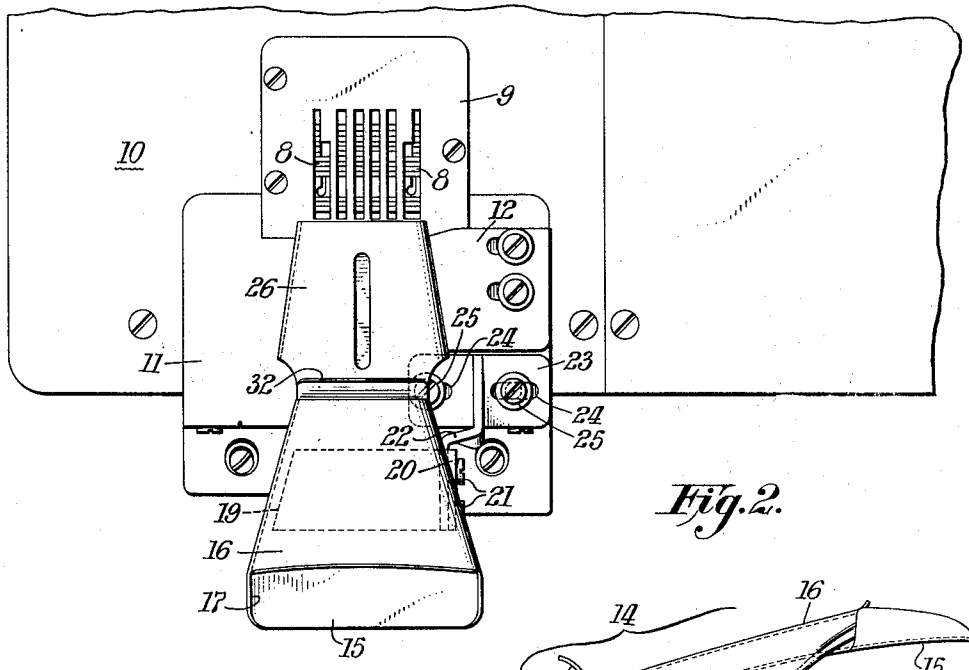


Fig. 2.

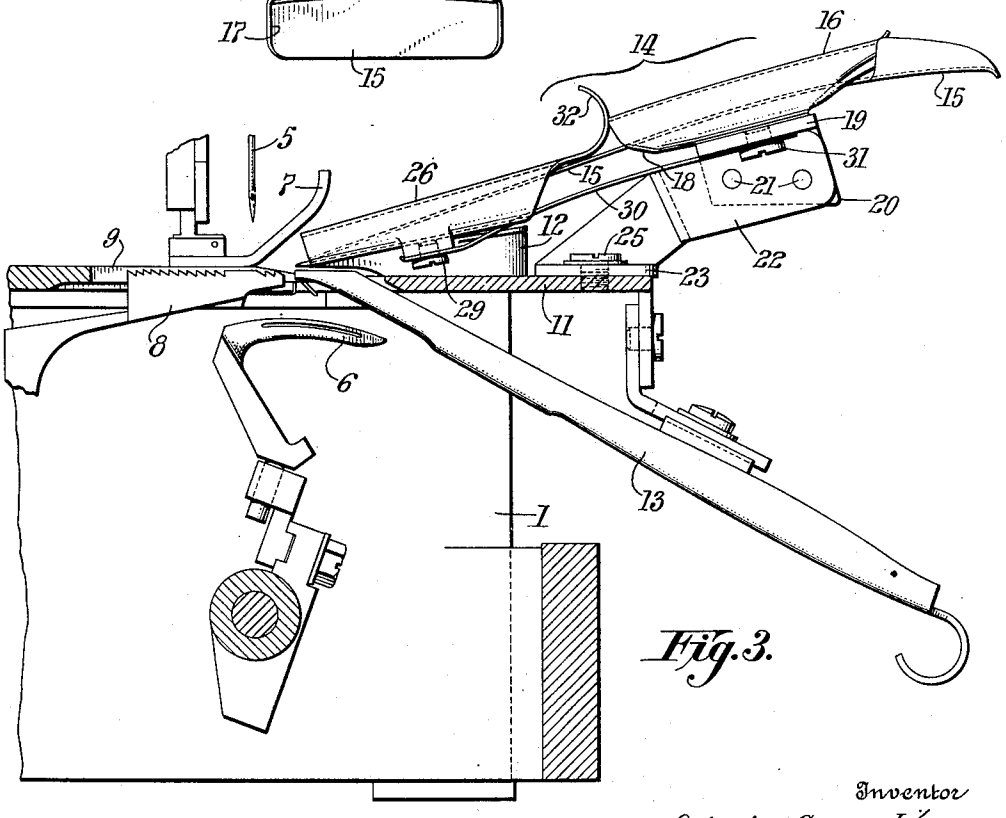


Fig. 3.

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WORK-GUIDING ATTACHMENT FOR SEWING MACHINES

Filed Dec. 20, 1950 4 Sheets-Sheet 3

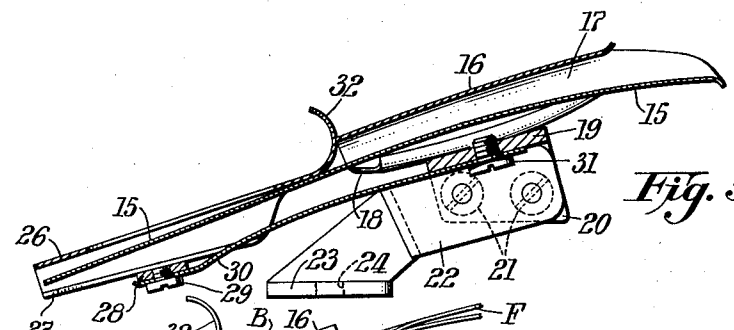


Fig. 5.

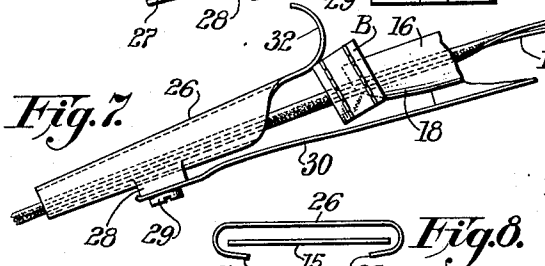


Fig. 7.

Fig. 8.

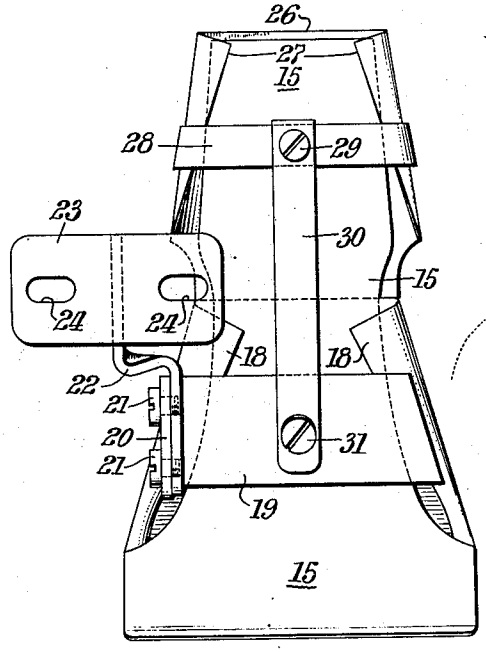


Fig. 4.

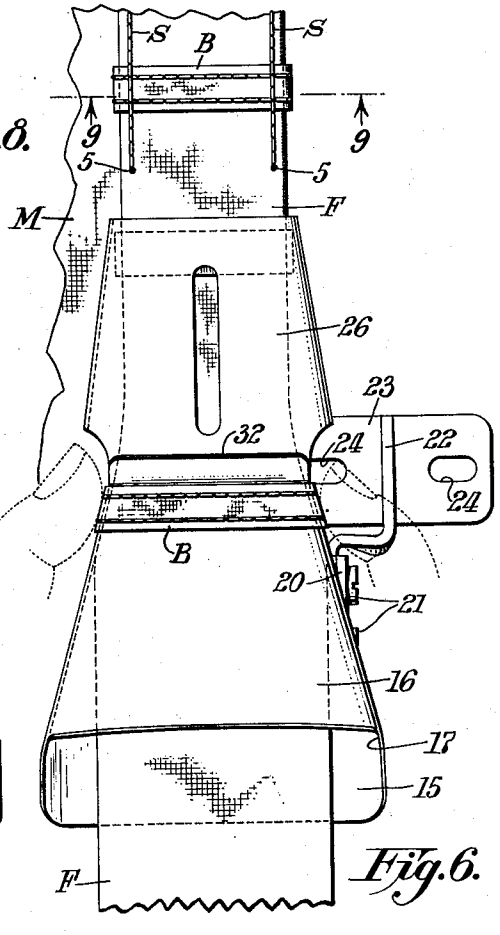


Fig. 6.

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WORK-GUIDING ATTACHMENT FOR SEWING MACHINES

Filed Dec. 20, 1950 4 Sheets-Sheet 4

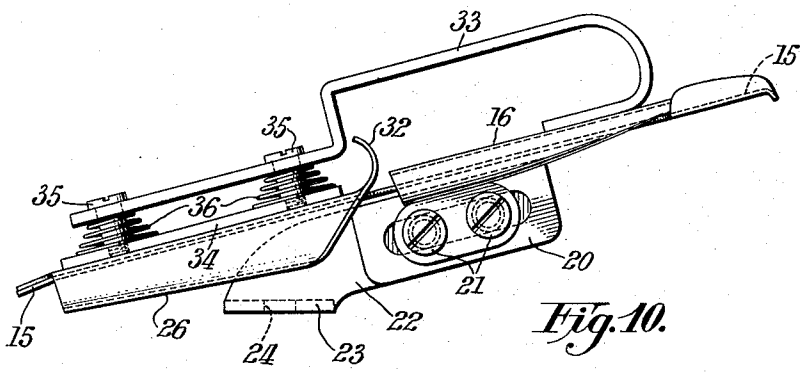


Fig. 10.

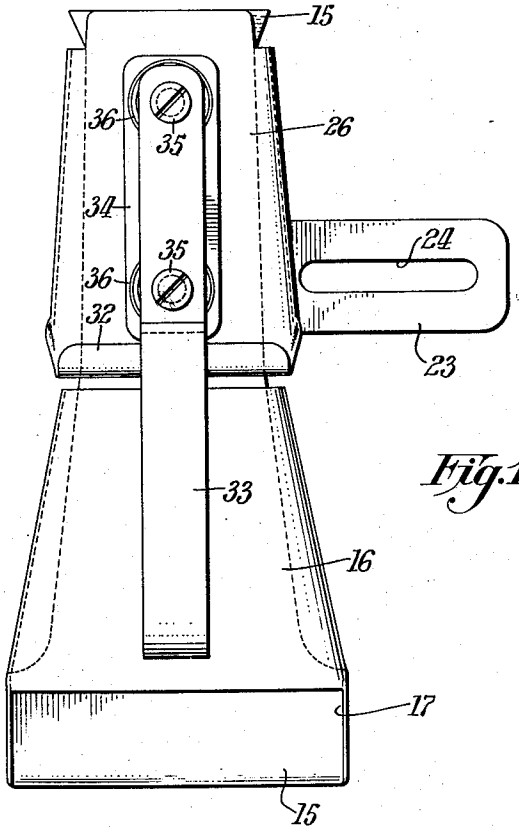


Fig. 11.

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2,674,213

WORK-GUIDING ATTACHMENT FOR SEWING MACHINES

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Application December 20, 1950, Serial No. 201,720

5 Claims. (Cl. 112—2)

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This invention relates to work-guiding attachments for sewing machines, and more particularly to a strip-folding and guiding attachment adapted for use in the making of overalls waistbands having belt-loops attached thereto.

The waistband commonly used in the production of overalls includes an inner or lining strip having inturned marginal edges and an outer or facing strip also having its marginal edges inturned, the waistband being attached to a single ply of body material of which the upper edge is interposed between the bottom inturned marginal edges of the facing and lining strips. Two parallel rows of waistband securing stitching, one disposed along the top and the other along the bottom of the waistband, secure the components thereof in proper assembled relation. After the waistband is stitched, the conventional belt-loops are attached at spaced points along the waistband by separate tacking operations.

It is the primary object of the present invention to provide a work-guiding attachment which functions to fold and direct the facing strip of the waistband to the stitching mechanism of a two needle sewing machine and simultaneously therewith permit the insertion of preformed belt-loops into the attachment so that they can be secured to the garment by the waistband securing stitches.

A further object of the present invention is to provide a work-guiding attachment of the type in question in which provision is made to introduce one preformed belt-loop at a time into the guide, whereby the opposite end-portions of the belt-loop are folded inwardly about the inturned marginal edges of the facing strip so that the end-portions of the belt loops are fastened by the waistband securing stitches and at the same time concealed from view.

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 elevational view of a portion of a sewing machine equipped with the improved work-guiding attachment.

Fig. 2 is a top plan view the work-guiding attachment and the adjacent work-support of the sewing machine.

Fig. 3 represents a vertical transverse sectional view of the sewing machine bed and work-support, showing in elevation the upwardly inclined lining strip guide and my improved combination facing strip and belt-loop guide arranged at a downward inclination.

Fig. 4 is a bottom plan view of the improved

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guide, illustrating the preferred way of resiliently supporting one of the guide sections from the other of the guide sections.

Fig. 5 represents a vertical section taken longitudinally of the guide shown in Fig. 4.

Fig. 6 is a top plan view of the work-guide and a fragment of the waistband, showing the manner in which the preformed belt-loop is manually folded about the front portion of the guide and introduced between the front and rear portions of the guide, whereby the belt-loop is caused to embrace the facing strip and be carried forward thereby to the stitching devices.

Fig. 7 is a left side view of the guide illustrated in Fig. 6, showing the manner in which the preformed belt-loop enters between the front and rear sections of the work-guide.

Fig. 8 is a view of the delivery end of the guide shown in Fig. 4.

Fig. 9 is a vertical section taken through the completed waistband (line 9—9, Fig. 6), illustrating the manner in which the end-portions of the belt-loop are folded about and concealed by the inturned marginal edges of the facing strip so that the entire assembly can be stitched by the parallel rows of waistband securing stitches.

Fig. 10 is a left side view of a modified form of the two-part facing strip guide.

Fig. 11 is a top plan view of the guide shown in Fig. 10.

Referring more in detail to the drawings, the invention is illustrated as applied to a two-needle two-thread chain-stitch sewing machine of the type disclosed in the U. S. patent of F. F. Zeier, No. 2,329,681, granted September 14, 1943. The machine includes a machine-bed 1 from which rises a standard 2 of an overhanging bracket-arm terminating in a head 3. Journaled in the head 3 for vibratory and endwise reciprocatory movements is a needle-bar 4 carrying at its lower end a pair of needles 5. Disposed within the bed 1 for cooperation with each of the needles 5, in the formation of chain-stitches, is a looper 6. Also carried by the head 3 is a spring-depressed presser-foot 7 which functions to yieldingly maintain the work in engagement with a four-motion feed-dog 8 adapted to operate through a slotted throat-plate 9 fastened to a work-support or cloth-plate 10 secured on the bed 1. In order to render the loopers 6 accessible for threading, the cloth-plate 10 is fitted with a retractable slide-plate 11.

The complete work-guiding attachment for folding and directing the components of the waistband to the stitching devices is carried on the retractable slide-plate 11 so that the attachment can be quickly removed from the machine and a simple slide-plate substituted therefor,

thereby to convert the sewing machine into a conventional flat-bed stitcher. The complete work-guiding attachment is best seen in Fig. 3 and the waistband in Fig. 9. The attachment comprises an intermediate edge-guide 12 for guiding the upper edge of the body material M, a bottom strip-folding guide 13 for inturning the marginal edges L' of the lining strip L, and a top strip-folding guide, indicated generally as 14, for inturning the marginal edges of the facing strip F and also the opposite end-portions B' of the preformed belt-loop B. The three guides 12, 13 and 14 are mounted on the slide-plate 11 so that they are relatively convergent at the delivery end of the attachment immediately in advance of the feed-dog 8 and presser-foot 7, whereby the components of the waistband are properly arranged relatively to each other and presented so arranged to the stitching devices of the sewing machine. The edge-guide 12 and the lining strip guide 13 are of conventional form and require no further description. The present improvement has to do with the facing strip guide 14, and it is to this guide that the rest of the description is directed.

As will be seen in Figs. 4, 5 and 6, the improved facing strip guide 14 comprises a sheet-metal base or arbor member 15 connected at the mouth or receiving end of the guide to the downturned side edges of a cover-plate 16 spaced vertically from the arbor member to define a rectangular strip-guiding passageway 17 having maximum width at the receiving end of the guide. The opposite longitudinal side portions of the cover-plate 16 are folded about and extend beneath the opposite edges of the arbor member 15 and cooperate therewith in forming folding scrolls 18 adapted to inturn the marginal edges of the facing strip as it traverses the guide. Extending between the two scrolls 18 beneath the arbor member 15 is a cross-piece or bridge-piece 19 soldered or otherwise secured to the scrolls. The bridge-piece 19 is formed at its right hand end with a depending ear 20 to which is attached, by screws 21, the upstanding vertical limb 22 of a supporting bracket 23. The supporting bracket 23 is slotted, as at 24, to receive the clamping screws 25 which are threaded into the slide-plate 11, the slots 24 serving to permit slight sidewise adjustment of the facing-strip guide relative to the stitching mechanism of the sewing machine.

It will be understood that in order to permit the convenient insertion of the preformed belt-loop B into the guide so that the opposite ends of the belt-loop will be folded about the inturned edges of the facing strip, the cover-plate 16 is preferably split transversely of itself into two tandem arranged relatively separable sections, the front or first section having been described hereinbefore and the rear or second section now to be described. As will be seen in Figs. 3, 4, 5 and 6, the rear section 26 of the cover-plate of the guide is generally similar in shape to the front section 16. The longitudinal side portions of the rear section 26 of the cover plate are folded about the opposite edges of the free end portion of the arbor member 15 to form folding scrolls 27 adapted to retain the previously inturned marginal edges of the facing strip in proper folded condition and, at the same time, to inturn the end portions of the belt-loop as it is being advanced or conveyed through the rear portion of the guide by the endwise moving facing-strip. The rear section 26 of the cover plate is resiliently supported by means of a cross-piece 28 soldered or otherwise secured to the folding scrolls 27, the cross-piece being secured by the screw 29 to one end of a leaf-spring member 30 fixed at its other end by the screw 31 to the bridge-piece 19. To facilitate the insertion of the belt-loop B between the proximate ends of the two sections 16 and 26 of the cover-plate, the rear section 16 at its front end is curved upwardly as at 32, in the region of the delivery-end of the section 16.

From the foregoing, it will be understood that the facing strip F is directed through the strip guide which inturns the marginal edges of the facing strip and presents the folded strip to the stitching mechanism in proper relative relation to the lining strip and the waist portion of the overalls. At the appropriate times, the operator manually inserts a precut length of belt-loop beneath the upturned front end 32 of the rear section 26 of the cover-plate, in the manner shown in Fig. 6. In so doing, the rear section 26 yields upwardly slightly in response to the flexing of the leaf-spring 30, thus permitting the belt-loop B to enter into the rear section 26 of the guide, as shown in Fig. 7. To facilitate the introduction of the belt-loop into the second work-folder or rear section 26, the receiving end thereof has a capacity greater than the delivery end of the first work-folder or front section 16. Upon entering the rear section of the guide, the belt-loop engages the folded facing strip F which becomes, in effect, a conveyor belt and carries the belt-loop through the rear section 26. As the belt-loop traverses the rear section its opposite end-portions are turned under the folded edges of the facing strip so that no unfinished edges appear in the final product. When the belt-loop and the facing strip emerged from the delivery end of the facing strip guide they are relatively disposed so that the two lines of waistband securing stitches S secure the waistband and belt-loops together in one operation. It will be understood that while the strip-passageway at the delivery end of the facing strip guide has sufficient capacity to accommodate both the folded facing strip F and the belt-loop B, it still effects control of the inturned marginal edges of the facing strip when only the facing strip is passing through the rear section 26 of the guide.

Figs. 10 and 11 disclose a modification of the facing strip guide. The constructive features of this guide differ from those of the attachment shown in Figs. 1 to 8, principally in the spring means employed for resiliently sustaining one of the sections from the other section. Referring to Figs. 10 and 11, it will be seen that the means for resiliently supporting the rear section 26 from the front section 16 comprises a relatively rigid overhanging scroll-supporting bracket 33 preferably soldered to the front section 16 and having its free end overhanging the rear section 26. Soldered or otherwise fastened to the top of the rear section 26 is a plate 34 which has threaded into it two screws 35 passing loosely through the bracket 33. Surrounding the screws 35 and interposed between the bracket 33 and the plate 34 are two beehive springs 36 which are preferably under slight compression and therefore bias the rear section 26 downwardly toward the arbor member 15. Introduction of the belt-loop between the rear end of the front section 16 and the upturned leading end 32 of the rear section 26 will cause the rear section to move upwardly against the action of the beehive springs 36 in order to give the additional capacity required to accommodate the belt-loop.

From the foregoing, it will be understood that the work-guiding attachment described above is designed to quickly and easily direct a belt-loop, together with the facing strip of the waistband, to a sewing machine so that the waistband and belt-loops can be secured in one stitching operation. The tandem arrangement of the relatively yielding front and rear sections **16** and **26** cooperating with a single or common arbor member **15** renders the device particularly well adapted for performing its intended function without any loss of control in the directing of the elements of the waistband to the stitching mechanism.

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

1. A work-guiding attachment of the class described comprising, a single arbor member, a front cover-plate spaced from said arbor member to provide a fabric passageway and terminating at its delivery end in work-folding scrolls bent about and extending beneath said arbor member, a cross-piece connected between the work-folding scrolls, a rear cover-plate spaced from said arbor member to provide a second fabric passageway in alinement with the first fabric passageway, said rear cover-plate terminating at its delivery end in work-folding scrolls bent about and extending beneath said arbor member, a cross-piece connected between the work-folding scrolls of said rear cover-plate, a spring member connected at its opposite ends to the cross-pieces of said front and rear cover-plates to resiliently support one of said cover-plates from the other cover-plate, and means rigidly supporting said single arbor member and one of said cover-plates.

2. A work-guiding attachment for folding and directing a plurality of superposed work-pieces to the stitching mechanism of a sewing machine, comprising, a single arbor member having at least one longitudinal work-engaging edge, a first work-folder having at least one work-folding scroll bent about and complemental to the longitudinal work-engaging edge of said arbor and having its delivery end disposed intermediate the ends of said arbor member, a second work-folder having at least one work-folding scroll bent about and complemental to the longitudinal work-engaging edge of said arbor, said second work-folder having its receiving end disposed after the delivery end of said first work-folder when viewed in the direction of the travel of the work through the attachment and having its delivery end terminating substantially at the end of said arbor member, and means supporting said first and second work-folders.

3. A work-guiding attachment for folding and directing a plurality of superposed work-pieces to the stitching mechanism of a sewing machine, comprising, a single plate-like arbor member having relatively convergent longitudinal work-engaging edges, a first work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having its opposite sides bent about and complemental to the front portion of the work-engaging edges of said arbor member to provide work-folding scrolls for a first work-piece, a second work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having sides bent about and complemental to the rear portion of the work-engaging edges of said arbor member to provide work-folding scrolls for a second work-piece to be superposed on said first work-piece, said second work-folder having its receiving end spaced from the delivery end of said first work-folder in a direction longitudinally of said single arbor member so that the second work-piece can be introduced into said attachment between said first and second work-folders, and means supporting said first and second work-folders.

4. A work-guiding attachment for folding and directing a plurality of superposed work-pieces to the stitching mechanism of a sewing machine, comprising, a single plate-like arbor member having relatively convergent longitudinal work-engaging edges, a first work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having its opposite sides bent about and complemental to the front portion of the work-engaging edges of said arbor member to provide work-folding scrolls for a first work-piece, a second work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having sides bent about and complemental to the rear portion of the work engaging edges of said arbor member to provide work-folding scrolls for a second work-piece to be superposed on said first work-piece, said second work-folder having its receiving end of greater capacity than the delivery end of said first work-folder and also having its receiving end spaced from the delivery end of said first work-folder in a direction longitudinally of said single arbor member so that the second work-piece can be introduced into said attachment between said first and second work-folders, and means supporting said first and second work-folders.

5. A work-guiding attachment for folding and directing a plurality of superposed work-pieces to the stitching mechanism of a sewing machine, comprising, a single plate-like arbor member having relatively convergent longitudinal work-engaging edges, a first work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having its opposite sides bent about and complemental to the front portion of the work-engaging edges of said arbor member to provide work-folding scrolls for a first work-piece, a second work-folder including a flat wall spaced from said arbor member to define a fabric passageway and having sides bent about and complemental to the rear portion of the work-engaging edges of said arbor member to provide work-folding scrolls for a second work-piece to be superposed on said first work-piece, said second work-folder having its receiving end spaced from the delivery end of said first work-folder in a direction longitudinally of said single arbor member so that the second work-piece can be introduced into said attachment between said first and second work-folders, means supporting one of said work-folders in fixed position with respect to said arbor member, and means supporting said other work-folder for yielding movement relative to said arbor member.

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