March 23, 1937. J. E. MARTIN 2,074,929

APPARATUS FOR ATTACHING ELASTIC BANDS TO GARMENTS

Filed June 14, 1935

Fig. 1

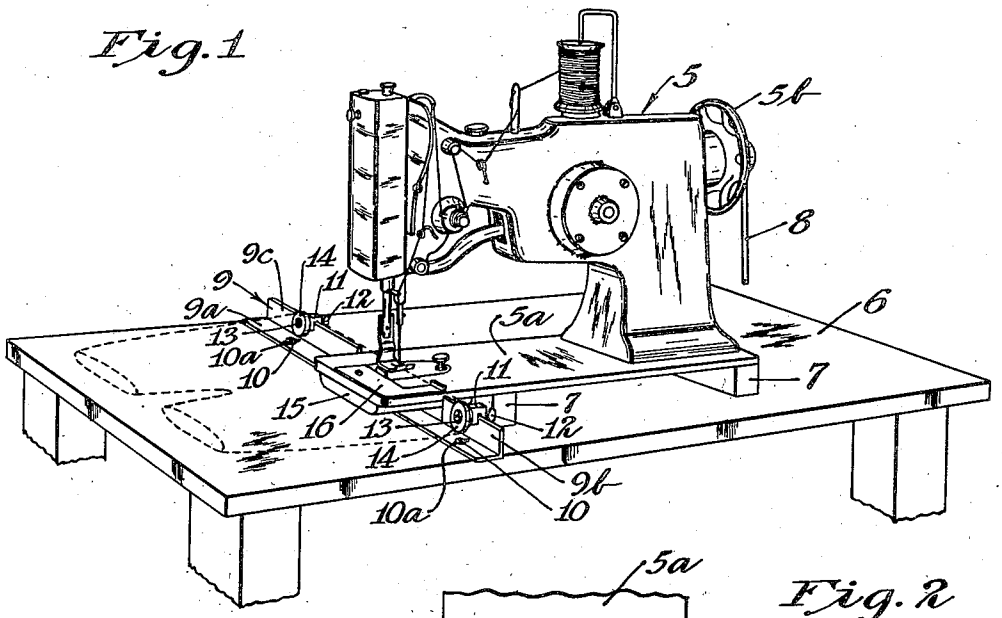


Fig. 2

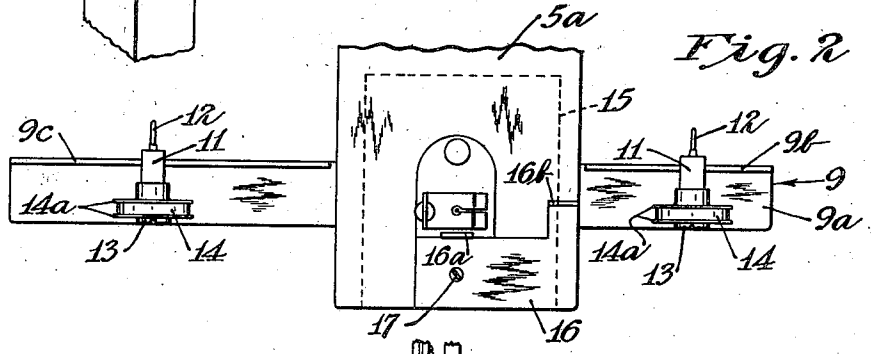


Fig. 3

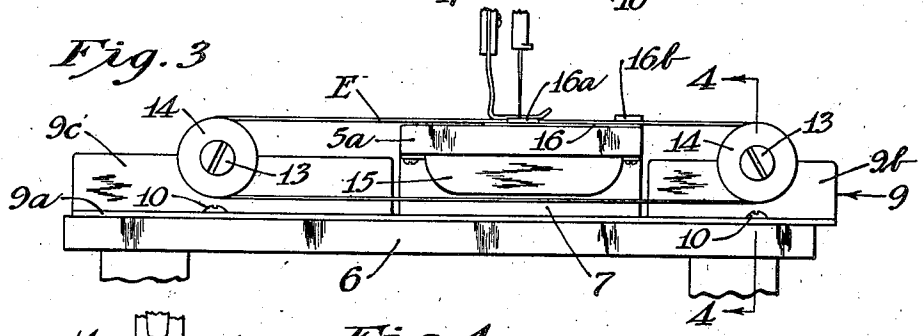
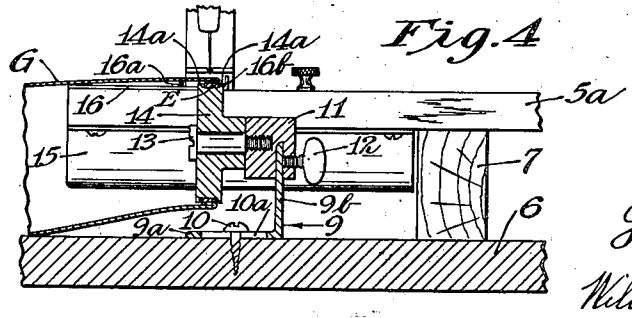


Fig. 4



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APPARATUS FOR ATTACHING ELASTIC BANDS TO GARMENTS

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Application June 14, 1935, Serial No. 26,585

1 Claim. (Cl. 112—2)

My invention relates to a sewing method and apparatus for use in garment manufacture and particularly to a method and apparatus or attaching elastic bands to endless marginal portions of garments.

It is customary to render portions of various garments bordering openings in such garments elastic by suitably associating elastic bands with such portions as, for example, in the case of ladies' bloomers, and the like, where it is common practice to apply an elastic band to the waistline portion and to the lower end of each leg portion thereof. In such garments the elastic band is stretched and under tension when the garment opening with which it is associated is distended to its maximum degree of opening and with lesser degrees of opening the contraction of the elastic band causes the garment material associated therewith to assume one form or another of a wrinkled or pleated configuration. It is of course highly desirable that the configuration produced be of uniform and pleasing appearance and of a type affording comfort to the wearer of the garment.

An object of my invention is to provide a method and apparatus for continuously and uniformly stitching an elastic band, while the same is in stretched condition, to the marginal portion of a garment bordering a garment opening so that the configuration of the wrinkles or pleats formed in the garment by contraction of the elastic band will be of uniform and pleasing appearance and will be entirely comfortable to the wearer of the garment.

These and other objects and advantages of the invention will be more fully set forth in the following description made in connection with the accompanying drawing, in which like reference characters refer to similar parts throughout the several views, and in which:—

Fig. 1 is a perspective view of a sewing machine having my device incorporated therewith;

Fig. 2 is a broken away top view;

Fig. 3 is a vertical view looking toward the left hand end of the machine, and

Fig. 4 is a section taken along the line 4—4 of Fig. 3 as indicated by the arrows.

Referring to the drawing, a sewing machine 5, having a base 5*a*, is securely mounted on a support such as a table top 6 with the base 5*a* thereof spaced above the table top 6 by suitable means such as the spacing blocks 7. A suitable source of mechanical power (not shown) is connected to the drive wheel 5*b* of the sewing machine 5 by means of the belt 8.

An angle shaped member 9 extending transversely of the table top 6 has a horizontally disposed flange 9*a* secured to the table top 6 by suitable means such as the screws 10. For purposes of adjustment apertures in the flange 9*a* of the angle member 9 through which the anchoring screws 10 extend are made in the form of transverse slots 10*a*. The vertically upstanding flange portion of the angle member 9 is cut away in a portion thereof situated below the base 5*a* of the sewing machine 5 to leave upstanding longitudinally spaced aligned flanges 9*b* and 9*c* located respectively forwardly and rearwardly of the base 5*a*.

A pair of slide-blocks 11 are mounted on the respective unstanding flanges 9*b* and 9*c* of the angle member 9. Each block 11 has a deep groove in its lower side by means of which it is mounted on the upstanding flange 9*b* or 9*c* for longitudinal sliding movement therealong as best shown in Fig. 4. A thumb-screw 12 is screw-threadedly engaged in an internally screw-threaded apertured portion of each block 11 for use as a clamping screw to releasably hold the block 11 stationary in an adjusted position relative to the length of the flange 9*b* or 9*c*.

A pivot screw 13 is mounted in the outer or left-hand side of each block 11 and a revoluble element such as the wheel 14 is revolubly mounted thereon. Each of the wheels 14 has a flange 14*a* at each edge of its peripheral portion and is of such proportions that the space between the flanges 14*a* is at least as wide as the elastic band to be used on my machine.

In using my machine an endless elastic element or band E is stretched about the two wheels 14 so as to engage a portion of the periphery of each wheel 14 and to extend between the two wheels 14 as shown. The portions of the band E engaging the peripheries of the wheels 14 are disposed between the flanges 14*a* of the wheels 14 whereby the flanges 14*a* serve as guide flanges or retaining means to prevent displacement of the band E toward either side of the wheels 14.

The proportions of the parts of my machine are such that the upper run of a band E, carried by the wheels 14 as described above, is disposed upon the sewing machine base 5*a* at the level normally occupied by material being stitched by a sewing machine such as the sewing machine 5.

The wheels 14 are positioned to rotate substantially in a vertical plane common to the longitudinal axis of the vertically reciprocating needle carrying member of the sewing machine 5 and the normal direction of movement of mate-

rial through such a sewing machine about respective parallel axes normal to said plane. Such an arrangement so positions the upper run of a band E that the sewing machine 5 may produce stitching in the upper run of the strip E.

When it is desired to stitch an elastic band E to the marginal portion of a garment G bordering an opening in that garment the band E is placed upon the wheels 14 in the manner previously described. The marginal portion of the garment G is placed on the wheels 14 over the elastic band E as indicated in Fig. 4. One or both of the clamping screws 12 may next be loosened and the distance between the respective blocks 11 is increased so that the marginal portion of the garment G fits tightly about the wheels 14. The clamping screws 12 are then tightened to hold the blocks 11 in adjusted position so that the axes of rotation of the wheels 14 are fixed. The proportions of the band E are of course so selected that the band E, only when considerably stretched and under tension, will have a circumferential length equal to the circumferential length of the marginal portion of the garment G.

When the band E and garment G arranged as described above the sewing machine 5 is operated to stitch the band E and the marginal portion of the garment G together. The sewing machine 5, of course, acts to progress the band E and marginal portion of the garment G in the well known manner of any conventional form of sewing machine as the stitching is carried on and the revolubility of the wheels 14 readily permits such progressive movement while maintaining the parts being stitched under tension. The stitching action of the sewing machine 5 is continued until the line of stitching reaches the starting point of the stitching at which time the sewing machine 5 is stopped and the garment G with the band E stitched thereto may be removed from the wheels 14.

The sewing machine 5 is preferably arranged to produce what is commonly known as zig-zag stitching although other suitable types of stitching may be used.

When the garment G is removed from my device the elastic band E contracts and the marginal portion of the garment G assumes a pleated configuration of uniform and pleasing appearance.

A pan 15 is provided for collecting oil drippings from the sewing machine 5 and lint so as to prevent the same from reaching a garment which is being stitched. The pan 15 is disposed immediately below and is supported from the sewing machine base 5*a* and is of such a depth that its lower side is spaced slightly above the lower run of a band E carried by the wheels 14. In length the pan 15 extends from the left-hand spacing block 7 to the left hand limit of the sewing machine base 5*a*.

Since the wheels 14 may be adjustively positioned at various distances apart it is obvious that my device is well adapted and easily adjustable for stitching of elastic bands of corresponding dimensions to marginal portions of garments of various circumferential dimensions.

It is apparent that I have invented a novel, convenient, inexpensive and effective method and apparatus for easily, rapidly and uniformly stitching elastic bands to marginal portions of garments adjoining openings in the garments.

A plate 16, secured to the left-hand forward corner portion of the sewing machine base 5*a* by means of a screw 17, integrally carries upstanding guide lips 16*a* and 16*b* located at respectively opposite sides of the position occupied by the upper run of an elastic band E carried by the wheels 14. The guide lip 16*a*, which is at the left, is only slightly higher than the thickness of the band E.

While my method and apparatus have been illustrated and described as applied to garment manufacture, it should be obvious that my method and apparatus are readily adaptable for use in stitching either elastic or non-elastic bands to many structures other than garment structures.

It will, of course, be understood that various changes may be made in the form, details, proportions and arrangement of the parts, without departing from the scope of my invention, which, generally stated, consists in a device capable of carrying out the objects above set forth and in the novel parts and combinations of parts disclosed and defined in the appended claim.

What is claimed is:—

In combination with a sewing machine having a relatively narrow base and a needle disposed above one of the end portions of said base, means for supporting said base above a supporting surface with the needle end of said base disposed in overhanging relation to such means, an elongated vertical member disposed transversely beneath said base inwardly of said needle end and extending at its ends for some distance beyond the sides of said base, said vertical member having a horizontal upper edge, a portion of which is disposed at one side of said base and a portion of which is disposed at the opposite side of said base, a pair of revoluble members disposed respectively at opposite sides of said base and mounted upon the edge of said vertical member in position to entrain an endless elastic element with the upper run of said element extending across the overhanging end of said base and beneath said needle in position to receive stitching, at least one of said revoluble members being mounted on a carriage, said carriage being slidably mounted on the horizontal edge of said vertical element, and means for securing said carriage in a multiplicity of various spaced positions relative to the other revoluble member.

JOHN E. MARTIN.