Aug. 1, 1944. J. P. WIREN 2,355,023

MEANS FOR MAKING FLAPS AND THE LIKE FOR GARMENTS

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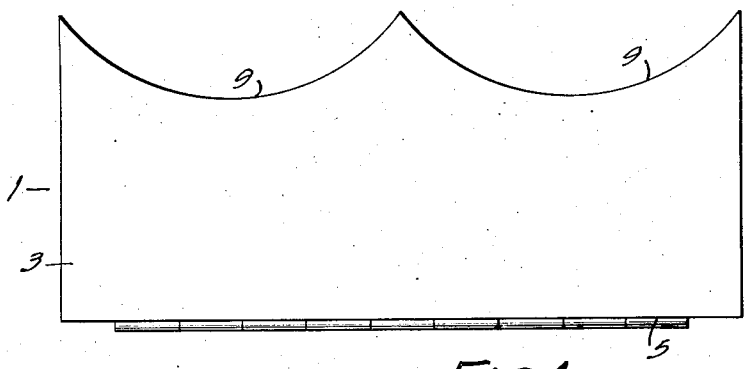


FIG. 1

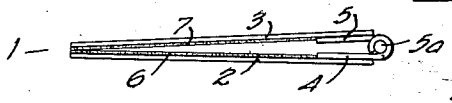


FIG. 2



FIG. 3

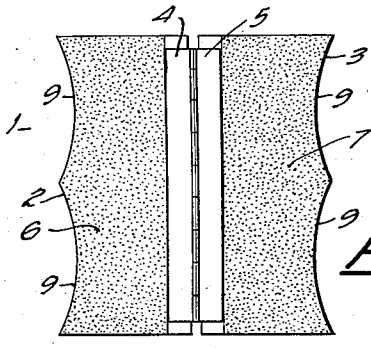


FIG. 4

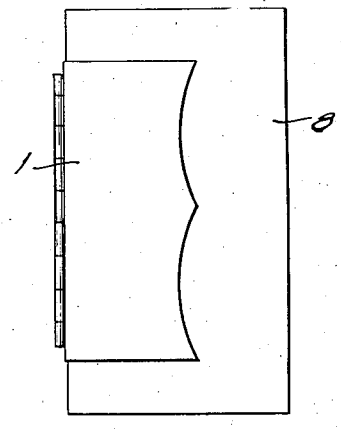


FIG. 5

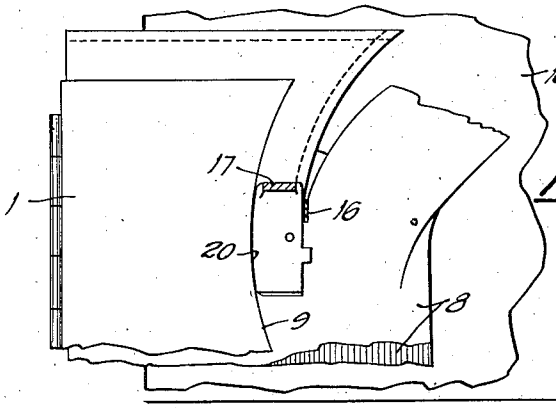


FIG. 12

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MEANS FOR MAKING FLAPS AND THE LIKE FOR GARMENTS

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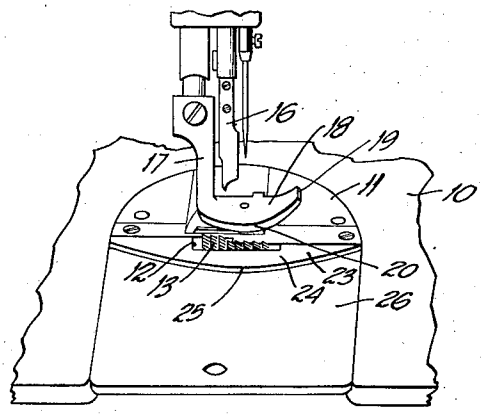


FIG. 6

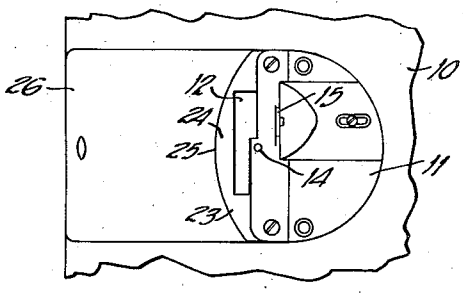


FIG. 7

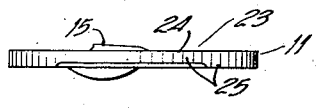


FIG. 8

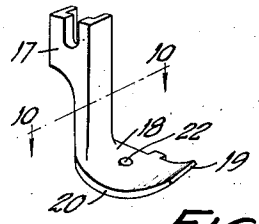


FIG. 9

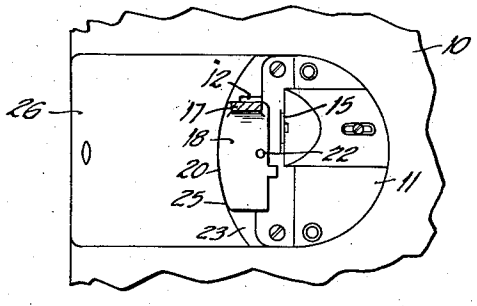


FIG. 11

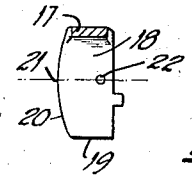


FIG. 10

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MEANS FOR MAKING FLAPS AND THE LIKE FOR GARMENTS

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Application July 18, 1941, Serial No. 402,963

3 Claims. (Cl. 112—2)

In manufacturing flaps, such as flaps for the pockets in garments, it has heretofore been the practice, in quantity production, to cut or blank out a considerable quantity of such flaps in one operation. A stack comprising around 40 or 50 pieces of material is subjected to a die which cuts through the entire stack blanking out a flap blank from each piece of material. With this method, the flap pieces are intended to be cut to the correct size, and, thereafter, are sewn, two flap blanks together, along their side edges and along three sides thereof.

However, in practice, it is found that when a stack consisting of a large number of pieces of fabric is die cut in the foregoing manner, the flap blanks so produced are not of uniform size and configuration. It therefore becomes the duty of an operator to match the flap blanks or, in other words, to pick from the mass of blanks two blanks which are substantially of like size, order and shape before they are sewn together.

Obviously, when the flaps are formed from blanks which to a noticeable degree vary in size, the finished flaps will also vary in size one to another and, similarly, they may vary in shape. Furthermore, when two flap blanks are sewn together by an operator, the line of stitching is not always uniformly spaced from the edges of the blanks. Because of this fact and also the fact, as above pointed out, that the blanks are not of uniform size, the finished flaps practically all vary and many to a noticeable degree both in shape and size. The finished flaps, of course, are turned inside out after they are stitched and the stitching more or less determines the precise configuration of the finished flap.

A first object of my invention resides in the provision of a novel method for making flaps and the like for garments which, in the practice thereof, will produce flaps of substantially like size and shape.

Another object of my invention resides in providing a novel template or guide element, which serves as a pattern to guide the operator both in the stitching and a cutting or trimming operation while the flap is being made.

Still another object resides in providing a combined sewing and trimming machine which is provided with means adapted to cooperate with a template of the above character as a guide for said template while it is moved in engagement therewith, said template-guiding means being characterized by the fact that it will so function even though the side edges of said template are of concave configuration.

With these and other objects in view, my invention includes the novel steps practiced in the method thereof and the novel elements and the constructions and correlations thereof described below and illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of one form of template for use in sewing and trimming flap blanks from larger blanks of material;

Fig. 2 is an end elevation view thereof;

Fig. 3 is a view similar to Fig. 2 but showing the two plates of the template fully opened up;

Fig. 4 is a plan view of the template when opened up as shown in Fig. 3 and showing the inner surfaces of the plates;

Fig. 5 shows a blank of material operatively disposed between the plates of the template;

Fig. 6 is a fragmentary, perspective view of a sewing and trimming machine constructed in accordance with my invention;

Fig. 7 is a fragmentary, plan view of the bed of the sewing machine shown in Fig. 6;

Fig. 8 is a side elevation view of the needle plate shown in Fig. 7;

Fig. 9 is a perspective view of a preferred form of presser foot formed in accordance with my invention;

Fig. 10 is a sectional view thereof taken in about the plane 10—10 of Fig. 9;

Fig. 11 is a fragmentary, plan view of the bed of the machine showing the presser foot operatively arranged thereover; and

Fig. 12 is a fragmentary view illustrating the manner in which a flap is stitched and severed from the blanks as it is made.

It will be understood that the method and the means of my invention may be employed not only in fabricating flaps of various sizes and irregular shapes but it may also be used in making other parts of garments. In the drawings I have illustrated and in the following will describe one form of template and it will be readily perceived that flaps of other sizes and configurations may be made simply by employing other templates having suitable configurations.

In the practice of this invention, I propose to place between the relatively movable flaps of a template device a pair of blanks of material, the blanks being somewhat larger in size than that of the finished flap and, thereafter, by using the edges of the template which overlie the blanks as guides, to stitch the two blanks together in uniformly spaced relation to the sides of the template, and while still using said template as a guide, to trim or cut the portions of the two

blanks held between the plates of the template from the remainder of the blanks, the line of cut also being uniformly spaced from the edges of the template.

Referring first to Figs. 1 through 5 wherein I have illustrated a template device, the side edges of which are of exemplary configuration, 1 indicates generally the template comprising two preferably substantially flat, plate-like elements 2 and 3 which are hingedly connected together by means of hinge plates 4 and 5 and the hinge pin 5a, the hinge plates 4 and 5 being secured in any suitable manner to the plates 2 and 3, respectively. The inner surfaces of the plates 2 and 3 preferably comprise or are provided with a gripping means which is adapted to provide firm engagement between the plates of the template and the fabric therebetween whereby to prevent relative movement between the template and fabric while the fabric is undergoing a sewing and trimming operation. In the embodiment illustrated, the plates 2 and 3 have adhesively secured thereto strips 6 and 7 of emery cloth. The strips of emery cloth are preferably substantially coextensive with the plates 2 and 3 and at least extend along the free side edges of the plates which are used as guides in the stitching operation.

When it is desired to fabricate a flap of the shape of the template shown in the drawings, two blanks of material are inserted in superimposed relation between the plates 2 and 3 of the template 1 as indicated at 8 in Fig. 5, only one blank, of course, appearing therein. The hinge may serve to align the inner edges of the two blanks. Since, in accordance with my invention, the templates are employed, while gripping the blanks of fabric 8 between the plates thereof, as a guide during the stitching and trimming operation and since the stitching will lie in outwardly spaced relation to the side edges of the template, the templates, of course, will be made somewhat smaller than the finished flap.

The machine of my invention on which the stitching and trimming operation is formed, is arranged to provide a guide means preferably precisely disposed relative to the stitching and the trimming mechanism thereof. In the preferred form of my machine, as illustrated, this guide means, which serves to maintain the edges of the templates in uniformly spaced relation to the stitching and cutting mechanism as the templates are moved along and in engagement therewith, is so constructed that templates having curved, concave side edges, such as that indicated at 9, may be guided in the foregoing manner.

In Figs. 6 through 11, I have illustrated a preferred cutting and trimming machine for making flaps. In the embodiment illustrated, the bed 10 of the machine is provided with the usual needle or throat plate 11 which is formed with an elongated opening 12 therein, through which the fabric-feeding mechanism 13 projects and in which it is adapted in the customary manner to reciprocate. The needle plate is also provided with the usual needle hole 14, through which the needle is adapted to pass, and an upstanding cutting bar 15 with which a reciprocating knife 16 is adapted to cooperate in trimming or cutting the fabric as it is stitched. Above the needle plate 11 is mounted a presser foot 17 which is adapted to be moved toward and away from the needle plate and to engage, when moved toward the plate, a fabric therebetween. The presser foot comprises a plate-like element 18 which is adapted to lie substantially flat against the fabric, the forward end thereof curving upwardly, as indicated at 19, in the usual manner to facilitate the insertion of fabric therebeneath.

In accordance with my invention, however, one side of the plate-like element 18 which extends in the general direction of that in which the fabric moves while being stitched is provided with a rounded projection or convex side edge 20. Since the plate-like element 18 of the presser foot may be comparatively short in length, the entire side edge thereof may be rounded as illustrated in the embodiment herein shown and, preferably the peak of the rounded side edge 20, as indicated at 21 in Fig. 10, lies opposite the needle hole 22 in the presser foot. In other words, a line passed through the peak 21 of the side edge 20 and the center of needle hole 22 preferably extends in a direction substantially at right angles to the direction which the feeding mechanism 13 will move the fabric.

In making the flaps, the template 1 with the blanks 8 of material between the plates thereof, as shown in Fig. 5, is placed on the bed of the machine, and the presser foot is lowered upon the fabric with the peak 21 of its curved side in engagement with the side edge of the template as shown in Fig. 12. Of course, the stitching operation is started at one side of the template adjacent the hinge and continued along the three, free sides thereof. In stitching, the template is moved continuously in contact with the curved side edge 20 of the presser foot as shown in Fig. 12. Hence, the row of stitching will follow and in uniformly spaced relation to the side edges of the template and, furthermore, since simultaneously a trimming or cutting operation is carried out by means of the knife 16 in cooperation with the cutting bar 15 of the needle or throat plate 11, the blanks will also be cut along a line following the side edges of the template but uniformly spaced therefrom and on the outer side of the stitching.

Due to the curved side edge 20 of the presser foot, templates having side edges of concave form may be guided thereby in forming flaps and the line of stitching will lie at a uniform spacing from the side edges of the template throughout the entire length thereof. Furthermore, since the curved side edge 20 is comparatively short in length and may have a substantially small radius of curvature, the templates may have concave side edges having small radii of curvature, substantially as small as that of the edge 20 of the presser foot, and under all of these conditions the presser foot will serve as a guide for the templates uniformly to space the stitching and line of trim from the side edges thereof whereby accurately stitched and trimmed flaps to correct and uniform size and configuration will be made. Obviously, if the radius of curvature of a side edge or part thereof of a template should be substantially less than that of the side edge of the presser foot, uniformity in the spacing of the stitching from the side edge of the template, using the template and presser foot as guiding means, will not result.

In accordance with my invention, I also propose to provide the bed of the machine with a guide means similar to that formed on the presser foot, and I preferably provide both guide means, which are aligned with each other and are adapted to be engaged respectively by the plates of the template which overlie and underlie the blanks.

In the embodiment herein illustrated, the needle or throat plate is provided with a guide means

indicated generally at **23**. The needle plate is provided with a portion **24** having a curved edge **25** which conforms in shape to the rounded side edge **20** of the presser foot and is disposed beneath and in alignment therewith, as shown in Fig. 11. The upper surface of portion **24** is preferably substantially flush with the upper surface of the main body of the needle plate but lies above the upper surface of the slide **26** in the bed of the machine which when removed affords access to the bobbin case. The upper surface of the needle plate and guide portion **24** lies in spaced relation above the surface of the bed and slide **26**, the bed and slide **26** being substantially flush with each other. Furthermore, the slide **26** is preferably cut away so as to fit about the portion **24** of the needle plate when slid into position to effect a closure over the bobbin case.

When both the bed of the machine and the presser foot are formed with guide means as hereinabove described, a template having a pair of blanks of fabric disposed between the plates thereof may be placed on the machine bed and slid over the slide **26** with the blanks overlying the needle plate and the side edge of the lowermost plate of the template abutting the guiding edge **25**. The presser foot is then lowered into engagement with the fabric adjacent the upper template plate, as shown in Fig. 12, and the stitching and trimming operation carried out by moving the template with its upper and lower plates in engagement respectively with the guide edges **20**, of the presser foot, and **25** of the needle plate.

It is important to note that in the practice of my present invention, the flaps will accurately correspond to the template employed and those made with the same template will be substantially of exactly the same size and shape. Furthermore, the necessity of matching blanks to obtain a pair of like size and shape is entirely eliminated. Additionally, since the finished flaps accurately conform in size and shape, the garment to which a pair thereof are applied will have a much smarter and better tailored appearance than otherwise.

In the preferred form of my invention herein described, the guiding edges of the needle plate and presser foot are designed to conform to the curvature of the template device and to engage it for an appreciable distance along its edges during the flap-forming operation whereby to provide a positive guiding action. Hence, the concave edges of the template in shape preferably substantially conform to arcs of circles whereby the complementary guiding edges on the presser foot and bed of the machine, which likewise of course preferably substantially conform to an arc of a circle, will cooperate therewith accurately to guide the work in the machine. Under these conditions, it will be understood that, in production, the guiding means on the needle plate and the presser foot are changed to those having suitable curvatures conforming to the curvature of the template to be used when flaps of another, curved configuration are to be made.

While I have described my invention in its preferred embodiments, it is to be understood that the words which I have used are words of description rather than of limitation. Hence, changes within the purview of the appended claims may be made without departing from the true scope and spirit of my invention in its broader aspects.

What I claim is:

1. A sewing machine comprising a bed including a needle plate having its upper surface disposed at a slightly higher elevation than the upper surface of said bed, a presser foot having a vertical side edge, a mounting for said presser foot adapting it to be moved towards and away from said needle plate to engage and release a fabric positioned therebetween, and a template guiding means on said bed having a flat upper surface substantially flush with the upper surface of said needle plate and provided with a vertical, template-guiding edge in vertical alignment with the side edge of said presser foot; said template guiding edge and the side edge of said presser foot presenting exposed surfaces against which a fabric-holding template comprising a lower plate and an upper plate having vertically-aligned guiding edges between which the fabric is held may be manually positioned and maintained on said bed with the edge of said lower plate in contact with the vertical edge of said template guiding means and the edge of said upper plate in contact with the side edge of said presser foot while said fabric is being stitched.

2. The structure set forth in claim 1 in which the side edge of said presser foot, and the guiding edge on said template-guiding means are convex curves.

3. The combination with a sewing machine comprising a bed including a needle plate having its upper surface disposed at a slightly higher elevation than the upper surface of said bed, a presser foot having a substantially vertical side edge, a mounting for said presser foot adapting it to be moved towards and away from said needle plate to engage and release a fabric positioned therebetween, and a template-guiding means on said bed having a flat upper surface substantially flush with the upper surface of said needle plate and provided with a substantially vertical, template-guiding edge in vertical alignment with the side edge of said presser foot, of a fabric-holding template comprising an upper plate and a lower plate having vertically aligned guiding edges between which the fabric is held and which are adapted to cooperate, respectively, with the side edge of said presser foot and the guiding edge on said template-guiding means while said fabric is being stitched; said lower plate being of such thickness that, when resting flat on said bed with its guiding edge in contact with the edge of said template-guiding means, its upper surface will be substantially flush with the surface of said needle plate; whereby said fabric will lie flat during the stitching thereof.

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