Sept 17, 1957 P. METZGER 2,806,223

METHOD OF MAKING A SOFT COLLAR

Filed May 9, 1952

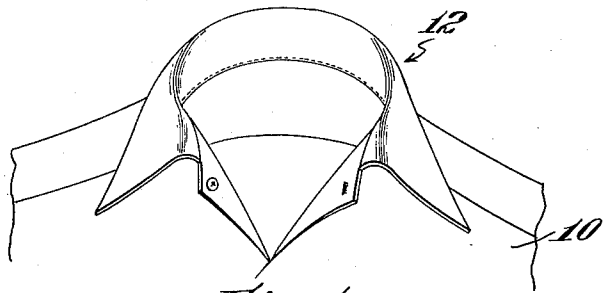


Fig. 1

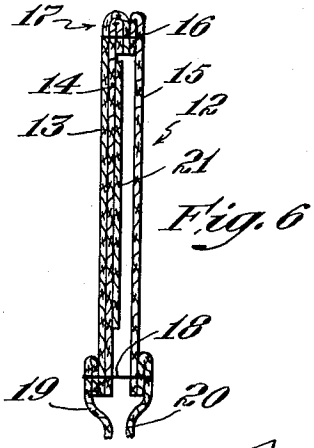


Fig. 6

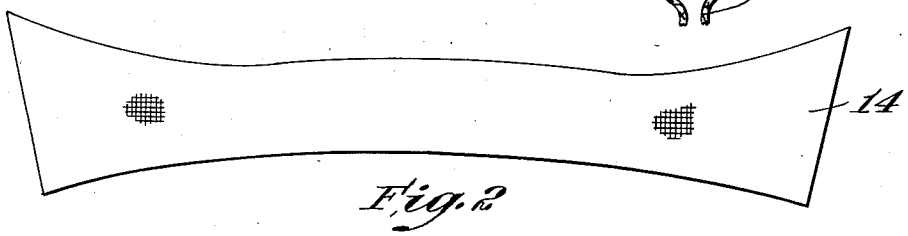


Fig. 2

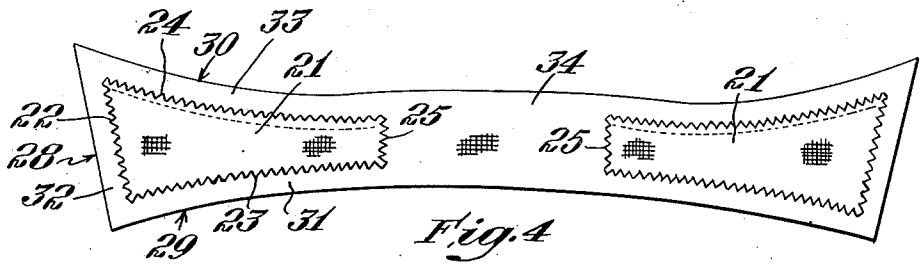


Fig. 4

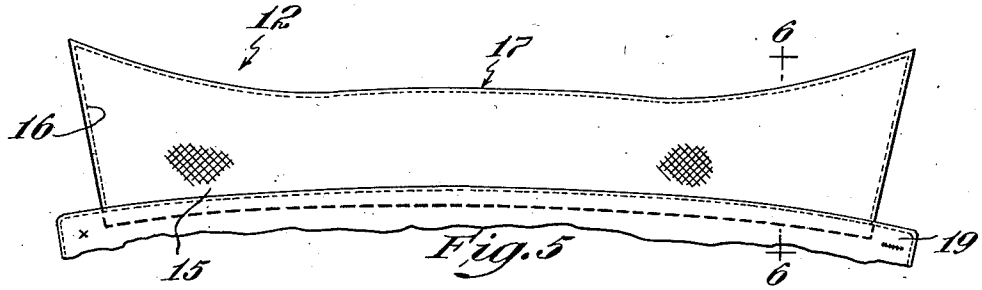


Fig. 5

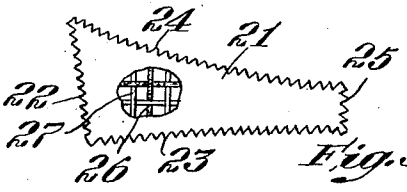


Fig. 3

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METHOD OF MAKING A SOFT COLLAR

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2 Claims. (Cl. 2—143)

This invention pertains to apparel collars, for example shirt collars, more especially to a soft collar for sports wear or the like and to a method of making such collars which results in uniformity of product, and is a collar which, after laundering has a smooth surface devoid of ridges. Such soft collars are usually attached directly to the shirt without any intervening neckband and are sometimes worn open and at other times closed. In the latter event, in particular, it is desirable that the collar, and especially its forward or wing portions, have sufficient inherent stiffness to provide a good appearance. On the other hand it is undesirable that the fold line be unduly stiff.

It has heretofore been proposed to stiffen the front or wing portions of a soft collar by associating spaced, independent stiffener elements of one or another material with the customary liner ply, but heretofore the usual practice in the employment of independent stiffening elements has been to sew them to the liner or one of the outer plies by sewed seams, after which the liner and outer plies are assembled and united and the collar is turned. However, the formation of a sewed seam for uniting the margin of the stiffener element (usually a piece of textile fabric) to the liner or other ply creates a narrow rib (the sewing stitches adding to the effective thickness at the location of the seam), whose presence is manifest in the finished and laundered collar as a perceptible ridge in the under surface of the collar. Moreover, in laundering, the threads of the sewed seam tend to shrink and thereby to cause a crinkling of the margin of the stiffener piece which accentuates the irregularity of the outer surface of the collar resultant from the presence of the seam itself. Laundering of such a collar in such a way as to avoid such surface irregularities is difficult, particularly at the rear part of the collar where the proximate vertical edges of the stiffener pieces are adjacent to each other.

The present invention has for its principal object the production of a collar of the above type useful, for example, as a collar for a sports type shirt, having a certain degree of stiffness at the front or wing portions, at least, but having a normally flexible fold line; which may be laundered in customary manner and without particular care and which, when so laundered, has a smooth outer surface devoid of visible undulations or irregularities resultant from the inclusion of the stiffener elements. A further object is to provide a novel method of making collars having the above characteristics, and which except with respect to the particular features of novelty herein disclosed, follows a usual and customary practice in the manufacture of collars. Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings wherein

Fig. 1 is a fragmentary perspective view of a shirt having a collar embodying the present invention;

Fig. 2 is a plan view of a liner ply useful in the preparation of a collar such as shown in Fig. 1;

Fig. 3 is a diagrammatic plan view of a stiffener element useful in accordance with the present invention, showing a portion magnified to illustrate a desirable kind of fabric;

Fig. 4 is a plan view showing the liner ply with stiffener elements according to the present invention applied thereto and in readiness for association with the front and rear plies of the collar;

Fig. 5 is a plan view of the completed collar showing it attached to a portion of the shirt and as it would appear after laundering; and

Fig. 6 is a diagrammatic section, to larger scale, on the line 6—6 of Fig. 5.

Referring to the drawings, the numeral **10** indicates a shirt having the collar **12** of the present invention attached thereto in conventional manner, the collar being shown in open position. This collar, as illustrated in Fig. 6, comprises the front or outer ply **13**, the liner ply **14**, and the rear or inner ply **15**. These several plies are of customary material employed in the manufacture of shirt collars, for example a fine textile fabric, the several plies being of approximately the same size and shape, as is usual, and being united along the end edges of the collar and along the free edge of the collar by a sewed seam **16**, the collar being turned after the formation of this seam so as to provide the finished edge **17** (Fig. 6). The opposite edges of the several plies are united by the seam **18** to the front and rear plies **19** and **20** of the shirt body, all in conventional manner.

In accordance with the present invention, the liner ply **14** which, as above noted, is of customary material and contour, is provided with stiffener means before it is assembled with the other plies. As illustrated in Fig. 3, stiffener elements **21** are arranged to stiffen each of the front or wing portions of the collar. The stiffener element **21**, being designed for use at the end portion of the collar, is shaped to conform generally to that of the end portion of the collar but is of less length and width than the liner ply. Thus the stiffener element **21**, as shown in Figs. 3 and 4, has the top edge **23**, the lower edge **24**, the front end edge **22** and the inner or rear edge **25**. Preferably these edges are pinked or scalloped in order to minimize irregularities in the outer surface of the completed collar. However, the use of pinked or scalloped edges is not essential. As illustrated to magnified scale in Fig. 3, the material from which the stiffener element **21** may be made, is a textile fabric having inclusions of yarn **26** consisting, for example, of a cellulose derivative which is normally non-tacky but which is inherently capable of becoming temporarily adhesive when heated or treated with a solvent, these yarns being preferably interspersed among ordinary textile yarns **27**.

Having prepared stiffener elements, such as illustrated in Fig. 3, the liner ply **14** is laid down on a flat surface and the stiffener elements are arranged, as shown in Fig. 4, where two such elements are illustrated, one at the right-hand end and the other at the left-hand end of the liner ply **14**. The stiffener elements **21** are so arranged that the edges **22**, **23** and **24** of the stiffener element are spaced from the adjacent edges **28**, **29** and **30** respectively of the liner ply **14** with the proximate or rear edges **25** of the two stiffener elements spaced apart at the center or rear portion of the liner ply so as to leave an area **34** of the liner ply uncovered. By thus arranging the stiffener elements, marginal areas **31**, **32** and **33** of the liner ply **14** are left exposed and it is these portions of the liner ply which are caught in the seams **16** and **18** in assembling and uniting the several plies of the collar and in attaching the collar to the shirt body.

Having arranged these stiffener elements **21** on the liner ply **14**, as shown in Fig. 4, they are then treated to bond them adhesively to the liner ply. If the stiffener elements be of the material above suggested and as illustrated in Fig. 3, it may be sufficient merely to apply heat and pressure to bond them to the liner ply or alternatively to lay over the stiffener elements a pad moistened with a solvent for the threads **26** and then to apply heat and pressure. If the stiffener element **21** be of ordinary textile fabric, adhesive or cement of appropriate type will be applied to the stiffener element and, if desired, also to the liner ply, before laying the stiffener element down on the liner ply. Then, by proper treatment, for example the application of heat or by merely allowing the parts to stand for a suitable time in the air, the adhesive is caused to set, thus permanently bonding the stiffener element to the liner ply. In any event, the stiffener element should be firmly bonded by the adhesive, throughout its entire area, including its extreme marginal portions, to the liner ply. Preferably the stiffling means is located between the liner ply **14** and the rear or inner ply **15** of the collar, thus further minimizing the possibility of the formation of irregularities on the outer or exposed surface of the completed collar when the latter has been laundered.

While stiffener elements of a certain shape and dimensions have herein been illustrated, it is obvious that stiffening means of other form and occupying more or less of the area of the liner ply may be employed, if desired, in order to obtain desired stiffening at selected portions of the collar. However, whatever the shape or dimensions of the stiffener element may be, the stiffening should not extend into the margins of the liner ply so as to be caught by the seams **16** or **18**, it being essential to the present invention that the stiffening means be united to the liner ply by adhesive only and that the stiffening means be otherwise entirely free from mechanical connection to the other collar parts.

While one desirable embodiment of the invention has herein been illustrated by way of example it is to be understood that the invention is broadly inclusive of any and all modifications falling within the scope of the appended claims.

I claim:

1. In that method of making a collar which is permeable to moisture throughout its entire extent and wherein a liner, coextensive with front and rear plies, is united by sewed seams to said plies at its margins only and wherein the liner consists of conventional soft textile fabric devoid of constituents which become adhesive when subjected to the action of heat and/or a solvent, and wherein independent stiffener elements are associated with each end, respectively, of the soft liner, each stiffening element being of permanent, shape-retaining character and being of a size and contour such that when placed upon one end portion, respectively, of the liner, parts of the liner may be left exposed at each edge of the stiffener element, with the proximate end edges of the stiffener elements widely spaced apart at the rear of the collar, each stiffener element being of textile material comprising conventional textile yarns associated with binder yarns of a material which is initially non-cementitious but which has the inherent capability of being made cementitious, the step of first placing the stiffener elements while dry and non-sticky

symmetrically upon the liner so that portions of the liner are exposed beyond all of the edges of the stiffener elements and with the proximate ends of the stiffener elements spaced widely apart at the rear of the liner, then moistening the stiffener element, in situ, with a solvent and applying heat and pressure to cause the binder yarns to become cementitious and to adhere to the material of the liner, thereby permanently joining the stiffener elements to the liner by integral portions of the binder yarns of the stiffener elements while leaving the liner, where it is exposed beyond the edges of the stiffener elements, with its initial softness and flexibility and devoid of any stiffening or cementitious substance, then assembling the liner, already stiffened at the location of its attached stiffener elements, with the front and rear plies, and uniting said parts by marginal seams to form a collar wherein the liner is wholly free from the front and rear plies except at its margins.

2. That method of making a collar which is permeable to moisture throughout its entire extent, and wherein a liner, co-extensive with front and rear plies, is united by sewed seams to said plies at its margins only, and wherein the liner consists of conventional soft textile fabric, devoid of constituents which become adhesive when subjected to the action of heat and/or a solvent, and wherein independent stiffener elements are associated with each end, respectively, of the soft liner, each stiffening element being of permanent shape-retaining character, and being of a size and contour such that when properly placed upon one end portion, respectively, of the liner, parts of the liner are left exposed at each edge of the stiffener element with the proximate end-edges of the stiffener elements spaced apart at the rear of the collar, each stiffener element being of textile material comprising conventional textile yarns associated with binder yarns of a material which is initially non-cementitious but which has the inherent capability of being made cementitious, the steps of placing the stiffener elements symmetrically upon the liner so that portions of the liner are exposed beyond all of the edges of the stiffener elements, and with the proximate ends of the stiffener elements spaced apart at the rear of the liner, applying heat and pressure as a step in causing the material of the binder yarns of the stiffener elements permanently to bond the stiffener elements to the material of the liner, while leaving the liner, where it is exposed beyond the edges of the stiffener elements, with its initial softness and flexibility and devoid of any stiffening or cementitious substance, then, after the bonding material, derived from the binder yarns, has completely set and is no longer tacky, assembling the liner, already stiffened at the locations of its attached stiffener elements, with the front and rear plies, and uniting the liner and the front and rear plies by marginal seams to form a collar wherein the liner is wholly free from the front and rear plies except at its margins.

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