

[54] QUILTED CONSTRUCTION

2,878,481 3/1959 Siminow 112/420

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FOREIGN PATENTS OR APPLICATIONS

59,835 11/1925 Sweden 112/420

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[57] ABSTRACT

Quilted construction particularly for use in lightweight clothing and sleeping bags wherein the sewn seams are completely contained within the shell of the garment so as to preclude snagging and breaking thereof.

[56] References Cited

UNITED STATES PATENTS

53,573 4/1866 Chipman 112/420

9 Claims, 4 Drawing Figures

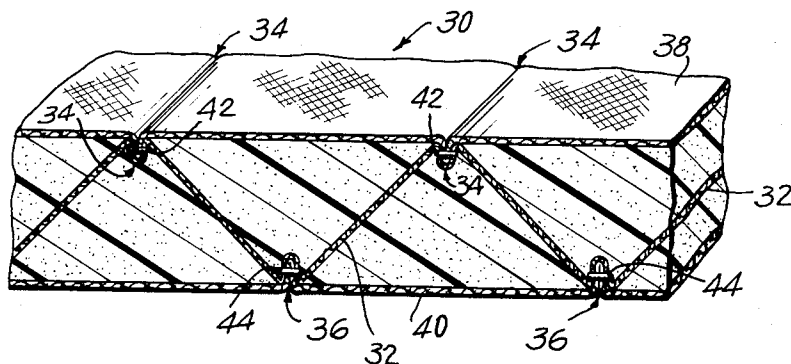


FIG. 1

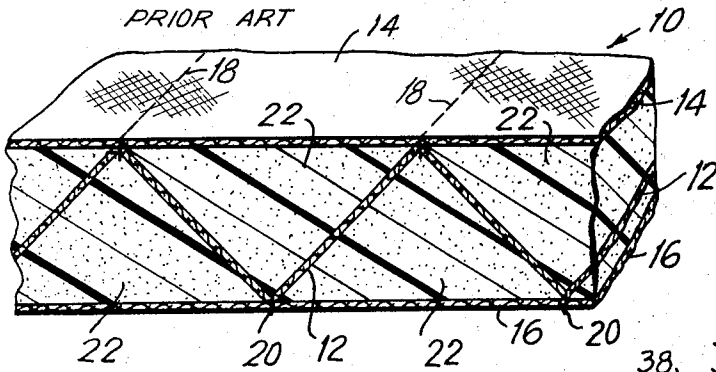


FIG. 2

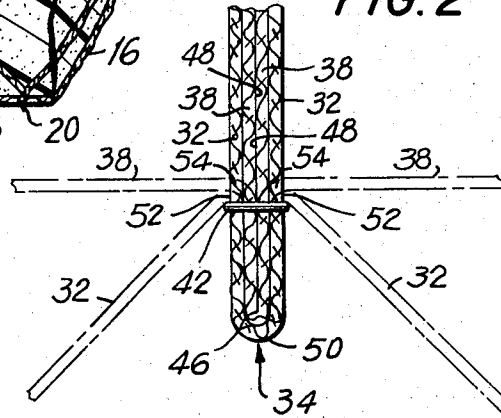


FIG. 3

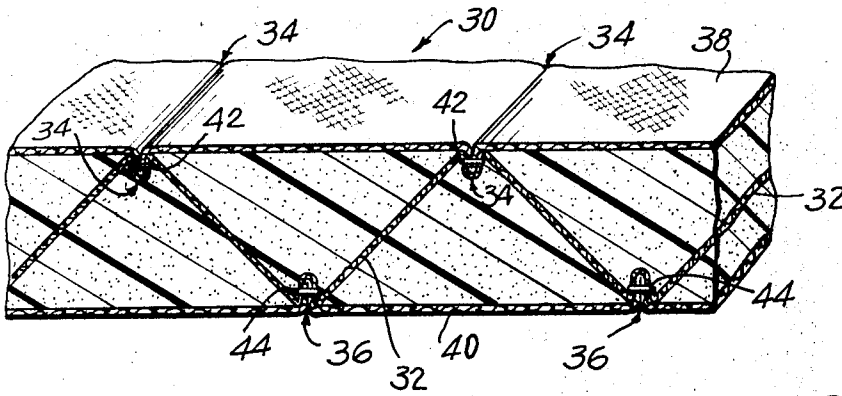
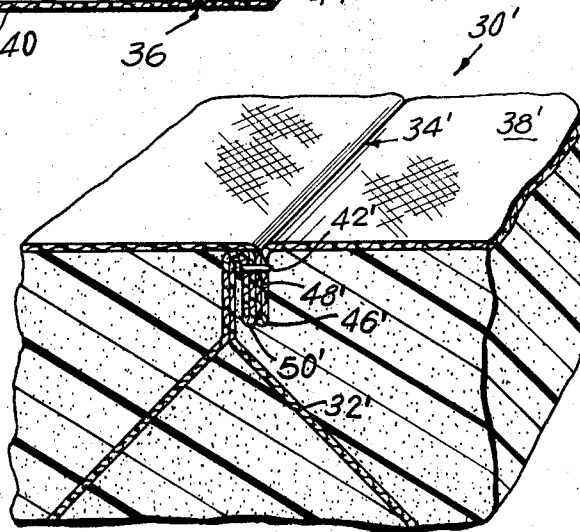


FIG. 4



QUILTED CONSTRUCTION

This invention relates to a quilted construction and, more particularly, to a quilted construction for use in the manufacture of garments, sleeping bags, quilts, and the like.

Quilted clothing and sleeping bags are very popular with sportsmen, campers, hikers, and the like, because of its high warmth and low weight as well as because of its flexibility. Recently quilted clothing using goose down as the fill and light-weight tightly woven materials such as rep-stop nylon weighing as little as 1 oz. per sq. yd. to contain the fill and shape the garment have become increasingly popular. Such quilted constructions provide the present ultimate in high warmth relative to low weight and such nylon materials themselves are very durable.

However, with the advent of such very light gauge tightly woven fabrics produced from very thin gauge synthetic threads, such as nylon, and the like, the production of tight and relatively invisible seams has become increasingly more difficult in comparison with the older materials used for quilted constructions, such as cotton balloon cloth. With the earlier materials, such as cotton, the cotton fibers and threads were sufficiently resilient that the sewing thread, under appropriate tension, would be substantially embedded into the surface of the fabric. Moreover, when cotton threads were used almost exclusively, the cotton threads themselves were sufficiently non-stretchable that even the application of substantial tension thereto did not result in any puckering of the garment fabric. With the newer synthetic materials, however, the lightweight woven nylon and taffeta material have such a hard finish that embedment of the sewing threads into the surface thereof is substantially precluded. Moreover, with the increased utilization of nylon threads for sewing, as well as other synthetic materials, the sewing thread exhibits such elasticity that when a high tension is applied thereto during the sewing process, the thread can stretch and, later, relax to pucker the material being sewn together. On the other hand, if the tension on the sewing thread is released or relieved such that puckering does not occur, then a relatively loose seam is produced with relatively loose loops of thread being exposed at the surface of the garment. Such threads tend to snag and catch both on other clothing items, other items of equipment that may be carried, for example, by a hiker or mountaineer, when such quilted garments are used for body covering. In the case of sleeping bags, and the like, similar snagging of the quilting threads can occur both against other articles of clothing, such as belt buckles, and the like, or other accessory items, such as wristwatch straps, or the like, and even on dried rough skin, finger nails, and toenails. Even the use of Dacron or other polyester thread, which are relatively non-stretchable is not entirely satisfactory in prior construction because both the sewing thread and the threads of the material, when consisting of such synthetic materials, have such smooth finishes that slippage between the threads readily occurs so that if a thread is snagged, relative movement of the seam might occur and repositioning the seam to its initial position may be very difficult.

Further, if the quilting threads are snagged by relatively sharp objects, the quilting threads can be easily torn or broken and repair thereof is exceedingly diffi-

cult, not only under field conditions but even under shop conditions since repair may require that the quilting be opened for access to the opposite side of the quilted seam.

Bearing in mind the foregoing, it is a primary object of the present invention to provide novel and improved quilted constructions particularly for the quilting of hard finished fabrics wherein the quilting threads or seams are substantially precluded from being snagged.

Yet another primary object of the present invention, in addition to the foregoing object, is the provision of such quilted constructions wherein the quilting threads utilized to provide the quilted seam are substantially entirely encased within the garment or fabric shell.

Yet another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such quilted construction wherein the quilting threads are not disposed for snagging, or the like, even when sewn with reduced tension.

Yet another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such quilted construction wherein, even if the quilting threads break, leakage of the stuffing material is yet still substantially precluded.

Another and still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such quilted construction providing overlapping V-tube baffles.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such quilted construction simply and economically.

The present invention resides in the combination, construction, arrangement and disposition of the various components parts and elements incorporated in improved quilted construction in accordance with the principles of this invention. The present invention will be better understood and objects and important features other than those specifically enumerated above will become apparent when consideration is given to the following details and description, which when taken in conjunction with the annexed drawing describes, discloses, illustrates and shows a preferred embodiment or modification of the present invention and what is presently considered and believed to be the best mode of practicing the principles thereof. Other embodiments or modifications may be suggested to those having the benefit of the teachings herein, and such other embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claims.

IN THE DRAWING:

FIG. 1 is a cross-sectional elevational view of a quilted construction incorporating overlapping V-tubes in accordance with the prior art;

FIG. 2 is an enlarged cross-sectional illustration of a seam for a quilted construction in accordance with the present invention;

FIG. 3 is a cross-sectional elevational view similar to FIG. 1 of a quilted construction incorporating the quilting seam shown in FIG. 2 in accordance with the present invention; and

FIG. 4 is an enlarged partial cross-sectional view of another quilted construction in accordance with this invention.

With reference now to the drawings, and particularly to FIG. 1 thereof, there is shown and illustrated a quilted construction designated generally by the reference character 10 corresponding to that which is standard in the prior art and which is constructed by sewing a layer of baffle material 12 in a generally zig-zag fashion between a pair of shell layers of fabric 14 and 16 along a series of alternating seam lines 18 and 20. Accordingly, there are defined by the shell layers 16 and 14 and the baffle layer 12 a series of overlapping generally v-shaped tubes 22 which may be filled with a resilient insulating or quilting material such as, for example, natural or artificial fibers such as wool or polyester or a material such as duck down, goose down, or the like. In such a fashion, the quilted construction 10 is of generally uniform thickness substantially entirely throughout its extent.

However, it will be observed that with the prior construction as shown and illustrated in FIG. 1, the lines of stitching 18 and 20 are exposed at the surfaces of the shell layers 14 and 16 where the threads are subject to abrasion, snagging, pulling, and the like, and particularly with the use of hard finished shell layer material such as rib-stopped nylon.

With reference now to FIGS. 2 and 3, there is shown and illustrated an improved quilted construction in accordance with the present invention designated generally by the reference character 30 and which comprises a generally zig-zag baffle layer 32 secured along generally alternating seam zones or assemblies 34 and 36 with a pair of shell layers 38 and 40, respectively, with the seam zones or assemblies 34 and 36 being constructed and arranged so as to retain the respective lines of stitching 42 and 44 entirely and completely within the confines of the quilted construction 30 as defined by the shell layers 38 and 40.

With specific reference now to FIG. 2 each of the seam zones or assemblies is formed in a similar manner and FIG. 2 illustrates, by example, a seam zone or assembly 34 associated with the shell layer 38, the seam zone or assembly 34 being formed by folding the shell layer 38 about a fold line 46 so that the outer surface 48 of the shell layer 38 on each opposite side of the fold line 46 are brought together in overlapping relationship to each other. Additionally, the baffle layer 32 is folded along a fold line 50 generally adjacent the shell fold line 46 so that the baffle layer 32 in the areas adjacent the fold lines 46 and 50 lies in superposition to the respective portions of the shell layer 38. Then, the line of stitching 42 is formed with the thread thereof being extended through all four layers defining the seam zone 34, namely, through the baffle layer 32 on both sides of the baffle fold line 50 as well as through the shell layer 38 on each side of the shell fold line 46. Then, the baffle and shell layers 32 and 38, respectively, are further folded generally oppositely to the direction of the fold lines 46 and 50, the baffle layer being folded along fold lines 52 and the shell being folded along shell fold lines 54 with the fold lines 52 and 54 being substantially defined by the line of stitching 42 so that the portions of the shell layer 38 outwardly of the line of stitching 42 and the shell fold line 54 extend substantially 180° oppositely one another and in the same plane and with the baffle layer extending obliquely therefrom, all as more particularly and specifically shown in FIGS. 2 and 3. Hence, the surface defined by the shell layer 38 appears substantially continuous across the seam zone 34,

appearing only as a crease thereat and the line of stitching 42 is positioned completely and entirely within the quilted construction, so as not to be exposed to abrasion, snagging, pulling, and the like.

With reference now to FIG. 4, there is shown and illustrated another embodiment or modification of the quilted construction in accordance with the present invention designated generally by the reference character 30' and which comprises a generally zig-zag baffle layer 32' secured along generally alternating seam zones or assemblies 34' with a pair of shell layers 38', with the seam zones or assemblies 34' being constructed and arranged so as to retain the stitching 42' entirely and completely within the confines of the quilted construction 30' as defined by the shell layers 38'.

Each of the seam zones or assemblies 24' is formed in a similar manner and FIG. 4 illustrates, as an example, a seam zone or assembly 34' associated with the shell layer 38', the seam zone or assembly 34' being formed by folding the shell layer 38' about a fold line 46' so that the outer surface 48' of the shell layer 38' on each opposite side of the fold line 46' are brought together in overlapping relationship to each other. Additionally, the baffle layer 32' is folded along a fold line 50' to form a fold generally adjacent the fold of the shell layer 38' so that the folded baffle layer 32' is in general superposition to the folded shell layer 38'. Then, a line of stitching 42' is formed with the thread thereof being extended through all four layers defining the seam zone 34', namely, through two layers of the baffle layer 32' as well as through two layers of the shell layer 38'. Then, the shell is folded outwardly along the stitching 42' so that the portions of the shell layer 38' outwardly of the line of stitching 42' extend substantially 180° oppositely one another and in the same plane with the baffle layer extending obliquely therefrom, as shown. Hence, the surface defined by the shell layer 38' appears substantially continuous across the seam zone 34', appearing only as a crease thereat and the line of stitching 42' is positioned completely entirely within the quilted construction, so as not to be exposed to abrasion, snagging, pulling, and the like.

While the invention has been described and shown as applied to an overlapping, V-tube quilting construction, it is expressly understood that the present invention is equally applicable to other types of quilting, including, without limitation, plane quilting, box tube quilting, overlapping tube quilting, and the like.

While the invention has been described, disclosed, illustrated and shown in terms of certain embodiments or modifications which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiments or modifications herein described, disclosed, illustrated or shown, such other embodiments or modifications as may be suggested to those having the benefit of the teachings herein being intended to be reserved especially as they fall within the scope and breadth of the claims here appended.

What is claimed is:

1. Quilted construction comprising, in combination, a pair of shell layers extending in generally spaced apart relation relative one another and baffle means extending therebetween wherein said baffle means is as-

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sociated with each of said shell layers along seam zones comprising an inwardly turned tuck of said shell layer and at least one line of stitching joining the leaves of said tuck closely subjacent the plane of the respective shell layer and means joining said baffle means with said inwardly turned tuck, said seam zones extending substantially entirely within the confines of the quilted construction defined by said shell layers so as to be contained therewithin and preclude abrasion, snagging, pulling and the like, of said line of stitching.

2. Quilted construction comprising, in combination, a pair of shell layers extending in generally spaced apart relation relative one another and a baffle layer extending therebetween wherein said baffle layer is associated with said shell layer along seam zones which comprise, in turn, portions of said shell layer folded to extend generally inwardly thereof with said baffle layers being sewn to said inwardly folded portion so that stitching therebetween is contained substantially entirely within the quilted construction defined by said shell layers so as to preclude abrasion, snagging, pulling and the like, of said stitching.

3. Quilted construction defined in claim 2 wherein said seam zone further comprises portions of said baffle layer folded to lie generally flat and superposed on said inwardly folded portions of said shell layers, said stitching extending generally perpendicular through said folded baffle and shell layers generally within the quilted construction defined by said shell layers.

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4. Quilted construction defined in claim 2 wherein said seam zone further comprise portions of said baffle layer folded generally around said inwardly folded portions of said shell layers, said stitching extending generally perpendicular through said folded baffle and shell layers substantially entirely within the quilted construction defined by said shell layers.

5. Quilted construction defined in claim 1 wherein said shell layers are further folded generally oppositely outwardly and oppositely from said lines of stitching so as to define a substantially smooth outer surface to said quilted construction uninterrupted by lines of stitching.

6. Quilted construction defined in claim 1 wherein a single line of stitching joins said leaves of said tuck and said baffle means.

7. Quilted construction defined in claim 1 wherein said leaves of said tuck are joined by a single line of stitching and said baffle means is joined thereto by a further line of stitching spaced inwardly therefrom.

8. Quilted construction defined in claim 1 wherein said baffle means comprises a baffle layer extending in generally zig-zag fashion between alternating seam zones on said shell layer.

9. Quilted construction defined in claim 2 wherein said baffle means comprises a baffle layer extending in generally zig-zag fashion between alternating seam zones on said shell layer.

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