May 19, 1970 C. BONK ET AL 3,512,180

CAP

Filed Jan. 10, 1967

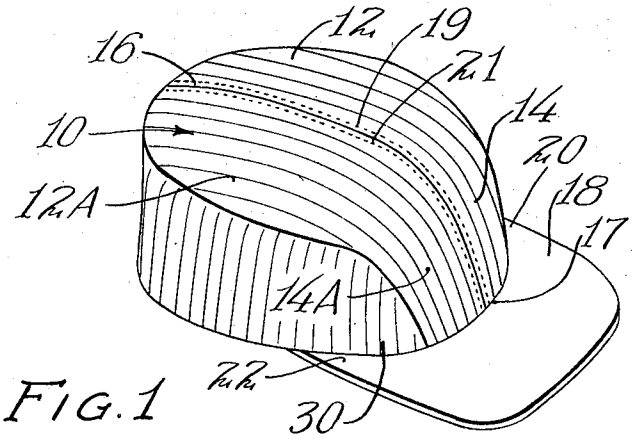


FIG. 1

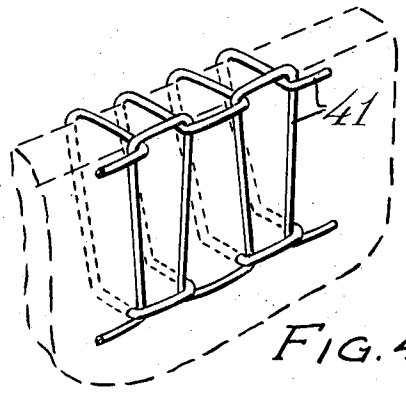


FIG. 4

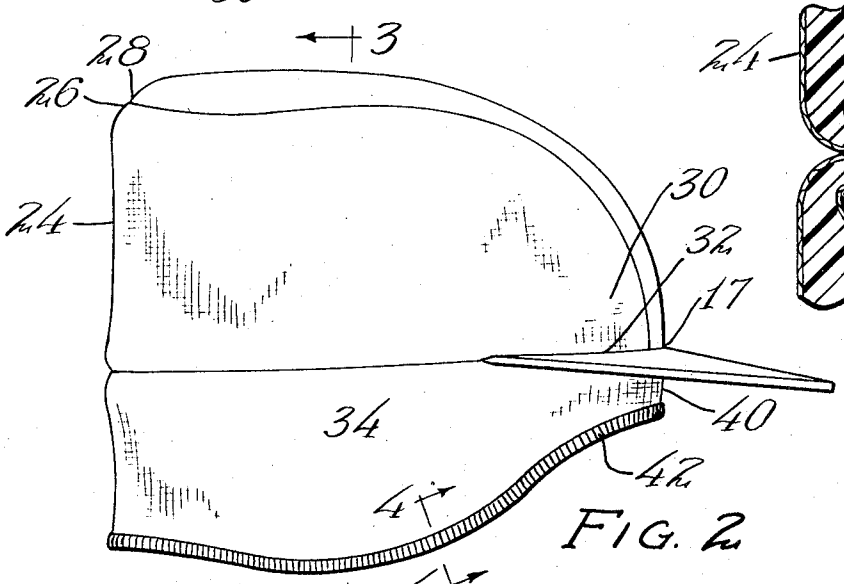


FIG. 2

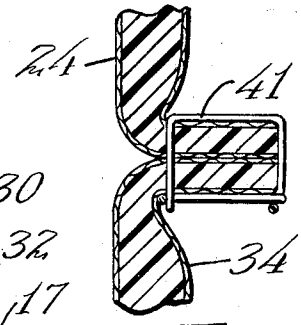


FIG. 5

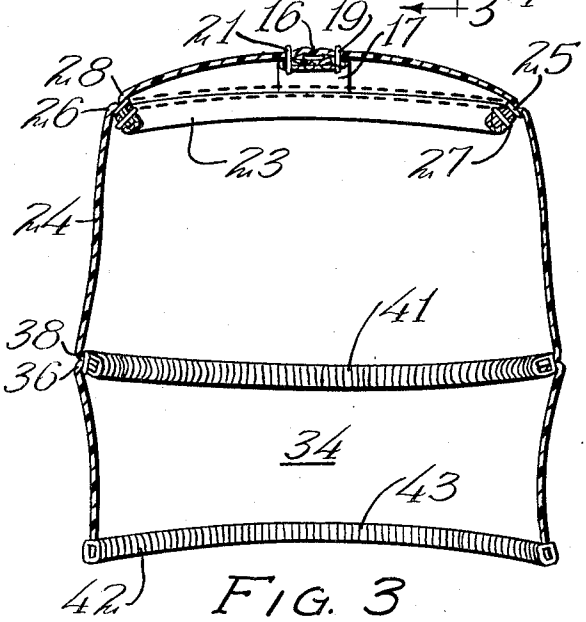


FIG. 3

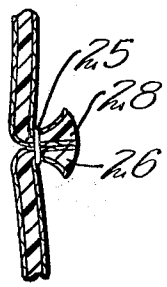


FIG. 6

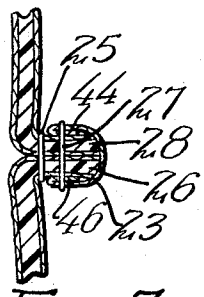


FIG. 7

INVENTOR

CHAIM BONK

SAMUEL RAFOWITZ

BY Fulbright & Dunning

ATTORNEY

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CAP

Chaim Bonk, 716 Mount Curve Blvd., St. Paul, Minn. 55116, and Samuel Rafowitz, 1604 Rome Ave., St. Paul, Minn. 55116

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ABSTRACT OF THE DISCLOSURE

A cap having a crown portion, a side wall and rear wall portion, a visa and a warming band. The crown portion is stretchable laterally, the sidewall rearwall portions, as well as the warming band are stretchable in the direction of their longest dimension. Resilient stretch stitches connect the side wall and warming band to permit longitudinal stretching of the seam connecting the same.

This invention relates to the construction of a cap comprised substantially in its entirety of resilient material and in which the warming band is secured to the side and back wall portions of the cap by a particularly stretchable stitch.

It has become somewhat commonplace to use various stretchable materials to comprise the cap body portions and portions of the warming band. In some instances it has been found possible to use knitted materials which function fairly well in adapting to various head sizes.

We have found that by utilizing a particularly unique stitch it is possible to construct a cap in which all of the cap is comprised of resilient material, preferably a material also having a fabric covering on both sides.

It will be understood that a material of foam generally will tend to stretch equally well in all directions. Therefore, I have constructed a cap in which a fabric covers the foam thereby limiting the direction of stretch mainly in one direction. The cap in many respects resembles conventional cap construction, the particular construction which we employ enables one cap to fit a multitude of head sizes. For example, one cap may fit as many as four or five head sizes, and for this reason, the cap is known as a multi-size cap.

It is a particular object of the present invention to provide a cap having a warming band secured to the side and rear walls of the cap by a particularly unique stretchable stitch which provides its greatest direction of stretch along this dimension of the warming band.

It is a further object of the present invention to provide a binding along the free depending edge of the warming band with the binding having a longest direction of stretch in the direction of the longest dimension of the warming band.

These and other objects and particular advantages will be more particularly described and detailed when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of my cap with the warming band folded inside as a liner.

FIG. 2 is a side elevation in which the warming band is depending from the lowest edge of the side and rear walls.

FIG. 3 is a diagrammatic view of the cap construction.

FIG. 4 is an enlarged detail illustrating my new stretch stitch.

FIG. 5 is a view in detail showing the connection of the ear or warming flap to the cap body.

FIG. 6 and FIG. 7 illustrate the steps in the seam construction of the side and rear walls to the peripheral edge of the crown and forehead portions.

The cap construction of the present invention is known

as a multi-sized cap and is designed to permit one cap to accommodate several head sizes. This is important for the retailer who must stock merchandise. It is obvious that he can reduce the size of his inventory if the cap sizes stocked will accommodate several head sizes. Normally, the cap of the present invention is made in small, medium, and large sizes to accommodate the range of head sizes normally found.

It will be understood that the cap construction to be further described embodies a cap having a resilient overall construction in which the cap is of a foam covered by a fabric which limits the direction of stretchability of the foam. Accordingly, as will be further described, when the cap portions are assembled together with the unique stretchable stitch to be further described, the cap will have increased stretchability in one direction and reduced stretchability in the opposite direction.

Turning now to FIG. 1, it will be observed that the general appearance of the cap is similar to other known cap constructions.

The cap generally numbered **10** comprises a crown portion **12** and a forehead portion **14** which extend over the crown of the head and at least a portion of the forehead of the person wearing the cap.

For purposes of design and also to provide increased stretchability, the crown and forehead portions may be comprised of identical half portions joined along a seam line longitudinally extending from front to back, the seam line being numbered **16**.

For purposes of description, we have numbered the similar half portions **12A** and **14A** to correspond with portions **12** and **14** previously described.

In the preferred construction, we provide a relatively stiff non-stretchable visor which is joined to the lower edge of the forehead portion as indicated at **16** along a generally concavely curved foreband line extending along the rear edge of the visor **18**.

Rear edge portions **20** and **22** of the visor **18** extend outwardly and rearwardly of the forehead portion **14** as may be clearly seen in FIG. 1.

A continuous resilient side wall and rear wall portion depends along one edge **26** of the side wall and rear wall portion **24** from the peripheral edge **28** of the crown portion **12** and forehead portion **14**. Forward portions **30** and its opposite portion (not shown) join to the visor as indicated at **32**.

In preferred construction the side wall and rear wall portion is continuous, although it would be obvious to provide a pair of half portions joined at the rear of the cap.

As may be seen in FIG. 2, we provide a continuous resilient warming band **34** having substantial stretch characteristics in the direction of its longest dimension and having slight stretch characteristics in the direction of its shortest dimension. The warming band **34** is stretchingly stitched as will be further described along one edge **36** to the other edge **38** of the side wall and rear wall portion **24**.

As may be further seen in FIG. 2, the warming band is of a size so as to stretch over at least a portion of the neck and to curve gently upwardly toward the visor with a frontal portion **40** extending around the forehead of the wearer.

To the free edge of the warming band **34** we provide a stretchable binding **42** which has similar stretch characteristics to the warming band, that is, the binding has substantial stretch characteristics in the direction of the longest dimension of the warming band and slight stretch characteristics in the direction of the shortest dimension of the band.

The stretch stitches **41** and **43** are similar stretchable

characteristics but are separately numbered because of their location in the various figures.

Returning to FIG. 1, the crown portions **12A** and **12** and the forehead portions **14A** and **14** have their greatest stretchability from side to side and least stretchability in a front to back relation. This enables the crown and forehead portions to accommodate the width of a person's head. On the other hand, the side and back wall portion **24** has its greatest stretchability in a front to back direction, or in its longest dimension. This enables the cap to adjust to the length of a person's head.

The warming band **34** has its greatest stretchability in the direction of its longest dimension thereby enabling the warming band to similarly adjust to the length of a person's head. Both the warming band and the side wall and rear wall portions have some degree of stretchability in an opposite direction to their longest dimension, but this is not to a very great extent.

The warming band is secured to the edge **38** of the side and rear wall portions by the stretch stitch **41** which may be clearly seen in FIG. 4. In the detail of FIG. 4, the stitch may be observed to restrict the stretchability in an up and down direction by binding the edges tightly together with a relatively short length of elastic thread while permitting stretchability in a longitudinal direction due to longer portions of the stitches between the vertical portions thereof. This enables the warming band to extend fully with the side and rear wall thereby easily accommodating a wide range of head sizes. As will be observed, the free edge **42** of the warming band has a similar stretch stitch **43** for the purpose of enabling the edge or binding of the warming band to conform to the shape of the head of the cap wearer. In actual wearing of the cap, the warming band snugly fits against the sides of the head and even will accommodate to a snug fit around glass frames if these are worn by the cap wearer. This obviously permits the cap to keep cold from passing along the temples of the wearer and consequently provides an extremely tight cap although very comfortable to wear.

Returning to FIG. 4, it may be observed that the stitch passes through the material covering the foam and is so locked as to prevent stretchability to any great extent in an up and down relation while permitting a relatively easy stretch in a longitudinal or front to back direction.

Returning to FIG. 3 which is a diagrammatic view taken along the line **3—3** of FIG. 2, it will be observed that the longitudinal seam **16** which secures the crown and forehead portions together may have an internal covering such as a tape **17** to cover the inward portion of the longitudinal seam **16**, the tape **17** being secured by stitching **19** and **21**.

A similar tape **23** may be utilized to cover the joining of edge portions **26** and **28** as is apparent in FIG. 3. Stitches **25** and **27** secure the tape **23** in overlying relation to the edges **26** and **28**.

Returning to FIG. 5, it will be seen that the side and rear wall portion **24** has its depending edge secured to the upper edge of the warming band **34** by the stretchable stitch **41**. It will be understood that the stretchable stitches **41** and **43** are similar but their numbering has been varied because of their different location. Whereas the stretchable stitch **43** would appear on the binding in a position similar to that illustrated in FIG. 4, the stitch **41** as viewed in FIG. 5 would be at approximately ninety degrees (90°) to the position shown in FIG. 4. This view of FIG. 4 is taken along the line **4—4** of FIG. 2.

FIGS. 6 and 7 illustrate the seam formation of the joining of the edge of the crown and forehead portion to the side wall and rear wall portion. In order to provide a smooth attractive seam which is tightly joined, we provide the stitching **25** which joins the edges **26** and **28** together. Over the ends of the edges **26** and **28**, we provide the tape **23** which has its ends underfolded as indicated at **44** and **46** with the underfolded ends **44** and **46** secured by stitching **27**.

As has been previously described, the warming band **34** may be folded into lining relation to the side and rear wall or may be in the depending relation illustrated in FIG. 2.

As has been previously indicated, the fabric covering the the foam serves to limit the direction of stretchability to one dimension such as length, for example. We prefer to cover both sides of the foam material with fabric for control of the stretchability of the foam as well as to provide a far neater appearance in the cap.

We claim:

1. A multi-size cap comprising:

a resilient crown portion and forehead portion adapted to overlie the top and at least a portion of the forehead of a person's head,

a visor joined to the lower edge of the forehead portion along a curved foreband line extending along the rear edge of said visor,

said resilient and crown portions being formed of a material which is relatively more stretchable in a side to side direction than in a front to back direction from the lower edge of the forehead portion to the rear of the crown portion,

said visor having rear edge portions extending outwardly and rearwardly of said forehead portion,

a continuous resilient sidewall and rearwall portion dependingly secured along one edge to the peripheral edge of said crown portion and forehead portion and along a portion of its other edge to said visor rear edge portions,

said resilient side wall being relatively more stretchable in its front to rear direction than in its top to bottom direction,

a continuous resilient warming band having substantial stretch characteristics in the direction of its longest dimension and slight stretch characteristics in the direction of its shortest dimension stretchingly stitched along one edge to the other edge of said sidewall and rearwall portion,

resilient stretch stitches connecting said one edge of said warming band to said other edge of said sidewall and rearwall portion, said stretch stitches stretching in a direction longitudinally of said last named connected edges,

a stretchable binding along the free edge of said warming band,

said warming band adapted to be folded into lining relation to said sidewall and rearwall portion and into depending relation to said sidewall and rearwall portion.

2. The structure of claim **1** and in which said stretchable binding and said stretch stitch have substantial stretch characteristics in the direction of said longest dimension of said warming band and slight stretch characteristics in the opposite direction.

3. The structure of claim **2** and in which said continuous warming band comprises a pair of half portions secured together at the back and at the visor.

4. The structure of claim **1** and in which said crown and forehead portion comprise a pair of generally similar half portions and a longitudinal seam line therebetween.

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MERVIN STEIN, Primary Examiner

G. H. KRIZMANICH, Assistant Examiner