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(54) **Elastic cap**

Dehnbare Mütze

Casquette extensible

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Description

FIELD OF THE INVENTION

[0001] The present invention generally relates to head coverings, in particular, the invention relates to an elastic cap constructed of a fabric and having structures which allow the cap to be used on a variety of sized heads.

BACKGROUND OF THE INVENTION

[0002] Caps and hats are a staple of contemporary fashion apparel as well as providing functional protection against the environment. Typically, hats and caps are offered in either a single size or a variably adjustable size configuration. Size adjustment is an important quality for manufacturers of hats and caps since when the hat or cap is adjustable, the manufacturer needs to produce only hats and caps of a single or limited configuration.

[0003] Consumers of hats and caps require adjustability since head size is highly variable throughout the population. In addition, a change in a wearer's hair length or style may alter the fitting of a cap. Conventional adjustable caps utilize such things as plastic adjusting bands having a plurality of holes and associated pegs. A cap user can alter the fitting of the cap by changing the position of the pegs in the holes. This allows the cap user to either increase or decrease the size of the cap. Other caps use an adjustable sliding strap, while still other caps use an elastic cord to allow for size adjustment. However, these types of conventional caps have several disadvantages. For example, caps using the plastic adjusting strap often interferes with the wearer's hair or clothing. This may occur when the wearer turns, raises and/or lowers their head. During these movements, the plastic strap often becomes entangled in the hair or clothing, thus causing extreme discomfort to the wearer.

[0004] In other cases where the cap uses an elastic sweatband to adjust size, the elastic produces a folded or wavy deformation around the periphery of the cap. In addition to not being aesthetically pleasing, the folds or wave can result in an insecure and uncomfortable wearing experience for the wearer.

[0005] EP 0 639 338 discloses a free size cap having a crown, a portion of which, rearward from a visor, is formed of a stretch woven fabric consisting of stretchable weft yards and non-stretchable warp yarns, and a sweat band having an elasticity and as stretchability, preferably placed rearward from the visor.

[0006] US 6, 122, 774 discloses a free size cap having a visor and with an inwardly folded portion from a crown having flexible material therein to function as a headband. A sweatband is attached to the crown portion to which the visor is attached, the sweatband being a non-stretchable material.

SUMMARY OF THE INVENTION

[0007] Briefly stated, the invention in a preferred form is a cap which includes a cap body, a cap bill, and sweatband. The material making up portions of the cap includes a stretchable fabric wherein the fabric is woven or knitted of a highly elastic yarn as the woof and an unstretchable yarn as the warp. The cap body has six pages of material wherein four of the pages are associated with a web, and two of the pages are not associated with a web. In some cases, the cap sweatband has a web material sewn within layers of the cap body material.

[0008] An object of the present invention that is provide a comfortable and simple size adjustable cap which readily adapts to different sizes and shapes of heads.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Other objects and advantages of the invention will be evident to one of ordinary skill in the art from the following detailed description made with reference to the accompanying drawings in which:

Figure 1 is a perspective view of elastic cap in accordance with the invention;
Figure 2 is a bottom view of an elastic cap in accordance with the present invention;
Figure 3A is a profile plan view of a portion of a sweatband included in an elastic cap in accordance with the present invention;
Figure 3B is a perspective view of a sweatband included in an elastic cap in accordance with the present invention;
Figure 3C is a sectional view of forward and rearward portions of a sweatband included in an elastic cap in accordance with the present invention;
Figure 4 is a bottom view of the elastic cap showing an example of the extent to which the web material extends about the perimeter of the elastic cap in accordance with the present invention;
Figure 5 is a cut away view of a portion of the sweatband which does not include web material; and
Figure 6 is a cutaway view of a portion of the sweatband which includes web material.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0010] With reference to Figures 1 and 2, in one embodiment of the invention, an elastic cap comprises a cap body 1, a cap bill 2 and a sweatband 3. The material used to construct the cap is a fabric woven or knitted from a highly elastic yarn as the woof (the yarn woven across the warp yarn) and a substantially un-stretchable yarn as the warp. For example, the highly elastic yarn may be composed of 11646/20*16 +70D fibers which include 97% cotton and 3% spandex material. The un-stretchable yarn may be composed of 9042/12*10 +70D fibers

which include 97% cotton and 3% spandex material.

[0011] The cap body 1 includes six sector pages 4. The cap body 1 is joined to a cap bill 2. The cap bill 2 is, for example, of a perspective arc shape. This shape can be achieved by forming the cap bill 2 to a model of a typical wearer's forehead. The bill 2 may include an internal plate (not shown) which adds structural rigidity to the bill 2. The plate may be composed of plastic or natural materials. For example, the plate may be made of polyethylene, cardboard and/or other material well known in the cap art.

[0012] In the invention, the sweatband 3, as shown in Figures 3A to 3C, includes fours pages 4 associated with a web 7. The web 7 is configured to influence the shape of the whole cap. The web 7 may be constructed of 6112H or non-woven cloth material or a knitted material. In addition, the web 7 may include absorbent and/or liquid draining properties which allow for the advantageous management of sweat produced by a wearer of the cap. The web 7 can, prior to cap construction, be immersed in a chemical. For example, the web 7 may be immersed in chemical for about four hours to modify moisture management properties. Such a chemical may modify the hydrophilic and hydrophobic properties of portions of the web.

[0013] The web 7, as shown in Figure 4 extends partially about the perimeter of the sweatband 3. For example, Figure 4 shows an extent line 20 that is coextensive with the length and position of the web 7 within the sweatband 3. A second extent line 22 shows the length and position of the sweatband 3 which does not contain the web 7. Figures 5 and 6, respectively, show a portion of the sweatband 3 without the web and with the web 7.

[0014] In the invention, wherein the cap has six sector pages 4, the web 7 is included in a forward portion 28 of the cap and has a length that spans about four sector pages 4. The rear 26 of the cap, does not included web for a length of about two pages 4. The inclusion of the sweatband portion without the web 7 provides advantageous cap wearing characteristics. For example, the rear portion of the cap body 1 has a substantially flat appearance. In addition, the cap does not produce a head clamping effect on the wearer. The head clamping effect includes excessive pressure on the wearer's head and/or points of pressure on the wearer's head.

[0015] The sweatband 3 may be formed, as shown in Figure 6, in one embodiment of the invention, by putting the web 7, for example a web made from 6112H material, between a double folded material 23 which can, for example, be woven or knitted. The double folded material 23 may be material of the original cap body 1 or may be different from the cap body 1. For example, the sweatband 3 may include a double folded material which is knitted fabric and the cap body 1 may include woven fabric or vice versa. The double folded material 23 is then sealed by a sewn seam 24. The sweatband 3, when sewn, includes a level and smooth appearance. The sweatband thickness is minimized since the web 7, for example made from 6112H material, is sandwiched, as shown in Figure 3C between at least one page near the front page 5 and the side page. The 6112H material includes about 65% polyester and about 35% cotton.

[0016] The sweatband 3, in one embodiment of the invention, is attached to the cap body 1 by highly elastic thread 12, as shown in figures 3A and 3B. The attachment with the highly elastic thread provides the periphery of the cap with an unexpected stretching potential. The attachment with the highly elastic thread also allows the periphery of the cap to elastically expand or contract. For example, the periphery of the cap may elastically expand or contract five to six centimeters. The highly elastic thread 12, when used for attachment of the sweatband 3 to the cap body, 1 provides elasticity in both the vertical and horizontal directions. In addition to maintaining the elasticity of the sweatband 3 for securing the hat to the head, the highly elastic thread 12 contributes to the prevention or reduction of the head clamping phenomena often experienced with conventional caps. The elastic thread 12 included the property of being able to elastically stretch at least twice its unstretched length.

[0017] In one embodiment of the invention as shown in Figure 4, the cap top has a plurality of holes 8 which allow for air permeability and heat dissipation. For example, there may be one hole in each of the sector pages 4. For example, if there are six sector blades 4 then there would be six holes 8. The air permeability and heat dissipation, provided by the holes 8, allows fresh air to reach a wearer's head and allows head generated by the wearer to escape.

[0018] In one embodiment of the invention, the rear bottom of the cap 26 is configured to form an inner arc shape. The shape is achieved by, among other things, the stretchable fabric. This shape allows the hat, when placed on the wearer's head, to remain substantially flat. Among other thing, this shape provides an improved secure attachment to a wearer's head.

[0019] While preferred embodiments of the foregoing invention have been set forth for the purpose of illustration, the foregoing description should not be deemed a limitation of the invention herein. Accordingly, various modifications, adaptations and alternatives may occur to one of skill in the art without departing from the scope of the present invention, as defined by the claims.

Claims

1. An elastic cap, comprising a cap body (1) having a plurality of joined sector pages (4) a cap bill (2) and a sweatband (3), said cap body made of stretchable fabric having high-elastic yarn as woof and an unstretchable yam as warp,
said sweatband includes a web (7) in a portion of the sweatband, wherein there are 6 sector pages **characterized in that** said web material extends for a length four pages in a forward portion (28) of the cap,

and not of a length of two pages of the rear portion (26) of the cap.

2. The elastic cap of claim 1, wherein said web (7) is non-woven material having absorbent and liquid draining properties.

3. The elastic cap of any preceding claims, wherein said sweatband (3) includes a web (7) disposed between a double-folded portion (23) of fabric of the cap body, said double-folded portion is sealed by stitching (24).

4. The elastic cap of any preceding claim, wherein said web (7) is non-woven material.

5. The elastic cap of any preceding claim, wherein said web (7) is a knitted material.

6. The elastic cap of claim 3, wherein said stitching (24) is a highly elastic thread.

7. The elastic cap of any preceding claim, wherein the fabric has portion of different colors.

8. The elastic cap of any preceding claim, wherein said web (7) immersed in a chemical for about 4 hours.

9. The elastic cap of any preceding claim, wherein the web is 6112H material.

10. The elastic cap of any preceding claim, wherein a periphery of the cap can elastically deform about 6 centimeters.

11. The elastic cap of any preceding claims, wherein the cap body (1) and the sweatband (3) are constructed with a woven fabric.

12. The elastic cap of any one of claims 1 to 10, wherein the cap body (1) and the sweatband (3) are constructed with a knitted fabric.

13. The elastic cap of any one of claims 1 to 10, wherein the cap body (1) includes one of either a knitted or a woven fabric and sweatband (3) includes the other of either the knitted or the woven fabric.

14. An elastic cap according to claim 1 comprising a cap top, cap forehead and sweat cord, said cap top consists of six sector pages, **characterized in that** the cloth of whole cap body is made of stretchable fabric, and said fabric is woven with high-plastic yam as woof and un-stretchable yarn as warp.

15. An elastic cap according to claim 14, wherein said web (7) is web or non-woven cloth and such web or non-woven cloth may have or may not have high absorbing wet and draining sweat functions.

16. An elastic cap according to claim 14 or claim 15, wherein said sweatband (3) is constructed by putting web in between double folded cloth (23) of original cap body and sewing it.

17. An elastic cap according to any one of claims 14 to 16, wherein said web is of non-woven or web.

18. An elastic cap according to claim 16, **characterized in that** during sewing sweatband (3) and cap body high elastic thread (12) is used.

19. An elastic cap according to any one of claims 14 to 18, wherein said whole cap may be of knit goods or fabric matched with different color or same color.

20. An elastic cap according to any one of claims 14 to 19, wherein said web (7) is completed by immersing web or non-woven cloth into chemical for about 4 hours.

21. An elastic cap according to any one of claims 14 to 20, wherein 6112H web or matched with other non-woven fabric may be used for said web.

Patentansprüche

1. Dehnbare Mütze umfassend einen Mützenkörper (1), der mehrere zusammengefügte Abschnittbereiche (4) aufweist, ein Mützenschild (2) und ein Schweißband (3), wobei der Mützenkörper aus streckbarem Stoff besteht, der ein hochelastisches Garn als Schuss und ein nicht streckbares Garn als Kette aufweist, wobei das Schweißband in einem Teil des Schweißbands eine Stoffbahn (7) umfasst, wobei 6 Abschnittbereiche vorliegen, **dadurch gekennzeichnet, dass** die Stoffbahnmaterial sich über eine Länge von vier Bereichen im nach vorne gerichteten Teil der Mütze und nicht über eine Länge von zwei Bereichen des hinteren Teils (26) der Mütze erstreckt.

2. Dehnbare Mütze nach Anspruch 1, wobei die Stoffbahn (7) ein Vliesstoff ist, der absorbierende und flüssigkeitsablassende Eigenschaften aufweist.

3. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei das Schweißband (3) eine Stoffbahn (7) umfasst, das sich zwischen einem doppelt gefalteten Abschnitt (23) des Stoffs des Mützenkörpers befindet, wobei der doppelt gefaltete Teil durch Nähen (24) abgedichtet ist.

4. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei die Stoffbahn (7) ein

Vliesstoff ist.

5. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei die Stoffbahn (7) ein gestricktes Material ist.

6. Dehnbare Mütze nach Anspruch 3, wobei das Genähte (24) aus einem äußerst elastischen Faden besteht.

7. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei der Stoff Teile verschiedener Farben aufweist.

8. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei die Stoffbahn (7) etwas 4 Stunden lang in eine Chemikalie eingetaucht wird.

9. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei die Stoffbahn 6112H-Material ist.

10. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei eine Peripherie der Mütze sich dehnbar um etwa 6 Zentimeter verformen kann.

11. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei der Mützenkörper (1) und das Schweißband (3) aus einem Gewebe konstruiert sind.

12. Dehnbare Mütze nach irgendeinem der vorhergehenden Ansprüche, wobei der Mützenkörper (1) und das Schweißband (3) aus einem Strickstoff konstruiert sind.

13. Dehnbare Mütze nach irgendeinem der Ansprüche 1 bis 10, wobei der Mützenkörper (1) eines von entweder einem gestrickten oder gewebten Stoff umfasst und das Schweißband (3) den anderen entweder von gestricktem oder gewebtem Stoff umfasst.

14. Dehnbare Mütze nach Anspruch 1, umfassend ein Mützenoberteil, eine Mützenstirne und ein Schweißband, wobei das Mützenoberteil aus sechs Abschnittsbreichen besteht, **dadurch gekennzeichnet, dass** der Stoff des ganzen Mützenkörpers aus streckbarem Stoff besteht und der Stoff mit hochelastischem Garn als Schuss und nicht streckbarem Garn als Kette gewoben ist.

15. Dehnbare Mütze nach Anspruch 14, wobei die Stoffbahn (7) eine Stoffbahn oder Vliesstoff ist und ein solches Band oder ein solcher Vliesstoff stark absorbierende und flüssigkeitsablassende Eigenschaften aufweisen oder nicht aufweisen kann.

16. Dehnbare Mütze nach Anspruch 14 oder Anspruch 15, wobei das Schweißband (3) durch Eingeben von Band zwischen doppelt gefaltetes Tuch (23) des ursprünglichen Mützenkörpers und Nähen desselben konstruiert wird.

17. Dehnbare Mütze nach irgendeinem Anspruch 14 bis 16, wobei die Stoffbahn aus Vliesstoff oder Band besteht.

18. Dehnbare Mütze nach Anspruch 16, **dadurch gekennzeichnet, dass** während des Nähens des Schweißbands (3) und des Mützenkörpers hochelastischer Faden (12) verwendet wird.

19. Dehnbare Mütze nach irgendeinem Anspruch 14 bis 18, wobei die ganze Mütze aus Strickwaren oder Stoff bestehen kann, die mit verschiedenen Farben oder der gleichen Farbe auf einander abgestimmt sind.

20. Dehnbare Mütze nach irgendeinem Anspruch 14 bis 19, wobei die Stoffbahn (7) durch etwa 4 Stunden langes Eintauchen des Bands oder Vliestoffttuchs in eine Chemikalie fertiggstellt wird.

21. Dehnbare Mütze nach irgendeinem Anspruch 14 bis 20, wobei 6112H- Stoffbahn oder mit anderem Vliesstoffgewebe abgestimmte Stoffbahn für die Stoffbahn verwendet werden kann.

Revendications

1. Casquette élastique, comprenant un corps de casquette (1) ayant une pluralité de pièces jointes (4), une visière (2) et un bandeau absorbant (3), ledit corps de casquette étant constitué d'un textile étirable ayant un fil à élasticité élevée dans la trame et un fil non étirable pour servir de chaîne, ledit bandeau absorbant inclut un voile (7) dans une partie du bandeau absorbant dans lequel il existe 6 pièces, **caractérisée en ce que** ledit matériau du type voile se prolonge sur une longueur de quatre pièces dans une partie dirigée vers l'avant (28) de la casquette, et pas d'une longueur de deux pièces de la partie située à l'arrière (26) de la casquette.

2. Casquette élastique selon la revendication 1, dans laquelle ledit voile (7) est un matériau non-tissé ayant des propriétés absorbantes et de drainage des liquides.

3. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle ledit bandeau absorbant (3) inclut un voile (7) disposé entre une partie à pli-double (23) du textile du corps de casquette, ladite partie à pli-double est hermétiquement fermée par piqûre (24).

4. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle ledit voile (7) est un matériau non-tissé.

5. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle ledit voile (7) est un matériau tricoté.

6. Casquette élastique selon la revendication 3, dans laquelle ladite piqûre (24) est un filé très élastique.

7. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle le textile présente une partie ayant des couleurs différentes.

8. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle ledit voile (7) est immergé dans un produit chimique durant environ 4 heures.

9. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle le voile est le matériau 6112H.

10. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle une périphérie de la casquette peut se déformer de manière élastique d'environ 6 centimètres.

11. Casquette élastique selon l'une quelconque revendication précédente, dans laquelle le corps de casquette (1) et le bandeau absorbant (3) sont construits avec un textile tissé.

12. Casquette élastique selon l'une quelconque des revendications 1 à 10, dans laquelle le corps de casquette (1) et le bandeau absorbant (3) sont construits avec un textile tricoté.

13. Casquette élastique selon l'une quelconque des revendications 1 à 10, dans laquelle le corps de casquette (1) inclut l'un parmi soit un textile tricoté soit un textile tissé et le bandeau absorbant (3) inclut l'autre parmi soit le textile tricoté soit le textile tissé.

14. Casquette élastique selon la revendication 1, comprenant un dessus de casquette, une partie frontale de casquette et un cordon absorbant, ledit dessus de casquette est constitué de six pièces, **caractérisée en ce que** le tissu du corps de casquette total est constitué de textile étirable, et ledit textile est tissé avec un fil d'élasticité élevée pour servir de trame et un fil non étirable comme chaîne.

15. Casquette élastique selon la revendication 14, dans laquelle ledit voile (7) est un voile ou un tissu non-tissé et ledit voile ou tissu non-tissé peuvent avoir ou peuvent ne pas avoir de fonctions fortement absorbantes de l'humidité et de drainage de la sueur.

16. Casquette élastique selon la revendication 14 ou la revendication 15, dans laquelle ledit bandeau absorbant (3) est construit en plaçant le voile à l'intérieur du tissu à double pli (23) du corps de casquette d'origine et en le cousant.

17. Casquette élastique selon l'une quelconque des revendications 14 à 16, dans laquelle ledit voile est du non-tissé ou du voile.

18. Casquette élastique selon la revendication 16, **caractérisée en ce que** durant la couture du bandeau absorbant (3) et du corps de casquette, un filé (12) fortement élastique est utilisé.

19. Casquette élastique selon l'une quelconque des revendications 14 à 18, dans laquelle ladite casquette entière peut être constituée d'articles tricotés ou de textile coordonnés de différentes couleurs ou de la même couleur.

20. Casquette élastique selon l'une quelconque des revendications 14 à 19, dans laquelle ledit voile (7) est achevé par l'immersion du voile ou du tissu non-tissé dans un produit chimique durant environ 4 heures.

21. Casquette élastique selon l'une quelconque des revendications 14 à 20, dans laquelle du voile 6112H ou coordonné avec un autre textile non-tissé peut être utilisé pour ledit voile.

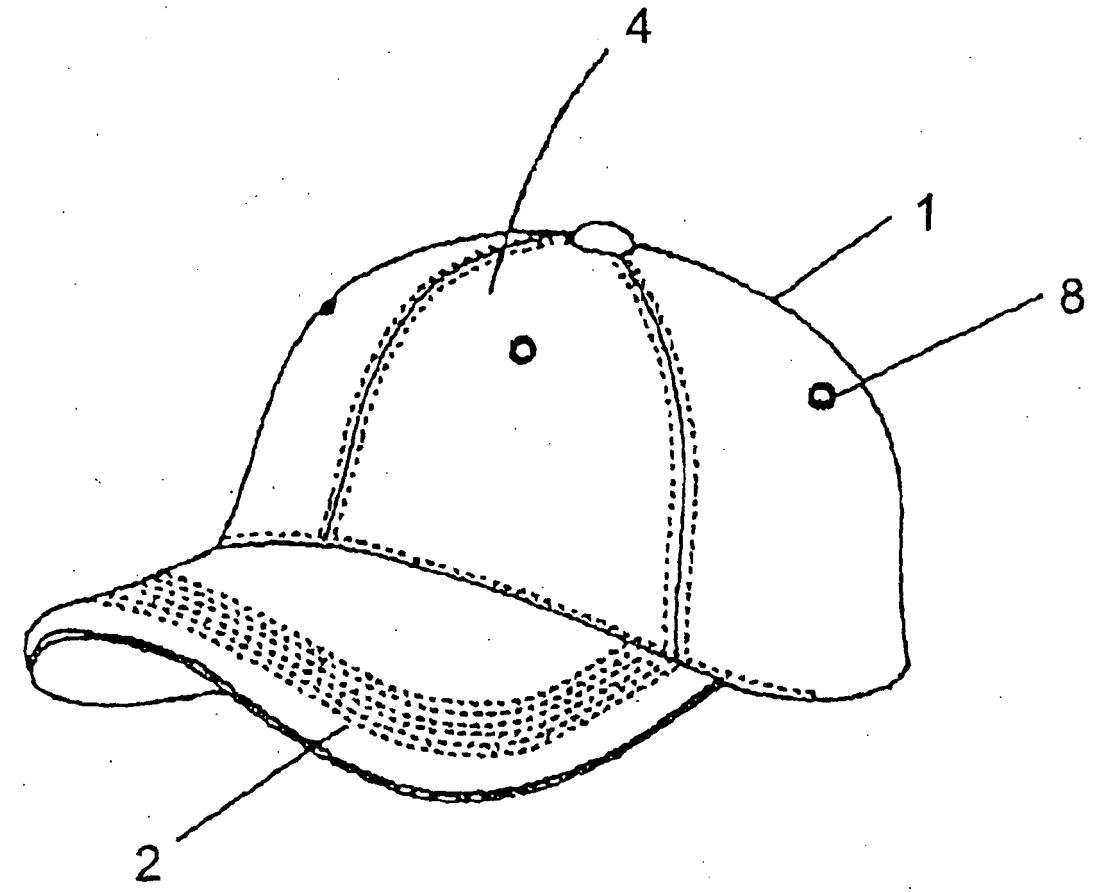


Figure 1

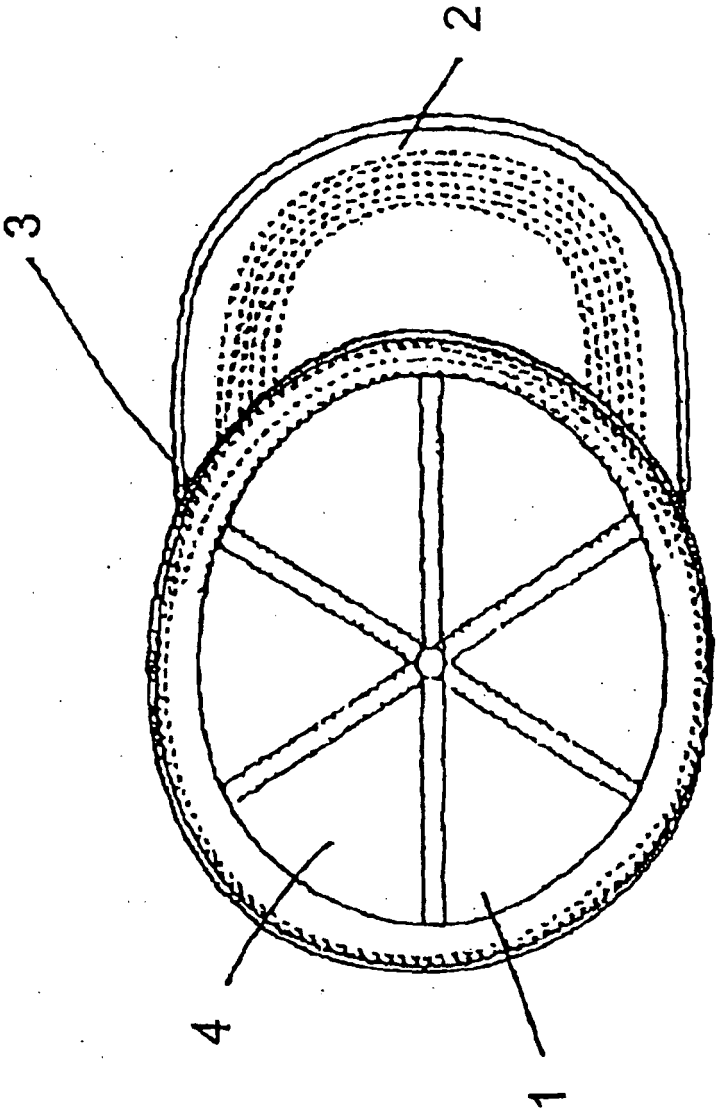


Figure 2

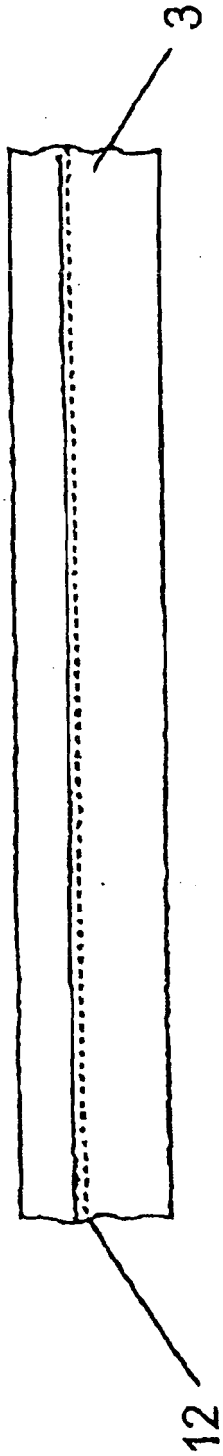


Figure 3A

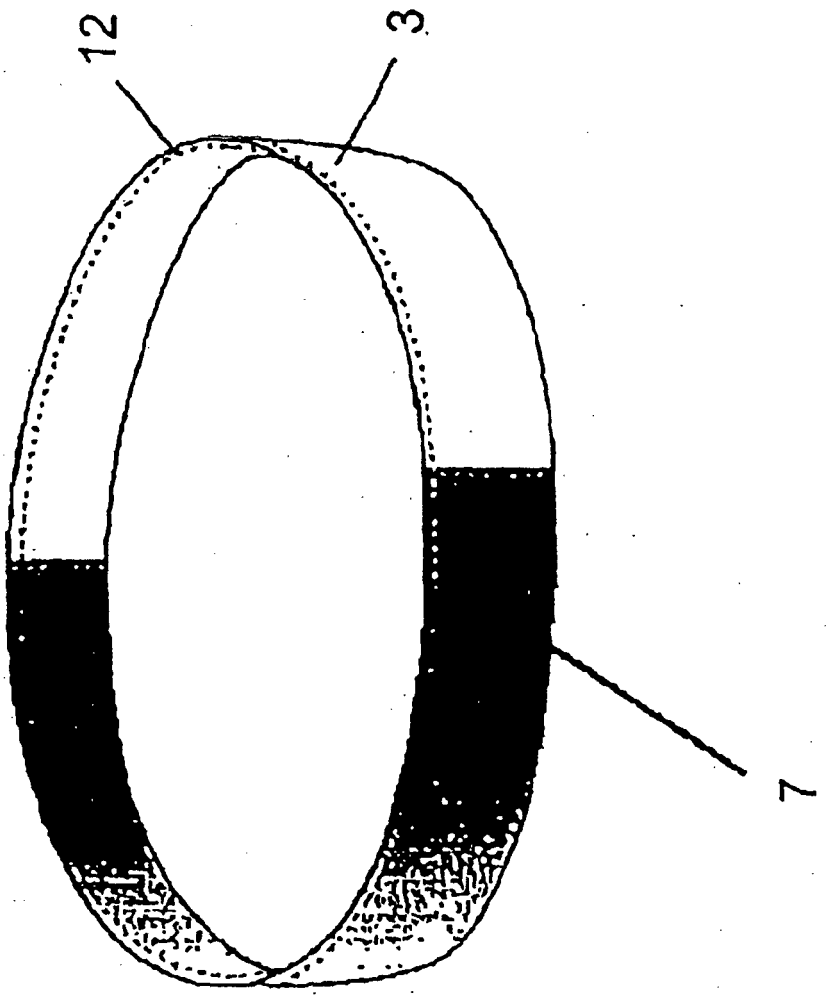


Figure 3B

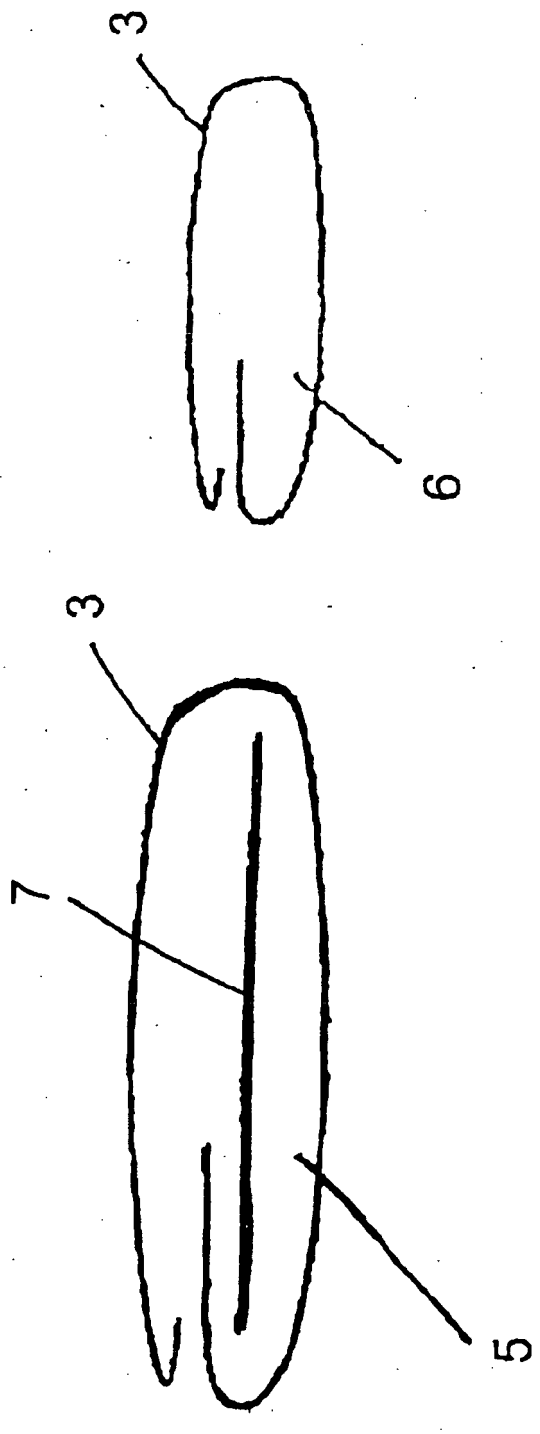


Figure 3C

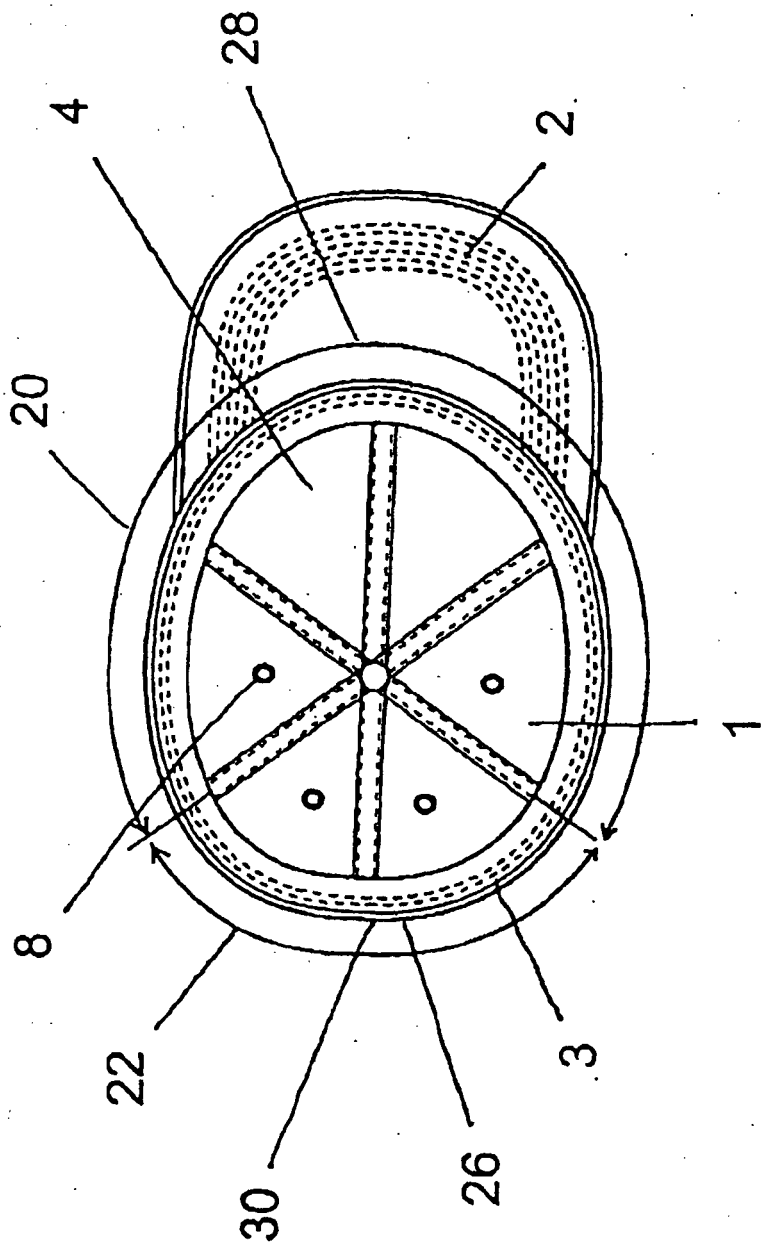


Figure 4

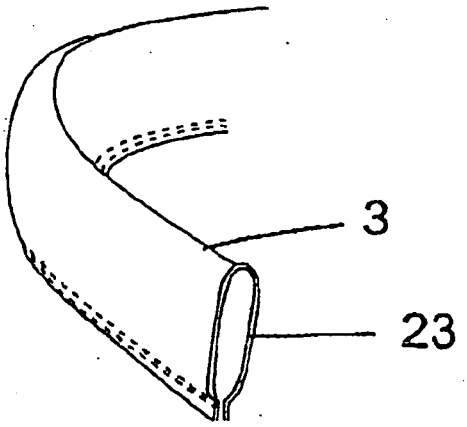


Figure 5

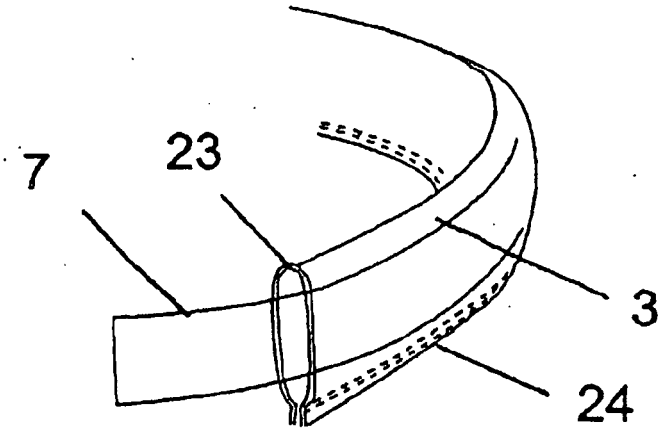


Figure 6

REFERENCES CITED IN THE DESCRIPTION

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