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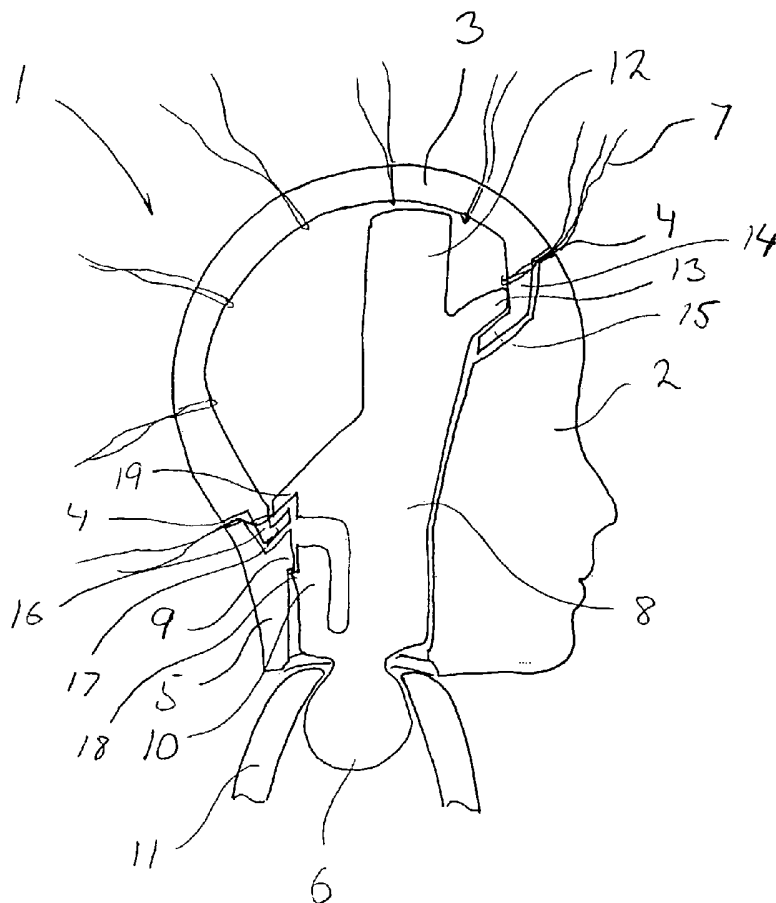
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[Continued on next page]

(54) Title: A TOY FIGURE



(57) Abstract: A toy figure comprising a head having a head surface, and being divided into a facial part (2) and a hollow skull part, the facial part (2) and the hollow skull part having abutting complementarily shaped annular surfaces extending along a borderline at the surface of the head and inwardly into the head, and where the hollow skull part is made from a soft, pliable, elastic material having artificial hair (7) sewn into the skull part (3), and where means are arranged for mounting or fastening the hollow skull part on the facial part (2), and where hair is sewn into the skull part and extending from the inside of the head and out between the abutting, complementarily shaped annular surfaces of the skull part and the facial part.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A toy figure.

The present invention relates to a toy figure comprising
5 a head having a head surface, and being divided into a
facial part and a hollow skull part, the facial part and
the hollow skull part having abutting, complementarily
shaped annular surfaces extending along a borderline at
the surface of the head and inwardly into the head, and
10 where the hollow skull part is made from a soft pliable
elastic material having artificial hair sewn into the
skull part, and where means are provided for mounting or
fastening the hollow skull part on the facial part.

15 The terms facial part and skull part may in the following
be understood in a wide sense, eg such as to cover also a
horse's head and its mane, because the advantages pro-
vided by the invention also relates to toy figures that
do not typify human beings.

20 From US patents Nos 3 225 489, 5 041 050 and 4 874 345
doll's heads are known having replaceable wigs. The head
part is shaped as a natural head, such that the head will
be life-like and attractive even without the wig. In or-
25 der for the hair to look natural, the wig is formed from
any relatively thin elastic material as a hemispherical
cap, and hair strands are sewn into the cap. The wig is
mounted on the head part by snap engagement or by means
of other releasable securing means, such as hook and loop
30 fasteners.

Japanese patent application No 10-192556 and Swiss patent
application No 1311/96 disclose a doll's head having a
wig made of a relatively thin flexible material, such as
35 textile material, where hairs are sewn into the textile
material. The doll's head comprises a facial part and a

skull part made of a relatively rigid plastics material such as polystyrene, urethane or epoxy resin. The wig is attached to the outer surface of the skull part, and the skull part is thereafter mounted on the facial part and thereby clamping the wig between the skull part and the facial part.

Especially in relation to small dolls the above mentioned prior art gives rise to the problem that the wigs are very fragile, and therefore a small child can relatively easily tear the wigs when playing with the dolls.

Furthermore the wigs according to the above mentioned prior art are easily released from the doll's head either intentionally or unintentionally. This represents a hazard as small children may unintentionally swallow the wigs.

In this relation it is therefore generally known to make hollow doll's heads in a rotational or slush molding process, and wherein artificial hair is sewn onto the head after the molding process. Such doll's heads are preferably made in one piece from polyvinyl chloride because polyvinyl chloride provides advantageous properties for both the printing, stitching and rotational moulding processes necessary for finishing the doll's head.

From US patent No 3 448 540 is also known a doll's head comprising a separate facial part and a skull part - both made from softened polyvinyl chloride, and where the facial part and the skull part have complementary annular abutting surfaces extending along border regions from the surface of the head and inwardly into the head. Plates are arranged inside the head in order to ensure correct positioning of the abutting surfaces of the skull part and the facial part.

One drawback in relation to the prior art according to US patent No 3 448 540 is that the borderline between the facial and the skull parts forming the complete doll's head will be visible in use.

Another problem in relation to the prior art is that there is an increasing market demand for avoiding the use of polyvinyl chloride in toys.

10

It is therefore the object of the present invention to provide a doll's head having a very natural and lifelike appearance, but at the same time providing a head wherein the need for using polyvinyl chloride as a material for the head is reduced or eliminated.

15

According to the invention this is obtained by that hair is sewn into the skull part and extends from the inside of the head and out between the abutting, complementarily shaped annular surfaces of the skull part and the facial part.

20

According to a preferred embodiment the hollow skull part has internal flanges extending from the surface of the head and into the head, and that the hairs extending between the abutting surfaces of the skull part and the facial part are sewn into the internal flanges. Hereby is obtained a hidden borderline and a very lifelike appearance of the doll's head.

30

It is advantageous if the toy figure comprises a plug having means at one end for engaging with one or more protrusions arranged in the hollow skull part, and the other end extending into the facial part and having means for engaging with one or more protrusions in the facial part.

35

Hereby is obtained that the complete doll's head consist of only the facial part, the skull part and the plug for mounting the skull part on the facial part.

5

In another embodiment of the invention, a relatively soft material for the facial part of the head is used, which in particular cases are advantageous.

10 In a preferred embodiment of the invention, a relatively rigid material for the facial part of the head is used, thereby accomplishing that any elastic deformation of the head parts - due to the hair strands extending between the abutting surfaces of the two parts - is concentrated
15 in the skull part and not in the facial part. Furthermore no specific means are necessary in order to hold the abutting surfaces of the skull part and the facial part into correct alignment and abutment.

20 In this relation the plug is also advantageously made from a relatively rigid plastics material, such as polystyrene or polyoximethylene.

The means at the other end of the plug for engaging with
25 protrusions in the facial part comprises - in a preferred embodiment of the invention - a one-way snap engaging means arranged such as to resist pulling the plug out of the facial part after insertion of the plug into the facial part so as to avoid that a child pulls the skull
30 part off the facial part.

In a further preferred embodiment of the invention the facial part of the toy figure has a neck portion which is engageable with a body portion of the toy figure for connecting the facial part to the body portion.
35

In this relation the plug may - according to a further embodiment of the invention - extend through the facial part and below the neck portion, and where the plug at the end below the neck portion is shaped as a ball for
5 engaging with a corresponding socket portion on the body part of the toy figure. The process of assembling the doll's head and the process of mounting the doll's head on the body part of the toy figure can thereby be effected simultaneously.

10

The term 'sewing' is used herein to designate any method of fastening the hair strands to the skull part, wherein the hair strands extend into perforations in the skull part, e.g. by means of a hair rooting process.

15

According to a preferred embodiment of the invention the skull part has an annular flange arranged on the innermost part of the annular abutting surface on the skull part, and where the annular flange extends from the annular abutting surface and into the facial part in the direction of the neck part of the facial part. Hereby it is ensured that the facial part and the skull part of the
20 head are kept in correct alignment.

25 In this relation it is furthermore made easier to sew the hairs into the annular flange as the annular flange is more parallel with the surface of the head than the abutting surfaces of the head parts, such that no reorientation of the skull part is needed when sewing in the
30 hairs.

In this relation it is further advantageous if the borderline at the surface of the head, which is defined by the abutting complementary shaped annular surfaces of the
35 skull part and the facial part, is shaped as a natural

hairline for the toy figure, so that it imparts a natural appearance of the head.

Preferred embodiments will be further described in the
5 following with reference to the drawings.

Figure 1 is a view of a fully assembled doll's head according to the present invention, without hair sewn into the skull.

10

Figure 2 shows a section of the fully assembled doll's head shown in Figure 1 in the symmetrical plane of the head.

15 Figure 3 is a view of a part of the doll's head according to Figures 1 and 2.

In Figure 1 the doll's head 1 comprises a facial part 2 and a skull part 3 being divided by a borderline 4. The
20 borderline is preferably formed such as to have a curvature that very much resembles the curvature of a natural hairline of a person. According to the invention the skull part is made of a relatively soft, pliable material suitable for sewing in tufts of artificial hair, and the
25 facial part is made of a relatively rigid plastics material, such as polystyrene (PS, ABS) or polyoximethylene (POM).

The embodiment disclosed in Figure 1 and the following
30 figures relates to dolls typifying human beings, but as the advantages of the present invention also relate to toy figures typifying other beings than humans, e.g. animals, such as horses, or other animals or creatures, it is obvious that the skilled person, by the description of
35 the present invention, will be able to suggest alternative shapes for the facial part and the skull part as

well as for the curvature of the borderline dividing the facial part and the skull part.

The facial part has a neck portion 5, and a ball-shaped connection part 6 is arranged below the neck part 5 in order to facilitate mounting of the head 1 in a correspondingly shaped socket arranged on a body part of the toy figure (not shown).

10 Now, in Figure 2 a section along the symmetrical plane of the doll's head according to Figure 1 is shown. The doll's head 1 is mounted in a socket 11 being a part of the body part of a toy figure. By the ball 6 and socket 11 connection it is possible to arrange the doll's head
15 in different positions in relation to the body part of the doll.

A plug 8 extends through the facial part 2 of the doll's head 1 from the upper part of the facial part 2 and below
20 the neck portion 5 of the facial part 2. At the lowermost end of the plug 8, the ball 6 is arranged so as to engage with the socket 11 on the body part of the doll.

Flanges 13, 19 are arranged at the upper end of the plug
25 8 so as to engage with inwardly extending protrusions 15, 17 on the skull part 3 so as to hold the skull part against the facial part 2 along the borderline 4. In order to secure the plug 8 in the facial part 2, a one-way snap means 9, 10 is arranged.

30 Even though the preferred embodiment disclosed provides easy assembly of the toy figure, an alternative embodiment is possible in which the one-way snap-engagement means are removed and the only means holding the skull
35 part 3 and the facial part together is the ball- 6 and-socket- 11 connection.

When assembling the doll's head 1, the skull part 3 is at first mounted on the plug 8, and thereafter the plug 8 is pushed into the facial part 2 until the skull part abuts on the facial part 2 along the borderline 4. In order to push the plug 8 into the facial part 2, a rod like extension 12 is arranged on top of the plug 8.

As can be seen from Figure 2, the plug 8 and the facial part 2 form a maze when assembled, and the protrusions 15, 17 and the flanges 14, 16 of skull part 3 extend into the maze such as to provide very secure locking of the skull part 3 to the facial part 2.

Artificial hair strands 7 are sewn into the skull part 3 of the doll's head by means of well known methods for this purpose, such as a hair rooting process or the like. In order to hide the borderline and impart a lifelike appearance, some of the hair strands are sewn into flanges 14, 16 extending inside the head, and the hair strands extend between the abutting surfaces of the skull part 3 and the facial part 2, and out through the borderline 4.

In Figure 3 the skull part 3 is shown in further detail, where the skull part 3 comprises a skull surface 20, an abutting surface 21, a flange 22 extending from the abutting surface, and forming the flanges 14, 16 disclosed in Figure 2, and a further flange 23 extending inwardly from the flange 22 and forming the protrusion 15, 17 disclosed in Figure 2.

Hair strands 7 of artificial hair are sewn into the skull part 3 along the dotted lines 25, and because some of the hair strands are sewn into the flange 22 extending from the abutting surface 21 it is clear that these hair

strands will extend out between the abutting surfaces on the skull part 3 and the facial part 2 as shown in fig 2.

C l a i m s

1. A toy figure comprising a head having a head surface,
and being divided into a facial part and a hollow skull
5 part, the facial part and the hollow skull part having
abutting, complementarily shaped annular surfaces extend-
ing along a borderline at the surface of the head and in-
wardly into the head, and where the hollow skull part is
made from a soft pliable elastic material having artifi-
10 cial hair sewn into the skull part, and where means are
provided for mounting or fastening the hollow skull part
on the facial part, c h a r a c t e r i z e d in
that hair is sewn into the skull part and extends from
the inside of the head and out between the abutting, com-
15 plementarily shaped annular surfaces of the skull part
and the facial part.

2. A toy figure according to claim 1, c h a r a c -
t e r i z e d in that the hollow skull part has inter-
20 nal flanges extending from the surface of the head and
into the head, and that the hairs extending between the
abutting surfaces of the skull part and the facial part
are sewn into the internal flanges.

25 3. A toy figure according to claim 1 or 2, c h a r -
a c t e r i z e d in that it comprises a plug having
means at one end for engaging with one or more protru-
sions arranged in the hollow skull part, and the other
end extending into the facial part and having means for
30 engaging with one or more protrusions in the facial part.

4. A toy figure according to any of the preceding claims
1-3, c h a r a c t e r i z e d in that the facial
part is made from a relatively soft plastics material.

5. A toy figure according to any of the preceding claims 1-3, c h a r a c t e r i z e d in that the facial part is made from a relatively rigid plastics material.
- 5 6. A toy figure according to claim 5, c h a r a c -
t e r i z e d in that the facial part is made from polystyrene (PS, ABS), or polyoximethylene (POM).
7. A toy figure according to claim 3, c h a r a c -
10 t e r i z e d in that the plug is made from a rela-
tively rigid plastics material, such as polystyrene or ABS.
8. A toy figure according to claim 3 or 7, c h a r -
15 a c t e r i z e d in that the means at the other end
of the plug for engaging with protrusions in the facial
part, comprises one-way, snap-engaging means being ar-
ranged such as to resist pulling the plug out of the fa-
cial part after insertion of the plug into the facial
20 part.
9. A toy figure according to one or more of the preceding
claims, c h a r a c t e r i z e d in that the facial
part has a neck portion being engageable with a body por-
25 tion of the toy figure for connecting the facial part to
the body portion.
10. A toy figure according to claim 3, 7 or 8,
c h a r a c t e r i z e d in that the plug extends
30 through the facial part and below the neck portion, and
where the plug at the end below the neck portion is
shaped as a ball for engaging with a corresponding socket
portion on the body part of the toy figure.
- 35 11. A toy figure according to claim 1 or 2, c h a r -
a c t e r i z e d in that the skull part has an annu-

lar flange arranged on the innermost part of the annular
abutting surface on the skull part, and where the annular
flange extends from the annular abutting surface and into
the facial part in the direction of the neck part of the
5 facial part.

12. A toy figure according to claim 11, c h a r a c -
t e r i z e d in that the hair extending between the
abutting surfaces of the skull part and the facial part
10 is sewn into the annular flange

13. A toy figure according to any of the preceding
claims, c h a r a c t e r i z e d in that the bor-
derline at the surface of the head, which is defined by
15 the abutting complementary shaped annular surfaces of the
skull part and the facial part, is shaped as a natural
hairline for the toy figure.

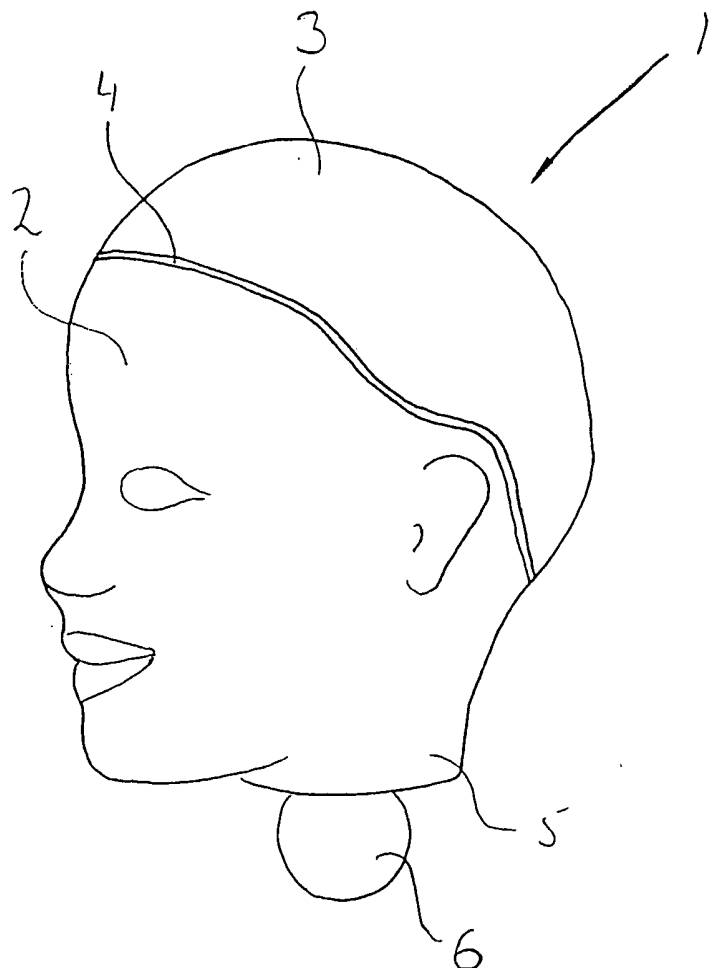


Fig. 1

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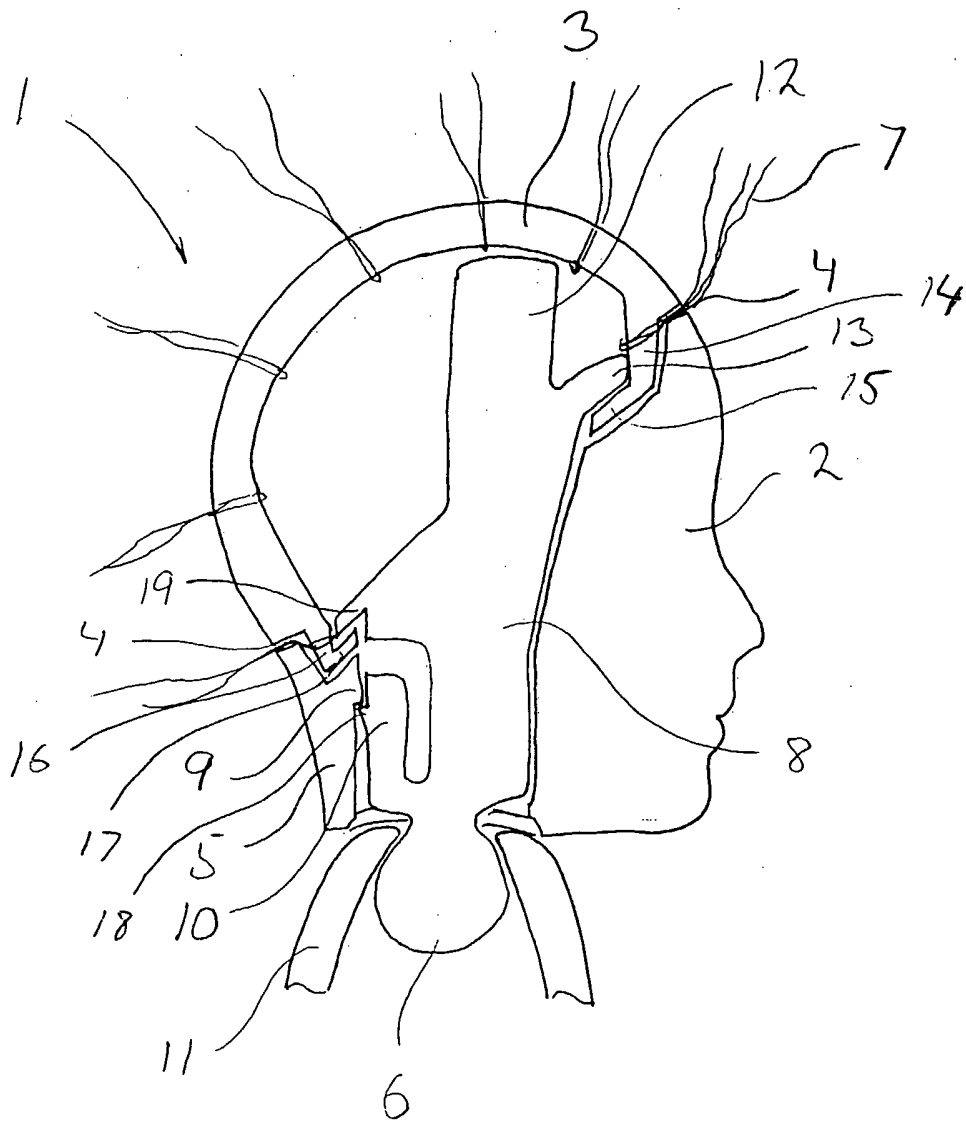


Fig. 2

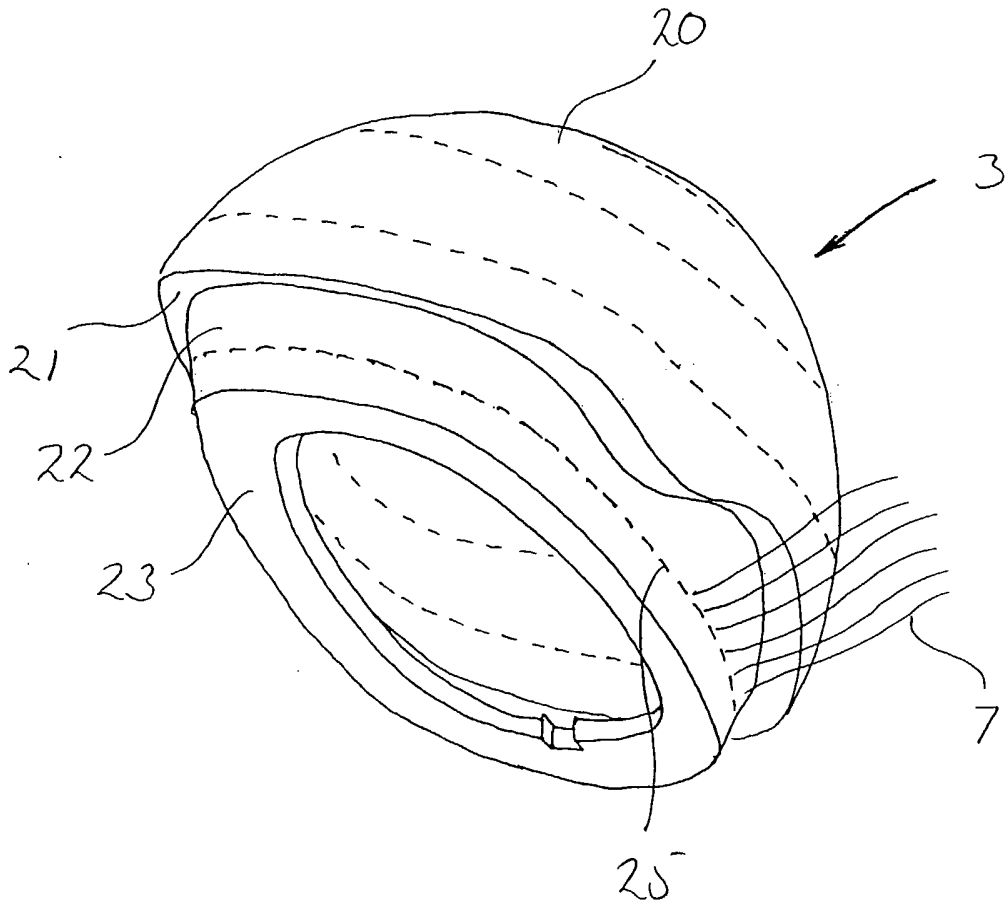


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/DK2005/000751

A. CLASSIFICATION OF SUBJECT MATTER A63H3/44		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) A63H		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 217 407 B1 (LAURSEN PALLE W) 17 April 2001 (2001-04-17) column 2, line 7 - column 4, line 56; figures 2,3	1-9, 11-13
Y	FR 1 562 481 A (FIRMA MAX ZAPF) 4 April 1969 (1969-04-04) column 2, line 56 - column 3, line 5; figure 3	10
X	US 3 273 280 A (KARTON JOSEPH) 20 September 1966 (1966-09-20) page 3, line 6 - page 5, line 4; figures 1,4-6,8-10	1-9, 11-13
Y	DE 897 963 C (PREH) 26 November 1953 (1953-11-26) the whole document	10
<input type="checkbox"/> Further documents are listed in the continuation of Box C.		
<input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
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P document published prior to the international filing date but later than the priority date claimed		
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