(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 613 625 A1**

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **94830099.1**

(51) Int. Cl.[5]: **A42B 3/10**

(22) Date of filing: **04.03.94**

(30) Priority: **05.03.93 IT MI930172 U**

(43) Date of publication of application:
07.09.94 Bulletin 94/36

(84) Designated Contracting States:
BE CH DE ES FR GB IT LI NL

(71) Applicant: **Mambretti, Giuseppe**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)
Applicant: **Mambretti, Marco**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)
Applicant: **Mambretti, Isabella**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)

(72) Inventor: **Mambretti, Giuseppe**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)
Inventor: **Mambretti, Marco**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)
Inventor: **Mambretti, Isabella**
Piazza Maria Adelaide, 6
I-20129 Milano (IT)

(74) Representative: **Cicogna, Franco et al**
Ufficio Internazionale Brevetti
Dott.Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
I-20122 Milano (IT)

(54) **Hygienic protecting cap, provided for application to the inside of helmets in general.**

(57) The present invention relates to a hygienic protecting cap which can be applied to the inside of helmets in general and comprises a die-cut plate-like element (1), made of an absorbing material. The periphery of said plate-like element (1) is provided with hollow portions (6,7,9), cut-outs (2) and recesses (10) in order to facilitate the bending, the fitting and the coupling of said cap to the helmet.

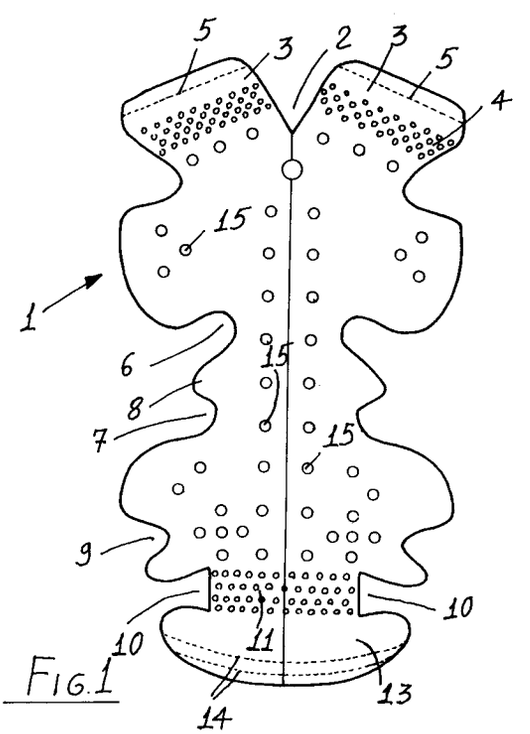


FIG.1

EP 0 613 625 A1

BACKGROUND OF THE INVENTION

The present invention relates to a hygienic protecting cap, which can be applied to the inside of helmets in general, and adapted to cover the inner padding layer of the helmet, and being specifically designed for interposing between the padding and the user scalp.

At present there are already applied several types of paddings to the inside of helmets, i.e. both sport helmets and work helmets.

As is known, a helmet is affected by serious hygienic problems, since the person bearing the helmet frequently sweats, thereby causing the padding to be impregnated by beads of perspiration.

This problem is aggravated as the helmet is used by several persons.

In such a case, the person frequently will bear a helmet which is not suitable from a mere hygienic standpoint.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned problem, by providing a hygienic protecting cap, to be applied to the inside of helmets in general, which can be easily and quickly fitted to a lot of different types of helmets, while providing a product which can be easily made, with a high yield, on industrial making systems.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a protecting cap which is specifically adapted to absorb the sweat thereby assuring very good hygienic conditions for the inside of the helmet, and which, moreover, can be made by simple cutting operations and may be quickly and simply applied to the inside of the helmet, while having a very reduced making cost.

Yet another object of the present invention is to provide such a protecting cap which can be also constructed as a disposable or single-use cap.

Yet another object of the present invention is to provide such a hygienic protecting cap which can be made starting from easily available materials, such as cellulose materials, fabric materials or other materials having high sweat or perspiration absorbing protperties and high protection properties with respect to the dust or other outer polluting agents.

Yet another object of the present invention is to provide such a protecting cap which, owing to its structural features, is very reliable and safe in operation.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a hygienic protecting cap, for application to the inside of helmets in general, characterized in that said protecting cap comprises a die-cut plate-like element made of either a cellulose or textile absorbing material and provided, on the periphery thereof, with hollow portions and, in the inside thereof, with a plurality of cut-outs in order to faciliate the connection thereof to the inner surface of the helment, peripheral recesses being moreover provided on said cap for the connection to the helmet.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent from the following detailed disclosure of a hygienic protecting cap, for application to the inside of helmets in general, which is illustrated, by way of an indicative, but not limitative example, in the accompanying drawings, where:

Figure 1 illustrates a protecting cap which has been specifically designed for sport helmets;

Figure 2 illustrates a protecting cap which has been specifically designed for work helmets;

Figure 3 is a perspective exploded view illustrating the subject protecting cap and a sport helmets, shown in cross-section;

Figure 4 illustrates the protecting cap applied to the inside of the helmet;

Figure 5 is an exploded view illustrating the protecting cap, by a plan view, and a work helmet, by a cross-section view;

and

Figure 6 illustrates the protecting cap applied to the inside of the work helmet.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the number references of the above mentioned figures and, more specifically, to figures 1, 3 and 4, the hygienic protecting cap, for application to the inside of helmets in general, according to the present invention, comprises a die-cut-plate-like element, generally indicated at the reference number 1, which is made of a sweat or perspiration absorbing material, such as paper or fabric or the like, and being so contoured as to facilitate the bending thereof to be easily engaged inside a helmet.

More specifically, the plate-like element 1 is provided with a front hollow portion 2, which separates two front flaps 3 which are provided with aerating cells 4, arranged at the front region.

Moreover, near the free edge portion of the flaps 3, there are provided perforation lines 5, facilitating a possible tearing operation, in order to re-

move the excess surface.

In the intermediate or middle portion of the plate-like element 1, there are provided the central hollow portions 6 and 7, which are separated by a central projection 8, said central hollow portions 6 and 7 being provided for facilitating the bending at the top region, a further hollow portion 9 being provided, near the rear end portion, to facilitate the fitting of the cap to the nape of the neck of the user.

At the rear flap portion there is provided, symmetrically with respect to the longitudinal line, a trapezoidal recess 10 which is provided for facilitating the bending of the die-cut element constituting the plate-like element, in order to be fixedly engaged in the flexible projection of the helmet which laps, at the outside, the occipital region.

Moreover, between the two oppositedly arranged recesses 10 there are provided aeration or ventilation cells, arranged on the neck 11, allowing the perspiration, in a region where the production of perspiration drops is the greatest.

At the rear edge there is provided a lug 13, where there are formed perforated lines 4 allowing to easily tear the excess portions.

Finally, through the overall inner surface of the plate-like element, there are provided holes 15 for facilitating the perspiration and, moreover, for allowing the plate-like element to be properly arranged inside the helmet.

Figures 2, 5 and 6 show a hygienic protectin cap, indicated at the reference number 20, which has been specifically designed for work helmets.

Even in this case, there is provided a die-cut plate-like element, made of an absorbing material, which has an elongated configuration and is provided, at the front end portion thereof, with a half-circular projection 21, ending with perforating lines 22 adapted to allow the excess portions to be easily torn away.

Adjoining the front projecting region, moreover, there is provided, for each side, a front hollow portion 23, adjoining a central recess 24, of trapezoidal configuration, which is adapted to fixedly engage with the central projection of the inner support of the head bearing element of a work helmet 25.

Toward the rear end portion there is moreover provided a rear cut-out 27 adjoining a side projecting 28 ending with rear lugs 29 separated by a loop portion 30.

As shown, the rear lugs 29 are provided with tearing lines 31, for removing the excess portions.

Even in this case, through the surface of the plate-like element there are provided holes 32 adapted to facilitate the perspiration and the bending of the plate-like element in order to fit it to the work helmet.

With the disclosed arrangement, the hygienic protecting cap is made as a single piece, which can be obtained by a simultaneous die-cut operation of several layers or sheets of paper, or fabric, while providing the possibility of also making, by subsequent die-cut operations, the hollow portions and all of the finishing details.

Moreover, the provision of the cap as a plate-like element will greatly facilitate the packaging of these caps, since they can be simply arranged in protecting envelopes either piece by piece or in piece sets.

From the above disclosure it should be apparent that the invention fully achieves the intended objects.

In particular, the fact is to be pointed out that the plate-like element can be easily bent in order to engage, inside the helmet, all of the convex portions of the padding; this result is obtained owing to the specifically designed pattern of the periphery of the cap and its inner cut-out portions.

Moreover, the hygienic protecting cap can be easily located and fitted inside the helmet since its proper locating will be facilitated and forced by the opposite recesses which will connect with the helmet.

This connection also provides the advantage of rendering the caps more stable with respect to a possible sliding, after the fitting thereof and during a repeated use of the helmet.

Finally, the specific contour of the cap allows to provide the cap with very good encompassing properties, so that the cap will adhere very satisfactorily to the user head and to the inner padding of the helmet.

In this respect there are very important the regions provided with holes for facilitating the perspiration both in the front region and in the rear region of the naple of the neck, that is those regions which are subjected to a high perspiration.

Furthermore, a very great number of perspiration holes are provided through the hygienic protecting cap, which holes are distributed through the overall cap surface, and which will operate both for facilitating the perspiration and for facilitating the bending of the cap as it is fitted to the helmet, thereby perfectly fitting it to the hair of the user.

In this connection it should be apparent that the cap could be subjected to several variations and modifications depending on the specific requirements.

Another important feature of the subject protecting cap is the provision of the perforated lines which will allow to remove possible excess portions and will allow to obtain a great reduction of the number and size of the hygienic caps to be sold, thereby contributing to a sensible reduction of the making cost.

In practicing the invention, the used materials, provided they are compatible to the specific use, as well as the contingent size and shape can be any, depending on requirements.

Claims

1. A hygienic protecting cap, for application to the inside of helmets in general, characterized in that said protecting cap comprises a die-cut plate-like element made of either a cellulose or textile absorbing material and provided, on the periphery thereof, with hollow portions and, in the inside thereof, with a plurality of cut-outs in order to facilitate the connection thereof to the inner surface of the helmet, peripheral recesses being moreover provided on said cap for the connection to the helmet.

2. A protecting cap, according to the preceding claim, characterized in that, for a sports helmet, said plate-like element has an elongated configuration, with a front cut-out, adjoining front laps delimited by side recesses, on each side of the plate-like element there being moreover provided two recesses, separated by a central projection, as well as further recesses provided on the rear portion of said plate-like element.

3. A protecting cap, according to the preceding claims, characterized in that said plate-like element is provided, at the rear end portion thereof, with recesses of a substantially trapezoidal shape, adapted to operate as a restraining elements for the connection to the helmet.

4. A protecting cap, according to one or more of the preceding claims, characterized in that said plate-like element comprises a rear lug.

5. A protecting cap, according to one or more of the preceding claims, characterized in that it comprises aeration cells at said flaps and in the portion included between said recesses.

6. A protecting cap, according to one or more of the preceding claims, characterized in that it comprises, at the free end portions of the front flaps and rear lug, perforation lines for tearing away the excess portions of said plate-like elements.

7. A protecting cap, according to one or more of the preceding claims, characterized in that, for the work helmets, said plate-like element is provided with a rounded front lug, delimited by intermediate side hollows, adjoining substantially trapezoidal central recesses, for fixedly engaging in the central portion of a head bearing inner support, rear lugs being provided at the rear end portion, said rear lugs being delimited by a central loop, and through the middle portion of said plate-like element being provided perspiration holes.

8. A protecting cap, according to one or more of the preceding claims, characterized in that it further comprises, at the front region and rear lugs thereof, perforation lines for tearing away the excess portions of said plate-like element.

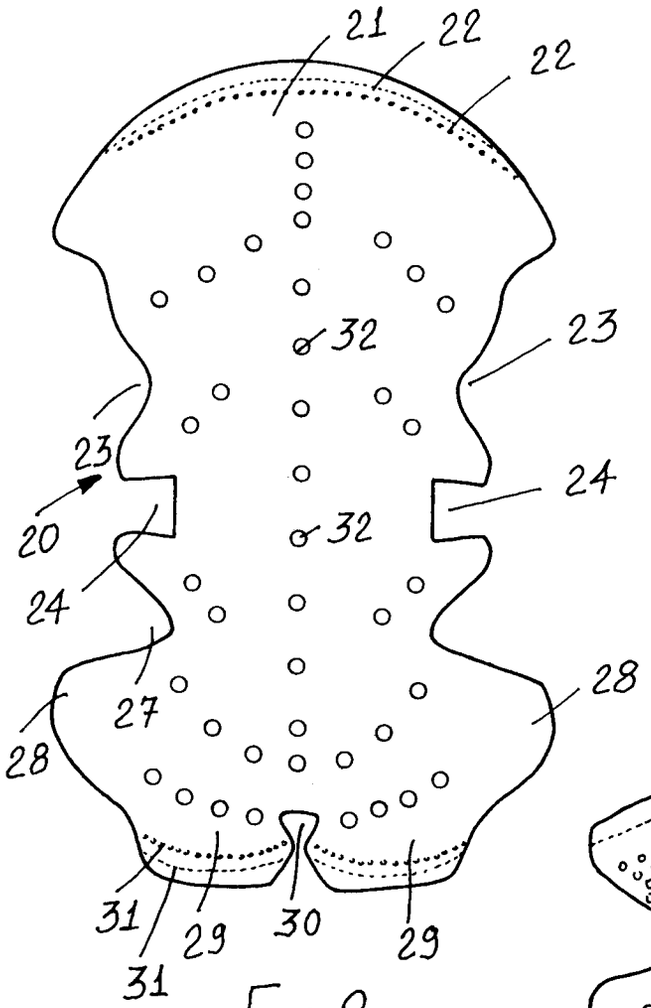

21
22
22
32
23
23
20
24
24
32
28
27
28
31
29
30
29
31

FIG. 2

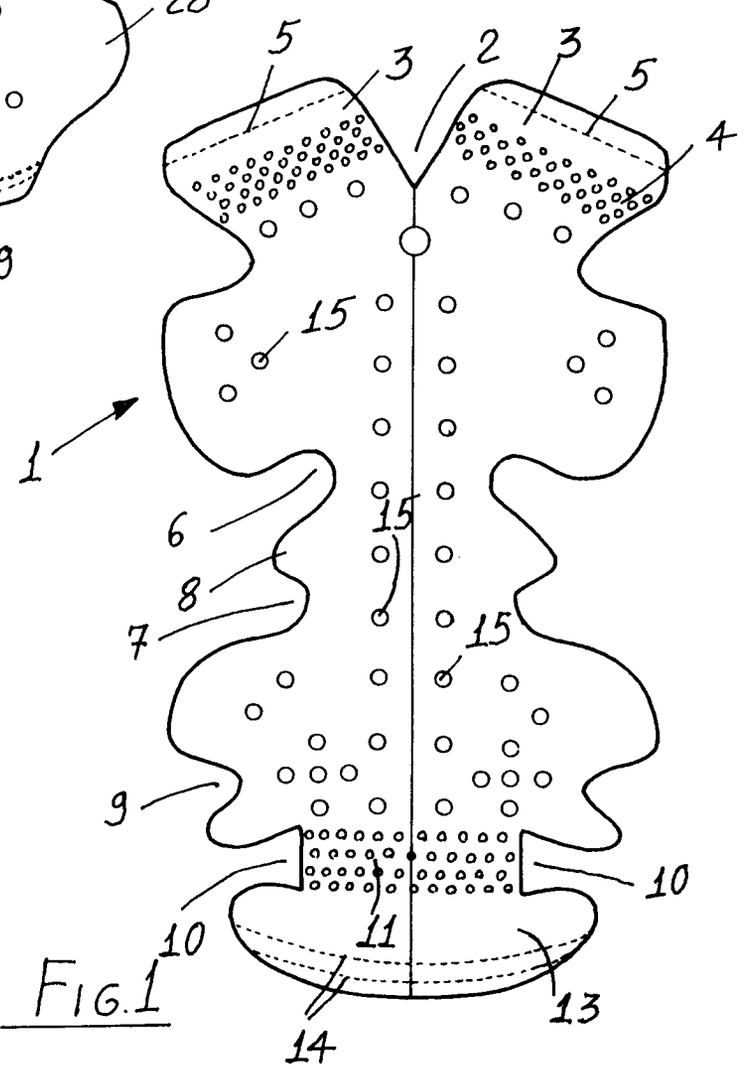

5
3
2
3
5
4
15
1
6
15
8
7
15
9
10
10
11
13
14

FIG. 1

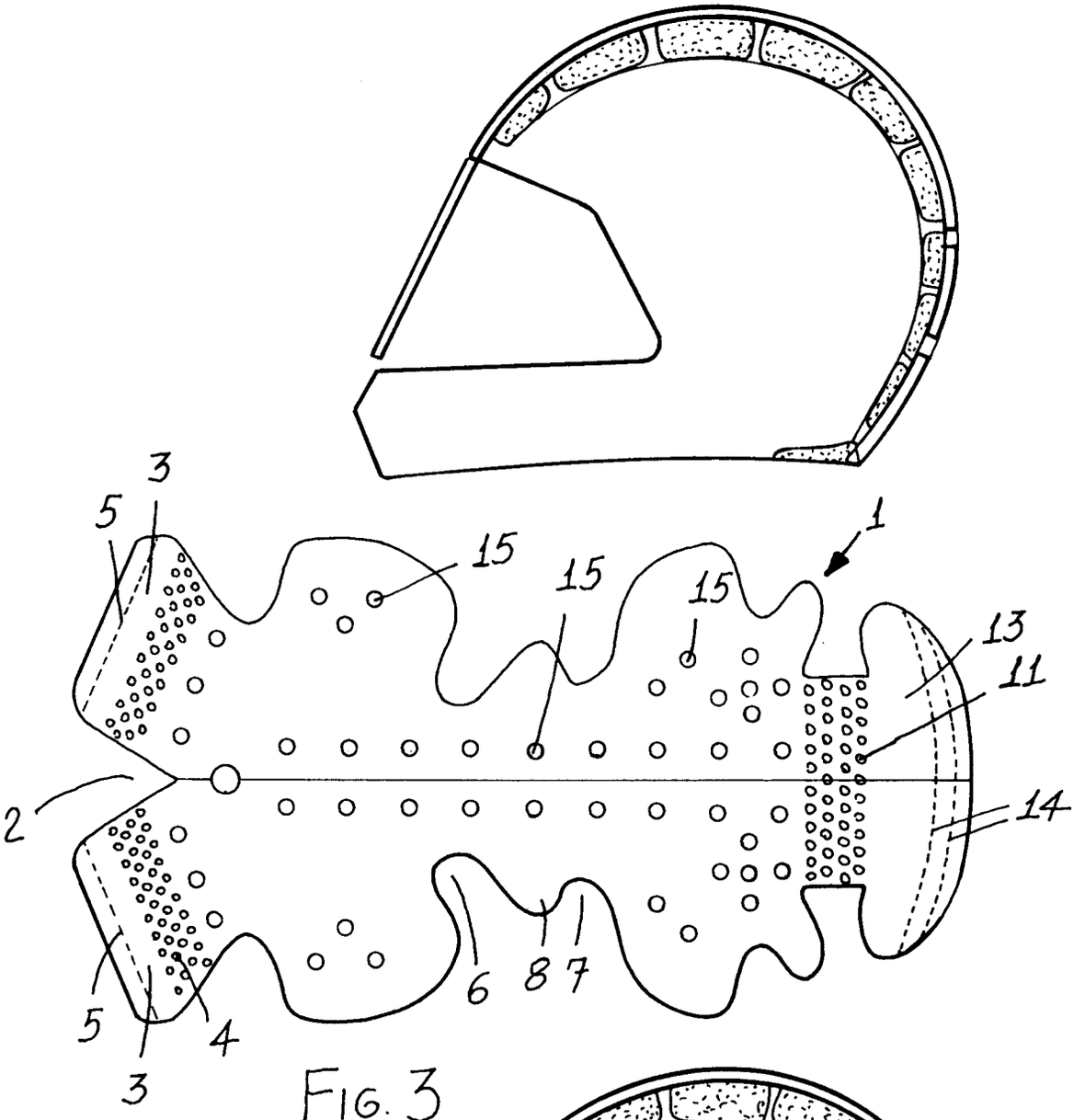


FIG. 3

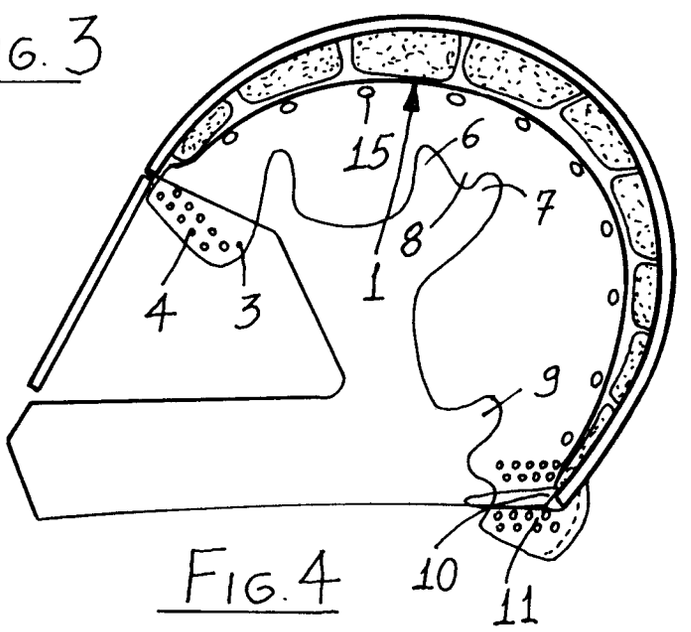
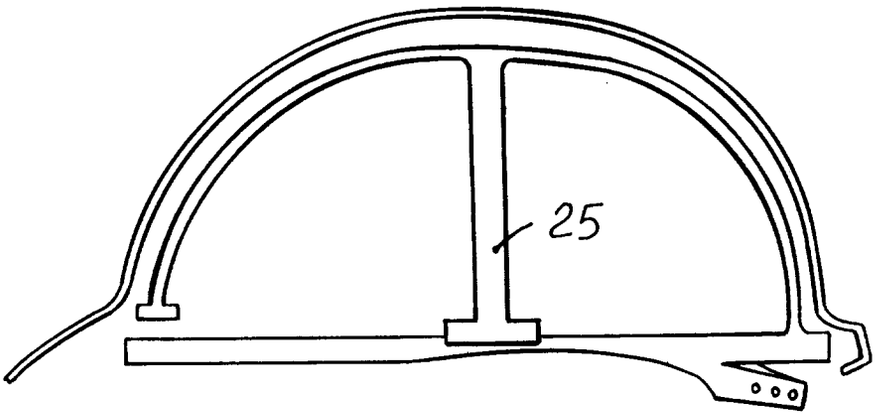


FIG. 4



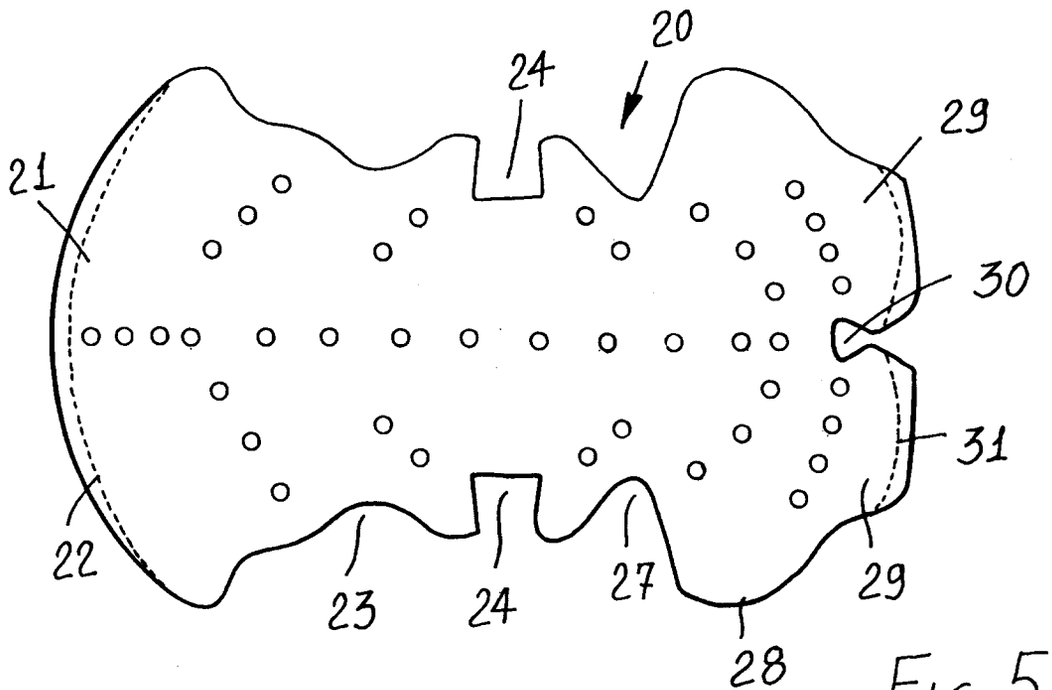


FIG. 5

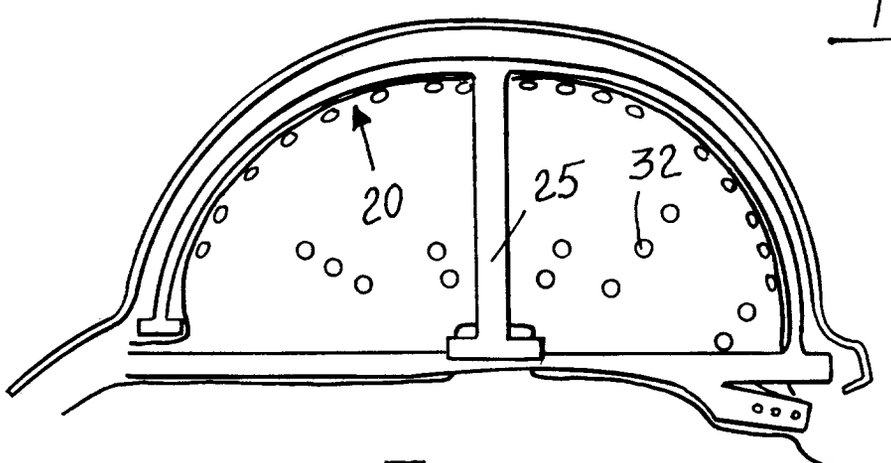


FIG. 6

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 83 0099

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	US-A-5 022 095 (R. L. FLEURY) * column 2, line 27 - column 3, line 68 * * claims; figures *	1-5,7	A42B3/10
A	FR-A-2 496 422 (E. DE SAINT MARS) * page 2, line 7 - page 5, line 7 * * claims; figures *	1-5,7	
A	US-A-5 088 126 (R. M. MATHIS) * column 3, lines 8 - 24, 39 - 61 * * claims 1,2,10,12,13; figures *	1	
A	US-A-3 116 488 (T. ZBIKOWSKI) * column 1, line 53 - column 2, line 22 * * figures *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

A42B
A42C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 June 1994	Bourseau, A-M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)