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(54) **Modular crash helmet**

(57) A modular crash helmet comprises a crash helmet cap and an interexchangeable cap cover associated with said cap by removable locking means, said modular cap cover comprising a top small cap substantially extending in the top part of the cap and partially covering

the sides and rear part of said cap; said top small cap comprising a plurality of openings leaving the surface of said cap exposed to the view; a pair of side plates covering the side parts of the cap converging to the side portions of said top small cap.

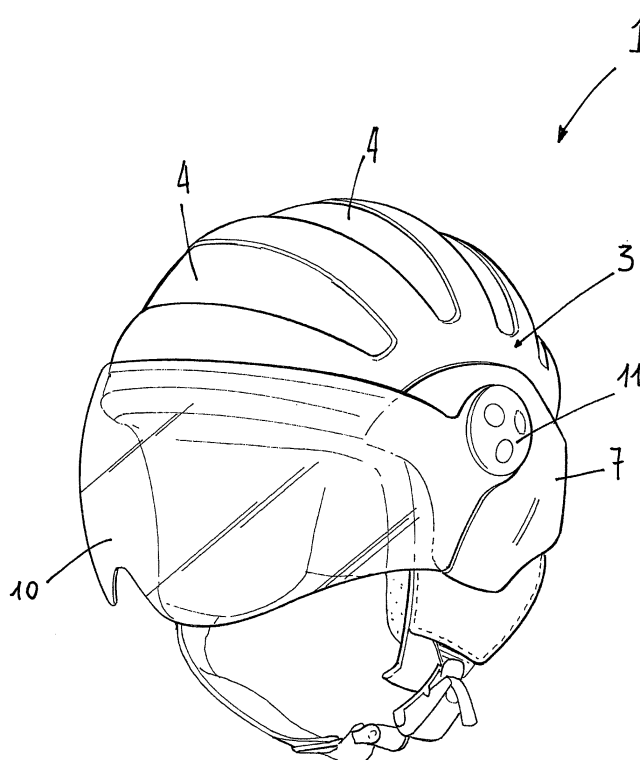


Fig. 1

Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a modular crash helmet construction.

[0002] As is known, the field of the protective helmets, particular for motorcycles, has encountered a great development because of an increasing use of motorcycles and motorbicycles, mainly in town centers, and due to recent rules which, in several Countries, have enforced a compulsory use of said helmets by the motorbicycle and motorcycle users.

[0003] In particular, the great diffusion of protective crash helmets and the competitiveness of their makers, have generated a need of providing crash helmets which may be differentiated also from an aesthetic standpoint, considering that many users require crash helmets which not only include desired safety and functionality requirements, but also particular stylistic and aesthetic characteristics.

SUMMARY OF THE INVENTION

[0004] Thus, the aim of the present invention is to provide a modular crash helmet having a very high strength and particular aesthetic characteristics.

[0005] Within the scope of the above mentioned aim, a main object of the invention is to provide such a modular crash helmet construction allowing the crash helmet user to easily change the helmet configuration and aesthetical aspect.

[0006] Another object of the present invention is to provide such an operatively flexible helmet body construction which allows to easily make crash helmets of different finishing patterns, according to requirements.

[0007] Yet another object of the present invention is to provide such a crash helmet construction which, owing to its specifically designed structural features is very reliable and safe in operation.

[0008] 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 modular crash helmet, **characterized in that** said modular crash helmet comprises a crash helmet cap and an interexchangeable cap cover associated with said cap by removable locking means.

[0009] Said modular cap cover comprises a top small cap substantially extending in the top part of the cap and partially covering the sides and rear part of said cap.

[0010] Said top small cap comprises a plurality of openings leaving the surface of said cap exposed to the view.

[0011] Moreover, a pair of side plates cover the side parts of the cap converging to the side portions of said top small cap.

[0012] The removable locking means comprise peg elements formed on the inner surface of said side plates.

[0013] The peg elements of said side plates passing through holes formed in said top small cap and being fixedly engaged in corresponding seats formed in said cap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following disclosure of a preferred, though not exclusive, embodiment of the invention, which is illustrated, by way of an indicative, but not limitative, example in the accompanying drawings, where:

Figure 1 is a perspective view of the modular crash helmet construction according to the present invention, the helmet being shown in its assembled condition;

Figure 2 is an exploded perspective view of the crash helmet construction according to the present invention;

Figure 3 is a further detail perspective view showing a step for applying the top small cap to the helmet body, and

Figure 4 is yet another perspective view showing a step for applying a visor element to the inventive crash helmet.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] With reference to the number references of the above mentioned figures, the modular crash helmet construction according to the present invention, which has been generally indicated by the reference number 1, comprises a crash helmet cap 2, which may be made of carbon fibers, "Kevlar" fibers, or glass fibers, impregnated by impregnating resins, or of a thermoplastics material, for example, a polycarbonate material or any other suitable thermoplastics materials.

[0016] As shown, on the crash helmet cap 2 a cap cover, comprising a top small cap 3 and side plates 7 is applied.

[0017] Said top small cap 3 substantially extends on the top part of the helmet cap 2 and partially covers the sides and rear portion of said helmet cap 2.

[0018] The top small cap 3 comprises a plurality of openings 4 extending substantially transversely and leaving exposed to the view the surface of the helmet cap 2.

[0019] The inventive helmet construction comprises moreover a pair of side plates 7, covering the side parts of the cap and converging to the side portions of said top small cap 2.

[0020] According to the present invention, said top small cap 3 and side plates 7 are removably affixed to the helmet cap 2 by removable locking means comprising, as herein preferred, pegs 8 formed on the inner sur-

faces of the plates 7, which pass through throughgoing holes 5 formed in said top small cap 3, and being fixedly engaged in corresponding seats 6 formed in the helmet cap 2.

[0021] Said side plates 7 comprise each a seat 9 forming a hinge assembly for applying a crash helmet visor 10.

[0022] Said crash helmet visor 10 is removably applied to the helmet construction by screw elements 11, engaging in the contoured recesses or seats 12 of the visor and being threadably engaged in respective threaded small blocks 13 in turn engaged in the helmet cap 2.

[0023] Said helmet cap 2 may further comprise a plurality of an aerating openings 14 which are substantially arranged at said openings 4 of said top small cap 3.

[0024] Further according to the present invention, said top small cap 3, side plates 7, visor 10 and screw elements 11 are all interexchangeable, and can be replaced even by an unskilled helmet user.

[0025] The above mentioned parts may be made of different materials and colors, so as to easily change their combinations and their relationship with the helmet cap 2.

[0026] The helmet may be easily and quickly changed, and, as stated, does not require any particular skillness by the user.

[0027] In fact, in the assembled condition, shown in figure 1, it is possible to remove the screw elements 11 by merely unscrewing them, to also remove the helmet visor 10.

[0028] Then, the side plates 7 may be removed by simply unlatching the helmet cap locking pegs 8, which operation may be easily and quickly performed owing to the resilient deformability of the side plates.

[0029] Upon having detached the side plates 7, it is possible to easily remove the top small cap, since the latter are not further locked by the pegs 8.

[0030] The helmet may be reassembled again by reversing the above disclosed operations, and by including one or more different elements.

[0031] The top small cap has been designed for increasing the strength of the crash helmet construction, while protecting the surface of the helmet cap 2 from rubbing or damaging friction occurring as the helmet is stored.

[0032] Thus, even if the inventive helmet is applied on rough surfaces, such as a floor or the ground, the helmet cap cannot be damaged since it does not contact the above rough surfaces.

[0033] The inventive crash helmet construction 1 further comprises finishing elements like those included in modern safety crash helmets, that is a polystyrene inner shell member and inner paddings and coatings, according to the requirements.

[0034] The colors, patterns and materials of the helmet interexchangeable elements have been so designed as to fit the aesthetic aspect and colors of the high strength helmet cap 2.

[0035] In this connection it should be pointed out that even if the figures show a crash helmet of the so-

called "jet" type, the inventive helmet construction may be advantageously applied to any desired types of helmets, and in particular to the so called "crash" helmets.

[0036] It has been found that the invention fully achieves the intended aim and objects.

[0037] In fact, the invention has provided a modular helmet construction allowing to easily and quickly modify the aesthetic aspect of the helmet, even by the helmet user, while assuring an improved safety and operating functionality.

[0038] In particular, the interexchangeable helmet small cap and side plates are so designed as to protect from wear and scratches the main helmet cap and may be easily and inexpensively replaced when damaged.

[0039] In practicing the invention, the used materials, as well as the contingent size and shapes, can be any, depending to requirements.

Claims

1. A modular crash helmet, **characterized in that** said modular crash element comprises a crash helmet cap and an interexchangeable cap cover associated with said cap by removable locking means.
2. A modular crash helmet, according to claim 1, **characterized in that** said modular cap cover comprises a top small cap substantially extending in the top part of the cap and partially covering the sides and rear part of said cap; said top small cap comprising a plurality of openings leaving the surface of said cap exposed to the view; a pair of side plates covering the side parts of the cap converging to the side portions of said top small cap.
3. A modular crash helmet, according to claim 2, **characterized in that** said removable locking means comprise peg elements formed on the inner surface of the plates, said peg elements of said side plates passing through holes formed in said top small cap and being fixedly engaged in corresponding seats formed in said cap.
4. A modular crash helmet, according to claim 2, **characterized in that** each of said side plates comprises a recess forming a hinge for a visor, said visor being removably applied to the crash helmet body by screw elements engaging the contoured recesses of the visor and being threadably engaged in respective threaded small blocks engaged in the cap.
5. A modular crash helmet, according to claim 2, **characterized in that** said cap comprises a plurality of aerating openings which are substantially arranged at said openings of said top small cap.
6. A modular crash helmet, according to claim 1, **char-**

acterized in that said cap is made of carbon fibers, "Kevlar" fibers, or glass fibers, impregnated by impregnating resins, or of a thermoplastics material, for example a polycarbonate material, or any other suitable thermoplastics materials.

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7. A modular crash helmet, according to claim 1, **characterized in that** said removable locking means provide a resilient deforming of the modular cap cover.

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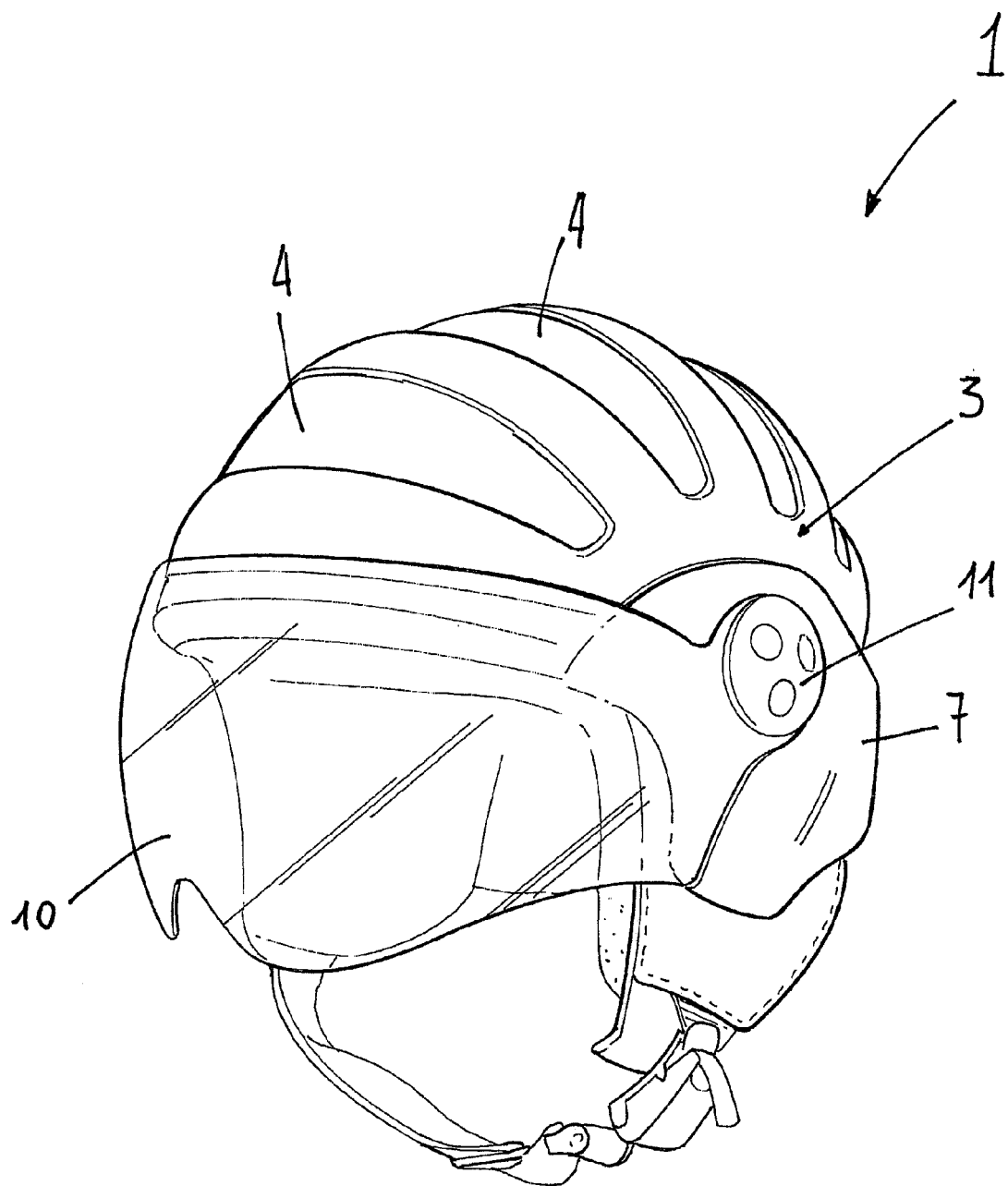


Fig. 1

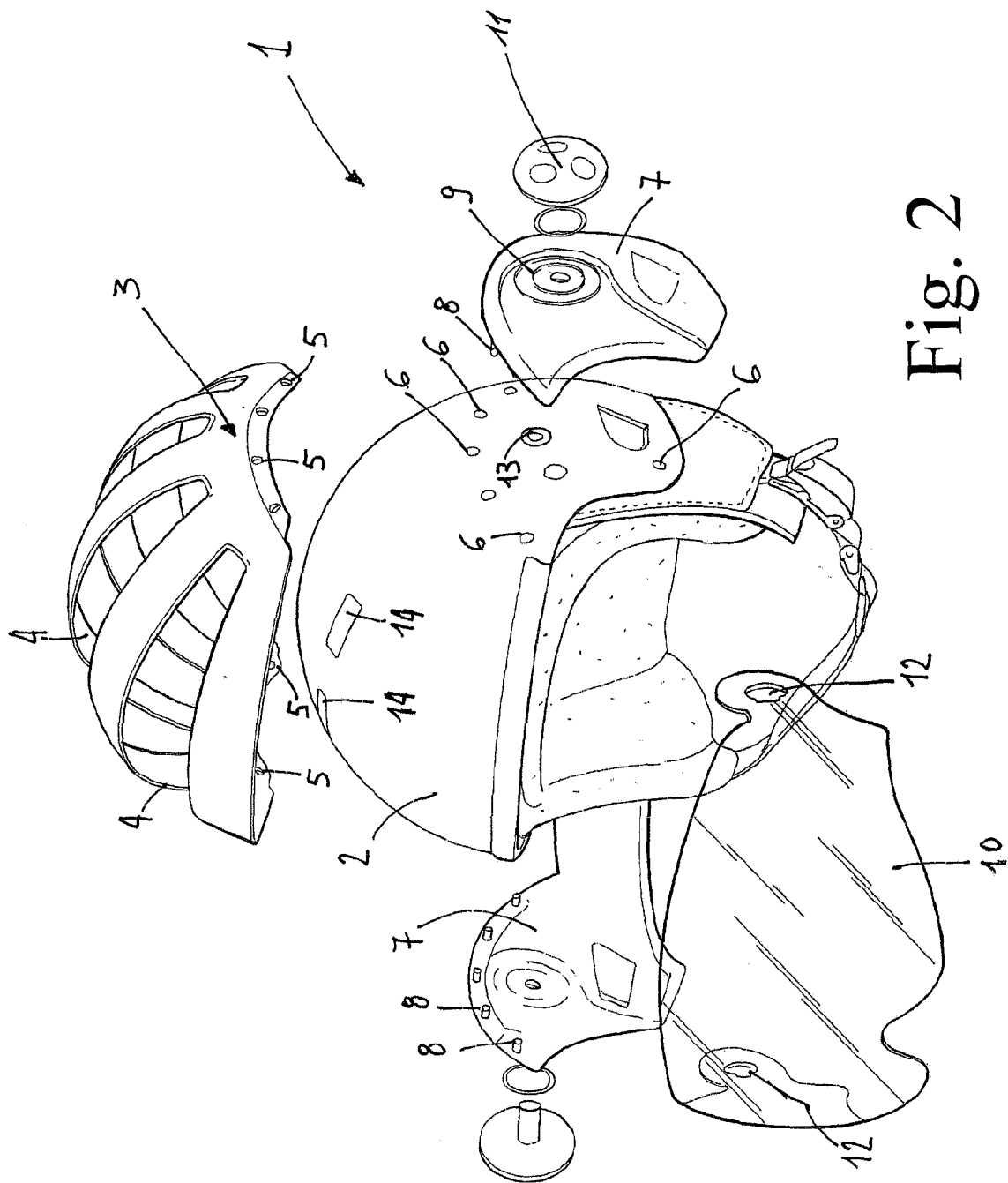


Fig. 2

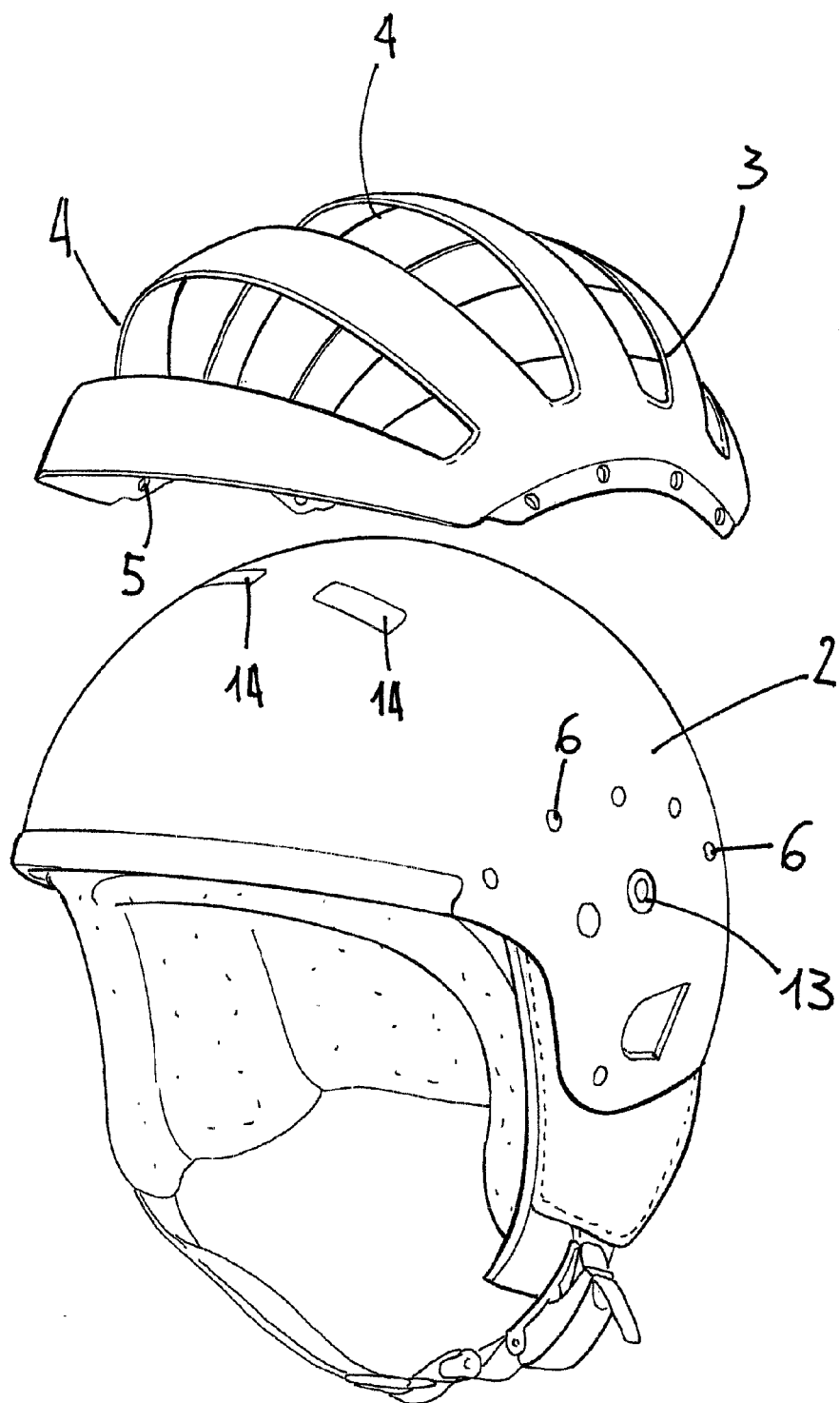


Fig. 3

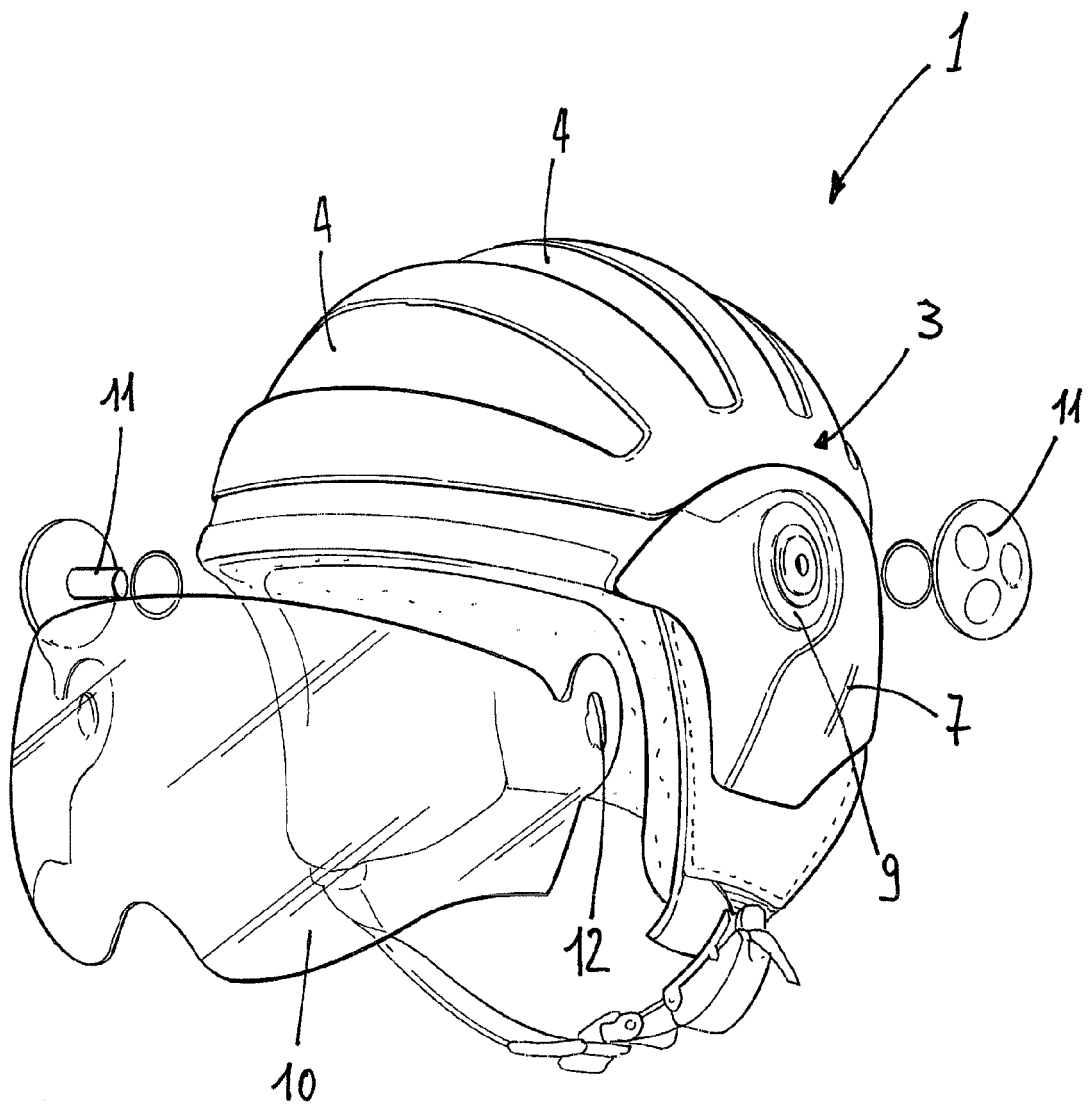


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 10 15 6290

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* paragraphs [0025] - [0027], [0034], [0039]; figure 1 *	2-5	
X	FR 2 717 990 A (GUERRE NICOLAS [FR]) 6 October 1995 (1995-10-06)	1,6,7	TECHNICAL FIELDS SEARCHED (IPC)
A	* claim 1; figures 4,5 *	1	
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	* claim 1; figure 1 *		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 June 2010	Examiner D'Souza, Jennifer
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 15 6290

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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29-06-2010

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