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(54) **A protective helmet and a method for making it**

(57) A protective helmet (1) comprises a protective helmet outer cap (2) including a bas-relief (3), said bas-relief (3) being formed by a cutting machine, such as a numerically controlled milling machine.

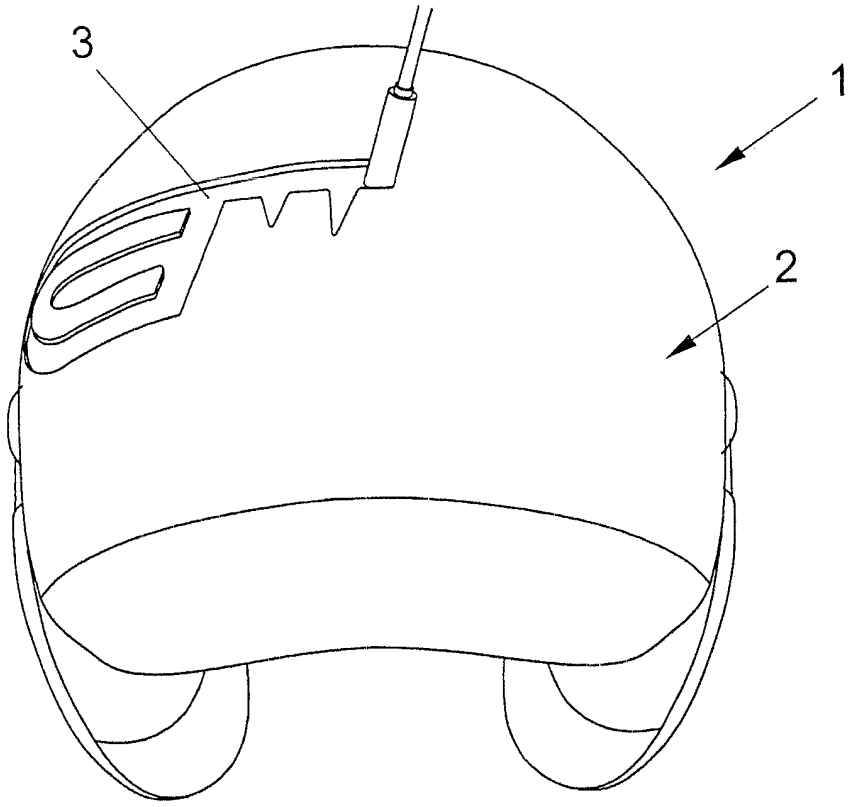

FIG.1

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Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a protective helmet and a method for making said protective helmet.

[0002] As is known, the protective helmet field has been greatly broadened due to a continuously increased use of protective helmets both in sports and work applications.

[0003] Protective helmets are mainly used by motorcyclists and sportsmen in general.

[0004] The above large diffusion of protective helmets and the consequent competition between helmet makers has generated a demand of helmets having different construction and aesthetical properties, since many users require not only standard safe but also aesthetically attractive helmets.

SUMMARY OF THE INVENTION

[0005] The aim of the present invention is to provide such a protective helmet having fashion and novel aesthetic features.

[0006] Within the above aim scope, a main object of the invention is to provide such a protective helmet which also has a very strong structure.

[0007] Another object of the present invention is to provide a making method for making the inventive helmet adapted to be carried out starting from commercially available materials and machines, and which moreover is optimally industrialized.

[0008] A further object of the present invention is to provide such a protective helmet which, owing to its specifically structural features, is very reliable and safe in operation.

[0009] According to one aspect of the present invention, the above aim and objects, which will become more apparent hereinafter, are achieved by a protective helmet according to the enclosed claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] 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 schematically shows an operating step for making a bas-relief on a rear zone of a protective helmet cap;

Figure 2 is a view similar to Figure 1, showing the protective helmet in a finished condition;

Figure 3 is a cross-sectional view of a portion of the protective helmet, being shown before making the bas-relief;

Figure 4 is a view similar to Figure 3, showing the protective helmet as the bas-relief is made;

Figure 5 schematically shows a painting step for painting a rear zone of a protective helmet cap;

Figure 6 is a view similar to Figure 5, schematically showing an operating step for providing a bas-relief on the cap painted zone; and

Figure 7 is a view similar to Figure 6, showing the inventive protective helmet in a finished condition thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] With reference to the number references of the above mentioned figures, the protective helmet according to the present invention, which has been generally indicated by the reference number 1, comprises a protective helmet outer cap 2, including a bas-relief decoration 3.

[0012] Advantageously, said decoration is made by a cutting machine, for example a numerically controlled milling machine.

[0013] The outer cap 2 may be made by known making materials and methods.

[0014] Said cap 2, for example, may be made of thermoplastic polymers such as ABS, polycarbonate, PVC and so on, or composite materials such as carbon fiber, glass resin materials, and other synthetic fibers, for example "Kevlar" and "Dyneema".

[0015] Advantageously, said cap 2 is made with a cap thickness larger than that of a prior conventional helmet cap, and sufficient to compensate for the material removed from the bas-relief zone, without reducing the mechanical strength of the latter.

[0016] According to a further aspect of the present invention, said cap 2 is coated by one or more paint coating layers 4, which are then selectively removed by a milling machine.

[0017] By way of an example, said cap may be coated by a single coating layer 4, thereby a selective removal thereof, by a cutting machine, will provide the bas-relief 3 leaving the cap surface with its original color in an exposed condition.

[0018] It is moreover possible to coat the cap 2 by several coating layers 4, having different colors, by selectively removing one or more coating layers at different zones to provide decorations of a number of color combinations,

[0019] It has been found that the invention fully achieves the intended aim and objects.

[0020] In fact, the invention has provided a protective helmet decorated by a bas-relief pattern made by a milling or a like cutting machine.

[0021] In particular, if a numerical control milling machine is used, it is possible to easily industrialize the decoration operation, while holding the related making costs and times within acceptable limits, while providing a safe

and reliable finished product.

[0022] In practicing the invention, the used materials as well as the contingent size and shapes can be any, depending on requirements.

Claims

1. A protective helmet, **characterized in that** said protective helmet comprises a protective helmet outer cap including a bas-relief.

2. A protective helmet, according to claim 1, **characterized in that** said protective helmet outer cap comprises one or more coating layers made of a paint or the like material; said bas-relief extending through one or more of said coating layers.

3. A method for making a protective helmet according to claims 1 and 2, **characterized in that** said method comprises the operating steps of:

   - providing a protective helmet outer cap; and
   - providing a bas-relief on said protective helmet outer cap.

4. A method, according to claim 3, **characterized in that** said bas-relief is provided by a cutting machine.

5. A method, according to claim 3, **characterized in that** said bas-relief is provided by a numerically controlled milling machine.

6. A method, according to claim 3, **characterized in that** said method comprises a step of coating said helmet cap with one or more coating layers before providing said bas-relief.

7. A method according to claim 6, **characterized in that** said bas-relief is provided by removing one or more of said layers.

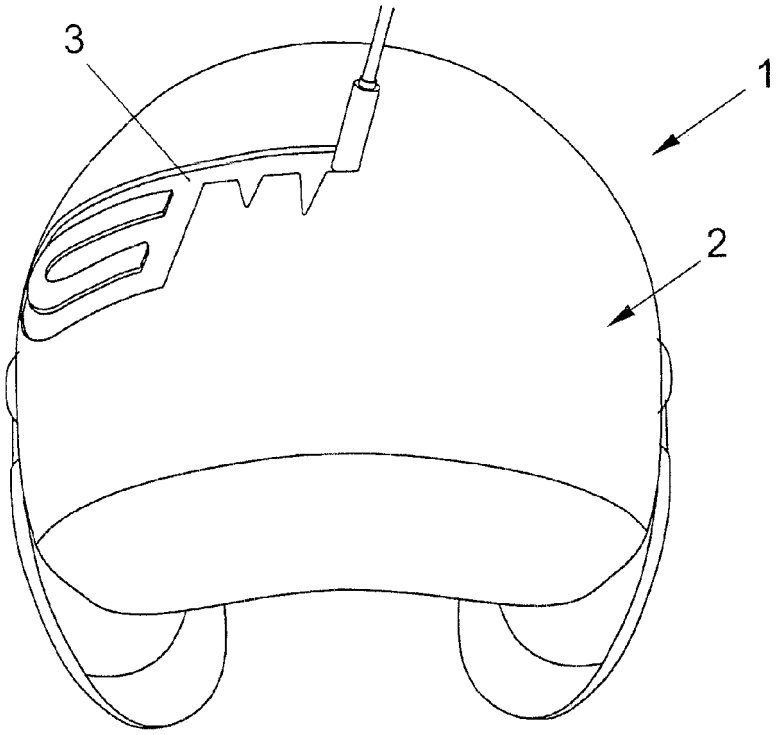

FIG.1

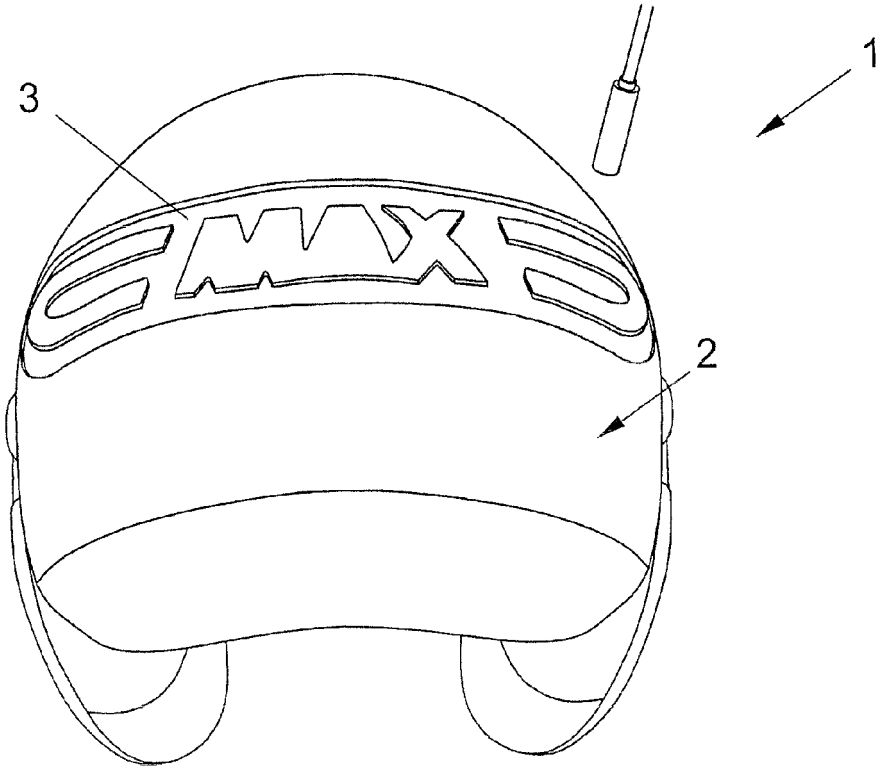

FIG.2

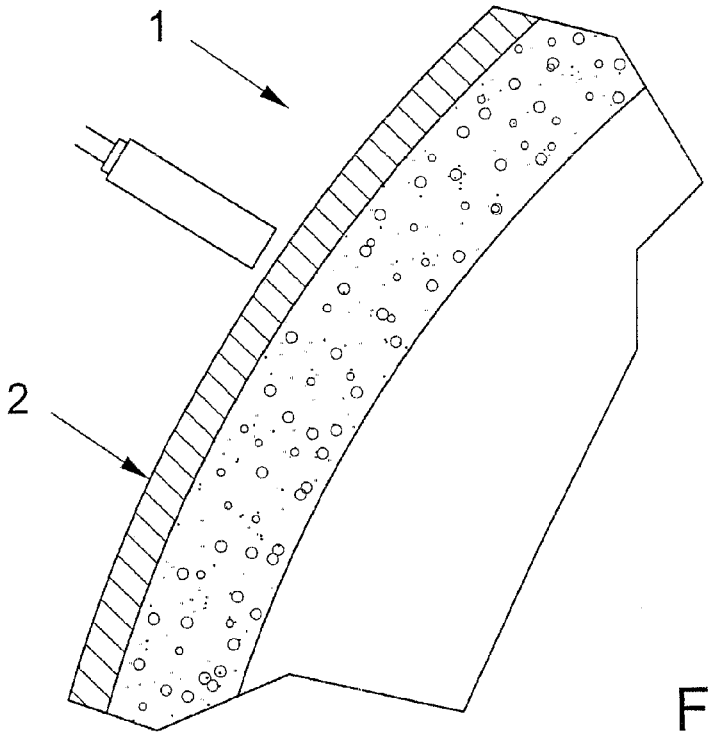

FIG.3

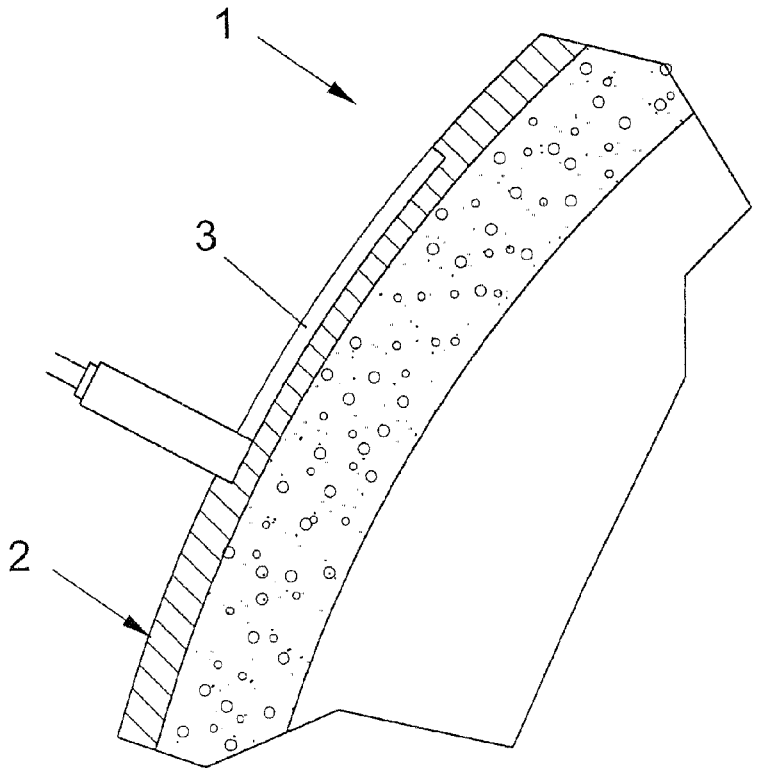

FIG.4

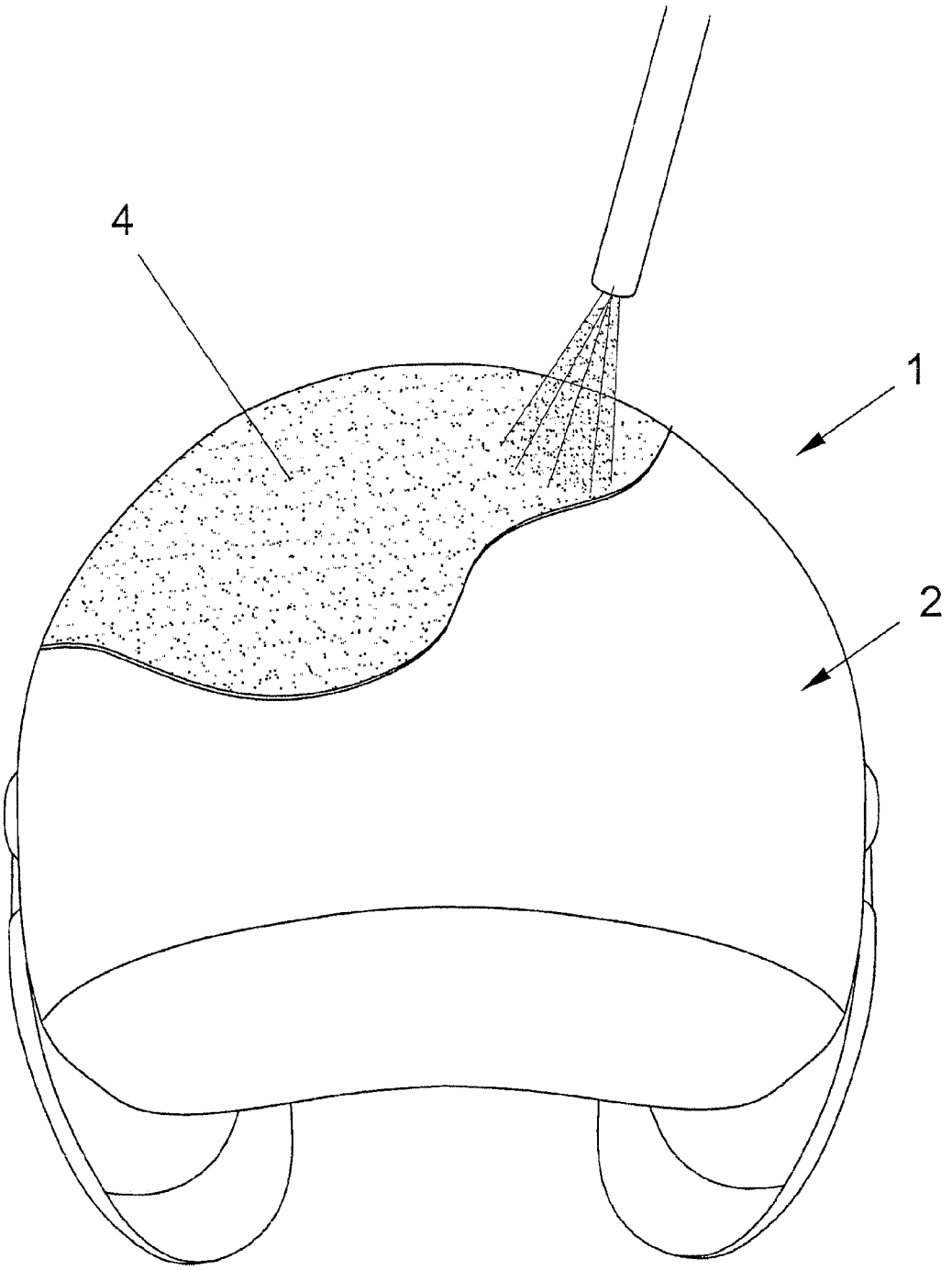

FIG.5

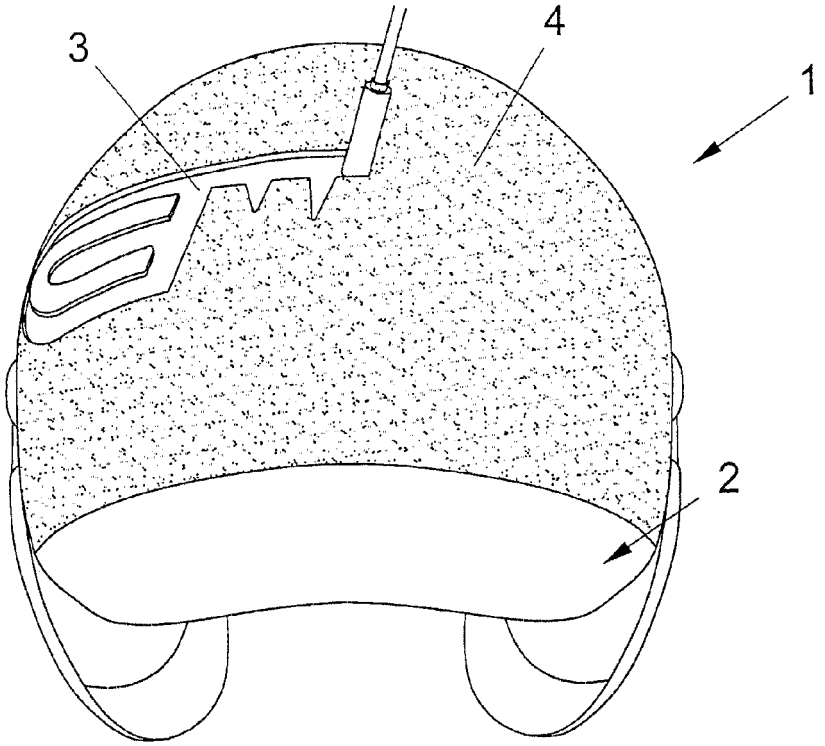

FIG.6

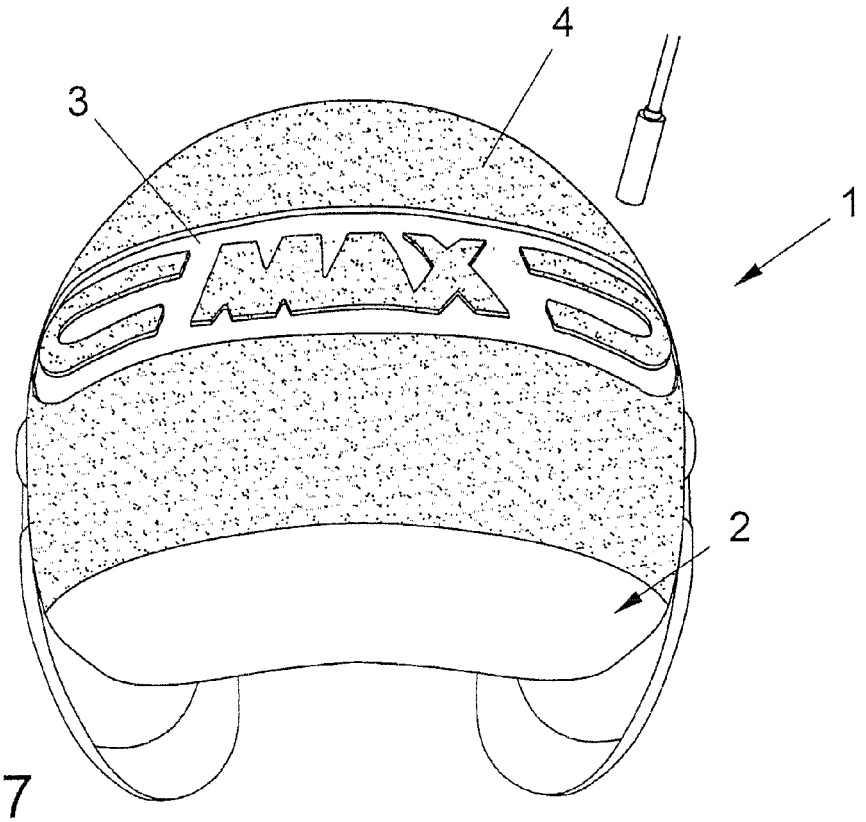

FIG.7

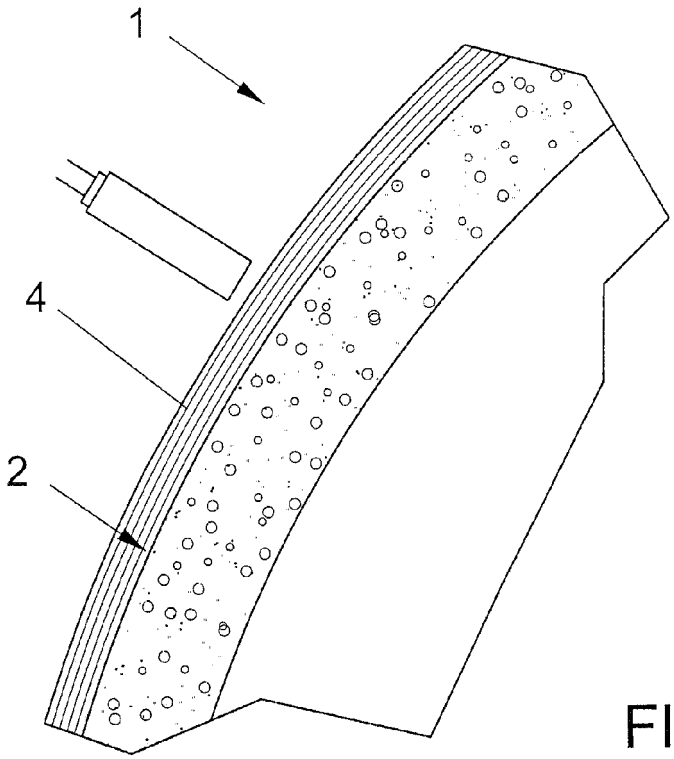

FIG.8

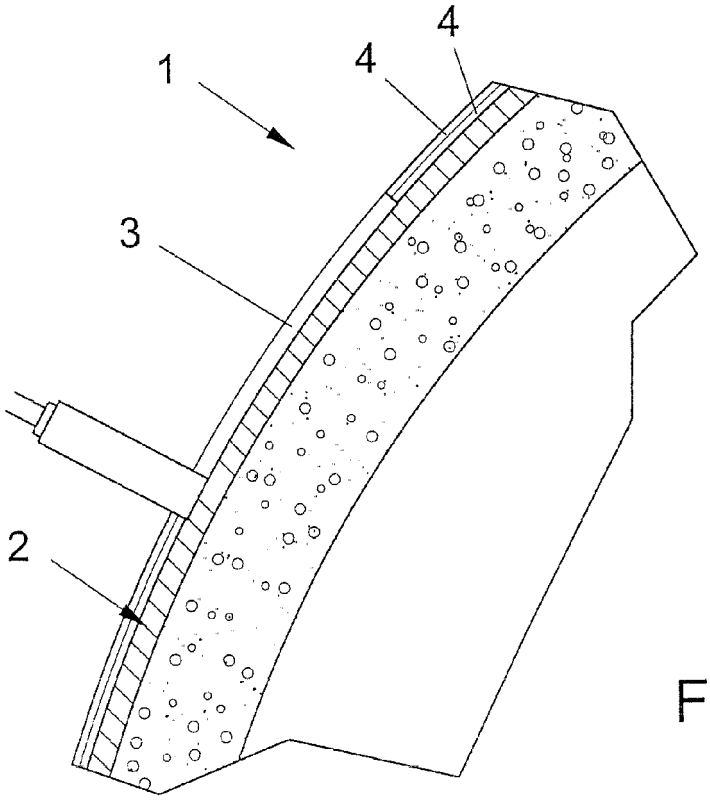

FIG.9

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EUROPEAN SEARCH REPORT

Application Number
EP 14 17 8923

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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TECHNICAL FIELDS SEARCHED (IPC)

A42B
B44C
B44B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	16 December 2014	D'Souza, Jennifer

CATEGORY OF CITED DOCUMENTS

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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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16-12-2014

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