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(54) PROTECTION COLLAR FOR RACING, IN PARTICULAR GO-KART RACING

(57) Protection collar for racing, in particular go-kart racing, which comprises a shaped body of substantially semi-annular form (2), intended to enclose the rear and side of the neck of a driver, and two pectoral bodies (3) which are extended in a descending manner with continuity from the ends of the semi-annular shaped body (2). The protection collar (1) also comprises a stratiform compensation element (4) with form substantially corresponding to that of the upper surface (2B) of the semi-annular shaped body (2), to which it is removably connectable by means of first removable retention means (5).

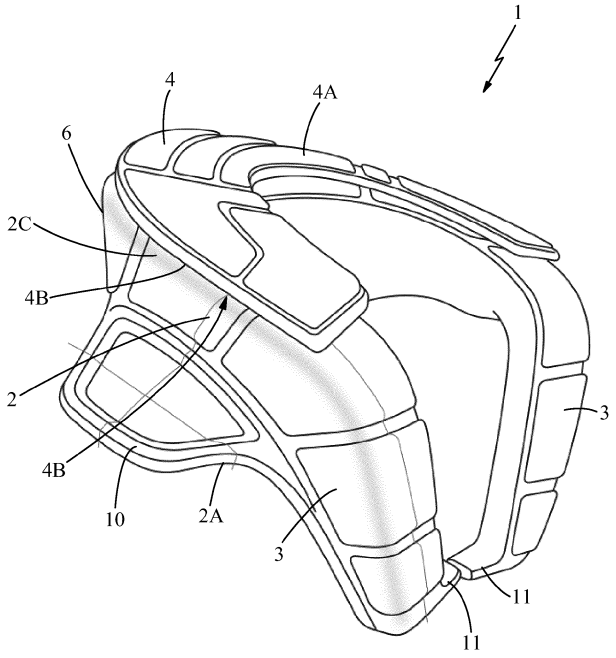

Fig. 1

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Description

Field of application

[0001] The present invention regards a protection collar for racing, in particular go-kart racing, according to the preamble of the main independent claim.

[0002] The present collar is advantageously inserted in the field of production of accessories for the drivers who participate in motoring competitions more particularly in the go-kart racing field.

[0003] The collar, object of the present invention, is therefore inserted in the general field of production of sports articles for motoring competitions and in particular in the go-kart field.

State of the art

[0004] Presently, protection collars are known which are employed by motorcycle drivers and in particular in motoring and motocross field, especially in competitions, which are worn around the neck in order to protect it from possible blows due to accidents or when going off the road.

[0005] Such collars are designed regarding shapes, characteristics and materials in order to accomplish specific needs in the motoring and motocross field; however, they are not optimized for a use thereof in the go-kart field.

[0006] For example protection collars are known for the motocross field which comprise a closed annular body, generally made of two semi-annular parts that can be joined together around the neck of the motorcyclist.

[0007] The annular body is generally rigid or semi-rigid with thinned form so as to allow the neck to project considerably with respect to its upper lying plane. The motorcyclist must in fact be able to freely carry out many head movements, for example for the jumps that he/she must complete with his/her motorcycle.

[0008] In addition, the whiplashes to which the neck is subjected in case of fall or accident can involve sudden thrusts forward or backward, from which there arises the need to have a protection collar provided with an annular body that annularly protects the cervical bones of the motorcycle driver all around the neck. One example of such collars is described for example in the patent WO 2009109943.

[0009] Protection collars for motoring competitions are also known, which comprise an annular body, usually open on the front, while the rear is provided with a raised portion which is extended parallel to the neck and against which the helmet of the driver is intended to be abutted in case of accident. Advantageously, the helmet is connected to such raised portion by means of a belt in order to damp forward movements of the head. One example of such collars is described for example in the patent EP 1058508.

[0010] A drawback of these collars of known type for the motoring field is that they excessively limit the mobility of the head, so as to render such collars unusable in the go-kart field.

[0011] A further drawback of these collars of known type is that they are excessively rigid, i.e. they provide for an annular body made of rigid composite materials which does not allow the go-kart driver to rest the helmet during the competition in a comfortable manner.

[0012] A further drawback of these collars of known type is to be adaptable to the size of the neck of the body of the driver only through mechanical adjustment means, which only allow discrete adjustments that are not very precise and not very practical to actuate.

Presentation of the invention

[0013] In this situation, the problem underlying the present invention is therefore that of eliminating the drawbacks of the prior art known up to now, by providing a protection collar for racing, in particular go-kart racing, which is quickly, easily and precisely adjusted on the body of the driver.

[0014] A further object of the present finding is to provide a protection collar for racing, in particular go-kart racing which allows effectively damping the thrust transmitted to the head of the driver in case of impact, accidents or exits off the road, while allowing the maintenance of an optimal mobility of the head during the normal driving phase for the driver.

[0015] A further object of the present finding is to provide a protection collar for racing, in particular go-kart racing which allows being worn by the driver in a firm and easy manner.

Brief description of the drawings

[0016] The technical characteristics of the finding, according to the aforesaid objects, can be clearly found in the contents of the below-reported claims and the advantages thereof will be more evident in the following detailed description, made with reference to the enclosed drawings, which represent a merely exemplifying and non-limiting embodiment of the invention, in which:

FIG. 1 shows an overall schematic perspective view of the protection collar for racing, object of the present invention;

FIG. 2 shows a first perspective side view of a detail of the protection collar of figure 1 relative to a semi-annular shaped body;

FIG. 3 shows a second perspective view of the detail of figure 2;

FIG. 4 shows a third top front perspective view of the detail of figure 2;

FIG. 5 shows a fourth rear perspective view of the detail of figure 2;

FIG. 6 shows, in a plan view, a detail of the protection collar of figure 1 relative to a stratiform compensation element;

FIG. 7 shows a first bottom rear view of the protection collar of figure 1 lacking the stratiform compensation element of figure 6 and with a detail relative to a protection shield underlined;

FIG. 8 shows, in a plan view, the detail of the protection collar of figure 7 relative to the protection shield;

FIGS. 9, 10 and **11** show three views of the protection collar, object of the present invention, fit on a driver lacking helmet with one belt buckled and another not buckled.

Detailed description of a preferred embodiment

[0017] With reference to the set of drawings, reference number 1 overall indicates an example of a protection collar for racing, in particular go-kart racing, object of the present invention.

[0018] Of course, without departing from the protective scope of the present patent, the protection collar 1 can also be employed in motoring competitions that are not strictly go-kart races, even if advantageously the form, the structure and the materials used in the embodiment described hereinbelow are suitable for a preferred use exclusively in this field.

[0019] The protection collar 1 for go-kart racing comprises, like other collars of per se known type, a shaped body 2, of substantially semi-annular form, intended to enclose the rear and side of the neck of a driver.

[0020] The semi-annular extension of such shaped body defines a concavity which during use surrounds the neck of the driver and is thus oriented towards the front of the same driver. Such shaped annular body 2 substantially has the shape of a half-doughnut which is extended for an arc of about 180 degrees, for example.

[0021] More in detail, as is visible in the enclosed figures, such shaped annular body 2 is provided with a lower surface 2A of abutment against the body of the driver (i. e. around the neck and on the shoulders), with an upper surface 2B directed upward. The latter defines a substantially horizontal lying plane P; the body 2 is also provided with two lateral surfaces 2C, one internal and one external, which connect the edges of the aforesaid lower 2A and upper 2b surfaces.

[0022] Advantageously, the thickness of the semi-annular shaped body and hence the height of the lateral surfaces has a decreasing progression starting from the rear median section up to the front ends in order to allow making a continuous abutment against the body of the driver.

[0023] The protection collar 1 also comprises two pectoral bodies 3 which are extended in a descending manner with continuity from the front ends of the semi-annular shaped body 2 with connection bends 15.

[0024] Advantageously the bends have a tilt α comprised between 120 and 150 degrees and preferably of about 135 degrees.

[0025] Preferably such pectoral bodies 3 have a reduced thickness with respect to that of the semi-annular shaped body 2 and advantageously such thickness is substantially constant.

[0026] In accordance with the idea underlying the present invention, the protection collar 1 comprises a stratiform compensation element 4, provided with a visible face 4A and with a connection face 4B substantially parallel to each other and of substantially semi-annular form as well as corresponding to that of the upper surface 2B of the shaped body 2.

[0027] The protection collar 1 also comprises first removable retention means 5 associated with the upper surface 2B of the semi-annular shaped body 2 and with the connection face 4B of the compensation element 4 in order to removably connect the latter on the semi-annular shaped body 2.

[0028] Advantageously, two or more stratiform compensation elements 4 can be provided, having different thicknesses and selectively associable with the upper surface of the semi-annular shaped body 2 as a function of the build of the driver and in particular of the length of his/her neck.

[0029] Indeed, advantageously, the visible face 4A of the compensation layer 4 must be placed at a predefined small distance from the lower edge of the helmet worn by the driver in order to allow, on one hand, an optimal rotation and movement of the head for all the driving maneuvers and without the helmet interfering with such compensation layer of the protection collar 1 and on the other hand allowing acting, already with brief travel, as a shock-absorbing body for the movements of the head of the driver, especially in the case of accidents or exits off the road.

[0030] The possibility of easily compensating for the height of the protection collar 1 around the neck of the driver, and for accounting for the various builds of the drivers, is a characteristic that allows an improved safety of the protection collar 1 according to the present invention with respect to the standardized solutions present on the market.

[0031] The same protection layer 1 which is subjected to greater wear due to friction with the helmet can be substituted with another layer without having to substitute the entire protection layer.

[0032] The semi-annular shaped body and the stratiform compensation element 4 are preferably made of a foamed material, in particular bi-component such as polyurethane (isocyanate and polyol) or even mono-component such as EVA.

[0033] Preferably, the first removable retention means 5 are constituted by first Velcro means.

[0034] In accordance with a further characteristic of the present invention, the protection collar 1 also comprises a shield 6 made of more rigid material than that of the semi-annular shaped body 2, and mechanically and removably connectable to a rear portion 20 of the semi-annular shaped body 2 by means of second removable retention means 7.

[0035] Also the second removable retention means 7, like the first 5, are constituted by second Velcro means.

[0036] Due to the Velcro, the shield 6 can be adapted to the build of the driver in order to protect the first spinal section thereof without obstructing the movements thereof.

[0037] For an optimal putting-on/wear of the protection collar 1, at least two belts 8 are provided which are extended from the shield 6, and advantageously from the lower part of the shield 6, which define two rings which are closed at the front on the two pectoral bodies 3.

[0038] The two belts are preferably elastic and terminate with third retention means 9, in particular constituted by third Velcro means, with which they are adjustable lengthwise for an optimal adaptation to the build of the driver. For such purpose, on the two pectoral bodies, two corresponding transmission rings are provided that are traversed by the belts which are then closed on themselves due to the third Velcro means.

[0039] In accordance with the preferred embodiment of the present invention illustrated in the enclosed figures, the semi-annular shaped body 2 is provided on the two lateral flanks with two projecting tabs 10 at its lower abutment surface 2B and as an extension thereof for an improved distribution of the forces on the shoulders of the driver.

[0040] Such tabs preferably have a form with slightly tapered extension starting from the lateral flanks of the semi-annular shaped body and a slight concavity directed downward for an improved adhesion on the shoulders of the driver.

[0041] Preferably moreover the two pectoral bodies 3 comprise, at their free ends, two terminal portions 11 that are horizontally projecting against each other, having the object of more greatly enclosing the body of the driver and giving greater stability to the protection body 1.

[0042] The protection collar comprises a connection belt 13 intended to connect together the terminal portions 11 of the pectoral bodies 3 provided for such purpose. The two ends of the connection belt 13 and the two terminal portions 11 of the pectoral bodies 3 are provided with fourth Velcro means 14 for a mutual adjustable engagement.

[0043] The finding thus conceived therefore attains the pre-established objects.

[0044] Of course, in the practical achievement of the invention, this can also take on shapes and configurations that are different from that illustrated above, without departing from the present protective scope.

[0045] In addition, all the details can be substituted with technically equivalent elements and the size, shapes and materials employed can be of any type in accordance with the requirements.

Claims

1. Protection collar for racing, in particular go-kart racing, which comprises:

- a shaped body of substantially semi-annular form (2), intended to enclose the rear and side of the neck of a driver, provided with a lower abutment surface (2A) and with an upper surface (2B) defining a substantially horizontal lying plane (P);
- two pectoral bodies (3) which are extended in a descending manner with continuity from the ends of said semi-annular shaped body (2) with a connection bend (15); **characterized in that** it comprises:
- a stratiform compensation element (4), provided with a visible face (4A) and with a connection face (4B) substantially parallel to each other and with substantially semi-annular form corresponding to that of the upper surface (2B) of said semi-annular shaped body (2);
- first removable retention means (5) associated with the upper surface (2B) of said semi-annular shaped body (2) and with the connection face of said stratiform compensation element (4) in order to removably connect said stratiform compensation element (4) on top of said semi-annular shaped body (2).

2. Protection collar according to claim 1, **characterized in that** said first removable retention means (5) are constituted by first Velcro means.

3. Protection collar according to claim 1, **characterized in that** it comprises a protection shield (6) made of more rigid material than said semi-annular shaped body (2) mechanically and removably connectable to a rear portion (20) of said semi-annular shaped body (2) by means of second removable retention means (7).

4. Protection collar according to claim 3, **characterized in that** said second removable retention means (7) are constituted by second Velcro means.

5. Protection collar according to claim 3, **characterized in that** it comprises at least two belts (8) which are extended from said protection shield (6) and define two rings which are closed on said pectoral bodies (3).

6. Protection collar according to claim 5, **characterized in that** said two belts (8) are elastic and terminate with third retention means (9), in particular constituted by third Velcro means.

7. Protection collar according to any one of the preceding claims, **characterized in that** said semi-annular shaped body (2) is provided, on the two lateral flanks (2C), with two projecting tabs (10) at the lower abut-

ment surface (2A) and as an extension thereof for an improved distribution of the forces on the shoulders of the driver.

8. Protection collar according to any one of the preceding claims, **characterized in that** said two pectoral bodies (3) at their free ends comprise two terminal portions (11) that are horizontally projecting against each other.

9. Protection collar according to claim 8, **characterized in that** it comprises a connection belt (13) intended to connect together the terminal portions of said pectoral bodies (3).

10. Protection collar according to any one of the preceding claims, **characterized in that** said semi-annular shaped body (2) is made of a foamed material, in particular bi-component such as polyurethane or mono-component such as EVA.

11. Protection collar according to any one of the preceding claims, **characterized in that** it comprises two or more stratiform compensation elements (4) having different thickness and selectively associable with the upper surface (2B) of said semi-annular shaped body (2).

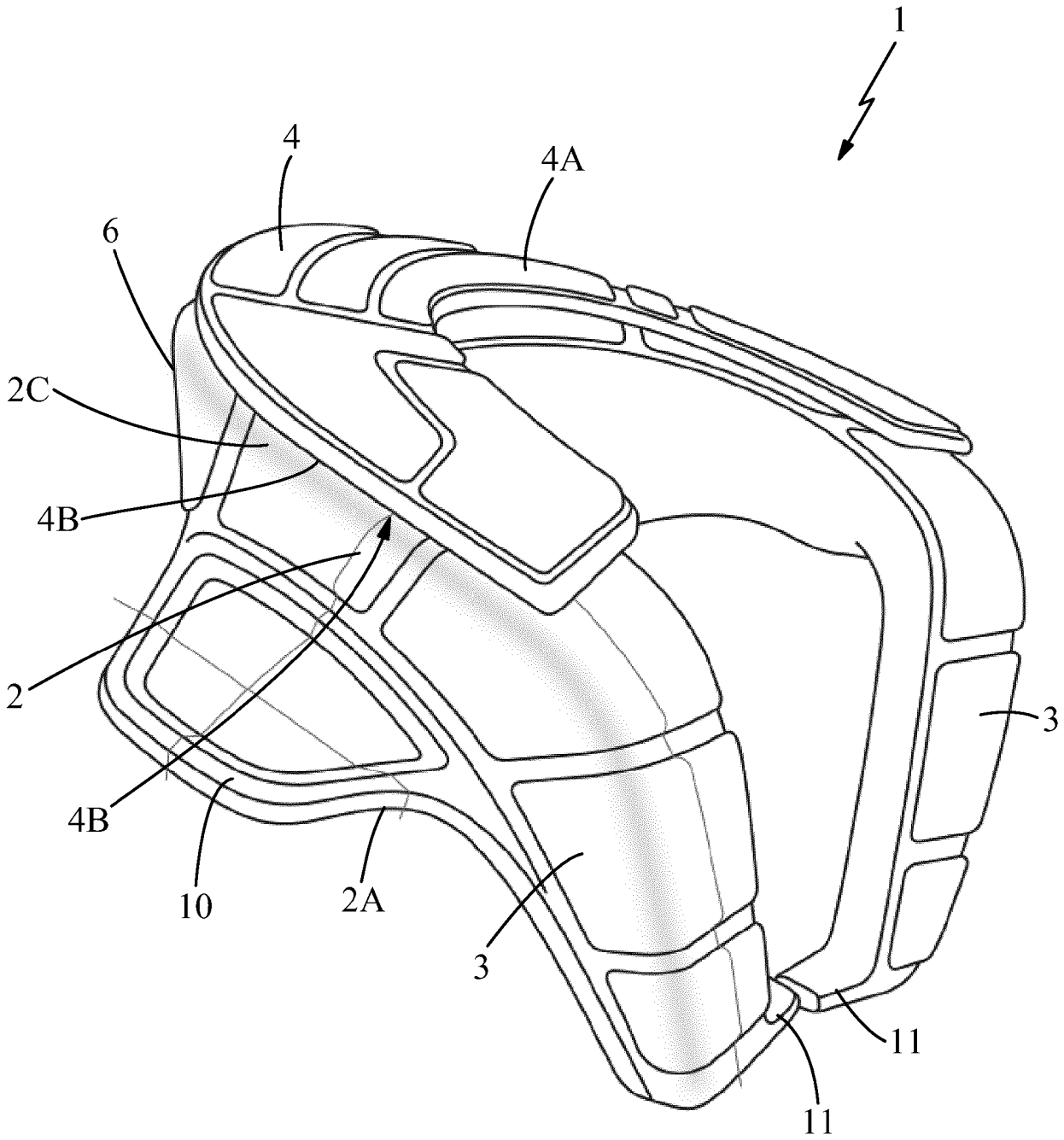

Fig. 1

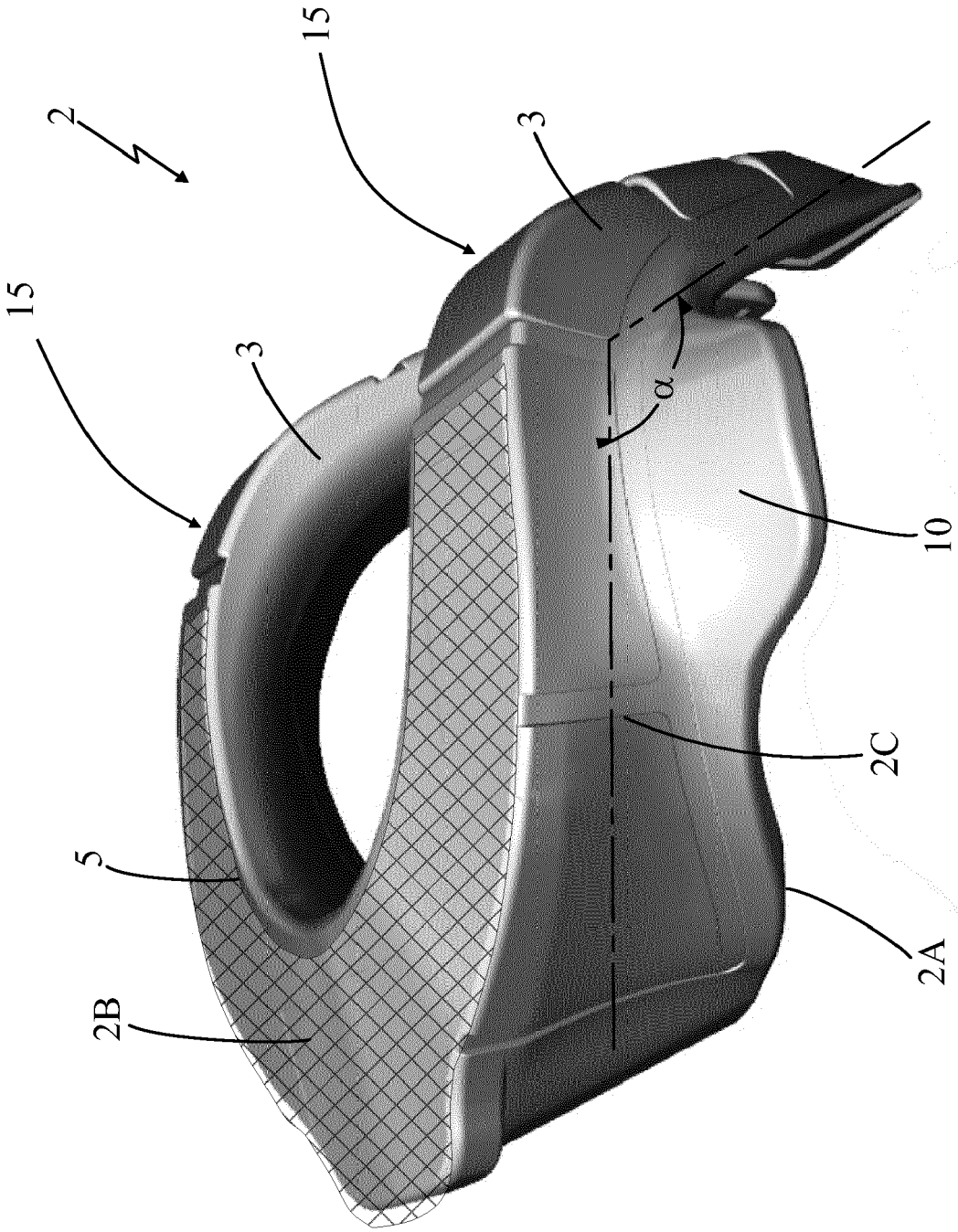

Fig. 2

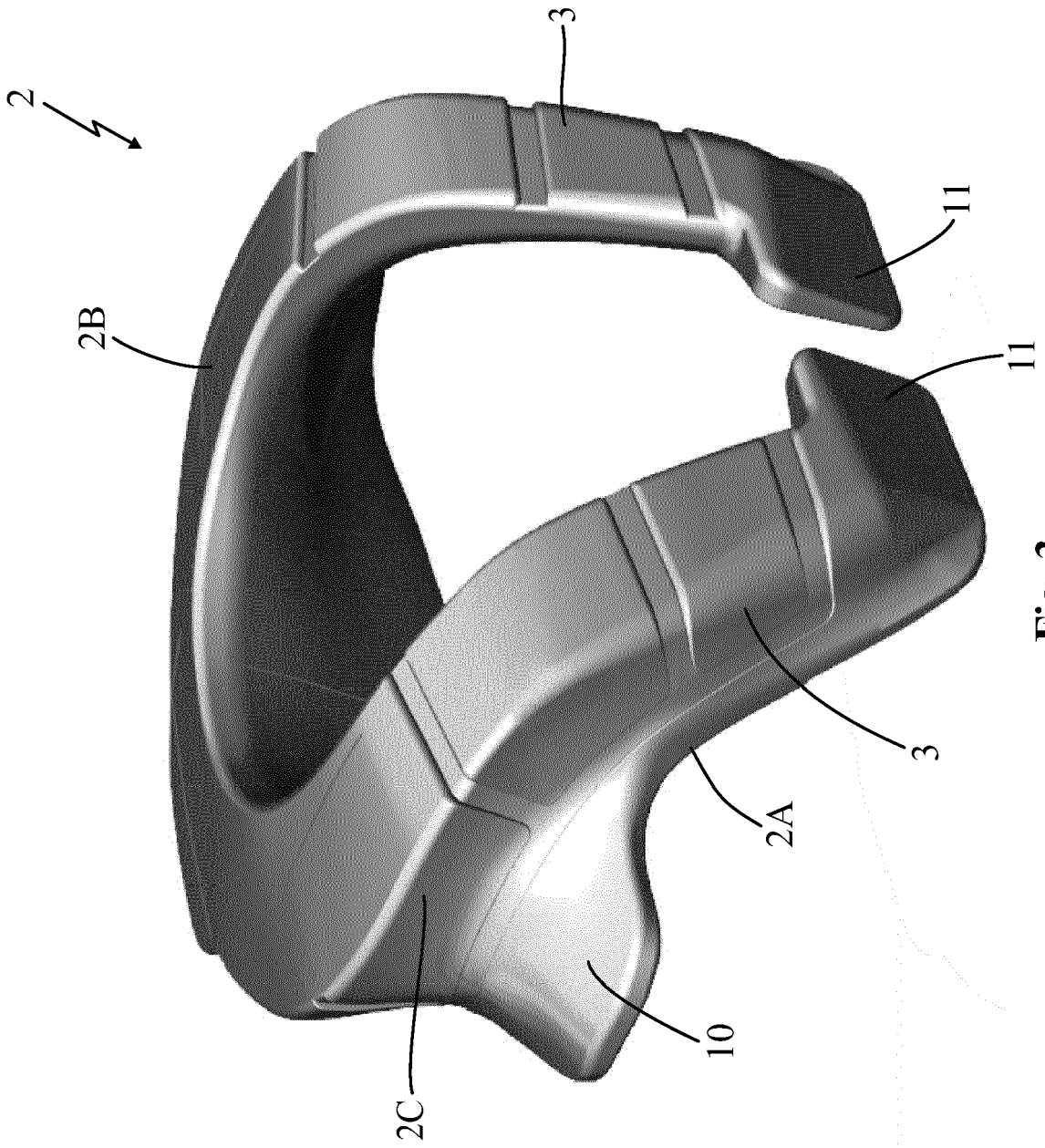

Fig. 3

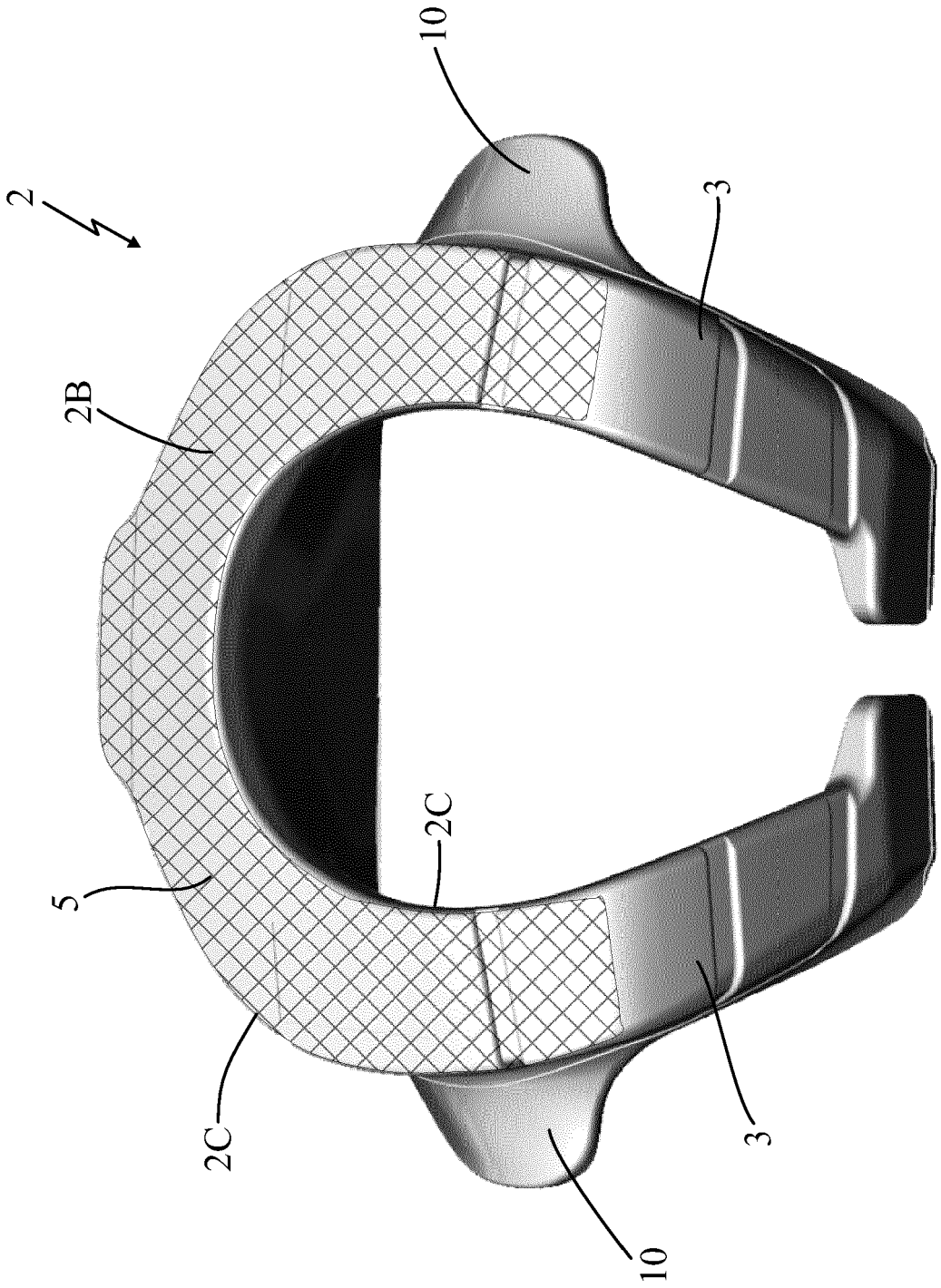

Fig. 4

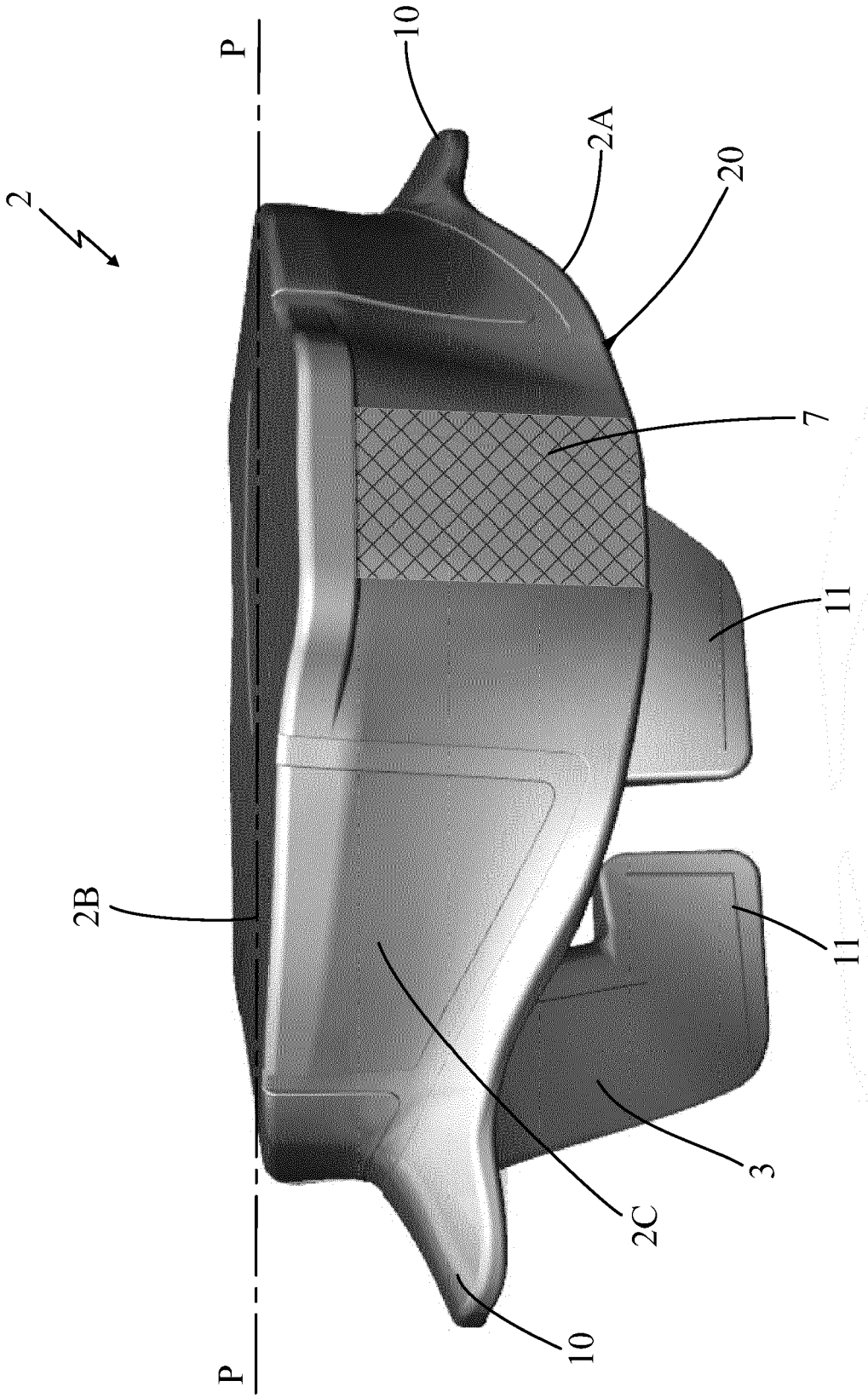

Fig. 5

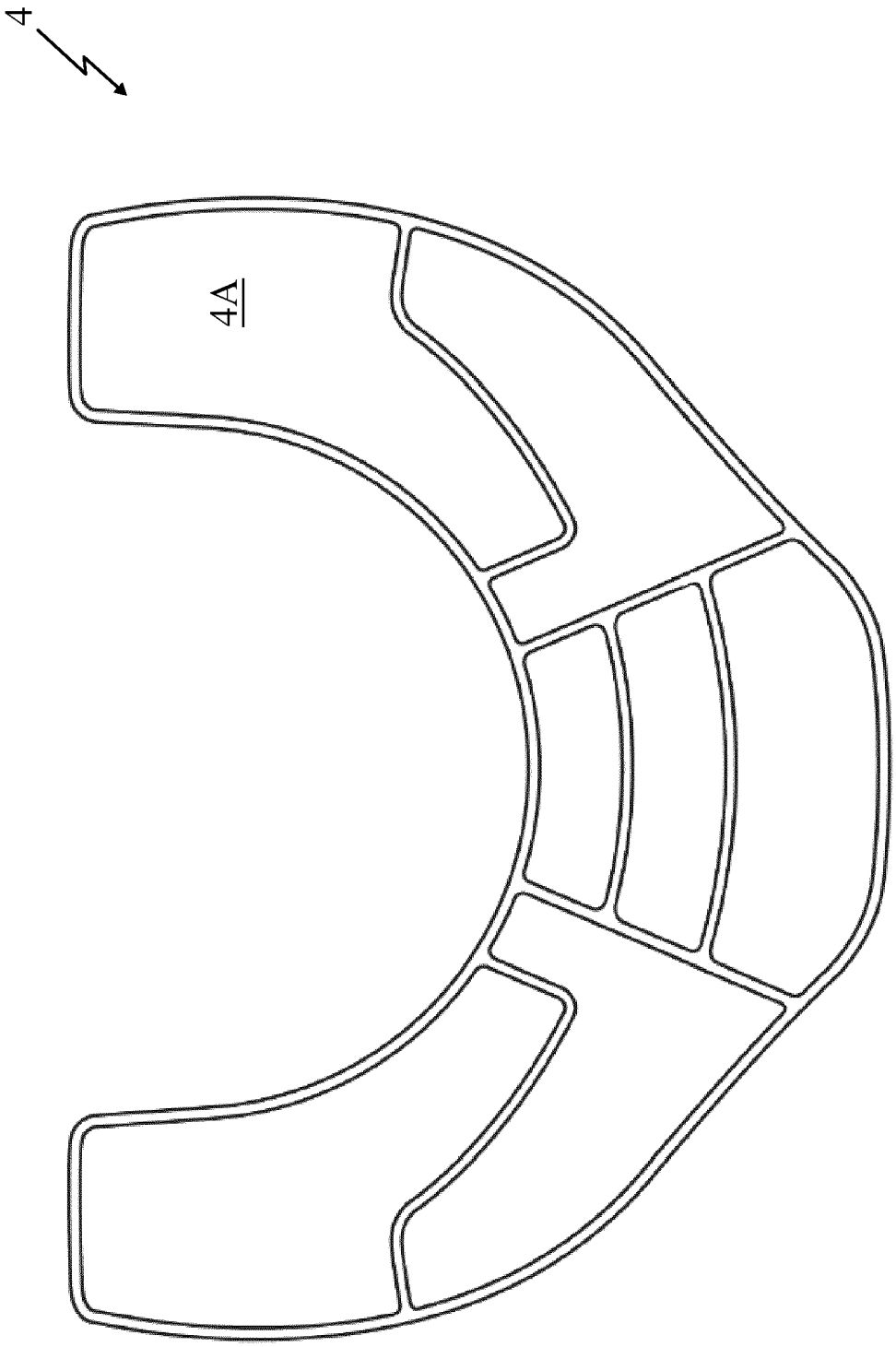

Fig. 6

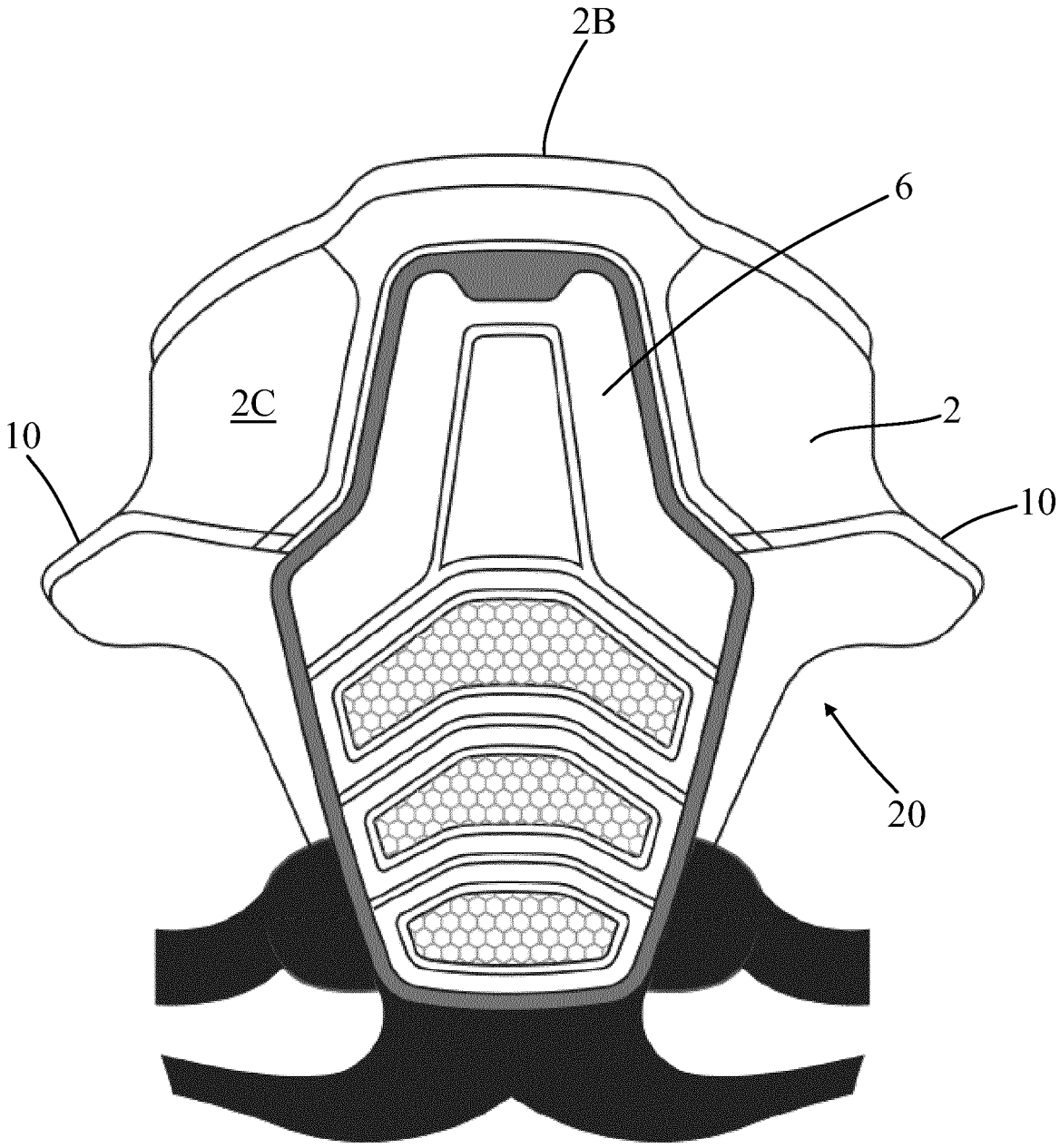

Fig. 7

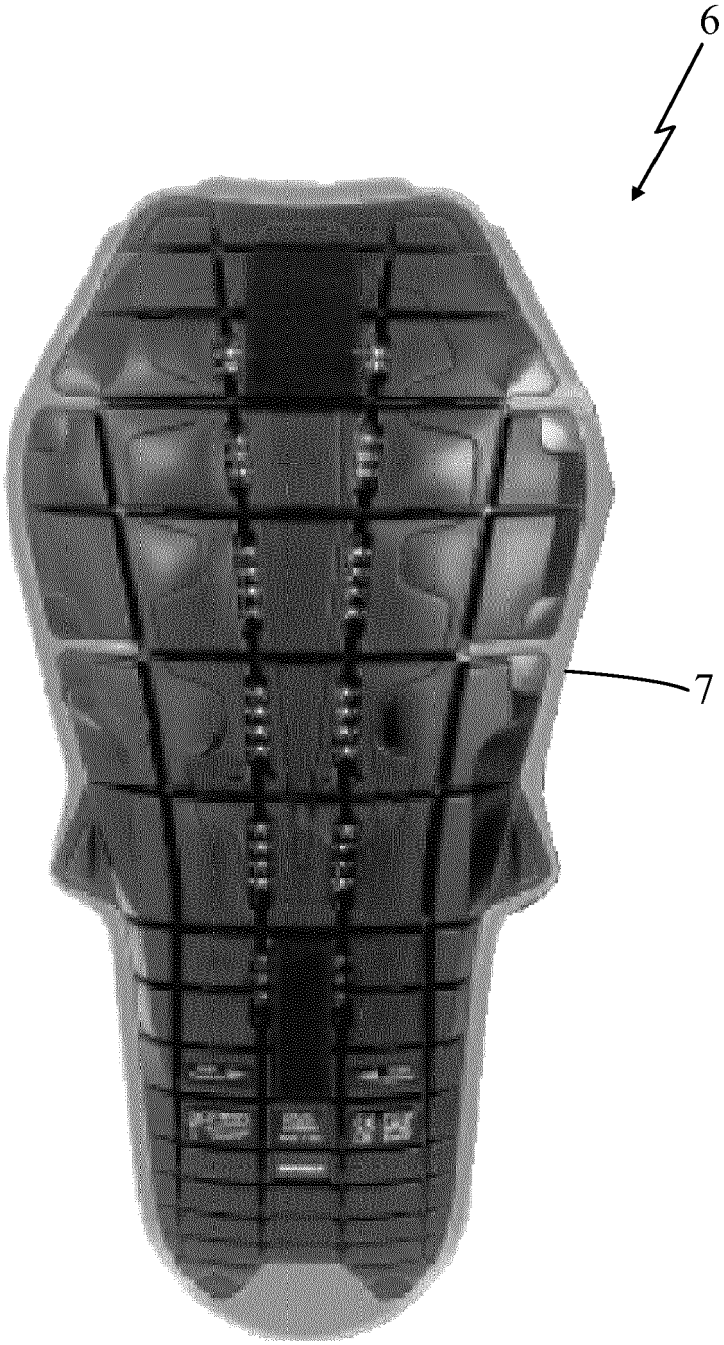

Fig. 8

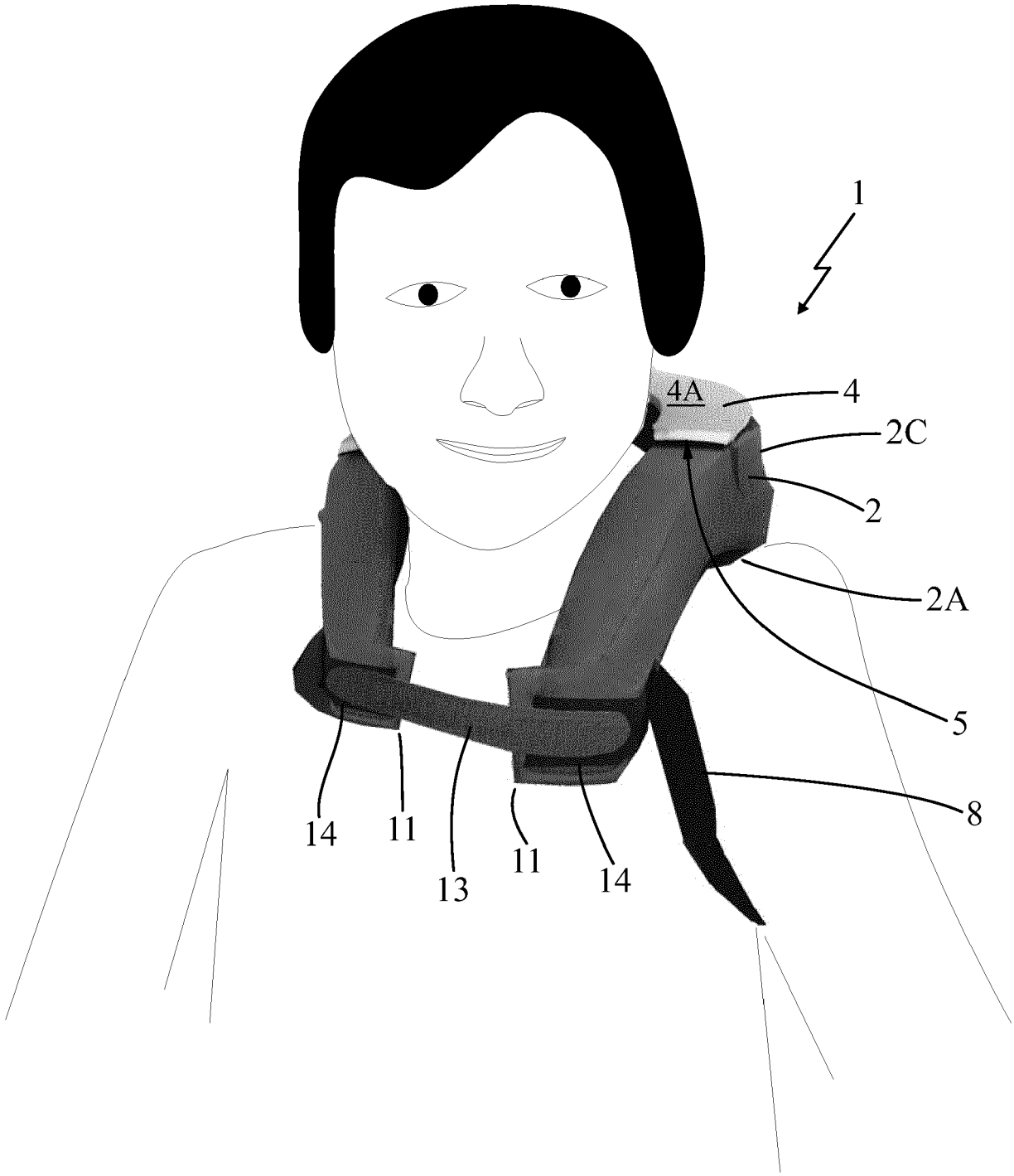

Fig. 9

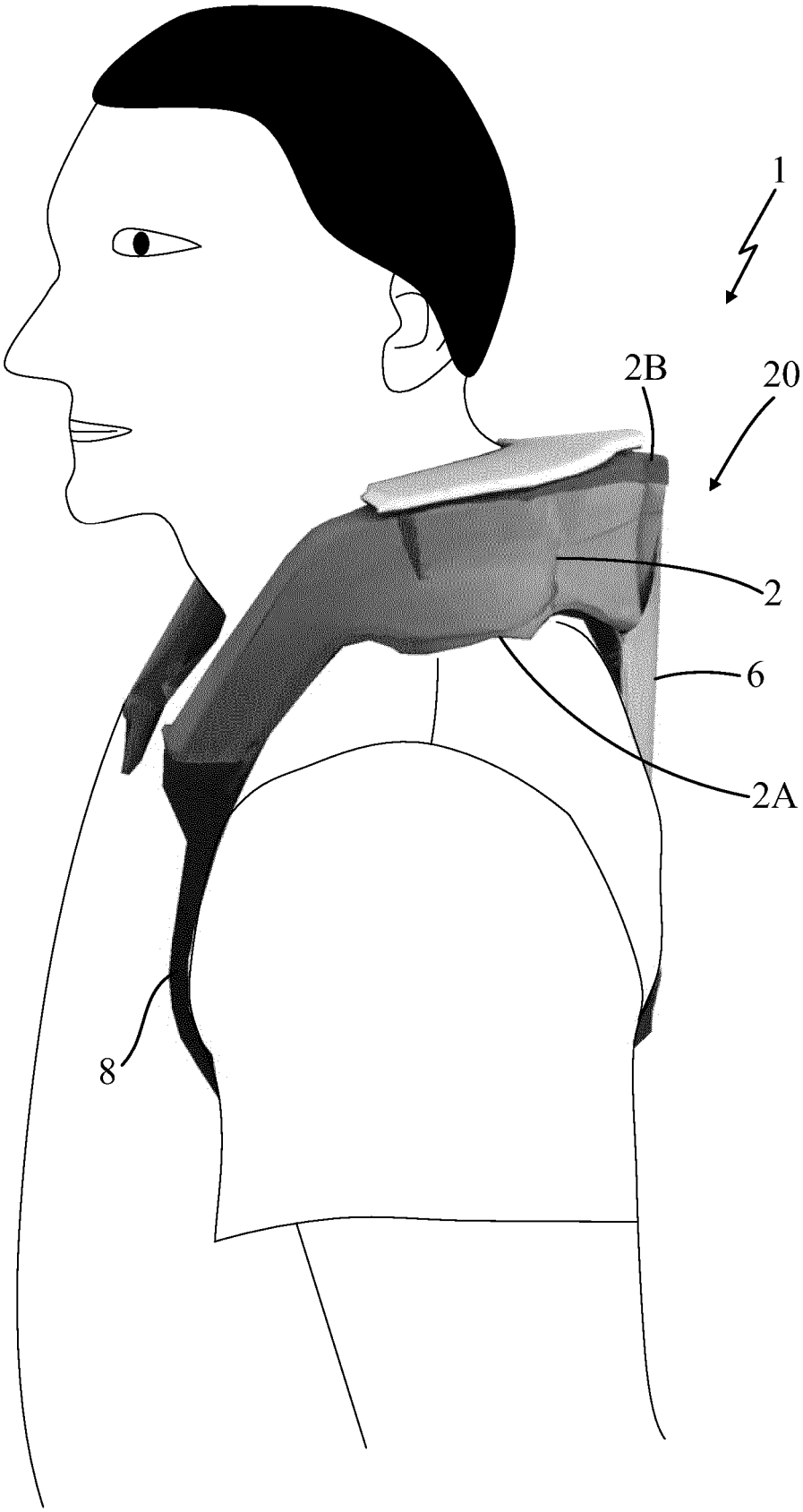

Fig. 10

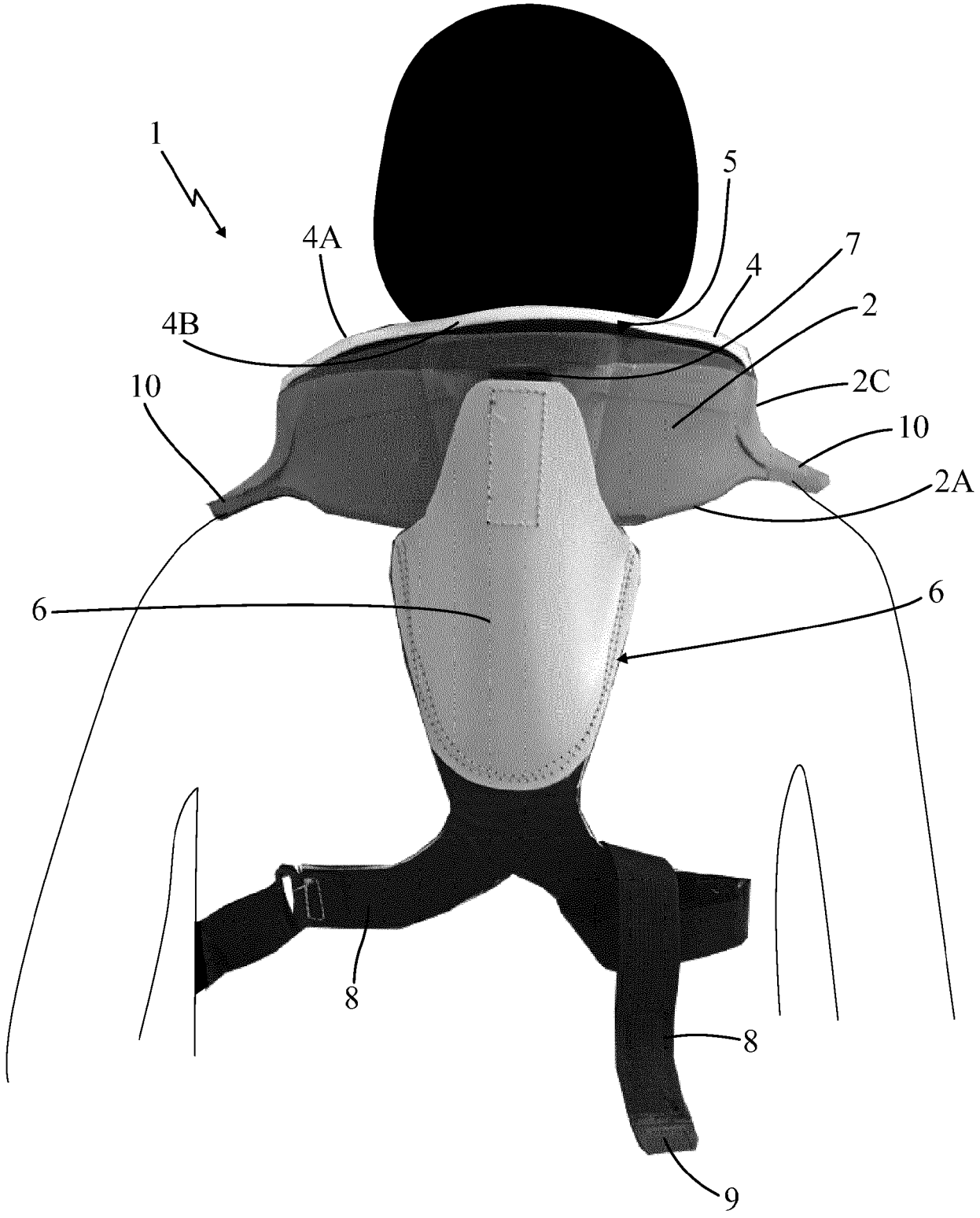

Fig. 11

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EUROPEAN SEARCH REPORT

Application Number
EP 18 19 8585

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2010/088808 A1 (RIETDYK GUIDO [US] ET AL) 15 April 2010 (2010-04-15) * paragraphs [0040] - [0043]; figures 3,8 * -----	1-11	INV. A41D13/05
A	US 3 497 872 A (MITCHELL RICHARD TRAVIS) 3 March 1970 (1970-03-03) * column 2, line 63 - column 3, line 22; figures 1,2 * -----	1-11	
A	WO 98/09545 A1 (POWERSPORTS SAFETY CORP [US]; GAJOR MICHAEL J [US]) 12 March 1998 (1998-03-12) * page 7, line 22 - page 8, line 32; figures 2,8 * -----	1-11	
A	FR 2 895 645 A1 (THUASNE SOC PAR ACTIONS SIMPLI [FR]) 6 July 2007 (2007-07-06) * claim 1; figures 1,2 * -----	1-11	
			TECHNICAL FIELDS SEARCHED (IPC) A41D A42B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	6 February 2019	D'Souza, Jennifer

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