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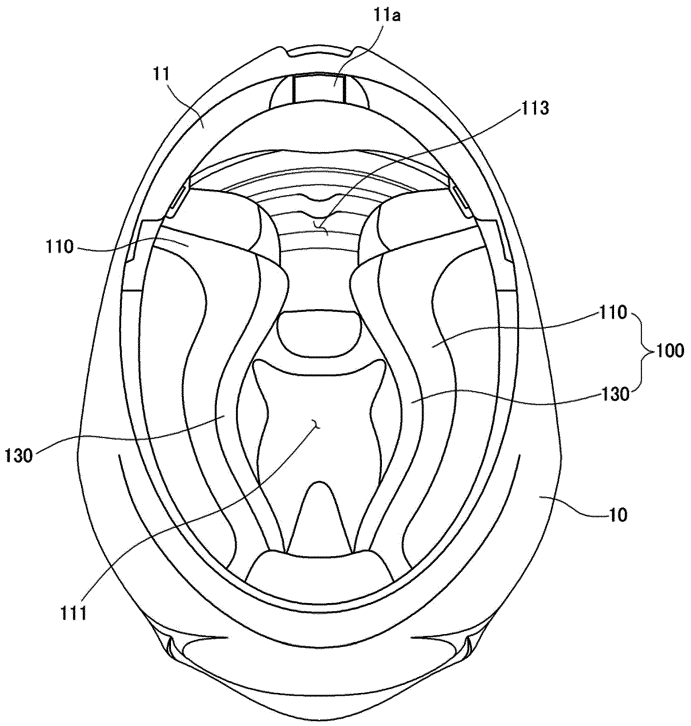
(54) **HELMET**

(57) Provided is a helmet, which includes a helmet body and a neck protector mounted in the helmet body to surround the neck of a wearer, wherein the neck protector includes cushion members extending from a lower circumference of the helmet body toward the neck of the wearer, and wing members protruding on a lower side of the cushion member and extending toward the neck of the wearer.

FIG. 2



EP 2 759 218 A1

Description

Technical Field

[0001] The present disclosure relates to a helmet, and more particularly, to a helmet capable of protecting the head of a wearer and also preventing cold air and noise from flowing into the helmet.

Background Art

[0002] A driver of a two-wheeled vehicle such as a motorcycle wears a helmet for safe reason to protect the head.

[0003] Generally, such a helmet includes a helmet cap having a front opening and configuring an appearance of the helmet, a shield for shielding the driver from a wind blowing in the front while the vehicle is running, a jaw protection member for protecting the jaw of the driver, and a liner formed in the helmet to protect the head of the driver against an external impact.

[0004] A breathing hole may be formed in the jaw protection member so that the driver may easily breathe against a strong wind in the front while running, and for this reason, the jaw protection member of the helmet is formed to protrude forwards.

[0005] However, due to the protruding jaw protection member, a strong wind in the front may flow into the helmet through the jaw protection member and other vacant spaces near the jaw and the neck of the wearer from the lower front side of the jaw protection member.

[0006] As a result, the strong wind flowing into the helmet may disturb breathing of the driver, and in the winter, a cold wind may flow in around the jaw and the neck of the wearer.

[0007] In addition, due to the protruding jaw protection member, a vacant space is formed near the jaw of the driver who is wearing the helmet, and thus the helmet may not be securely adhered to the head of the wearer.

[0008] Meanwhile, as a scheme to solve this problem, Korean Unexamined Patent Publication No. 10-2007-0109195 (entitled "a jaw curtain for a safe helmet") discloses a helmet having a jaw curtain attached to a lower side of a jaw protection member.

[0009] The helmet disclosed in Korean Unexamined Patent Publication No. 10-2007-0109195 prevents a wind from flowing into the helmet since a jaw curtain is attached to the lower side of the jaw protection member as described above to cover the front lower portion of the jaw protection member and portions around the jaw and the neck of the wearer.

[0010] However, the jaw curtain of the helmet disclosed in Korean Unexamined Patent Publication No. 10-2007-0109195 is not so large to sufficiently cover the portions around the jaw and the neck of the wearer. Therefore, the jaw curtain just partially covers the jaw and the neck of the wearer and is not perfectly adhered thereto, and thus it is difficult to perfectly shield an external wind.

[0011] Therefore, there is needed to develop a helmet capable of effectively preventing cold air and noise from flowing into a helmet by perfect adhesion to the jaw and the neck of a wearer.

Disclosure

Technical Problem

[0012] The present disclosure is directed to providing a helmet which may effectively prevent cold air and noise from flowing in around the jaw and the neck of a wearer from the outside.

Technical Solution

[0013] In one general aspect, the present disclosure provides a helmet, which includes a helmet body; and a neck protector mounted in the helmet body to surround the neck of a wearer, wherein the neck protector includes cushion members extending from a lower circumference of the helmet body toward the neck of the wearer; and wing members protruding on a lower side of the cushion member and extending toward the neck of the wearer.

[0014] Here, an opening may be formed between the cushion members, and the cushion members may be elastically spread outwards based on the opening when the head of the wearer is inserted into the helmet body.

Advantageous Effects

[0015] The helmet of the present disclosure includes a neck protector for surrounding the neck of a wearer to protect the neck of the wearer and closely adhered to the neck portion of the wearer, and a chin curtain for surrounding a lower side of the chin together with the neck protector, thereby preventing external cold air and noise from flowing into the helmet around the jaw and the neck of the helmet wearer.

Description of Drawings

[0016]

Fig. 1 is a perspective view showing a helmet according to an embodiment of the present disclosure.
Fig. 2 is a bottom view showing the helmet of Fig. 1.
Fig. 3 is a cross-section view showing a cushion member of the helmet of Fig. 1 and a cross-section view showing the cushion member worn by a wearer.
Fig. 4 is a bottom view showing a coupled state of a jaw protection member and a chin curtain employed in the helmet of Fig. 1.
Fig. 5 is a perspective view showing a chin curtain according to an embodiment of the present disclosure.
Fig. 6 is a front view showing the chin curtain of Fig. 5.

Fig. 7 is a plane view showing the chin curtain of Fig. 5.

Best Mode

[0017] Hereinafter, embodiments of the present disclosure will be described in detail with reference to the accompanying drawings so as to be easily implemented by those having ordinary skill in the art. However, the present disclosure can be implemented in various ways, without being limited to the embodiments. In addition, in the drawings, features having no relation with the disclosure are not depicted for clear explanation, and like reference numerals denote like elements throughout the specification.

[0018] In the specification, when describing that any portion is "connected" to another portion, this connection includes not only "direct connection" but also "electric connection" by which both portions are connected via another element. In addition, when describing that any element "includes" a component, this means that the element does not exclude another component but can further include any other component.

[0019] Fig. 1 is a perspective view showing a helmet according to an embodiment of the present disclosure, Fig. 2 is a bottom view showing the helmet of Fig. 1, Fig. 3 is a cross-section view showing a cushion member of the helmet of Fig. 1 and a cross-section view showing the cushion member worn by a wearer, Fig. 4 is a bottom view showing a coupled state of a jaw protection member and a chin curtain employed in the helmet of Fig. 1, Fig. 5 is a perspective view showing a chin curtain according to an embodiment of the present disclosure, Fig. 6 is a front view showing the chin curtain of Fig. 5, and Fig. 7 is a plane view showing the chin curtain of Fig. 5.

[0020] First, referring to Figs. 1 to 4, a helmet according to an embodiment of the present disclosure includes a helmet body 10, and a neck protector 100 surrounding the neck of a wearer. In addition, the helmet according to an embodiment of the present disclosure may further include a chin curtain 200 surrounding a lower side of the jaw of the wearer.

[0021] The neck protector 100 may extend from a liner (not shown) formed in the helmet body 10 to protect the head of the wearer or be detachably provided in the helmet body 10 separately from the liner.

[0022] In this embodiment, the neck protector 100 may be detachably provided at the helmet body 10. The neck protector 100 includes cushion members 110 extending downwards toward the neck of the wearer along a lower circumference of the helmet body 10, and wing members 130 protruding downwards on the cushion member 110 and extending toward the neck of the wearer.

[0023] The cushion members 110 may be coupled to the helmet body 10 to form an opening 111, and may also be elastically spread outwards based on the opening 111 so that the head portion of the wearer may easily enter the helmet body 10 (see Fig. 3).

[0024] The opening 111 is formed at a lower side of the helmet body 10 through which the head portion of the wearer may enter the helmet body 10, and hereinafter this will be called a first opening 111. Meanwhile, when the wearer wears the helmet, an opening formed at a front side toward the jaw of the wearer may be called a second opening 113.

[0025] Since the cushion members 110 may be elastically spread as described above, when the wearer inserts his head into the helmet, the cushion members 110 may be spread so as not to give an excessive force to the head of the wearer. In addition, after the head of the wearer is inserted into the helmet, the cushion members 110 may be closely adhered to the circumference of the neck of the wearer so as to prevent external cold air and noise from flowing in.

[0026] However, since the cushion members 110 should be spread so that the first opening 111 may be formed to ensure the entrance of the head of the wearer, it may be difficult to sufficiently block wind or noise flowing into the helmet only with the cushion members 110.

[0027] In the present disclosure, the wing members 130 are secondarily provided at the lower side of the cushion member 110 to doubly shield wind and noise.

[0028] The wing members 130 are formed at the lower side of the cushion member 110 along the circumference of the first opening 111 to protrude toward the first opening 111 (see Figs. 2 and 3).

[0029] Since the cushion members 110 and the wing members 130 are combined to be doubly adhered to the circumference of the neck of the wearer, it is possible to more effectively prevent external cold air and noise from flowing in, in comparison to the case where only the cushion members 110 are provided.

[0030] In addition, since the wing members 130 are bent toward the lower side of the neck to contact the neck as shown in Portion (b) of Fig. 3, the wing members 130 may shield wind and noise without giving a strong pressure to the neck, thereby ensuring good wearability and excellent shielding property simultaneously.

[0031] Meanwhile, the cushion members 110 and the wing members 130 of the neck protector 100 may be made of fabric material.

[0032] Since the cushion members 110 and the wing members 130 are made of fabric material, they may be elastically spread as described above. In particular, the cushion members 110 made of fabric material may be filled with shock-absorbing material such as sponge therein.

[0033] By doing so, the cushion members 110 may sufficiently absorb external impacts to stably protect the neck portion of the wearer.

[0034] In addition, since the wing members 130 are also made of fabric material, when the wearer wears the helmet, the wing members 130 may be more closely adhered to the neck portion of the wearer to prevent cold air from contacting the neck portion of the wearer and also secondarily prevent external cold air and noise from

flowing into the helmet.

[0035] Portion (a) of Fig. 3 is a cross-sectional view showing the cushion members 110 and the wing members 130, and Portion (b) of Fig. 3 is a cross-sectional view showing that the cushion members 110 and the wing members 130 are deformed when a wearer wears the helmet.

[0036] As shown in Fig. 3, if the wearer wears the helmet, the cushion members 110 and the wing members 130 contact the face and the neck of the wearer and elastically deform while moving in the arrowed direction according to the face shape of the wearer to be closely adhered to the face and the neck.

[0037] Meanwhile, the cushion members 110 and the wing members 130 may be not only separately formed and then assembled but also integrally formed. For example, when the cushion members 110 and the wing members 130 are integrally formed, the cushion members 110 and the wing members 130 may be divided by backstitching.

[0038] The wing members 130 protruding at the lower side of the cushion members 110 may be formed along the circumference of the first opening 111 at a position near the first opening 111 and may also be elastically spread in the outward direction of the first opening 111 based on the first opening 111.

[0039] If the wing members 130 are formed closer to the first opening 111, when the wearer wears the helmet, the wing members 130 may be more closely adhered to the circumference of the neck of the wearer. However, if the wing members 130 are formed too close to the first opening 111, the wearer may not easily insert his head into the first opening 111, or when the head of the wearer enters the first opening 111, the wing members 130 may be entangled into the first opening 111. Therefore, the locations and extension lengths of the wing members 130 should be suitably determined to effectively shield wind and noise while preventing the above problems.

[0040] Meanwhile, the helmet body 10 further includes a jaw protection member 11 pivotally mounted to the lower end thereof, and referring to Fig. 4, the chin curtain 200 described above is detachably mounted to the jaw protection member 11.

[0041] The chin curtain 200 is detachably mounted to the lower side of the jaw protection member 11 to surround the lower portion of the jaw of the wearer as described above, and also contacts the neck protector 100 mounted in the helmet body 10 to prevent external cold air and noise from flowing in toward the lower portion of the jaw of the wearer.

[0042] The structure of the chin curtain 200 will be described in more detail with reference to Figs. 4 to 7. The chin curtain 200 includes a curtain body 210 having a plurality of coupling units 211, 213, a fabric portion 230 connected to the curtain body 210, and a curtain portion 250 detachably coupled to the fabric portion 230.

[0043] The plurality of coupling units 211, 213 provided at the curtain body 210 allows the chin curtain 200 to be coupled to or released from the jaw protection member 11.

[0044] When being observed from the below, the jaw protection member 11 has a streamline shape, and the curtain body 210 of the chin curtain 200 which is coupled to the jaw protection member 11 also has the same shape as the shape of the jaw protection member 11 observed from the below.

[0045] The curtain body 210 may be made of flexible material so that, when being coupled to the jaw protection member 11, the curtain body 210 is bent and closely adhered to the jaw protection member 11 by contact. Here, the flexible material may be, for example, any one of rubber and resin.

[0046] Now, the plurality of coupling units 211, 213 provided at the curtain body 210 will be described in detail. The plurality of coupling units 211, 213 include a first coupling unit 211 coupled in a locking lever 11a of the jaw protection member 11 by means of engagement, and a second coupling unit 213 formed symmetrical to the first coupling unit 211 and inserted into and coupled to a coupling hole (not shown) formed in the jaw protection member 11.

[0047] The jaw protection member 11 includes the locking lever 11a provided at a lower side of the center thereof to lock or unlock the jaw protection member 11 to/from the helmet body 10. When the locking lever 11a is pulled without forming a separate coupling hole to be coupled to the first coupling unit 211 in the jaw protection member 11, the first coupling unit 211 is inserted into the locking lever 11a, and the pulling of the locking lever 11a is released, the first coupling unit 211 may be coupled into the locking lever 11a by means of engagement.

[0048] Therefore, the first coupling unit 211 may have a protrusion 211a bent into a "ㄱ" shape of "L" shape so that the protrusion 211a may be hooked in the locking lever 11a.

[0049] The second coupling unit 213 formed symmetrical to the first coupling unit 211 has a plurality of ribs 213a extending from the curtain body 210, and both sides of the second coupling unit 213 have protrusions 213b to be fixed without departing from a coupling hole (not shown) when the second coupling unit 213 is inserted into the coupling hole (not shown) formed in the jaw protection member 11.

[0050] The second coupling unit 213 extends from the curtain body 210 and thus is made of flexible material, identical to the curtain body 210, which allows elastic shrinkage of the second coupling unit 230. Thus, if the wearer gives a force, the second coupling unit 230 may be easily inserted into or escape from the coupling hole (not shown).

[0051] The second coupling unit 213 is made of flexible material and is attached or detached by means of elastic shrinkage when a perpendicular force is applied to the coupling hole. Therefore, if the wearer does not want to attach or detach the second coupling unit 230, the second coupling unit 230 is not easily attached or detached since

without giving such a perpendicular force. In addition, if the wearer wants to attach or detach the second coupling unit 230, the second coupling unit 230 is not easily attached or detached by giving such a perpendicular force.

[0052] As described above, since the chin curtain 200 is coupled to the jaw protection member 11 by the combination of the first coupling unit 211 engaged into the locking lever 11a and the second coupling unit 213 coupled into the coupling hole by elastic shrinkage, the chin curtain 200 may be coupled to the jaw protection member 11 more firmly and more securely. In addition, if the wearer wants to detach the chin curtain 200, the wearer may easily detach the chin curtain 200 by pulling the locking lever 11a or applying a predetermined force thereto.

[0053] In addition, the curtain body 210 and the fabric portion 230 may be made of different materials and may also be fixed by forming a plurality of holes in the curtain body 210 and then stitching the fabric portion 230.

[0054] The curtain portion 250 may have a Velcro tape (not shown) at one side thereof so that small hooks (not shown) formed at the Velcro tape are held by one side of the fabric portion 230. In this way, the curtain portion 250 may be fixed to the fabric portion 230.

[0055] The chin curtain 200 is coupled to the lower side of the jaw protection member 11 to prevent external cold air and noise from flowing into the helmet through the lower side of the jaw of the wearer together with the neck protector 100. The effect of the chin curtain 200 may be more improved by additionally coupling the curtain portion 250 to the fabric portion 230.

[0056] In addition, since the curtain portion 250 is not fixed to the fabric portion 230 but detachably coupled to the fabric portion 230, the curtain portion 250 may be excluded from the chin curtain 200 as desired by the wearer. In addition, if the curtain portion 250 is worn down due to long-term use, it is possible to exchange the curtain portion 250.

[0057] Moreover, the curtain portion 250 may be disposed to contact the neck protector 100. As described above, the curtain portion 250 may be detachably coupled to the fabric portion 230, and the detachable portion may be set so that the curtain portion 250 is disposed to contact the neck protector 100. In addition, the size, shape, material and thickness of the curtain portion 250 may be determined so that the curtain portion 250 may elastically contact the neck protector 100 and thus wind or noise does not flow in between the neck protector 100 and the curtain portion 250.

[0058] Since the curtain portion 250 is disposed to contact the neck protector 100 as described above, a gap is not created between the chin curtain 200 surrounding the jaw of the wearer and the neck protector 100 surrounding the neck of the wearer, thereby ensuring continuous shielding. Therefore, it is possible to prevent wind or noise from flowing into the helmet more efficiently.

[0059] In particular, together with the disposition where the curtain portion 250 contacts the neck protector 100, the curtain body 210 is made of flexible material so that the curtain body 210 is bent to contact and closely adhere to the jaw protection member 11 when being coupled to the jaw protection member 11 as described above, thereby shielding the entire circumferential portion of the chin curtain 200.

[0060] As described above, the helmet according to the present disclosure includes a neck protector mounted in the helmet body to surround the circumference of the neck of the wearer, thereby protecting the neck of the wearer and preventing cold air and noise from flowing in from the outside.

[0061] In particular, since the helmet according to the present disclosure further includes wing members provided at the lower side of the neck protector and extending toward the neck of the wearer along the circumferential direction of the neck of the wearer and the wing members are made of fabric material, when the wearer wears the helmet, the wing members is more closely adhered to the neck of the wearer and thus additionally prevents external cold air and noise from flowing in.

[0062] In addition, since the cushion members and the wing members of the neck protector are made of soft material such as fabric, the cushion members and the wing members may deform according to the face shape of the wearer, thereby ensuring convenient use of the wearer.

[0063] Moreover, since the helmet according to the present disclosure further includes a chin curtain provided at the lower side of the jaw protection member and surrounding the lower side of the jaw of the wearer, the chin curtain may further prevent external cold air and noise from flowing in through the lower side of the jaw of the wearer together with the neck protector.

[0064] In addition, since the neck protector and the chin curtain may be detachably provided at the helmet body, even though the neck protector or the chin curtain are worn due to long-term use, only the neck protector or the chin curtain may be exchanged without changing the entire helmet, thereby reducing costs of the user.

[0065] The above disclosure is just for illustration only, and a person having ordinary skill in the art will understand that the present disclosure may be easily modified without departing from the spirit or scope of the present disclosure.

[0066] Therefore, the embodiments disclosed herein should be understood as examples, not limitative, in every aspect. For example, any component explained as a single form may be distributed as various elements, and any components explained as a distributed may also be implemented as a single form.

[0067] The scope of the present disclosure is defined by the appended claims, and all changes or modifications derived from the meaning and scope of the claims or their equivalents should be interpreted as falling into the scope of the present disclosure.

Industrial Applicability

[0068] The present disclosure is directed to a helmet including a neck protector for preventing external cold air and noise from flowing in and a chin curtain and has industrial applicability since the helmet may be applied to a protecting instrument for leisure or the like.

Claims

1. A helmet, comprising:

a helmet body; and
a neck protector mounted in the helmet body to surround the neck of a wearer,
wherein the neck protector includes:

cushion members extending from a lower circumference of the helmet body toward the neck of the wearer; and
wing members protruding on a lower side of the cushion member and extending toward the neck of the wearer.

2. The helmet according to claim 1,
wherein an opening is formed between the cushion members, and
wherein the cushion members are elastically spread outwards based on the opening when the head of the wearer is inserted into the helmet body.

3. The helmet according to claim 1,
wherein the cushion members and the wing members are made of fabric material.

4. The helmet according to claim 2,
wherein the wing members are formed along a circumferential direction of the opening and elastically spreadable to the outer side of the opening.

5. The helmet according to claim 1, further comprising a chin curtain mounted to a lower end of the helmet body to surround a lower side of the jaw of the wearer.

6. The helmet according to claim 5,
wherein the helmet body further includes a jaw protection member pivotally mounted to the lower end thereof, and
wherein the chin curtain is detachably mounted to the jaw protection member.

7. The helmet according to claim 6, wherein the chin curtain includes:

a curtain body having a plurality of coupling units detachably mountable to the jaw protection member;
a fabric portion provided at the curtain body; and
a curtain portion detachably coupled to the fabric portion.

8. The helmet according to claim 7,
wherein the curtain body is made of flexible material so as to be bent to contact the jaw protection member, and
wherein the curtain portion is disposed to contact the neck protector.

9. The helmet according to claim 8,
wherein the flexible material is any one of rubber and resin.

10. The helmet according to claim 7, wherein the plurality of coupling units of the curtain body include:

a first coupling unit coupled into a locking lever of the jaw protection member by means of engagement; and
a second coupling unit formed symmetrical to the first coupling unit and fit into a coupling hole formed in the jaw protection member.

11. The helmet according to claim 10,
wherein the second coupling unit is inserted into the coupling hole while being elastically shrunken.

12. The helmet according to claim 7,

1. wherein the curtain portion has a Velcro tape detachably provided at one side of the fabric portion.

FIG. 1

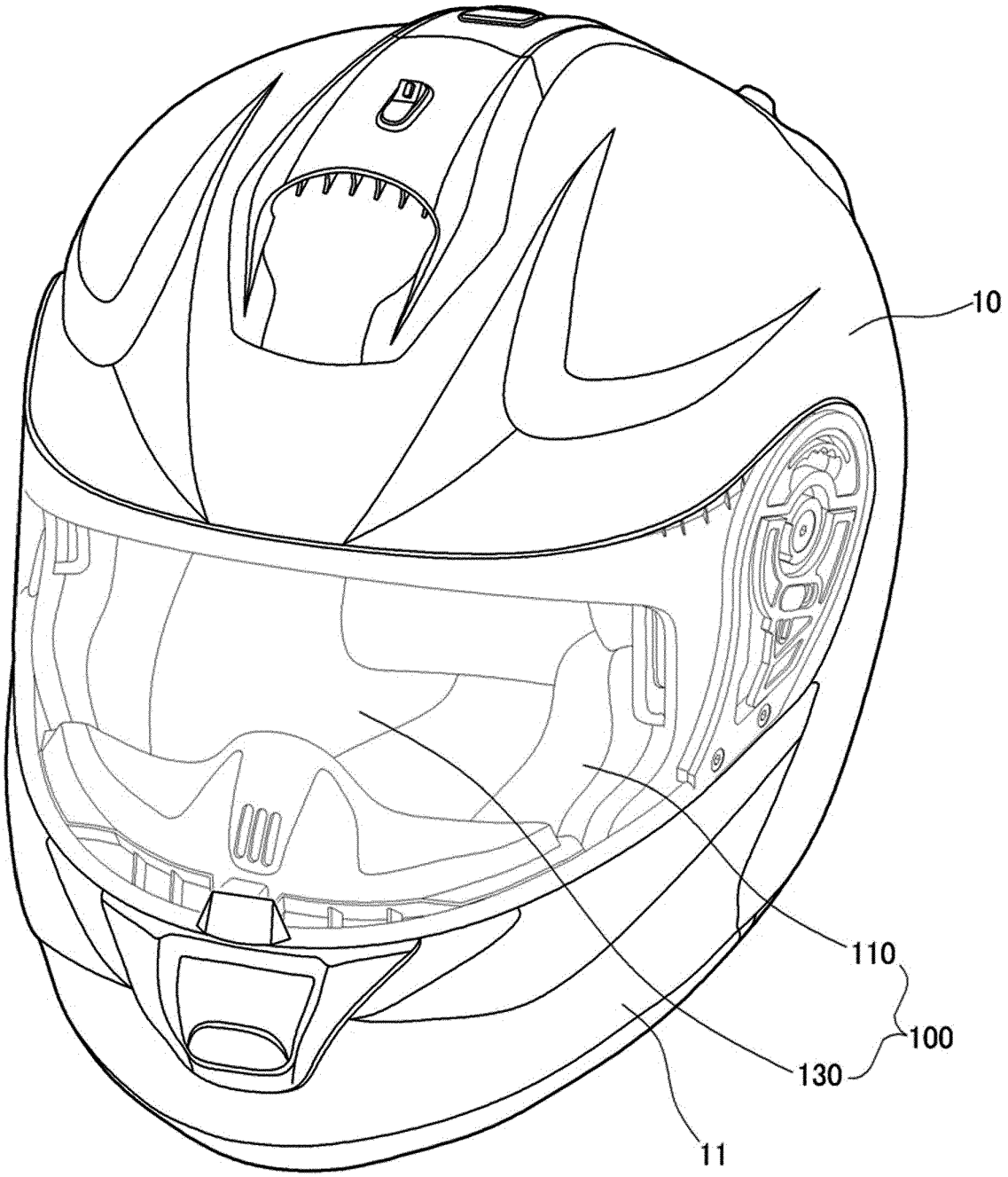


FIG. 2

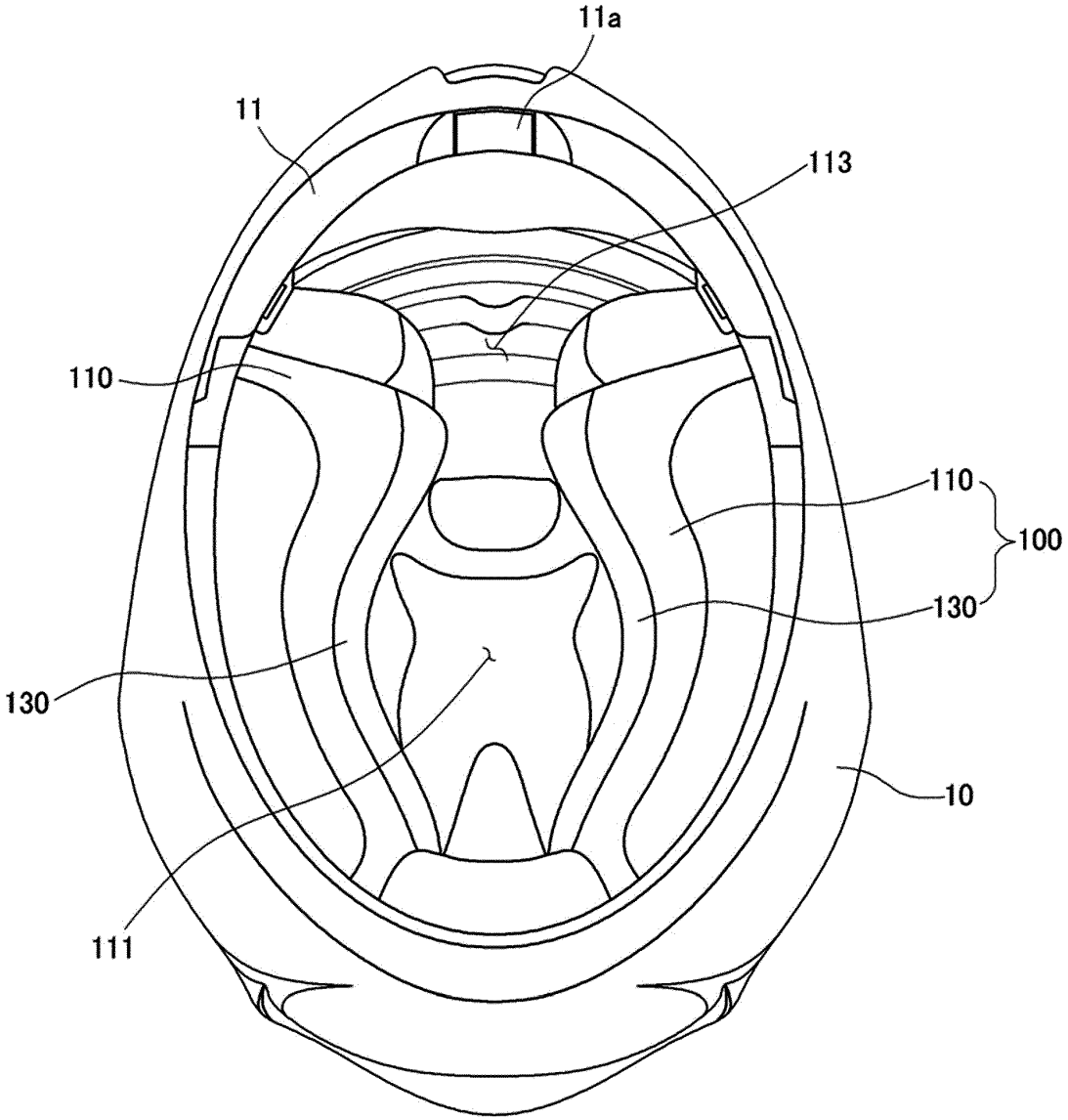


FIG. 3

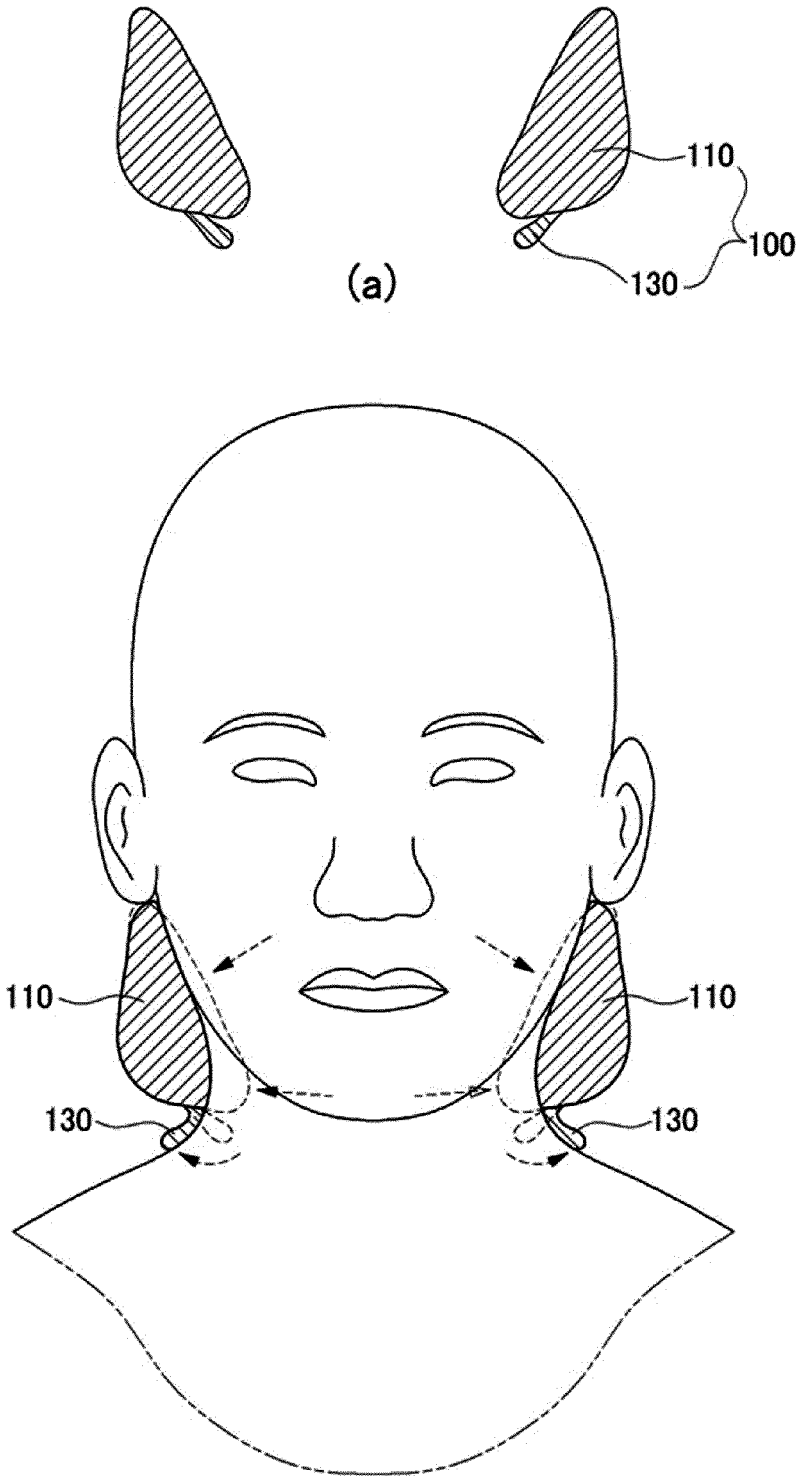


FIG. 4

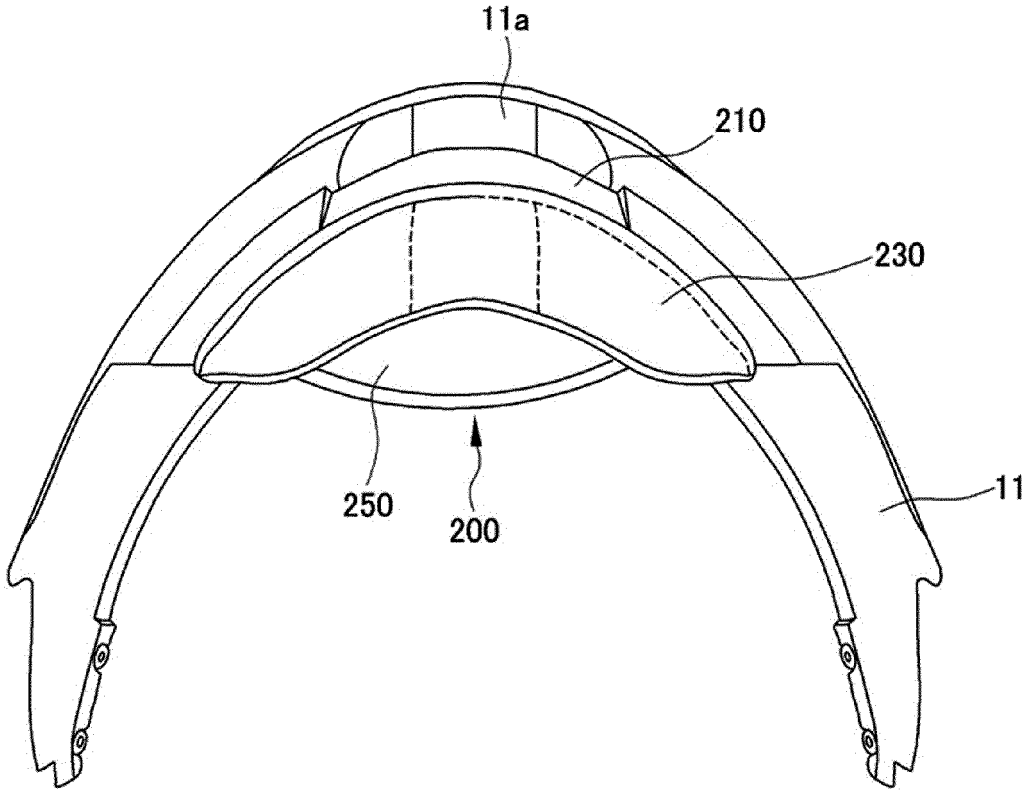


FIG. 5

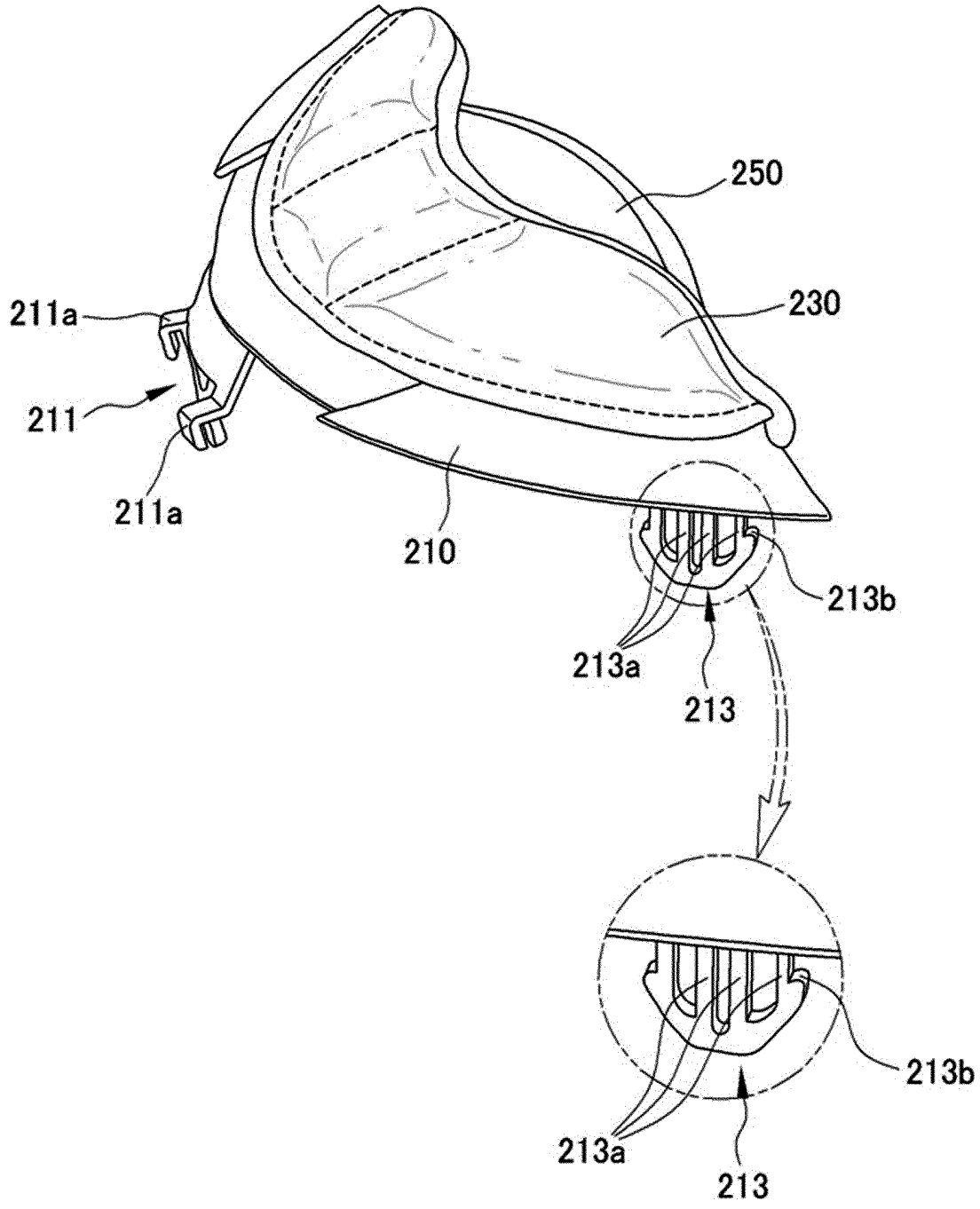


FIG. 6

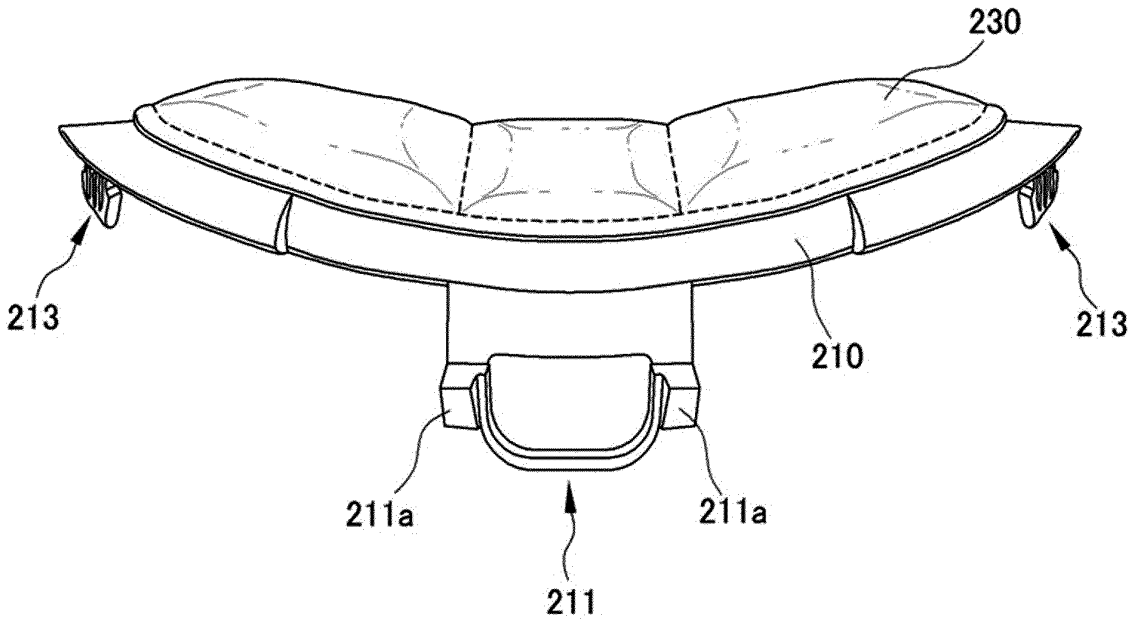
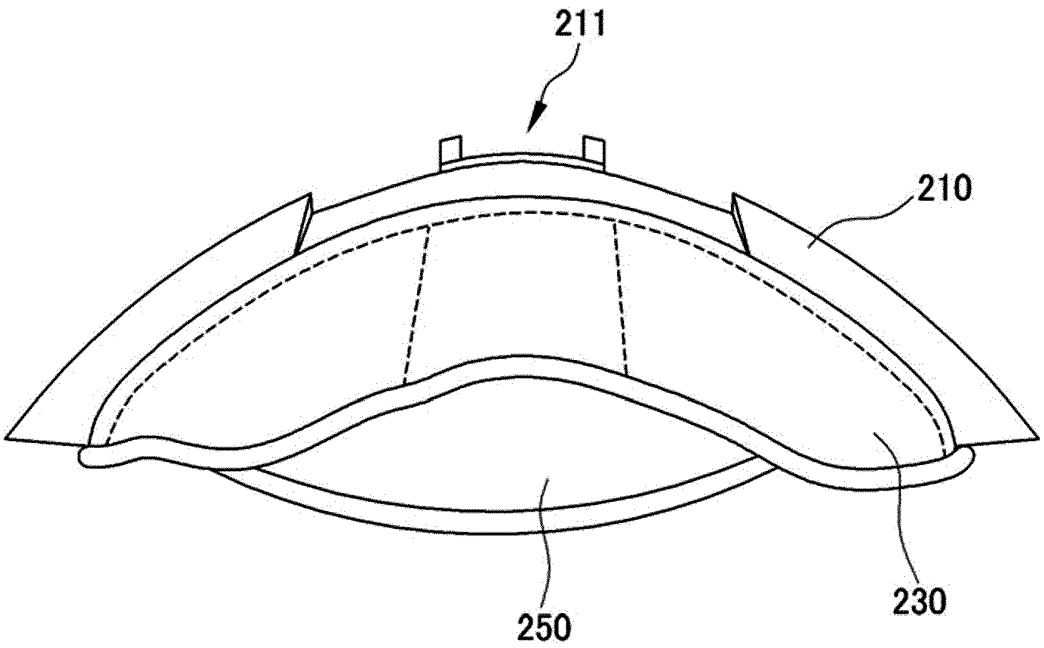


FIG. 7



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2011/007038

A. CLASSIFICATION OF SUBJECT MATTER

A42B 3/12(2006.01)i, A42B 3/10(2006.01)i, A42B 3/04(2006.01)i

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)

A42B 3/12; A41D 27/16; A42B 3/06; A42B 3/00; A42B 3/28; A42B 3/04; A42B 3/18

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models: IPC as above
Japanese Utility models and applications for Utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & Keywords: helmet, safety helmet, jaw, neck, cushion, blade, curtain, blocking

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2000-0028551 A (ARAI HELMET, LTD.) 25 May 2000 See abstract, claim 1, figure 1.	1-12
A	JP 4545746 B2 (-) 09 July 2010 See abstract, paragraphs [0001-0002], [0029-0030], [0036-0041], figures 1-14.	1-12
A	KR 10-2008-0068080 A (HOVDING SVERIGE AB) 22 July 2008 See abstract, claim 1, paragraphs [0021-0025], figures 1-5.	1-12
A	US 04017906A A (BOCHYNSKY; FRANK J. et al.) 19 April 1977 See abstract, claim 1, figures 1-2.	1-12
A	JP 2002-069738 A (SHOEI:KK) 08 March 2002 See abstract, claim 1, figure 1.	1-12

☐ Further documents are listed in the continuation of Box C. ☒ 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
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 JUNE 2012 (21.06.2012)	**22 JUNE 2012 (22.06.2012)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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