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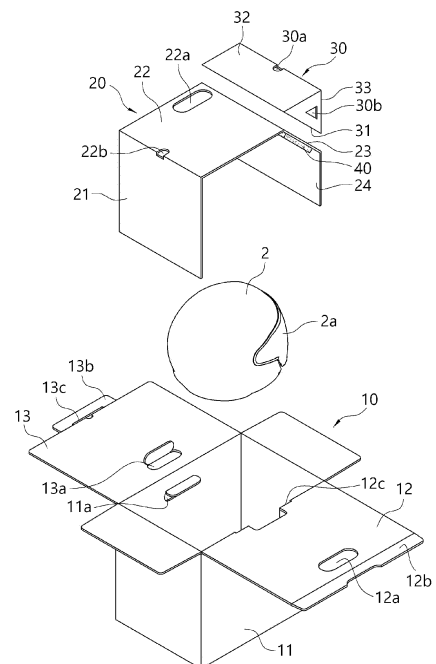
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(54) **PACKAGING DEVICE FOR HELMET**

(57) Disclosed is a packaging device for a helmet, the packaging device being capable of minimizing damage of a helmet when the helmet moves after being packed. A packaging device for a helmet according to one aspect of the present invention may comprise: a packaging box body having an inside space formed to store a helmet therein; and a cover member for impact mitigation, which is installed to cover the helmet in a state in which the helmet is accommodated in the packaging box body and has an inclined surface formed on at least one surface of the helmet to be in close contact therewith, to secure a gap with respect to external impact so as to relieve the impact.

FIG. 3



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**Description****[TECHNICAL FIELD]**

**[0001]** The present disclosure relates to a packaging box for a helmet, and more specifically, to a packaging device for a helmet capable of minimizing damage to the helmet when the helmet is moved after being packed.

**[BACKGROUND ART]**

**[0002]** Head protection gear is a commonly referred to as a helmet, and is used to protect a wearer's head.

**[0003]** The head protection gear has a space formed therein to accommodate the wearer's head. In order to safely protect the accommodated head, the head protection gear is generally configured to wrap the head from the outside. At this time, a visor made of a transparent material may be provided on the front side of the head protection gear so that the wearer may secure a forward view while driving.

**[0004]** The visor is rotatably provided on a frame accommodating the head of the wearer. The wearer may rotate the visor to partially open or close the frame.

**[0005]** When the wearer is driving while wearing the head protection gear, the visor must be stably maintained in a closed state with the frame. In addition, when the wearer intends to partially open the frame, the visor must be able to rotate easily.

**[0006]** In addition to the visor, a shield may be installed in the conventional helmet. Such a shield protects the inside of the main body of the helmet from the outside. The shield, like the visor, may also be both rotary and fixed.

**[0007]** The head protection gear, helmet, is packed in a packaging box when the product is sold. Therefore, it is preferable to include a structure or a protective material that may absorb a shock inside the packaging box so that the shock does not damage the helmet even if the packaging box falls or other external shock is applied when the product is moved or sold after being packed in the packaging box.

**[0008]** In general, the manufacturer may pack the helmet in the packaging box and then perform a package drop test. At this time, the packaging box is dropped several times from a predetermined height across six sides, and the influence and damage applied to the inside of the helmet are investigated to determine whether the packaging box is acceptable.

**[0009]** However, since the packaging box of helmet according to the conventional technology does not provide a separate structure for shock prevention and clearance for shock absorption, there was a problem that when the packaging box is dropped, the detachable parts such as the visor are removed from the inside of the packaging box or other parts are damaged.

**[DISCLOSURE]****[TECHNICAL PROBLEM]**

**[0010]** An object of the present disclosure is to provide a packaging device for a helmet capable of absorbing a shock with a gap in response to an external shape of a helmet.

**[0011]** Another object of the present disclosure is to provide a packaging device for helmet including a separate storage box that is disposed in a predetermined space inside a main packaging box in a form corresponding to the appearance of the main packaging box to store a manual or accessory.

**[0012]** The technical problems of the present disclosure are not limited to the above-mentioned problems, and other technical problems not mentioned may be clearly understood by those skilled in the art to which the present disclosure pertains from the following description.

**[TECHNICAL SOLUTION]**

**[0013]** According to an aspect of the present disclosure, there is provided a packaging device for a helmet including: a first surface configured to be in close contact with a rear side of the helmet; a second surface configured extend from the first surface to cover the upper side of the helmet; the inclined surface configured to extend from the second surface to be in close contact between the front side and the upper side of the helmet; and a third surface configured to extend from the inclined surface to be in close contact with the front side of the helmet.

**[0014]** In this case, the shock-relieving cover includes: a first surface configured to be in close contact with a rear side of the helmet; a second surface configured extend from the first surface to cover the upper side of the helmet; the inclined surface is configured to extend from the second surface to be in close contact between the front side and the upper side of the helmet; and a third surface configured to extend from the inclined surface to be in close contact with the front side of the helmet.

**[0015]** In this case, the first surface and the third surface may be respectively upright and supported in close contact with a wall surface of the main packaging box.

**[0016]** In this case, the inclined surface may have an angle of 100 to 160 degrees with respect to a horizontal surface of the main packaging box.

**[0017]** In this case, the inclined surface may have a shock absorber on an inner side thereof.

**[0018]** In this case, the packaging device may include a manual box, and the manual box is configured to fill an empty space of the main packaging box generated by the inclined surface.

**[0019]** In this case, the manual box is configured as a pentahedron to be in close contact with the inclined surface and the main packaging box.

**[0020]** In this case, the manual box may include one or more windows to allow viewing of internal components therein.

**[0021]** In this case, a color sticker for indicating a sales area may be attached to the manual box.

**[0022]** In this case, the manual box may have a cut-out for detachments formed to be easily detachable from the main packaging box.

**[0023]** In this case, the main packaging box and the shock-relieving cover may have cut-out for handles to complete packaging and then insert a finger to hold the main packaging box and the shock-relieving cover.

**[0024]** In this case, the main packaging box and the shock-relieving cover are formed in the form of a buffer structure with at least one layer in the cross-section to prevent a stab injury.

**[0025]** In this case, a visor of the helmet may be in close contact with the inclined surface.

#### [ADVANTAGEOUS EFFECTS]

**[0026]** According to the above configuration, the packaging device for the helmet according to the embodiment of the present disclosure has a shock-relieving cover with an inclined surface formed inside the main packaging box, so that the product can be protected from external shock and at the same time, some parts can be prevented from being detached.

#### [DESCRIPTION OF DRAWINGS]

##### [0027]

FIG. 1 is a perspective view of a packaging device for a helmet according to an embodiment of the present disclosure.

FIG. 2 is a perspective view of a state in which a top cover of a packaging device for a helmet according to an embodiment of the present disclosure is opened.

FIG. 3 is an exploded perspective view of a packaging device for a helmet according to an embodiment of the present disclosure.

FIG. 4 is a partial perspective view of a state of locking a packaging device for a helmet according to an embodiment of the present disclosure.

FIG. 5 is an inner perspective view of a shock-relieving cover, which is some components of a packaging device for a helmet according to an embodiment of the present disclosure.

FIG. 6 is a front view of a shock-relieving cover, which is some components of a packaging device for a helmet according to an embodiment of the present disclosure.

FIG. 7 is a cross-sectional view of a packaging device for a helmet according to an embodiment of the present disclosure.

#### [DETAILED DESCRIPTION OF THE EMBODIMENTS]

**[0028]** Hereinafter, exemplary embodiments of the present disclosure will be described in detail so that those

of ordinary skill in the art can readily implement the present disclosure with reference to the accompanying drawings. The present disclosure may be embodied in many different forms and is not limited to the embodiments set forth herein. In the drawings, parts unrelated to the description are omitted for clarity of description of the present disclosure, and throughout the specification, same or similar reference numerals denote same elements.

**[0029]** The words and terms used in this specification and the claims are not interpreted as limited to conventional or dictionary meanings, but should be interpreted as meanings and concepts consistent with the technical idea of the present disclosure according to the principle in which the inventor can define the terms and concepts in order to best explain their invention.

**[0030]** Therefore, the embodiments described in this specification and the configurations illustrated in the drawings correspond to a preferred embodiment of the present disclosure and do not all represent the technical idea of the present disclosure, so the corresponding configurations may be various equivalents and modifications to replace them at the time of filing the present disclosure.

**[0031]** In this specification, it should be understood that the terms such as "comprise" or "have" are intended to specify the presence of features, numbers, steps, operations, components, parts, or combinations thereof described in the specification and do not preclude the possibility of the presence or addition of one or more other features, numbers, steps, operations, components, parts, or combinations thereof.

**[0032]** The fact that a component is in the "front", "rear", "upper" or "lower" of another component includes not only the case that it is disposed in the "front", "rear", "upper" or "lower" in immediate contact with the other component, but also the case that another component is disposed in the middle. In addition, the fact that a component is "connected" to another component includes not only the case that it is directly connected to each other but also the case that it is indirectly connected to each other unless otherwise specified.

**[0033]** Hereinafter, a packaging device 1 for a helmet according to an embodiment of the present disclosure will be described with reference to the drawings.

**[0034]** Referring to FIGS. 1 to 7, the packaging device 1 for the helmet according to an embodiment of the present disclosure may include a main packaging box 10 and a shock-relieving cover 20.

**[0035]** Referring to FIGS. 1 to 6, the main packaging box 10 may have an internal space formed therein to store the helmet.

**[0036]** At this time, the main packaging box 10 may be formed in a rectangular parallelepiped shape. The bottom surface and the side surfaces 11 may be combined and fixed to each other, and the top surface may include a first top surface 12 and a second top surface 13 to cover an upper portion and close the inside of the main packa-

ging box 10. In addition, the first top surface 12 and second top surface 13 may be installed to face each other, and may be foldable closed, and an insert-type lock 12b (or 13b) that is foldable inserted is formed at the end portion thereof, and a slit 12c (or 13c) is formed on one side of the first (or second) top surfaces 12 (or 13) so that the insert-type lock 12d (or 13b) may be inserted thereto. A pair of wings 14 are formed on the side of the first and second top surfaces 12 and 13 to cover a part of the upper portion before closing the first and second top surfaces 12 and 13. Since this form is a form of a general packaging box, a detailed description is omitted.

**[0037]** Referring to FIGS. 2 to 7, the shock-relieving cover 20 is installed inside the main packaging box 10 to cover the helmet 2 while the helmet 2 is accommodated in the main packaging box 10, and has an inclined surface 23 formed on at least one surface to be in close contact between a front side and an upper side of the helmet 2 to secure a gap against an external shock, thereby relieving the shock.

**[0038]** In this case, the shock-relieving cover may include a first surface 21 configured to be in close contact with a rear side of the helmet 2, a second surface 22 configured extend from the first surface 21 to cover the upper side of the helmet 2, the inclined surface 23 configured to extend from the second surface 22 to be in close contact between the front side and the upper side of the helmet 2, and a third surface 24 configured to extend from the inclined surface 23 to be in close contact with the front side of the helmet 2.

**[0039]** The first surface 21 and the third surface 24 may be respectively upright and supported in close contact with a wall surface of the main packaging box 10. Referring to FIGS. 6 and 7, when the packaging is completed by being accommodated in the main packaging box 10, the first surface 21 and the third surface 24 will be in close contact with an inner side of the side surfaces 11 of the main packaging box 10.

**[0040]** In this case, the inclined surface 23 may have an angle  $\Theta$  of 100 to 160 degrees with respect to a horizontal surface of the main packaging box 10. The angle of the inclined surface 23 is configured to be different depending on the type of the target helmet. That is, the angle of the inclined surface 23 is formed differently according to the type of the helmet 2, so that the visor 2a may be in close contact therewith.

**[0041]** In this case, the inclined surface 23 may have a shock absorber 40 on an inner side thereof. Various synthetic resin foams may be provided as the shock absorber 40. It goes without saying that the shock absorber 40 may be applied not only to the inner side of the inclined surface 23 but also to the inner sides of the first and second surfaces 21 and 22.

**[0042]** At this time, comprising a manual box 30 may be further installed, and the manual box 30 is configured to fill an empty space of the main packaging box 10 generated by the inclined surface 23. A manual and accessory, etc. may be stored inside the manual box 30, but it is not

necessarily the case that only manual is stored.

**[0043]** In this case, the manual box 30 may be formed in a three-dimensional pentahedron shape corresponding to be in close contact with the inclined surface 23 and the main packaging box 10. In this way, since the manual box 30 is formed as a pentagon, the inside of the main packaging box 10 may be completely supported by the box assembly without any empty space.

**[0044]** At this time, the manual box 30 may include one or more windows 30b to allow viewing of internal components therein.

**[0045]** In this case, a color sticker for indicating a sales area may be attached to the manual box 30. The color sticker may be attached to the surface of the manual box 30 or may be attached to a manual or a wrapping paper of the manual contained therein.

**[0046]** At this time, a cut-out 30a for detachments may be formed on the manual box 30 so that it may be easily detached from the main packaging box 10. The user may easily separate the manual box 30 from the main packaging box 10 by inserting a finger in the cut-out 30 for detachments.

**[0047]** In this case, the cut-outs 11a, 12a, 13a and 22a for handles may be formed in the main packaging box 10 and the shock-relieving cover 20 to form a handle 10a that may be held by inserting a finger after completing the packaging.

**[0048]** At this time, the cut-outs 11a, 12a, 13a and 22a for handles are formed so that the fingers may be inserted and hold them at one corner of the upper portion of the main packaging box 10. Therefore, it is possible to easily lift and move the main packaging box 10.

**[0049]** At this time, the main packaging box 10 and the shock-relieving cover 20 are formed in the form of a buffer structure with at least one layer in the cross-section to prevent a stab injury. That is, the structure of the panel forming the main packaging box 10 and the shock-relieving cover 20 has a so-called corrugated cardboard shape to prevent a sharp edge from being formed, thereby preventing the user from being stabbed in a situation such as opening and closing of the packaging or moving it.

**[0050]** Referring to FIG. 1, a perspective view of a packaging device 1 for a helmet according to an embodiment of the present disclosure is illustrated. A state in which the helmet is fully packaged is illustrated. It has a hexahedral box-shaped appearance. All insert-type locks 12b, 12d and 13b are in a locked state, and a handle 10a is formed at the corner of the top surface so that the user may hold it with his or her hand. In this state, the user may move by holding the packaging device 1 for the helmet where the product is packaged using the handle 10a. The handle 10 may be configured by forming the cut-outs 11a, 12a, 13a and 22a for handles formed on the side surfaces of the main packaging box 10, one side of the first and second top surfaces 12 and 13, and the second surface 22 of the shock-relieving cover 20 at positions corresponding to each other.

**[0051]** Referring to FIG. 2, a perspective view of a state in which a top cover of a packaging device 1 for the helmet according to an embodiment of the present disclosure is opened is illustrated. A product is contained inside. First and second top surfaces 12 and 13 are in a state of being flipped back open. Wings 14 on the side of the first and second upper surfaces 12 and 13 are also in a state of being flipped back open. Inside a main packaging box 10, a shock-relieving cover 20 and a manual box 30 are exposed. In this state, the manual box 30 may be easily separated by inserting a finger into a cut-out 30a for detachments. In addition, the shock-relieving cover 20 may also be easily separated by using a cut-out 22a for handles or a cut-out 22b for detachments. The manual box 30 and the shock-relieving cover 20 may be removed in order and the helmet 2 may be taken out. Here, a cut-out 12a for handles is formed on the first top surface 12, an insert-type lock 12b for folding and assembling is provided at the end, and a cut-out 12c for insertion is formed at a folded portion so that another insert-type lock 13b may pass through. A cut-out 13a for handles is also formed on the second top surface 13, and a slit 13c is formed on the end for an insert-type lock 13b and another insert-type lock 12d to pass there through. Meanwhile, the cross-section of the material forming the main packaging box 10 and the shock-relieving cover 20 is enlarged and illustrated, and each panel 3 is formed to have a buffering structure, and a buffering space 4a is formed by a connector 4 between the panels 3.

**[0052]** Referring to FIGS. 3 and 4, an exploded perspective view of a packaging device 1 for a helmet according to one embodiment of the present disclosure and a partial perspective view in a state of locking it are illustrated. All components may be disassembled and the packaging and separation of the helmet 2 may be explained. When packaging, the first and second top surfaces 12 and 13 of the main packaging box 10 and a wing 14 of the side surface 11 are flipped outward and folded, and then the helmet 2 is stored. After the helmet is stored, the shock-relieving cover 20 is inserted so that it is positioned corresponding to the helmet 2, and the manual box 30 is inserted between the shock-relieving cover 20 and the side surface 11 of the main packaging box 10. Thereafter, all of the wings 14 of the side surface are folded inward and the first top surface 13 and the second top surface 12 are covered in order to complete the packaging. At each step, the locking state is maintained using the insert-type lock 12b, 13b and 12d in order. That is, the wings 14 are folded, the first top surface 12 is folded, the second top surface 13 is covered, and the insert-type lock 13b of the second top surface 13 is passed through the slit 12c of the first top surface 12 to lock. Thereafter, referring to FIG. 4, the insert-type lock 12d of the first top surface 12 passes through the slit 13c of the second top surface 13 to finally lock it. The separation of the packaging may be carried out in reverse order, but it may be easily carried out using the cut-outs 30a and 22b for detachments.

**[0053]** Referring to FIGS. 5 and 6, an inner perspective

view and a front view of a shock-relieving cover 20, which is some components of a packaging device 1 for a helmet according to an embodiment of the present disclosure, are illustrated. The shock-relieving cover 20 includes first to third surfaces 21 to 24, and an inclined surface 23. The first surface 21 is in a vertical state and is in close contact with an inner side of a side surface 11 of the main packaging box 10 to be supported in a vertical state. The shock absorber 41 may be attached to an inner side of the first surface 21 and disposed between the helmet 2 and the first surface 21. The second surface 22 may be disposed horizontally on an upper side of the helmet 2, and a shock absorber 42 may be provided on an inner side thereof. A cut-out 22b for detachments and a cut-out 22a for handles may be formed on the second surface 22. A shock absorber 40 may be provided on an inner side of the inclined surface 23, and the inclined surface 23 is formed to have an angle  $\theta$  of 100 to 160 degrees with respect to the horizontal surface as described above, and the angle may be changed depending on the type and shape of the helmet 2 to be accommodated. By positioning a portion in contact with the inclined surface 23 between the visor 2a and frame of the helmet 2, it is possible to simultaneously support the helmet 2 and the visor 2a and prevent the visor 2a from escaping or damage to the helmet 2 by relieving and absorbing a shock when the external shock is transmitted. Here, it goes without saying that the shock absorber may also be provided on the third surface 24.

**[0054]** In other words, when the shock is applied to the main packaging box 10 from the outside, the shock will be transmitted to the helmet 2 through the shock-relieving cover 20. At this time, the shock amount is multiplied by a shock force and a time and is inversely proportional to the time. Therefore, the portion in close contact with the inclined surface 23 has a buffering time in which the shock is transmitted by the inclined surface 23, thereby increasing the transmission time and reducing the shock amount applied to the helmet 2. By this principle, it is possible to protect the visor 2a of the helmet 2 and also to prevent damage. On the other hand, the third surface 24 is upright and is in close contact with an inner side of the side surface 11 of the main packaging box 10, like the first surface 21. Therefore, the first and third surfaces 21 and 24 are maintained in an upright state, so the shock-relieving cover 20 may accurately maintain its shape even during packaging.

**[0055]** Referring to FIG. 7, a cross-sectional view of a packaging device 1 for a helmet according to an embodiment of the present disclosure is illustrated. All surfaces of the main packaging box 10 and the shock-relieving cover 20 are designed to support and protect the helmet 2, and the shock absorber 40 of the inclined surface 23 is disposed so as to be in close contact between the frame of the helmet 2 and the visor 2a. Therefore, even if the shock is applied, the visor 2a is difficult to escape from the helmet frame. The formation of the inclined surface 23 creates a space in which the cross-section is triangular in the main packaging box 10. A manual box 30 is disposed

in the empty space, and a window 30b is formed in the manual box 30 and allows viewing of a manual or accessory inside.

**[0056]** Although the present disclosure has been described, the spirit of the present disclosure is not limited by the embodiments presented in this specification, and those skilled in the art who understand the spirit of the present disclosure can easily propose other embodiments by adding, changing, deleting, and merging components within the same spirit, but this is also within the scope of the spirit of the present disclosure.

#### [INDUSTRIAL APPLICABILITY]

**[0057]** The present disclosure may be applied to packaging device and packaging paper for packaging helmets.

#### Claims

1. 1. A packaging device for a helmet comprising:

a main packaging box configured to have an internal space formed to store a helmet therein; and

a shock-relieving cover is configured to be installed inside the main packaging box to cover the helmet while the helmet is accommodated in the main packaging box, and have an inclined surface formed on at least one surface thereof to be in close contact between a front side and an upper side of the helmet to secure a gap against an external shock, thereby relieving the shock.

2. The packaging device of claim 1, wherein the shock-relieving cover includes:

a first surface configured to be in close contact with a rear side of the helmet;

a second surface configured extend from the first surface to cover the upper side of the helmet;

the inclined surface is configured to extend from the second surface to be in close contact between the front side and the upper side of the helmet; and

a third surface configured to extend from the inclined surface to be in close contact with the front side of the helmet.

3. The packaging device of claim 2, wherein the first surface and the third surface are configured to be respectively upright and supported in close contact with a wall surface of the main packaging box.

4. The packaging device of claim 1, wherein the inclined surface is configured to have an angle of 100

to 160 degrees with respect to a horizontal surface of the main packaging box.

5. The packaging device of claim 1, wherein the inclined surface is configured to have a shock absorber on an inner side thereof.

6. The packaging device of claim 1, further comprising a manual box, and wherein the manual box is configured to fill an empty space of the main packaging box generated by the inclined surface.

7. The packaging device of claim 6, wherein the manual box is configured as a pentahedron to be in close contact with the inclined surface and the main packaging box.

8. The packaging device of claim 6, wherein the manual box includes one or more windows to allow viewing of internal components therein.

9. The packaging device of claim 6, where the manual box is configured to have a cut-out for detachments formed to be easily detachable from the main packaging box.

10. The packaging device of claim 1, wherein the main packaging box and the shock-relieving cover are configured to have cut-out for handles to complete packaging and then insert a finger to hold the main packaging box and the shock-relieving cover.

11. The packaging device of claim 1, wherein a visor of the helmet is configured to be in close contact with the inclined surface.

FIG. 1

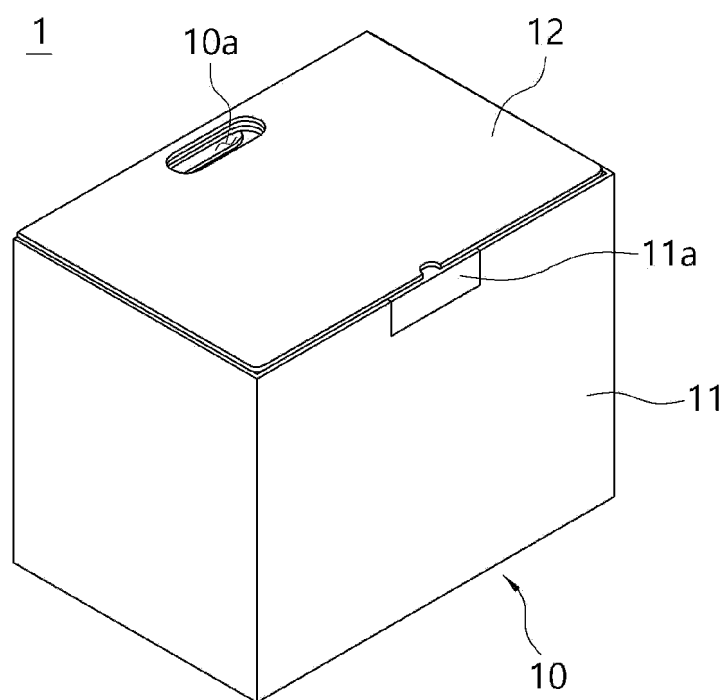


FIG. 2

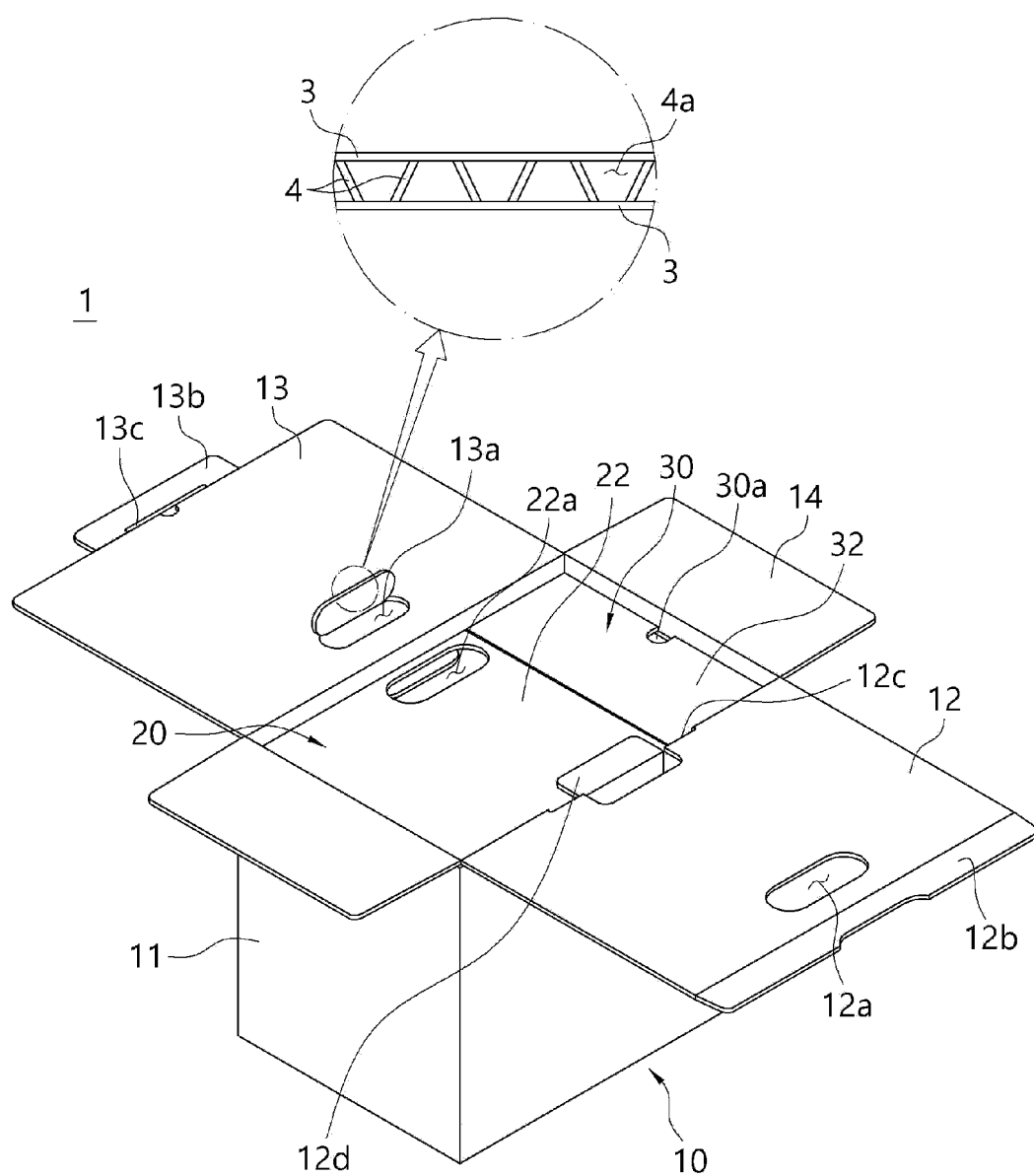




FIG. 3

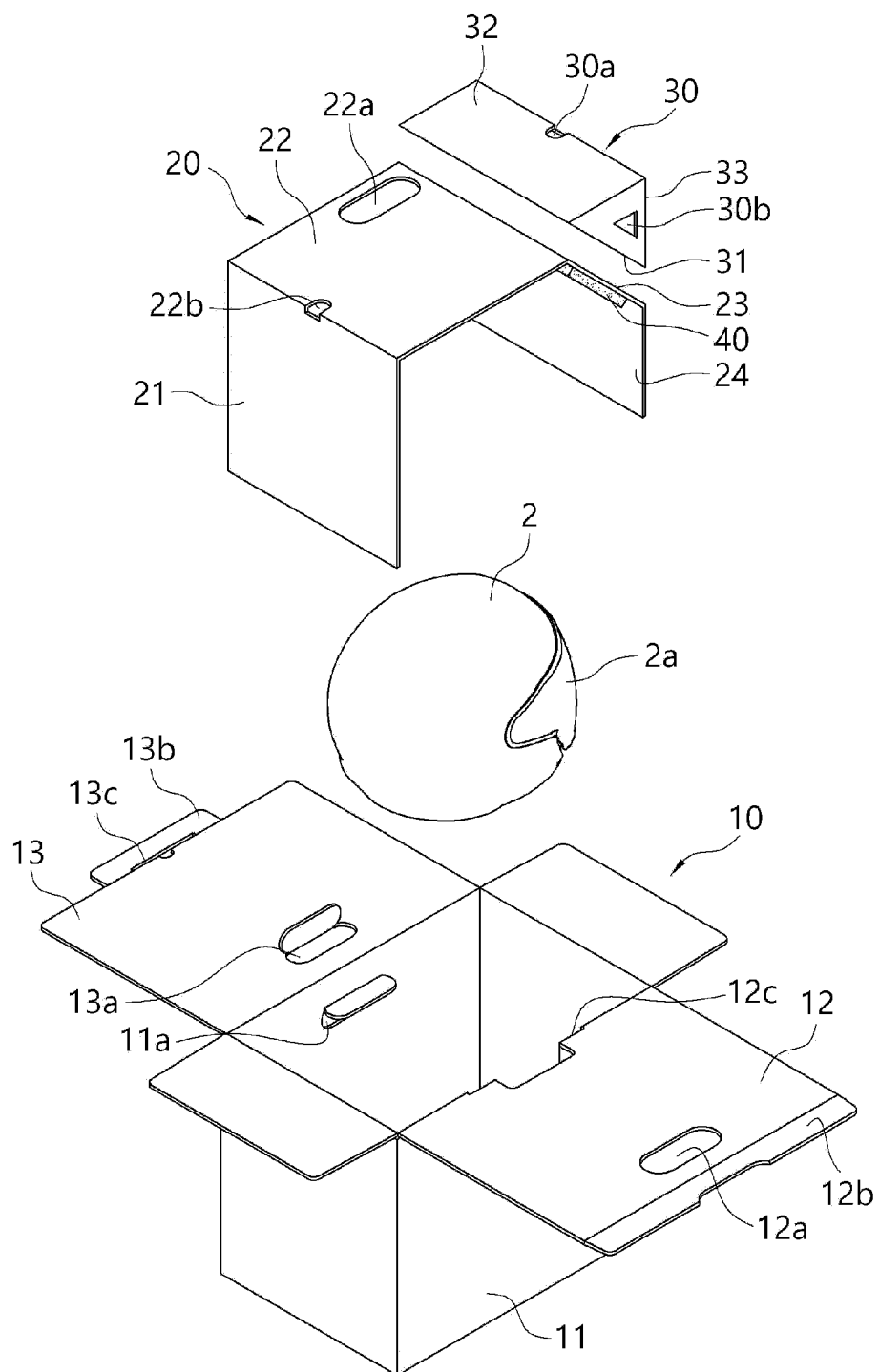


FIG. 4

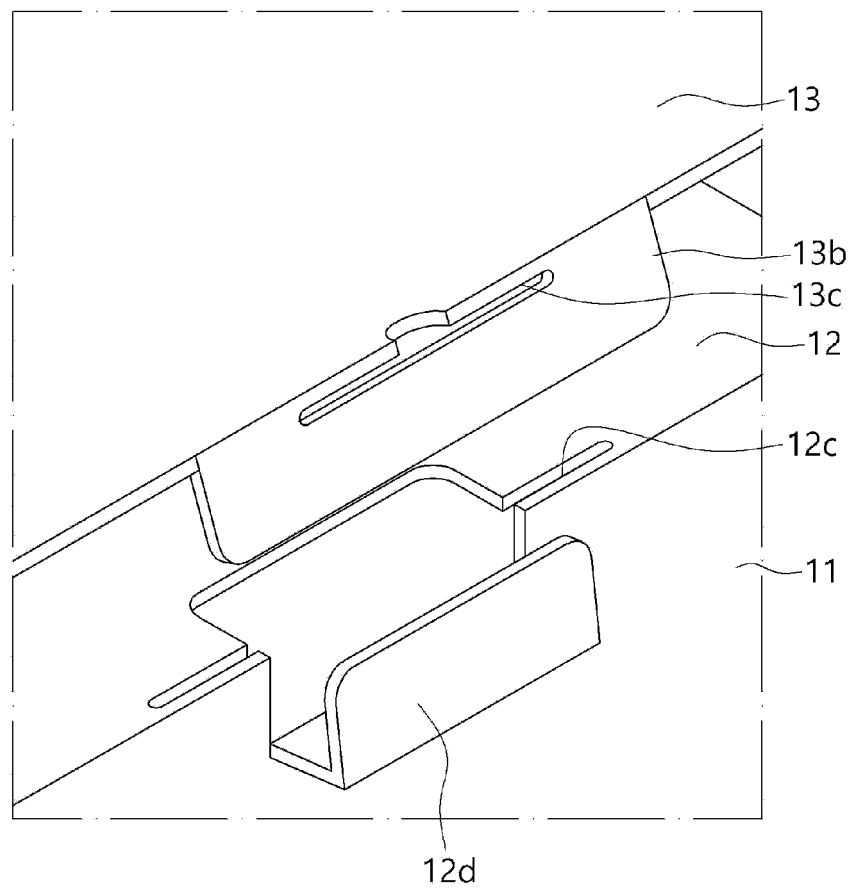


FIG. 5

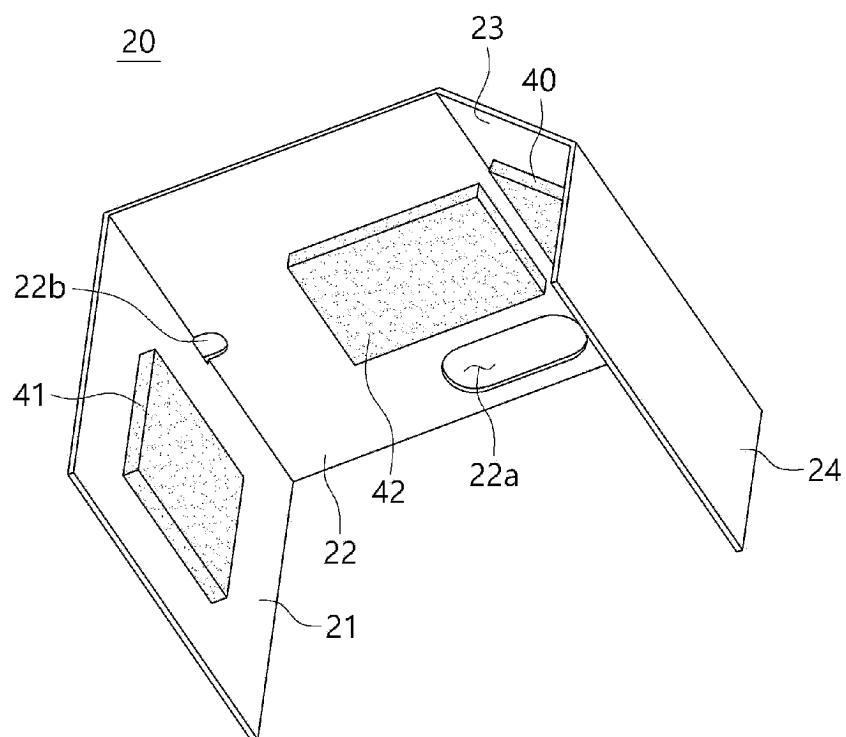


FIG. 6

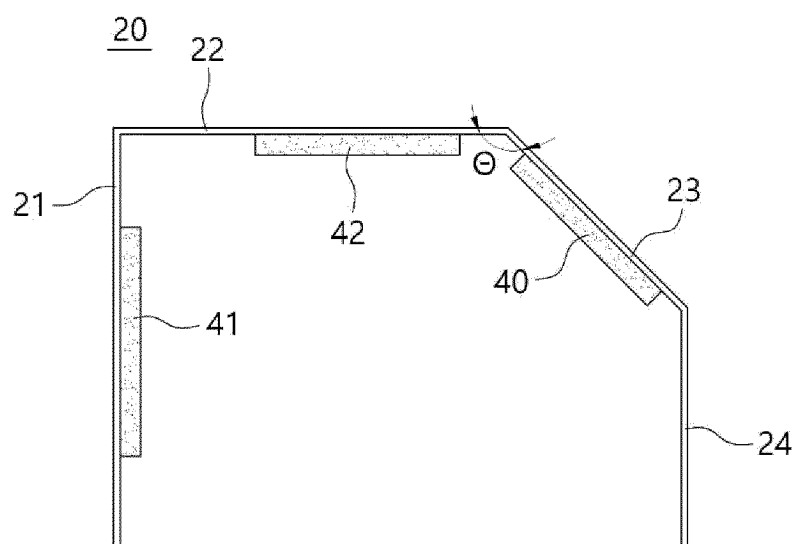
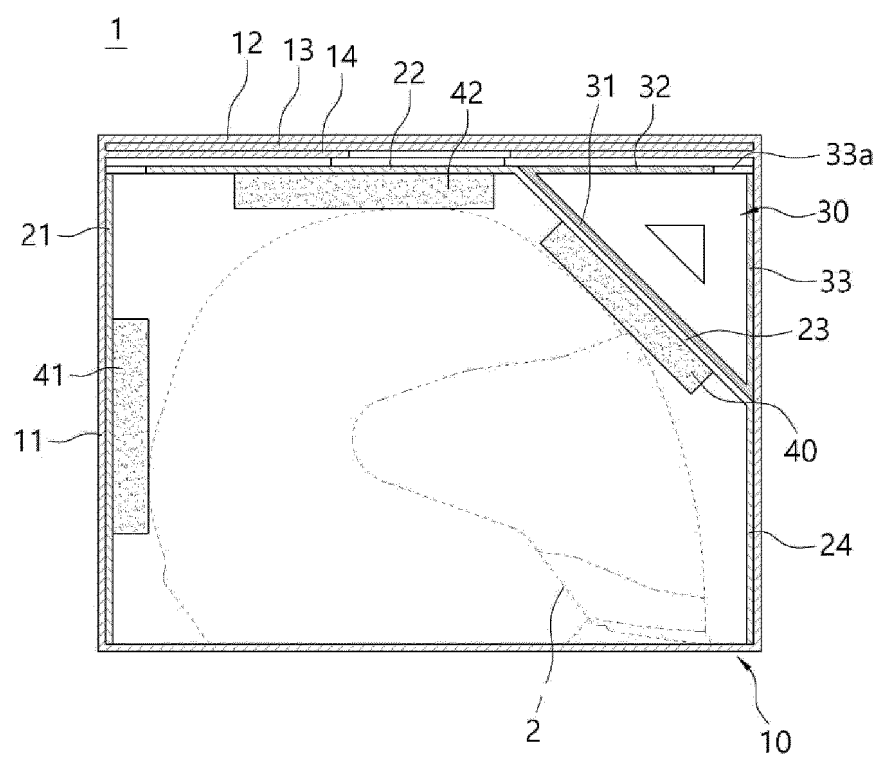


FIG. 7



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2023/008899

## A. CLASSIFICATION OF SUBJECT MATTER

B65D 81/05(2006.01)i; B65D 5/50(2006.01)i; B65D 5/66(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)

B65D 81/05(2006.01); B65D 25/28(2006.01); B65D 5/38(2006.01); B65D 5/468(2006.01); B65D 5/50(2006.01);  
B65D 77/04(2006.01); B65D 81/02(2006.01); B65D 81/07(2006.01); B65D 85/42(2006.01)

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) &amp; keywords: 헬멧(helmet), 포장박스(package box), 경사면(incline), 완충(damping), 고정(fix)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 20-0118110 Y1 (SAMSUNG ELECTRONICS CO., LTD.) 01 June 1998 (1998-06-01) See abstract, paragraphs [0014]-[0018], claim 1 and figures 3-7.	1-4,11
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Y	KR 20-2022-0001790 U (DAONCHEM CO., LTD.) 19 July 2022 (2022-07-19) See paragraph [0019] and figure 1.	10

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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## INTERNATIONAL SEARCH REPORT

### Information on patent family members

International application No.

**PCT/KR2023/008899**

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