(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 483 739 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
01.01.2025 Bulletin 2025/01

(21) Application number: **22929085.3**

(22) Date of filing: **06.12.2022**

(51) International Patent Classification (IPC):
A42B 3/20 *(2006.01)*

(86) International application number:
PCT/KR2022/019657

(87) International publication number:
WO 2023/163337 (31.08.2023 Gazette 2023/35)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **24.02.2022 KR 20220024064**

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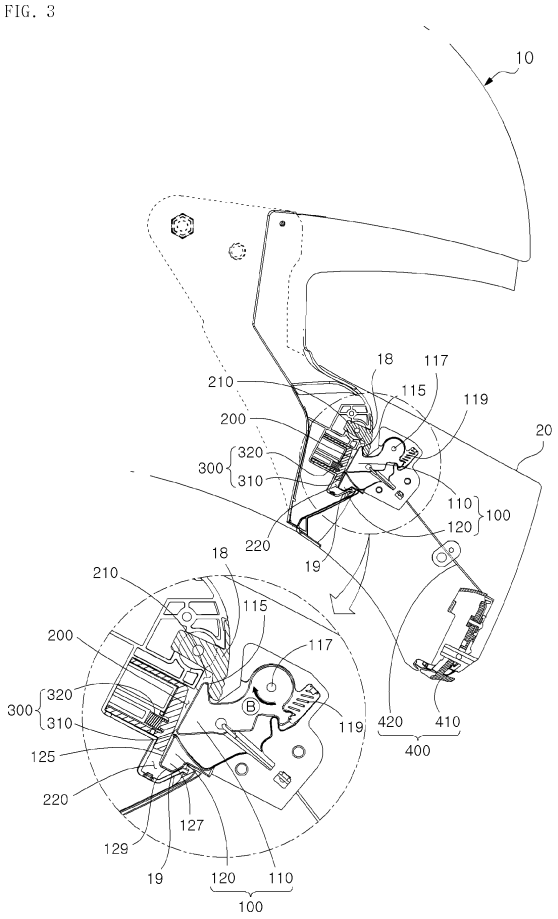
(54) LOCKING MEANS FOR CHIN GUARD

(57) The present disclosure relates to a locking means for chin guard, and the locking means for chin guard according to the present disclosure is equipped in a helmet including a helmet body (10) and a chin guard (20) rotatably coupled to the helmet body (10), and includes a first fastening portion (100) formed in any one of the chin guard (20) and the helmet body (10), a second fastening portion (200) formed in the other one of the chin guard (20) and the helmet body (10), and into which the first fastening portion (100) is inserted, and a shutter portion (300) covering the second fastening portion (200), wherein when the first fastening portion (100) is inserted into the second fastening portion (200), the shutter portion (300) opens the second fastening portion (200).

FIG. 3



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Description

[Technical Field]

[0001] The present disclosure relates to a locking means for chin guard.

[Background Art]

[0002] In general, it is mandatory to wear a helmet while driving a two wheeled vehicle with high speed to protect the wearer's head. The helmet has a front open portion to ensure the wearer's frontal field of view. The helmet may include a shield that can selectively open and close the open portion to keep out wind, dust, etc. while driving.

[0003] Meanwhile, the conventional helmet includes a chin guard to protect the wearer's chin as disclosed in the patent literature of the related literatures described below. In this instance, the chin guard may rotate between a closed position and an open position, and when the chin guard is in the closed position, a locker is used to fix the chin guard. However, in the conventional helmet, the locker that fixes the chin guard protrudes from the helmet, so when the chin guard is open, the locker is exposed and this is a factor that makes design look bad.

[RELATED LITERATURES]

[Patent Literature]

[0004] (Patent Literature 1) KR10-2014-0001141 A

[Disclosure]

[Technical Problem]

[0005] The present disclosure is designed to solve the above-described problem, and an aspect of the present disclosure is directed to providing a locking means for chin guard including a shutter portion covering a second fastening portion into which a first fastening portion is inserted, thereby preventing the second fastening portion from being exposed when a chin guard is open.

[Technical Solution]

[0006] A locking means for chin guard according to an embodiment of the present disclosure is equipped in a helmet including a helmet body and a chin guard rotatably coupled to the helmet body, and includes a first fastening portion formed in any one of the chin guard and the helmet body, a second fastening portion formed in the other one of the chin guard and the helmet body, and into which the first fastening portion is inserted, and a shutter portion covering the second fastening portion, wherein when the first fastening portion is inserted into the second fastening portion, the shutter portion opens the second fastening portion.

[0007] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, when the first fastening portion is inserted into the second fastening portion, the shutter portion is pressed by the first fastening portion, and moved in an inward direction of the second fastening portion.

[0008] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, an elastic force is provided to the shutter portion in a direction in which the shutter portion covers the second fastening portion.

[0009] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, the second fastening portion is recessed from one side of an outer surface of the helmet body, and when the shutter portion covers the second fastening portion, an outer surface of the shutter portion is disposed corresponding to said one side of the outer surface of the helmet body.

[0010] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, the first fastening portion includes a pressing portion to press the shutter portion to move the shutter portion in an inward direction of the second fastening portion, and a first coupling portion that is fastened to the second fastening portion.

[0011] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, the pressing portion includes a second coupling portion that is fastened to the second fastening portion.

[0012] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, when one side and the other side of the second fastening portion face each other, the first coupling portion is fastened to one side of the second fastening portion, and the second coupling portion is fastened to the other side of the second fastening portion.

[0013] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, as the

chin guard rotates, the pressing portion presses the shutter portion to move the shutter portion in the inward direction of the second fastening portion, and then the first coupling portion is fastened to the second fastening portion.

[0014] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, the first fastening portion includes a first coupling portion that is fastened to the second fastening portion, and the first coupling portion is rotatably disposed in any one of the chin guard and the helmet body.

[0015] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, before the first coupling portion is inserted into the second fastening portion, the first coupling portion contacts the outer surface of the helmet body and rotates in one direction, and as the first coupling portion is inserted into the second fastening portion, the first coupling portion rotates in other direction.

[0016] Additionally, in the locking means for chin guard according to an embodiment of the present disclosure, an elastic force is provided to the first coupling portion in the other direction.

[0017] Additionally, the locking means for chin guard according to an embodiment of the present disclosure further includes a decoupling means to pull the first coupling portion to rotate the first coupling portion in said one direction.

[0018] The features and advantages of the present disclosure will be apparent from the following detailed description in accordance with the accompanying drawings.

[0019] Prior to the description, it should be understood that the terms or words used in the specification and the appended claims should not be construed as limited to general and dictionary meanings, but rather interpreted based on the meanings and concepts corresponding to the technical spirit of the present disclosure on the basis of the principle that the inventor is allowed to define terms appropriately for the best explanation.

[Advantageous Effects]

[0020] According to the present disclosure, as the shutter portion covers the second fastening portion into which the first fastening portion is inserted, it may be possible to provide aesthetics in design by preventing the second fastening portion from being exposed when the chin guard is open.

[Description of Drawings]

[0021]

FIGS. 1A and 1B are perspective views of a locking means for chin guard according to an embodiment of the present disclosure.

FIGS. 2 to 4 are side views of a locking means for chin guard according to an embodiment of the present disclosure.

FIGS. 5 to 10 are side views showing an operation process of a locking means for chin guard according to an embodiment of the present disclosure.

[Best Mode]

[0022] The objectives, particular advantages and new features of the present disclosure will be apparent from the following detailed description and exemplary embodiments in association with the accompanying drawings. In affixing the reference numbers to the elements of each drawing in the present disclosure, it should be noted that identical elements are given as identical numbers as possible although they are depicted in different drawings. Additionally, the terms such as "first", "second" or the like are used to distinguish one element from another, and the elements are not limited by the terms. Hereinafter, in describing the present disclosure, when it is determined that a certain description of related known technology may unnecessarily obscure the subject matter of the present disclosure, the detailed description is omitted.

[0023] Hereinafter, exemplary embodiments of the present disclosure will be described in detail with reference to the accompanying drawings.

[0024] FIGS. 1A and 1B are perspective views of a locking means for chin guard according to an embodiment of the present disclosure, and FIGS. 2 to 4 are side views of the locking means for chin guard according to an embodiment of the present disclosure.

[0025] As shown in FIGS. 1A to 4, the locking means for chin guard according to this embodiment is equipped in a helmet including a helmet body 10 and a chin guard 20 rotatably coupled to the helmet body 10, and includes a first fastening portion 100 formed in any one of the chin guard 20 and the helmet body 10, a second fastening portion 200 formed in the other one of the chin guard 20 and the helmet body 10 and into which the first fastening portion 100 is inserted, and a shutter portion 300 covering the second fastening portion 200, wherein when the first fastening portion 100 is inserted into the second fastening portion 200, the shutter portion 300 opens the second fastening portion 200.

[0026] Basically, the helmet body 10 plays a role in protecting a wearer's head. The helmet body 10 may be made of a shock absorbing material. For example, the helmet body 10 may include an outer shell of hard synthetic resin and having

high strength, and an absorber disposed in the outer shell, made of an expanded polystyrene (EPS) foam and having proper strength and elasticity. A pad may be present inside the absorber to improve a snug fit.

[0027] Additionally, the chin guard 20 plays a role in protecting the wearer's chin, and may be extended in such an arc shape as a whole that it is disposed in front of the wearer's chin. In this instance, the chin guard 20 is rotatable from a first predetermined position to a second predetermined position with two ends rotatably coupled to two sides (for example, a ratchet 30) of the helmet body 10. For example, the first predetermined position may refer to a position when the chin guard 20 is disposed in front of the wearer's chin (see FIG. 1A, the chin guard 20 is closed), and the second predetermined position may refer to a position when the chin guard 20 is disposed above the helmet body 10 (see FIG. 1B, the chin guard 20 is open). However, the chin guard 20 is not limited merely to be rotatable from the first predetermined position to the second predetermined position, and may be disposed at the rear of the helmet body 10.

[0028] When the chin guard 20 is disposed in front of the wearer's chin (see FIG. 1A, when the chin guard 20 is closed), in order to prevent the chin guard 20 from arbitrarily rotating, a locking means for chin guard is used to fix the chin guard 20 to the helmet body 10, and as shown in FIGS. 1A and 1B, the locking means for chin guard includes the first fastening portion 100, the second fastening portion 200 and the shutter portion 300.

[0029] Here, the first fastening portion 100 is formed in the chin guard 20, and the second fastening portion 200 is formed in the helmet body 10 to allow the first fastening portion 100 to be inserted. Additionally, before the first fastening portion 100 is inserted into the second fastening portion 200, the shutter portion 300 covers the second fastening portion 200, and when the first fastening portion 100 is inserted into the second fastening portion 200, the shutter portion 300 opens the second fastening portion 200.

[0030] As shown in FIGS. 2 and 3, as the chin guard 20 rotates, when the first fastening portion 100 is inserted into the second fastening portion 200, the first fastening portion 100 moves in the inward direction of the second fastening portion 200. In this instance, the first fastening portion 100 presses the shutter portion 300 which in turn, moves in the inward direction of the second fastening portion 200, and as a result, the shutter portion 300 opens the second fastening portion 200. That is, when pressed by the first fastening portion 100, the shutter portion 300 opens the second fastening portion 200, then the first fastening portion 100 is inserted into the open second fastening portion 200, and the first fastening portion 100 is fastened to the second fastening portion 200. As a result, before the first fastening portion 100 is inserted into the second fastening portion 200, the shutter portion 300 covers the second fastening portion 200 (see FIG. 1B), and when the first fastening portion 100 is inserted into the second fastening portion 200, the shutter portion 300 opens the second fastening portion 200 (see FIG. 2), then the first fastening portion 100 is fastened to the open second fastening portion 200 (see FIG. 3).

[0031] Specifically, the first fastening portion 100 may be formed at one side of the chin guard 20. For example, one first fastening portion 100 may be disposed at each of two inner sides of the chin guard 20, totaling two first fastening portions 100 (see FIG. 1A). As shown in FIG. 2, the first fastening portion 100 may include a first coupling portion 110 and a pressing portion 120. In this instance, the pressing portion 120 presses the shutter portion 300 to move the shutter portion 300 in the inward direction of the second fastening portion 200, and includes a protruding portion 125 that protrudes toward the shutter portion 300 to push the shutter portion 300. When the chin guard 20 is rotated to be disposed in front of the chin (when the chin guard 20 is rotated in the closing direction), the protruding portion 125 pushes the shutter portion 300 in the inward direction of the second fastening portion 200. Additionally, the pressing portion 120 may include a second coupling portion 127 that is fastened to the second fastening portion 200. The second coupling portion 127 may have a second hook portion 129 at its end to be fastened to the second fastening portion 200.

[0032] Additionally, the first coupling portion 110 may have a first hook portion 115 at its end to be fastened to the second fastening portion 200. Here, the first coupling portion 110 is disposed at an upper position than the pressing portion 120. Accordingly, when the chin guard 20 rotates to be disposed in front of the chin (when the chin guard 20 rotates in the closing direction), first, the pressing portion 120 may open the shutter portion 300 (see FIG. 2), then the first coupling portion 110 may be fastened to the second fastening portion 200 (see FIG. 3). That is, as the chin guard 20 rotates, the pressing portion 120 presses the shutter portion 300 to move it in the inward direction of the fastening portion (see FIG. 2), then the first coupling portion 110 is fastened to the second fastening portion 200 (see FIG. 3).

[0033] Specifically, the first coupling portion 110 may be rotatably formed in the chin guard 20. For example, the first coupling portion 110 may rotate around a rotation axis 117 fixed to the chin guard 20. As described above, as the first coupling portion 110 rotates with respect to the chin guard 20, when the chin guard 20 rotates to be disposed in front of the chin (when the chin guard 20 rotates in the closing direction), before the first coupling portion 110 is inserted into the second fastening portion 200, the first hook portion 115 may contact the outer surface of the helmet body 10 and rotate in one direction A (see FIG. 2), and as it is inserted into the second fastening portion 200, may rotate in the other direction B (opposite direction to one direction A) (see FIG. 3). That is, before the first coupling portion 110 is inserted into the second fastening portion 200, the first hook portion 115 may rotate in one direction A, and the first hook portion 115 may move into the second fastening portion 200 without being interrupted by one side of the outer surface of the helmet body 10 (the outer side of the second fastening portion 200) (see FIG. 2). Additionally, when the first coupling portion 110 is inserted into the second fastening portion 200, as the first hook portion 115 rotates in the other direction B, the first hook portion 115 may be

fastened to the second fastening portion 200 (see FIG. 3). More specifically, an elastic force may be provided to the first coupling portion 110 in the other direction B. For example, a compression spring 119 may be coupled to the first coupling portion 110, and the elastic force may be provided to the first coupling portion 110 in the other direction B by the compression spring 119. As the elastic force is provided to the first coupling portion 110 in the other direction B, when the chin guard 20 rotates to be disposed in front of the chin (when the chin guard 20 rotates in the closing direction), before the first coupling portion 110 is inserted into the second fastening portion 200, the first hook portion 115 may rotate in one direction A by the application of an external force more than the elastic force when it contacts the outer surface of the helmet body 10 (see FIG. 2). Subsequently, when the first coupling portion 110 is inserted into the second fastening portion 200, the first hook portion 115 may rotate in the other direction B by the elastic force, and accordingly the first hook portion 115 of the first coupling portion 110 may be fastened to the second fastening portion 200 (see FIG. 3). As described above, as the elastic force is provided to the first coupling portion 110 in the other direction B, it may be possible to prevent the first coupling portion 110 from being arbitrarily decoupled from the second fastening portion 200.

[0034] In addition, as shown in FIG. 4, the locking means for chin guard may further include a decoupling means 400 to pull the first coupling portion 110 to rotate it in one direction A. When the first coupling portion 110 is pulled to rotate in one direction A using the decoupling means 400, the first coupling portion 110 may be decoupled from the second fastening portion 200. Specifically, when the first hook portion 115 of the first coupling portion 110 is fastened to the second fastening portion 200, as the elastic force is provided to the first coupling portion 110 in the other direction B (see FIG. 3), the first coupling portion 110 is not decoupled from the second fastening portion 200. In this instance, when the first coupling portion 110 is pulled to rotate in one direction A using the decoupling means 400, the first coupling portion 110 may rotate in one direction A by the application of the external force more than the elastic force (see FIG. 4), and accordingly the first hook portion 115 of the first coupling portion 110 may be decoupled from the second fastening portion 200. Specifically, the decoupling means 400 may include a manipulation portion 410 at the center of the chin guard 20, and a connection portion 420 connecting the manipulation portion 410 to the first coupling portion 110. For example, the manipulation portion 410 may be rotatably coupled to the chin guard 20, and the connection portion 420 may be a wire connecting one side of the manipulation portion 410 to the first coupling portion 110. Accordingly, when the manipulation portion 410 is manipulated to rotate with respect to the chin guard 20, a tensile force may be provided to the connection portion 420, and the first coupling portion 110 may be pulled to rotate in one direction A.

[0035] As shown in FIG. 3, the second fastening portion 200 is formed to allow the first fastening portion 100 to be inserted into the helmet body 10. Here, when the chin guard 20 is disposed in front of the chin (when the chin guard 20 is closed), the second fastening portion 200 may be formed at a location opposite the first fastening portion 100. Specifically, the second fastening portion 200 may be recessed from one side of the outer surface of the helmet body 10. For example, the second fastening portion 200 may be recessed from the outer surface of the helmet body 10 disposed at two sides of the wearer's chin. To match the two first fastening portions 100 each disposed at each of two inner sides of the chin guard 20, one second fastening portion 200 may be disposed on each of two sides of the wearer's chin, totaling two second fastening portions 200. Additionally, the second fastening portion 200 recessed from the outer surface of the helmet body 10 may include a first insertion portion 210 extended in one side direction (upward direction) and a second insertion portion 220 extended in the other side direction (downward direction). In this instance, the first coupling portion 110 (the first hook portion 115) of the first fastening portion 100 may be fastened to one side (the first insertion portion 210) of the second fastening portion 200, and the second coupling portion 127 (the second hook portion 129) of the first fastening portion 100 may be fastened to the other side (the second insertion portion 220) of the second fastening portion 200. As described above, because the first and second coupling portions 110, 127 of the first fastening portion 100 are fastened in two directions (the first and second insertion portions 210, 220) of the second fastening portion 200, it may be possible to completely prevent the first fastening portion 100 from arbitrarily separating from the second fastening portion 200.

[0036] Meanwhile, the helmet body 10 may include a fixing member 18 disposed in one side direction (upward direction) of the second fastening portion 200. Here, the fixing member 18 may be bent to define the first insertion portion 210 to which the first coupling portion 110 (the first hook portion 115) is coupled. Additionally, the exposed outer surface of the fixing member 18 may be the outer surface of the helmet body 10 with which the first coupling portion 110 (the first hook portion 115) comes into contact before the first coupling portion 110 is inserted into the second fastening portion 200 (see FIG. 2). Accordingly, before it is inserted into the second fastening portion 200, the first coupling portion 110 (the first hook portion 115) may contact the outer surface of the fixing member 18 and rotate in one direction A.

[0037] Additionally, as shown in FIG. 3, the helmet body 10 may include a partition 19 disposed in the other side direction (downward direction) of the second fastening portion 200. Here, the partition 19 may be formed to match the second coupling portion 127 (the second hook portion 129) to define the second insertion portion 220 to which the second coupling portion 127 (the second hook portion 129) is coupled.

[0038] Additionally, the shutter portion 300 covers the second fastening portion 200, and when the first fastening portion 100 is inserted into the second fastening portion 200, opens the second fastening portion 200. That is, the shutter portion 300 covers the second fastening portion 200 when the chin guard 20 is open (see FIG. 1B), and when the chin guard 20 is closed, opens the second fastening portion 200 (see FIGS. 2 and 3). Specifically, before the first fastening portion 100 is

inserted into the second fastening portion 200 (when the chin guard 20 is open), the shutter portion 300 is disposed within the second fastening portion 200 and covers the second fastening portion 200 (see FIG. 1B). In contrast, when the first fastening portion 100 is inserted into the second fastening portion 200 (when the chin guard 20 rotates in the closing direction), the shutter portion 300 is pressed by the first fastening portion 100 (the pressing portion 120), and moves in the inward direction of the second fastening portion 200 to open the second fastening portion 200 (see FIGS. 2 and 3). As described above, when the first fastening portion 100 is inserted into the second fastening portion 200, as the shutter portion 300 opens the second fastening portion 200, the first fastening portion 100 may be fastened to the second fastening portion 200. On the other hand, when the shutter portion 300 covers the second fastening portion 200 (when the chin guard 20 is open), the outer surface of the shutter portion 300 may be disposed corresponding to one side of the outer surface of the helmet body 10 (the outer surface of the helmet body 10 adjacent to the second fastening portion 200) (see FIG. 1B). That is, the outer surface of the shutter portion 300 and one side of the outer surface of the helmet body 10 may continuously extend on a plane without a step. Accordingly, when the chin guard 20 is open, the second fastening portion 200 is not exposed and may be recognized as a continuous plane, thereby providing aesthetics in design.

[0039] More specifically, as shown in FIGS. 2 and 3, the shutter portion 300 may include a movement member 310 that is disposed within the second fastening portion 200 and is slidable in the depth direction of the second fastening portion 200, and an elastic body 320 that provides an elastic force to the movement member 310 in the outward direction of the second fastening portion 200. Here, the movement member 310 substantially covers or opens the second fastening portion 200, and the elastic body 320 provides the elastic force to the movement member 310 to allow the movement member 310 to cover the second fastening portion 200 when the chin guard 20 is open. Specifically, before the first fastening portion 100 is inserted into the second fastening portion 200 (when the chin guard 20 is open), the movement member 310 covers the second fastening portion 200 by the elastic force of the elastic body 320. In this instance, the outer surface of the movement member 310 may be disposed corresponding to one side of the outer surface of the helmet body 10 (the outer surface of the helmet body 10 adjacent to the second fastening portion 200) (see FIG. 1B). In contrast, when the first fastening portion 100 is inserted into the second fastening portion 200 (when the chin guard 20 is closed), the movement member 310 may be pressed by the first fastening portion 100 (the pressing portion 120), the elastic body 320 may shrink and the movement member 310 may slide in the inward direction of the second fastening portion 200 to open the second fastening portion 200 (see FIGS. 2 and 3).

[Mode for Invention]

[0040] FIGS. 5 to 10 are side views showing an operation process of the locking means for chin guard according to an embodiment of the present disclosure, and the operation process of the locking means for chin guard according to an embodiment of the present disclosure will be described with reference to FIGS. 5 to 10.

[0041] To begin with, as shown in FIG. 5, when the chin guard 20 is open, the second fastening portion 200 may be covered by the outer surface of the movement member 310 of the shutter portion 300. In this instance, the movement member 310 of the shutter portion 300 may be provided with the elastic force from the elastic body 320, and the outer surface may be disposed corresponding to one side of the outer surface (the outer surface of the helmet body 10 adjacent to the second fastening portion 200) of the helmet body 10.

[0042] Subsequently, as shown in FIGS. 6 and 7, when the chin guard 20 rotates in the closing direction, the pressing portion 120 (the protruding portion 125) of the first coupling portion 110 presses the movement member 310 of the shutter portion 300 in the inward direction of the second fastening portion 200. In this instance, by the pressing of the pressing portion 120 (the protruding portion 125), as the elastic body 320 shrinks, the movement member 310 of the shutter portion 300 may slide in the inward direction of the second fastening portion 200, and accordingly the second fastening portion 200 may be open. At the same time, the first coupling portion 110 of the first fastening portion 100 may contact the outer surface of the helmet body 10 and rotate in one direction A. Accordingly, the first hook portion 115 of the first coupling portion 110 may move in the inward direction of the second fastening portion 200 without being interrupted by one surface of the helmet body 10. In this instance, the compression spring 119 provides the elastic force to the first coupling portion 110, and as the first coupling portion 110 rotates in one direction A, the compression spring 119 is compressed.

[0043] Subsequently, as shown in FIG. 8, when the chin guard 20 is closed, the pressing portion 120 (the protruding portion 125) of the first coupling portion 110 further slides the movement member 310 of the shutter portion 300 in the inward direction of the second fastening portion 200. In this instance, the second coupling portion 127 (the second hook portion 129) of the pressing portion 120 is inserted into the second insertion portion 220 of the second fastening portion 200. At the same time, the first coupling portion 110 of the first fastening portion 100 moves into the second fastening portion 200 and rotates in the other direction B by the elastic force of the compression spring 119, and accordingly the first hook portion 115 is inserted into the first insertion portion 210 of the second fastening portion 200. Accordingly, the first and second coupling portions 110, 127 of the first fastening portion 100 may be fastened in two directions of the second fastening portion 200 (the first and second insertion portions 210, 220).

[0044] Subsequently, as shown in FIG. 9, when the manipulation portion 410 of the decoupling means 400 is

manipulated, the tensile force may be provided to the connection portion 420, and the first coupling portion 110 may rotate in one direction A. In this instance, the first hook portion 115 of the first coupling portion 110 may be separated from the first insertion portion 210 of the second fastening portion 200. Accordingly, the first fastening portion 100 may be decoupled from the second fastening portion 200.

[0045] Subsequently, as shown in FIG. 10, when the chin guard 20 rotates in the opening direction, as the force of the pressing portion 120 (the protruding portion 125) of the first coupling portion 110 applied to the movement member 310 of the shutter portion 300 is removed, the elastic body 320 may expand and the movement member 310 of the shutter portion 300 may slide to cover the second fastening portion 200. In this instance, the outer surface of the movement member 310 of the shutter portion 300 may be disposed corresponding to one side of the outer surface (the outer surface of the helmet body 10 adjacent to the second fastening portion 200) of the helmet body 10.

[0046] Although the foregoing description describes that the first fastening portion 100 is formed in the chin guard 20 and the second fastening portion 200 is formed in the helmet body 10, the scope of protection of the present disclosure is not necessarily limited thereto. Alternatively, the first fastening portion 100 may be formed in the helmet body 10, and the second fastening portion 200 may be formed in the chin guard 20.

[0047] While the present disclosure has been hereinabove described in detail through the specific embodiments, this is provided to describe the present disclosure in detail, and the present disclosure is not limited thereto, and it is obvious that modifications or changes may be made by those having ordinary skill in the art within the technical spirit of the present disclosure.

[0048] Such modifications and changes of the present disclosure fall in the scope of the present disclosure, and the scope of protection of the present disclosure will be apparent from the appended claims.

[Detailed Description of Main Elements]

[0049]

10:	Helmet body	18:	Fixing member
19:	Partition	20:	Chin guard
30:	Ratchet	100:	First fastening portion
110:	First coupling portion	115:	First hook portion
117:	Rotation axis	119:	Compression spring
120:	Pressing portion	125:	Protruding portion
127:	Second coupling portion	129:	Second hook portion
200:	Second fastening portion	210:	First insertion portion
220:	Second insertion portion	300:	Shutter portion
310:	Movement member	320:	Elastic body
400:	Decoupling means	410:	Manipulation portion
420:	Connection portion	A:	One direction
B:	Other direction		

[Industrial Applicability]

[0050] The present disclosure may provide the locking means for chin guard including the shutter portion covering the second fastening portion into which the first fastening portion is inserted, thereby preventing the second fastening portion from being exposed when the chin guard is open.

Claims

1. A locking means for chin guard equipped in a helmet including a helmet body and a chin guard rotatably coupled to the helmet body, the locking means for chin guard comprising:

   a first fastening portion formed in any one of the chin guard and the helmet body;
   a second fastening portion formed in the other one of the chin guard and the helmet body, and into which the first fastening portion is inserted; and
   a shutter portion covering the second fastening portion, wherein when the first fastening portion is inserted into the second fastening portion, the shutter portion opens the second fastening portion.

2. The locking means for chin guard according to claim 1, wherein when the first fastening portion is inserted into the second fastening portion, the shutter portion is pressed by the first fastening portion, and moved in an inward direction of the second fastening portion.

3. The locking means for chin guard according to claim 2, wherein an elastic force is provided to the shutter portion in a direction in which the shutter portion covers the second fastening portion.

4. The locking means for chin guard according to claim 1, wherein the second fastening portion is recessed from one side of an outer surface of the helmet body, and
wherein when the shutter portion covers the second fastening portion, an outer surface of the shutter portion is disposed corresponding to said one side of the outer surface of the helmet body.

5. The locking means for chin guard according to claim 1, wherein the first fastening portion includes:

a pressing portion to press the shutter portion to move the shutter portion in an inward direction of the second fastening portion; and
a first coupling portion that is fastened to the second fastening portion.

6. The locking means for chin guard according to claim 5, wherein the pressing portion includes a second coupling portion that is fastened to the second fastening portion.

7. The locking means for chin guard according to claim 6, wherein when one side and the other side of the second fastening portion face each other, the first coupling portion is fastened to one side of the second fastening portion, and the second coupling portion is fastened to the other side of the second fastening portion.

8. The locking means for chin guard according to claim 5, wherein as the chin guard rotates, the pressing portion presses the shutter portion to move the shutter portion in the inward direction of the second fastening portion, and then the first coupling portion is fastened to the second fastening portion.

9. The locking means for chin guard according to claim 1, wherein the first fastening portion includes a first coupling portion that is fastened to the second fastening portion, and
wherein the first coupling portion is rotatably disposed in any one of the chin guard and the helmet body.

10. The locking means for chin guard according to claim 9, wherein before the first coupling portion is inserted into the second fastening portion, the first coupling portion contacts the outer surface of the helmet body and rotates in one direction, and as the first coupling portion is inserted into the second fastening portion, the first coupling portion rotates in other direction.

11. The locking means for chin guard according to claim 10, wherein an elastic force is provided to the first coupling portion in the other direction.

12. The locking means for chin guard according to claim 11, further comprising:
a decoupling means to pull the first coupling portion to rotate the first coupling portion in said one direction.

FIG. 1A

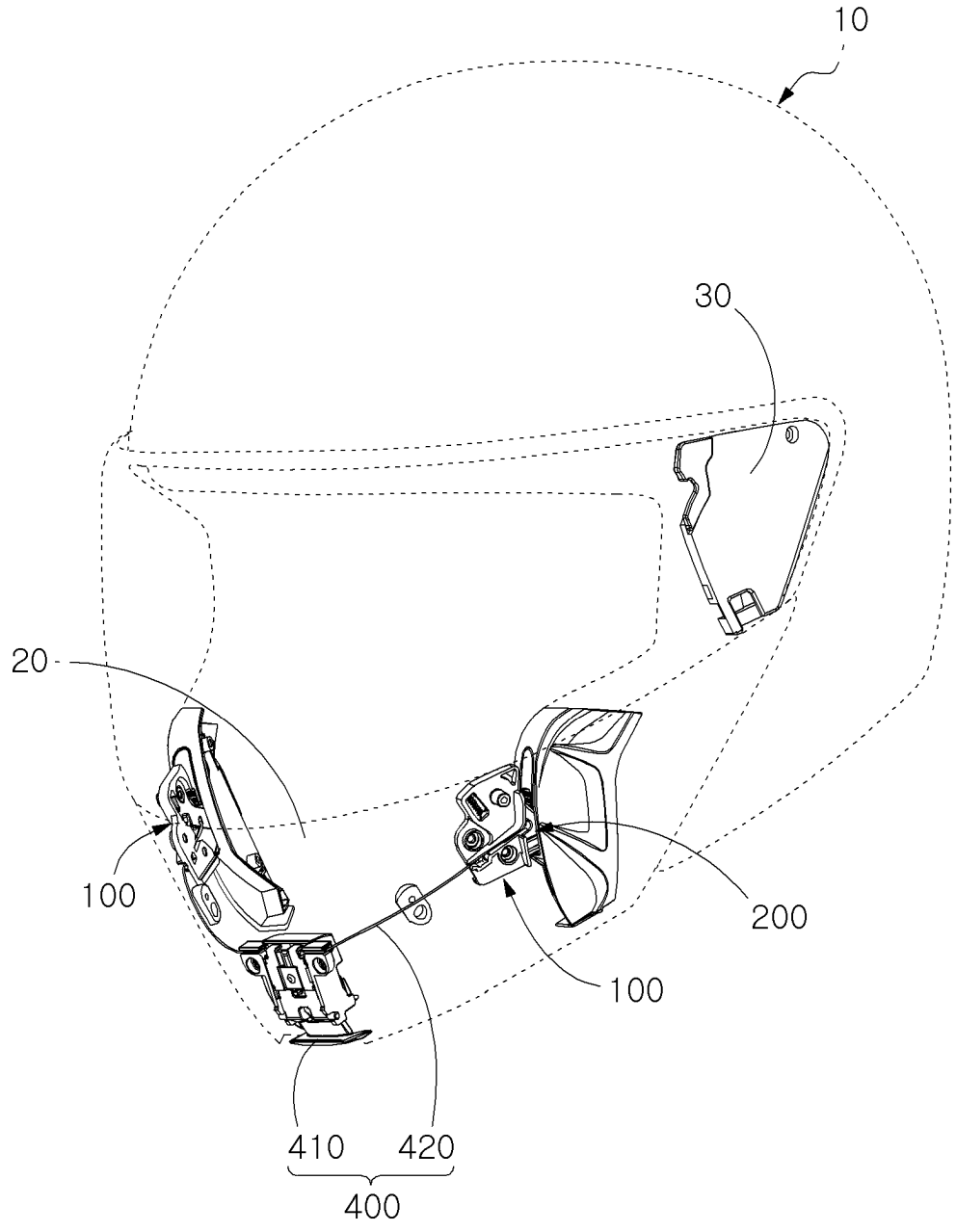

FIG. 1B

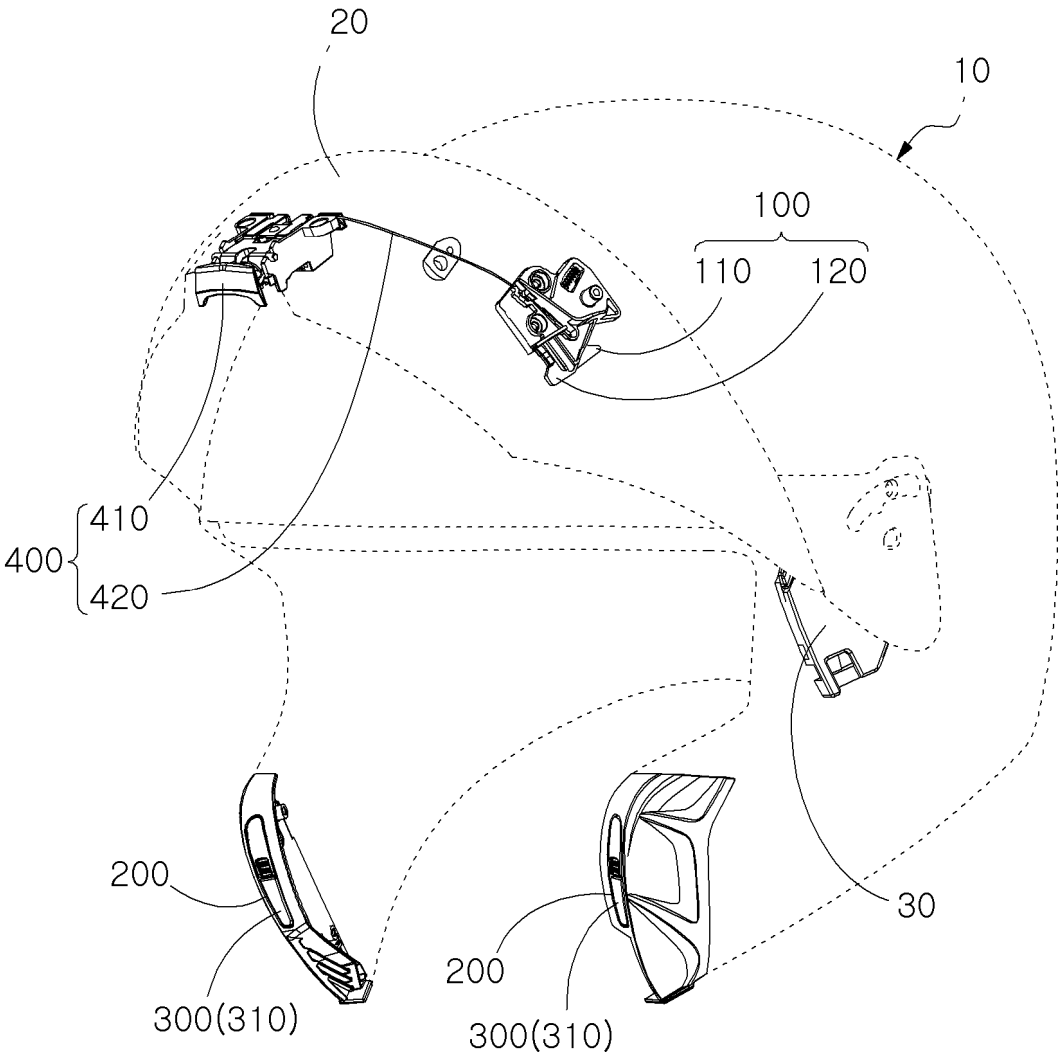

FIG. 2

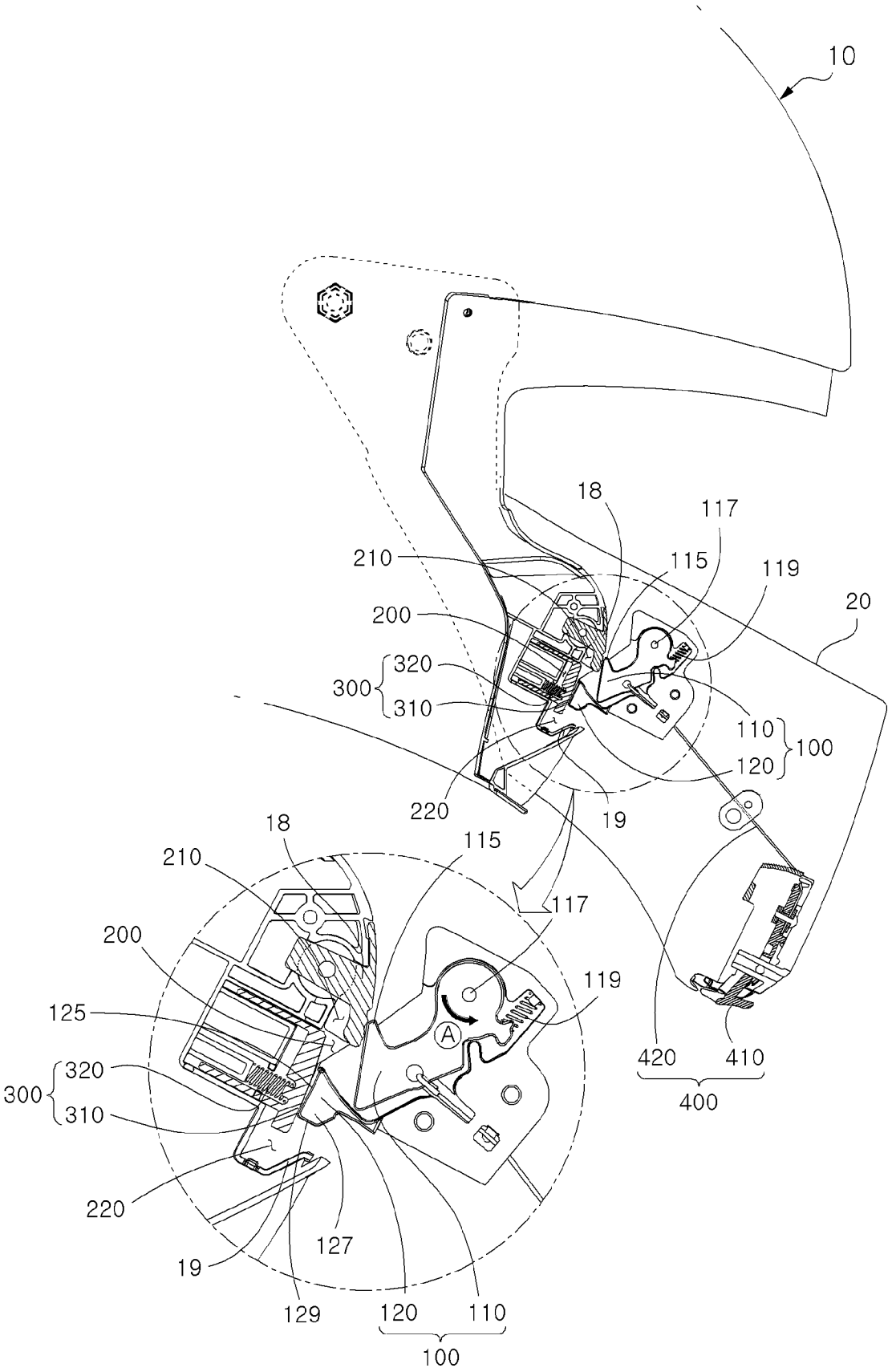
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FIG. 3

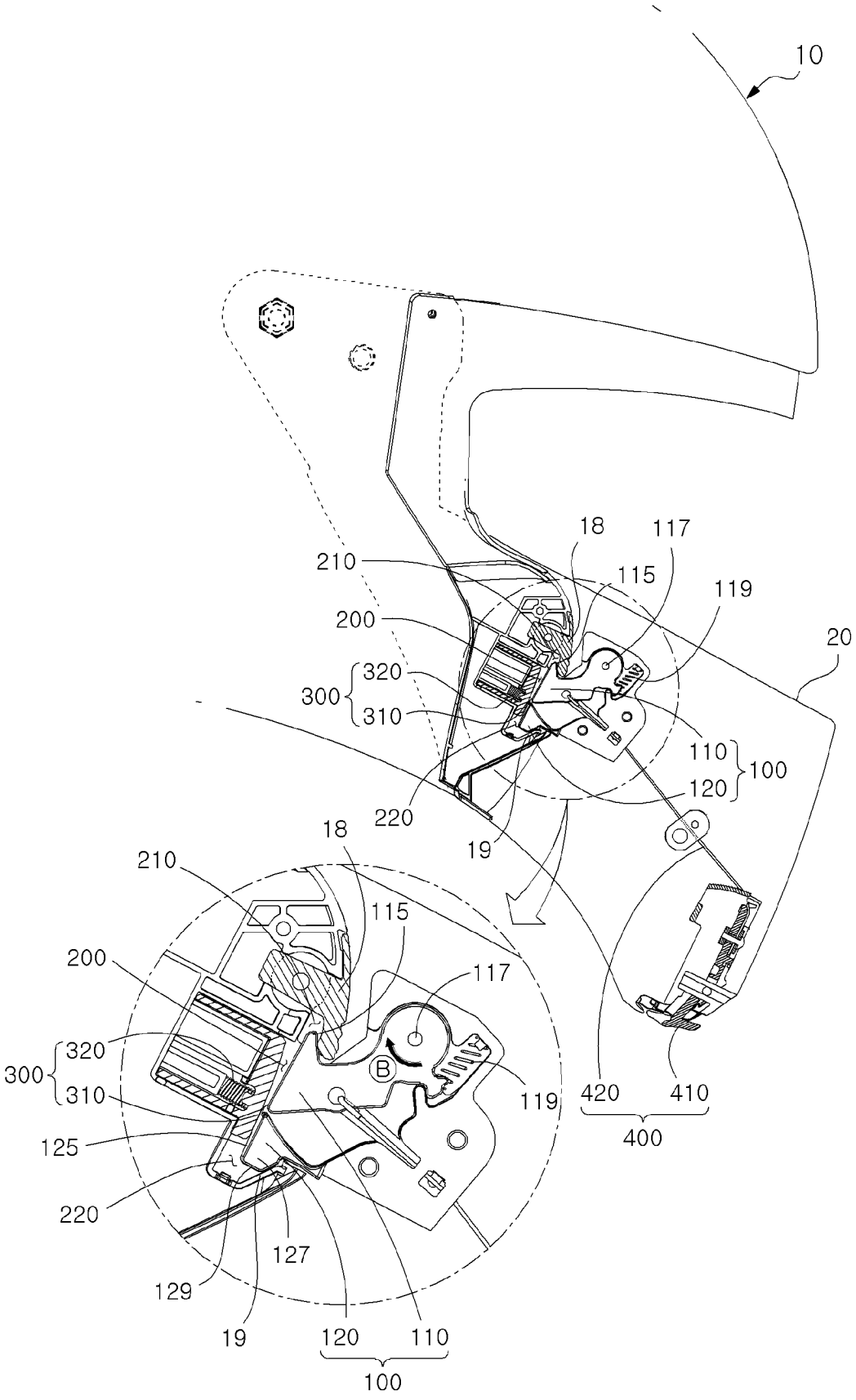
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FIG. 4

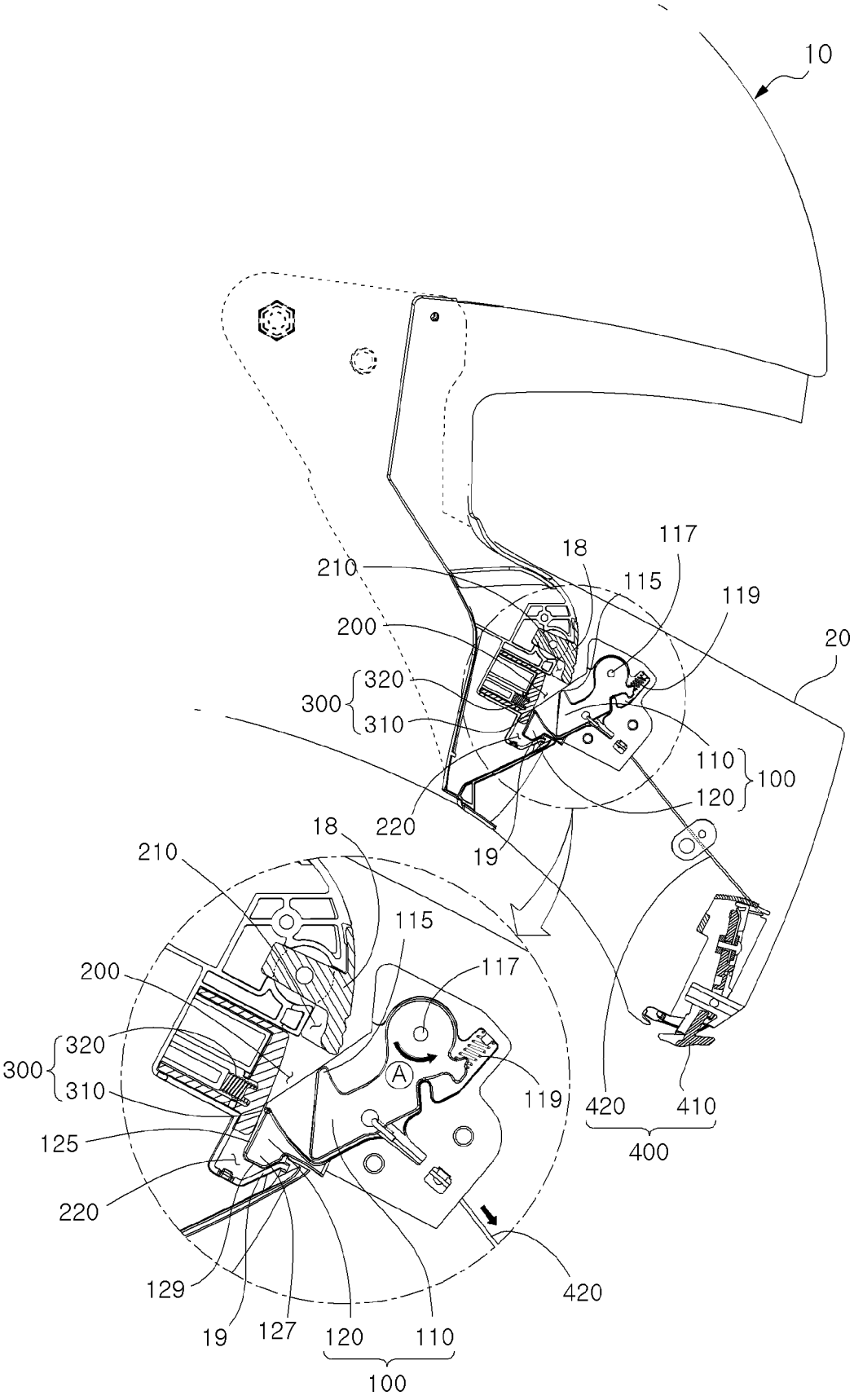
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FIG. 5

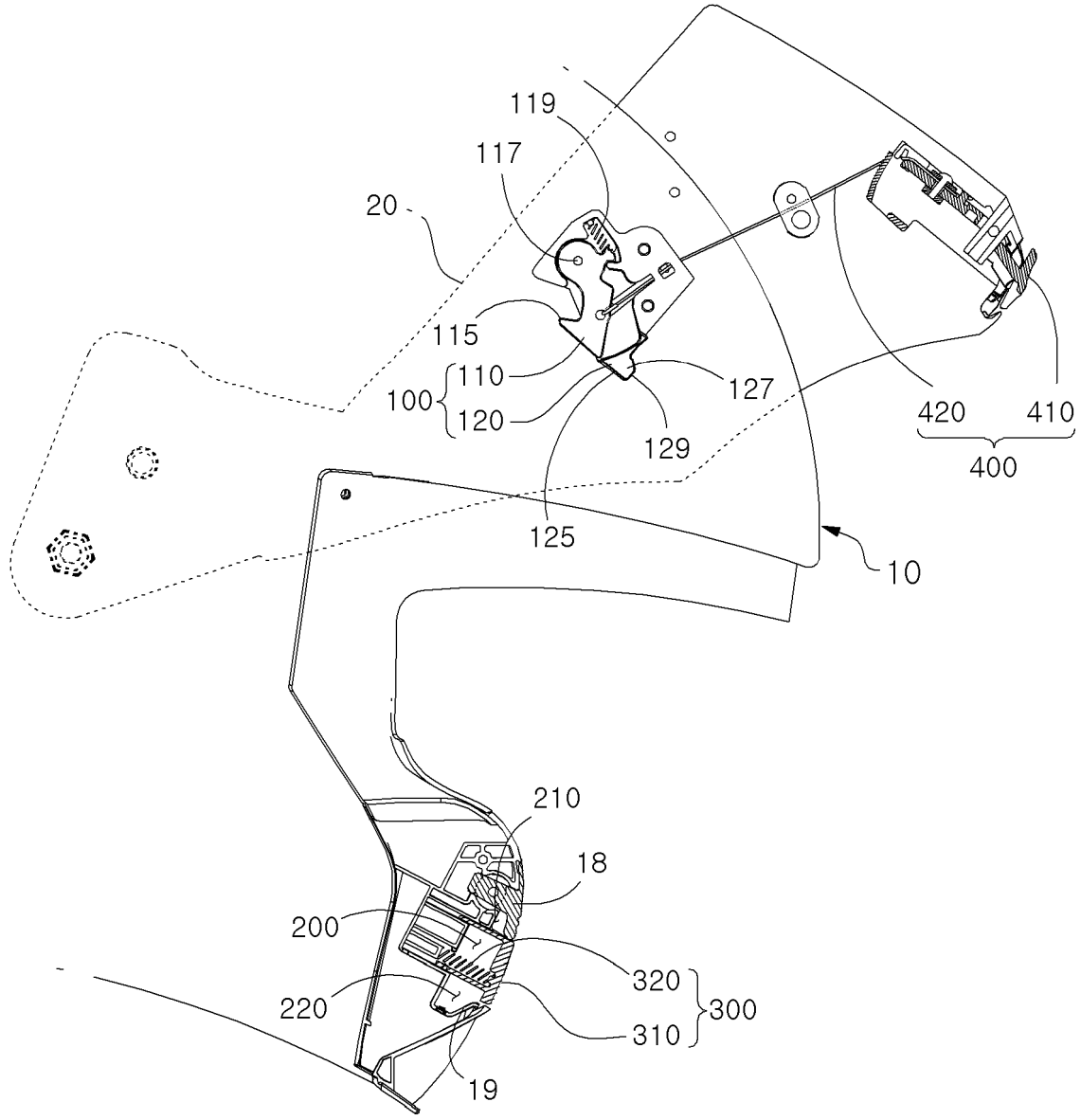
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FIG. 6

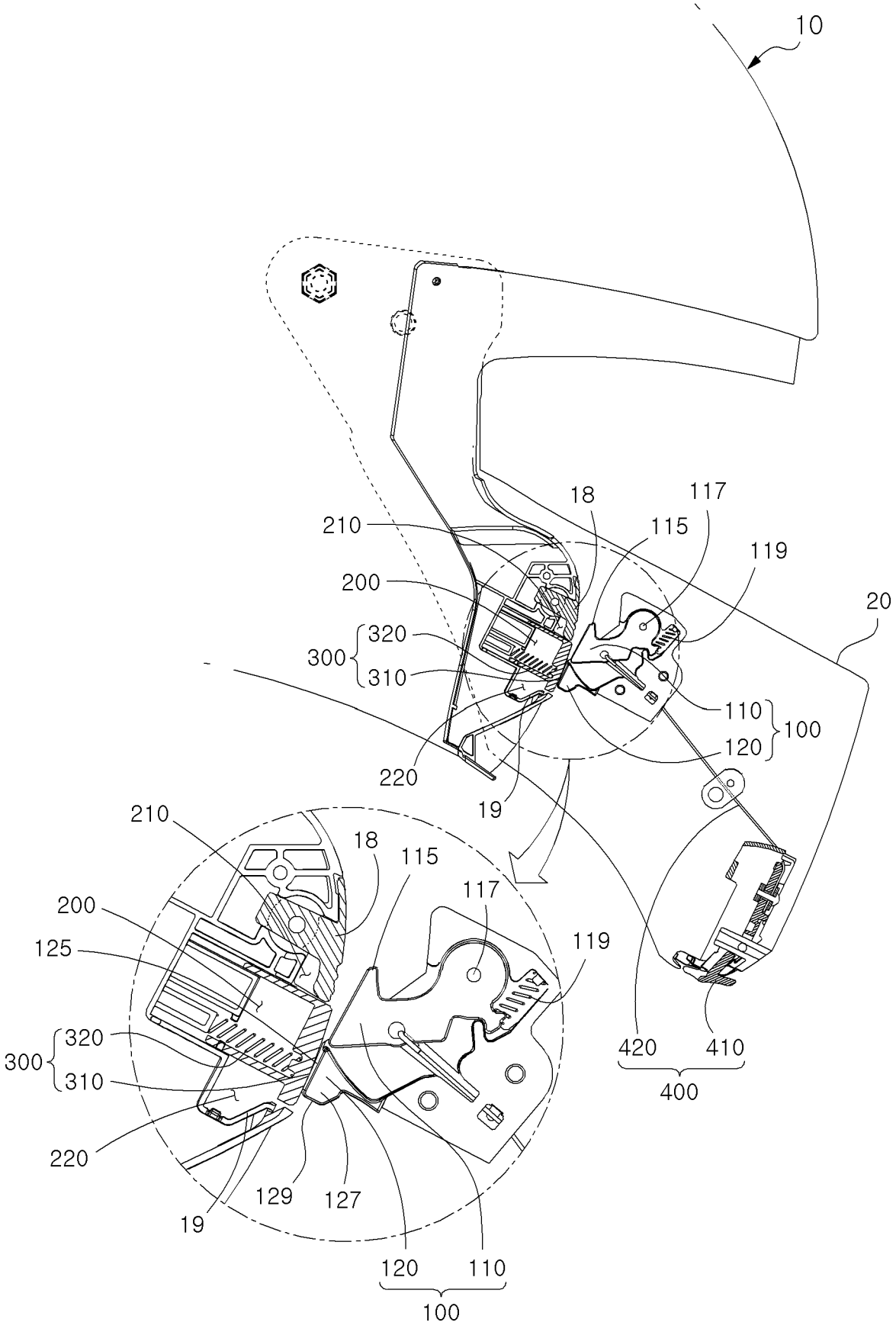
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FIG. 7

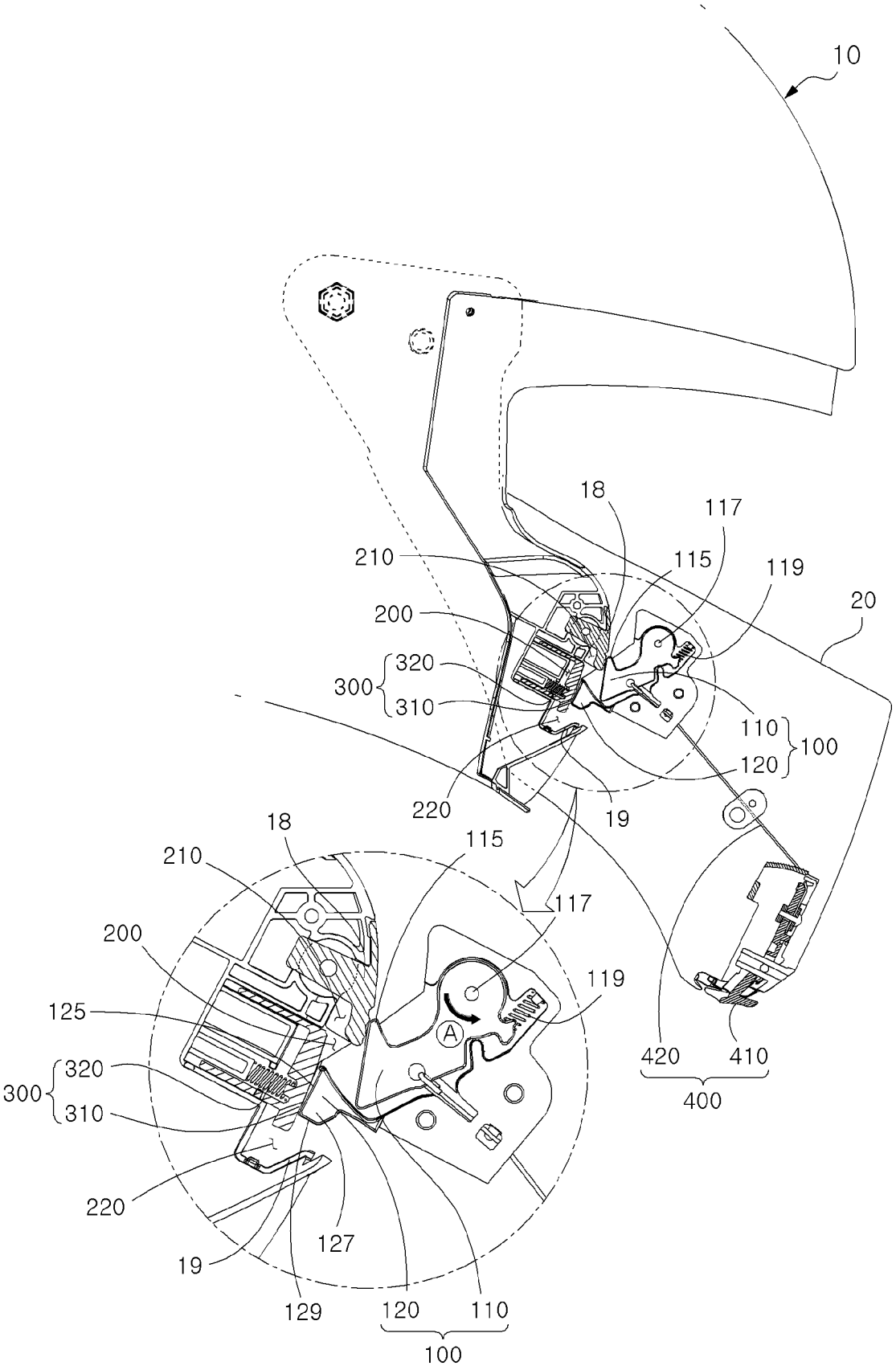
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FIG. 8

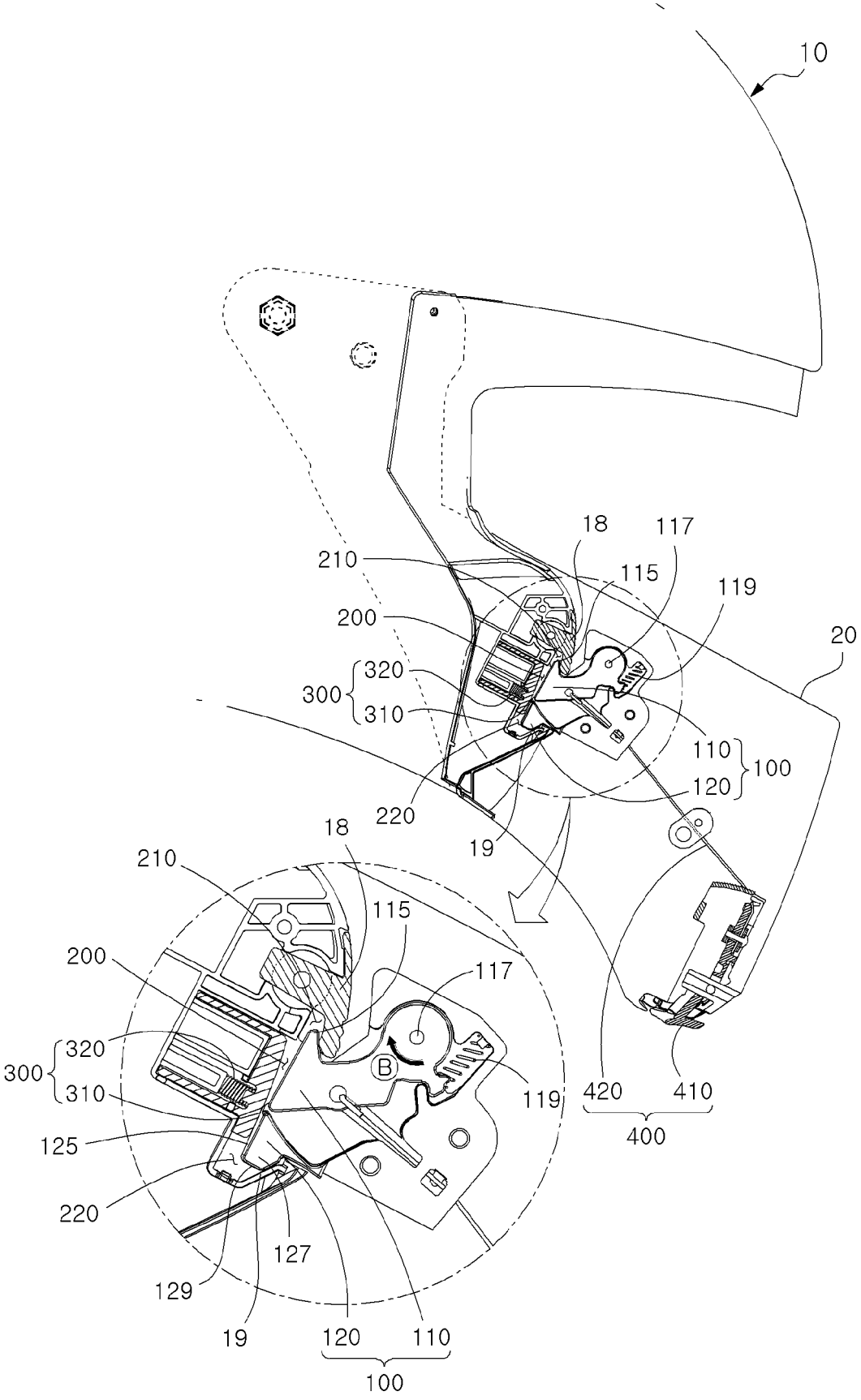
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FIG. 9

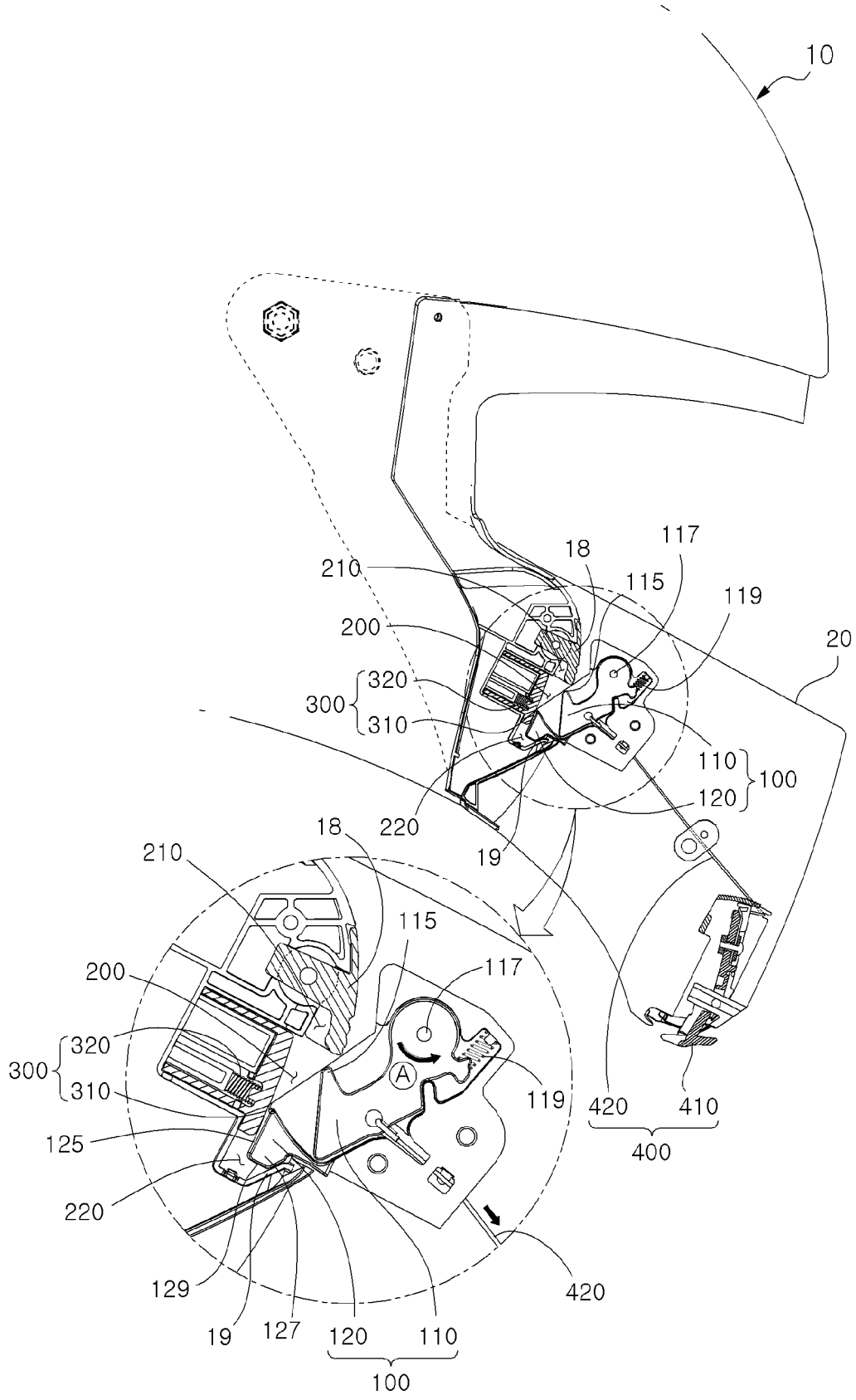
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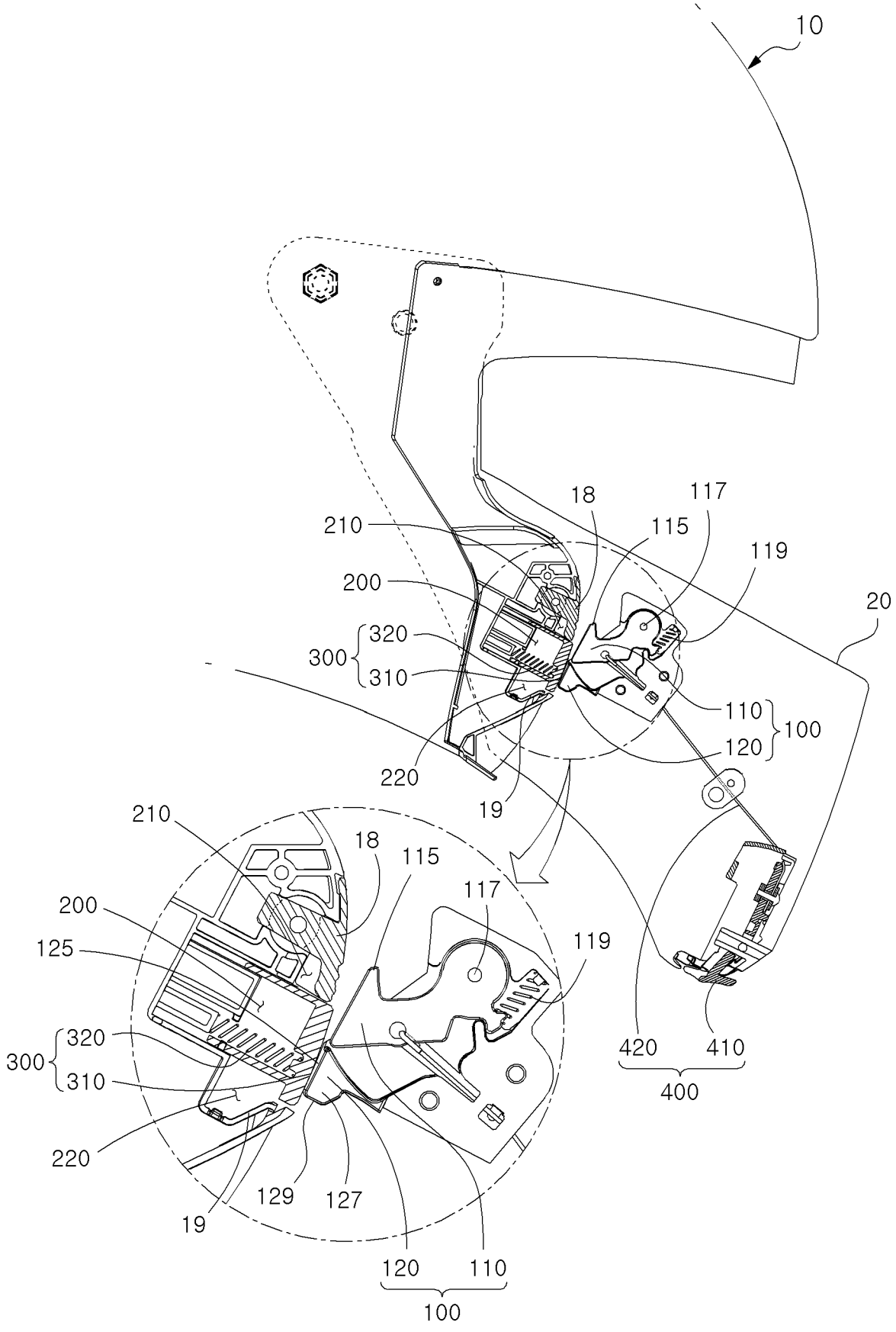
FIG. 10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INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2022/019657

A. CLASSIFICATION OF SUBJECT MATTER

A42B 3/20(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 3/20(2006.01); A42B 3/04(2006.01); A42B 3/08(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) & keywords: 친가드(chin guard), 회동(rotate), 체결(connect), 고정(lock), 셔터(shutter), 삽입(insert)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-2005-0064696 A (HJC CORP.) 29 June 2005 (2005-06-29) See paragraphs [0027] and [0032]-[0033]; and figures 2 and 6-8.	1-12
Y	KR 10-2003-0063792 A (HJC CO., LTD.) 31 July 2003 (2003-07-31) See paragraphs [0032]-[0035]; and figures 1-4.	1-12
Y	KR 10-0750720 B1 (KIDO SPORTS CO., LTD.) 22 August 2007 (2007-08-22) See paragraphs [0032] and [0034]-[0035]; and figures 2-5b.	4-12
A	US 6212689 B1 (LEE, Te-Lung) 10 April 2001 (2001-04-10) See column 2, line 17 – column 3, line 27; and figures 5-14.	1-12
A	US 2014-0338106 A1 (CLERRE.E. S.R.L.) 20 November 2014 (2014-11-20) See paragraphs [0045]-[0058]; and figures 1-4.	1-12

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

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Date of the actual completion of the international search	Date of mailing of the international search report
10 March 2023	**10 March 2023**
Name and mailing address of the ISA/KR **Korean Intellectual Property Office** **Government Complex-Daejeon Building 4, 189 Cheongsa-ro, Seo-gu, Daejeon 35208** Facsimile No. **+82-42-481-8578**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR2022/019657

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
KR 10-2005-0064696 A	29 June 2005	CN 1636475 A	13 July 2005
		EP 1547480 A1	29 June 2005
		US 6892400 B1	17 May 2005
KR 10-2003-0063792 A	31 July 2003	EP 1330966 A2	30 July 2003
		EP 1330966 A3	14 July 2004
KR 10-0750720 B1	22 August 2007	EP 2063725 A1	03 June 2009
		EP 2063725 B1	01 January 2014
		US 2010-0005558 A1	14 January 2010
		US 8458822 B2	11 June 2013
		WO 2008-035927 A1	27 March 2008
US 6212689 B1	10 April 2001	DE 29920802 U1	02 March 2000
US 2014-0338106 A1	20 November 2014	EP 2816917 A2	31 December 2014
		EP 2816917 B1	18 May 2016
		IT BG20110046 U1	23 June 2013
		US 9655398 B2	23 May 2017
		WO 2013-093008 A2	27 June 2013
		WO 2013-093008 A3	27 November 2014

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Patent documents cited in the description

- KR 1020140001141 A **[0004]**