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(54) **HELMET CHIN STRAP DIVIDER**

(57) The present invention relates to a helmet chin strap divider. A helmet chin strap divider according to the present invention comprises: a first support (100) to which a first chin strap (200) extending from the front of the side surface of the helmet (500) is connected; and a second support (300) rotatably coupled to the first support (100) so that a second chin strap (400) extending from the rear of the side surface of the helmet (500) is connected thereto.

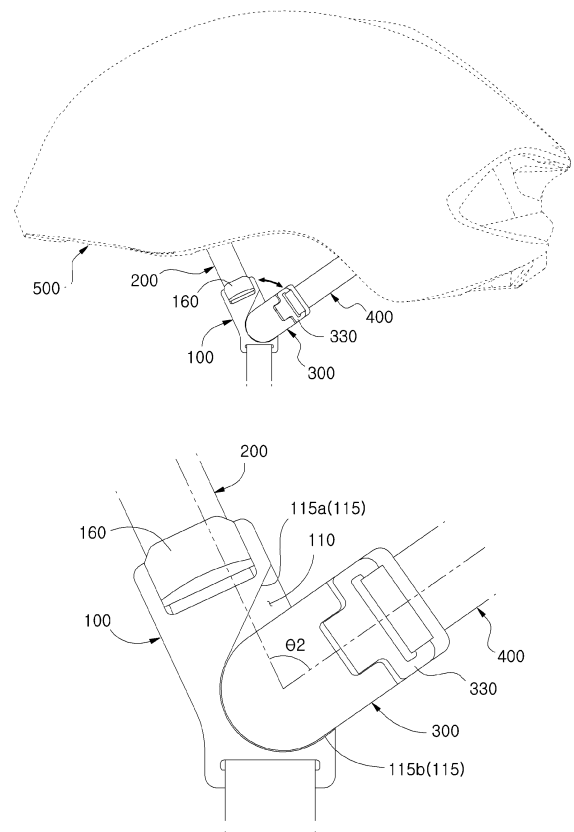


FIG. 3

Description

TECHNICAL FIELD

5 **[0001]** The present invention relates to a helmet chin strap divider.

BACKGROUND ART

10 **[0002]** A helmet is used to protect a wearer's head and is classified into several types like bicycle helmets, ski helmets, motorcycle helmets, and so on according to purpose thereof.

[0003] The helmet has chin straps on both sides thereof so that the chin straps are fastened around a wearer's chin to fix the helmet to the wearer's head. In this case, the chin straps are extended from the front and rear of one side of the helmet and overlaidly collected under the wearer's ear. In conventional practices, the helmet is configured to have the chin strap extended from the front thereof and the chin strap extended from the rear thereof so that the chin straps are overlaidly collected. Accordingly, it is impossible to adjust the length of the chin strap extended from the front of the helmet and the length of the chin strap extended from the rear of the helmet, thereby making hard to correspond to various head shapes and causing interferences between the chin straps and the ear of a wearer having a long face.

15 **[0004]** So as to solve such problems, a divider, which is located at a portion where the chin strap extended from the front of the helmet and the chin strap extended from the rear of the helmet are overlaidly collected, is introduced to allow the lengths of the chin straps to be adjusted relatively to each other, but according to the conventional divider, the chin strap extended from the front of the helmet and the chin strap extended from the rear of the helmet are collected at one position to thus cause an angle therebetween to be drastically varied, so that the chin straps may twist. As the chin straps twist, accordingly, a degree of contact between the chin straps and the wearer's face may be decreased.

25 Prior Art Documents

Patent Documents

30 **[0005]** Patent Document 1 KR10-1617366 B1

Disclosure

Technical Problem

35 **[0006]** Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the related art, and it is an object of the present invention to provide a helmet chin strap divider that is capable of allowing a first support connected to a first chin strap extended from the front of the side surface of a helmet and a second support connected to a second chin strap extended from the rear of the side surface of the helmet in such a manner as to be rotatably coupled to the first support, so that the angle between the first support and the second support can be varied according to the angle between the first chin strap and the second chin strap.

Technical Solution

45 **[0007]** To accomplish the above-mentioned objects, according to the present invention, there is provided a helmet chin strap divider including: a first support connected to a first chin strap extended from the front of the side surface of a helmet; and a second support rotatably coupled to the first support in such a manner as to be connected to a second chin strap extended from the rear of the side surface of the helmet.

[0008] In the helmet chin strap divider according to the present invention, further, if the length of the first chin strap from the helmet to the first support is shortened or if the length of the second chin strap from the helmet to the second support is shortened, the angle between the first chin strap and the second chin strap increases.

[0009] In the helmet chin strap divider according to the present invention, further, the second support is rotatably coupled to the first support within a given angle with respect to the first support.

55 **[0010]** In the helmet chin strap divider according to the present invention, further, the first support has a concave portion formed on one surface thereof in such a manner as to form a step therefrom, and the second support is coupled to the concave portion, so that if the second support has a given angle with respect to the first support, the side surface of the second support comes into contact with the step.

[0011] In the helmet chin strap divider according to the present invention, further, one of the first support and the second support has a protrusion portion protruding therefrom, and the other has an insertion hole adapted to insert the

protrusion portion thereinto.

[0012] In the helmet chin strap divider according to the present invention, further, the protrusion portion has hooks provided on the end thereof in such a manner as to be locked onto the insertion hole.

[0013] In the helmet chin strap divider according to the present invention, further, the protrusion portion protrudes to the form of a ring shape to form an empty space at the center thereof in such a manner as to be divided into one or more divided sections, and the second support includes protection means having a protection body having a shape of a cylinder inserted into the empty space of the protrusion portion and protection protrusions protruding from the protection body in such a manner as to be inserted into the divided sections.

[0014] In the helmet chin strap divider according to the present invention, further, the second support is coupled to one surface of the first support, and the first chin strap is extended along the other surface of the first support.

[0015] In the helmet chin strap divider according to the present invention, further, the first support has a first guide portion formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap, a first through portion formed at the inside of the first guide portion in a thickness direction thereof, and a second through portion formed on the other end thereof in the thickness direction, so that after the first chin strap passes through the first guide portion and the first through portion sequentially, the first chin strap is extended along the other surface of the first support and next passes through the second through portion.

[0016] The helmet chin strap divider according to the present invention further includes a locker provided on the first support to fix the first chin strap to the first support.

[0017] In the helmet chin strap divider according to the present invention, further, the first support has the first guide portion formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap, and the locker is located on the first guide portion and rotatably coupled to the first support, so that if the locker has a first angle with respect to the first support, the locker pressurizes the first chin strap, and if the locker has a second angle with respect to the first support, the locker allows the first chin strap to move.

[0018] In the helmet chin strap divider according to the present invention, further, the locker is coupled to the first support by means of a rotating shaft thereof and includes a first surface having a first distance from the rotating shaft and a second surface having a second distance closer than the first distance from the rotating shaft, so that if the locker has the first angle with respect to the first support, the first surface pressurizes the first chin strap, and if the locker has the second angle with respect to the first support, the second surface allows the first chin strap to move.

[0019] The helmet chin strap divider according to the present invention further includes a holder provided on the second support to fix the second chin strap to the second support.

[0020] In the helmet chin strap divider according to the present invention, further, the second support has a first bar formed on one end thereof and a third through portion formed at the inside of the first bar in a thickness direction thereof, and the holder is located on the first bar and the third through portion and rotatably coupled to the second support, and the holder has a second bar formed on the end thereof and a fourth through portion formed at the inside of the second bar in a thickness direction thereof, so that the second chin strap passes through the space between the first bar and the second bar, and if the holder rotates with respect to the second support to allow the second bar to be close to the first bar, the second chin strap is pressurized between the second bar and the first bar.

[0021] In the helmet chin strap divider according to the present invention, further, the second chin strap passes through the third through portion and the fourth through portion sequentially, cover the second bar, and passes through the third through portion, so that if the second chin strap positioned from the helmet to the second support is pulled, the holder rotates to allow the second bar to be close to the first bar, and the second chin strap is thus pressurized between the second bar and the first bar.

[0022] In the helmet chin strap divider according to the present invention, further, the first chin strap has marks provided at regular intervals thereon so as to check the relative position of the first support thereto.

[0023] In the helmet chin strap divider according to the present invention, further, the first support has a rotation-limiting member protruding from one surface thereof, and if the second support has a given angle with respect to the first support, the side surface of the second support comes into contact with the rotation-limiting member.

[0024] In the helmet chin strap divider according to the present invention, further, the protrusion portion is coupled to a screw, and the screw or a washer fitting around the screw is locked onto the insertion hole.

[0025] In the helmet chin strap divider according to the present invention, further, the first support and the second support are rotatably coupled to each other around a fastening shaft.

[0026] Objects, characteristics and advantages of the present invention will be more clearly understood from the detailed description as will be described below and the attached drawings.

[0027] Further, the terms used in this application are used to only describe specific exemplary embodiments, but may be varied under the intention or regulation of a user or operator. Therefore, they should be defined on the basis of the whole scope of the present invention.

Advantageous Effects

[0028] According to the present invention, the helmet chin strap divider is configured to allow the first support connected to the first chin strap extended from the front of the side surface of the helmet and the second support connected to the second chin strap extended from the rear of the side surface of the helmet in such a manner as to be rotatably coupled to the first support, so that even if the helmet chin strap divider is located at an arbitrary position, the first support and the second support rotate according to the angle between the first chin strap and the second chin strap to thus prevent the first chin strap and the second chin strap from twisting.

BRIEF DESCRIPTION OF DRAWINGS

[0029]

FIG. 1 is a perspective view showing a helmet to which a helmet chin strap divider according to an embodiment of the present invention is applied.

FIGS. 2 and 3 are plan views showing operating processes of the helmet chin strap divider according to the present invention.

FIGS. 4a and 5a are perspective views showing the helmet chin strap divider according to the present invention.

FIGS. 4b and 5b are exploded perspective views showing the helmet chin strap divider according to the present invention.

FIGS. 6a and 6b are sectional views taken along the line A-A' of FIG. 4a.

FIGS. 7a and 7b are sectional views taken along the line B-B' of FIG. 4a.

FIG. 8 is a perspective view showing first and second chin straps applied to the helmet chin strap divider according to the present invention.

FIG. 9 is a perspective view showing a helmet chin strap divider according to another embodiment of the present invention.

FIG. 10 is a plan view showing the helmet chin strap divider according to another embodiment of the present invention.

FIGS. 11 and 12 are sectional views showing a helmet chin strap divider according to yet another embodiment of the present invention.

Best Mode for Invention

[0030] Objects, characteristics and advantages of the present invention will be more clearly understood from the detailed description as will be described below and the attached drawings wherein the corresponding parts in the embodiments of the present invention are indicated by corresponding reference numerals and the repeated explanation on the corresponding parts will be avoided. Terms, such as the first, the second, etc., may be used to describe various elements, but the elements should not be restricted by the terms. The terms are used to only distinguish one element from the other element. If it is determined that the detailed explanation on the well known technology related to the present invention makes the scope of the present invention not clear, the explanation will be avoided for the brevity of the description.

[0031] Now, embodiments of the present invention will be in detail described with reference to attached drawings.

[0032] FIG. 1 is a perspective view showing a helmet to which a helmet chin strap divider according to an embodiment of the present invention is applied, and FIGS. 2 and 3 are plan views showing operating processes of the helmet chin strap divider according to the present invention.

[0033] As shown in FIGS. 1 to 3, a helmet chin strap divider according to the present invention includes a first support 100 connected to a first chin strap 200 extended from the front of the side surface of a helmet 500; and a second support 300 rotatably coupled to the first support 100 in such a manner as to be connected to a second chin strap 400 extended from the rear of the side surface of the helmet 500.

[0034] The helmet chin strap divider according to the present invention serves to overlaidly collect the first chin strap 200 extended from the front of the side surface of the helmet 500 and the second chin strap 400 extended from the rear of the side surface of the helmet 500 under a wearer's ear. In this case, the helmet chin strap divider according to the present invention includes the first support 100 connected to the first chin strap 200 and the second support 300 connected to the second chin strap 400.

[0035] Basically, the first support 100 and the second support 300 are rotatably coupled to each other. In this case, as shown in FIGS. 2 and 3, a relative position of the first support 100 to the first chin strap 200 is adjustable by a locker 160, and a relative position of the second support 300 to the second chin strap 400 is adjustable by a holder 330. That is, it is possible to adjust the length of the first chin strap 200 from the helmet 500 to the first support 100 and to adjust the length of the second chin strap 400 from the helmet 500 to the second support 300. Like this, if the length of the first

chin strap 200 or the length of the second chin strap 400 is adjusted, the angle between the first chin strap 200 and the second chin strap 400 becomes varied to allow the angle between the first support 100 and the second support 300 to be also varied. For example, if the length of the first chin strap 200 from the helmet 500 to the first support 100 is shortened or if the length of the second chin strap 400 from the helmet 500 to the second support 300 is shortened (See the change from FIG.2 to FIG.3), the angle between the first chin strap 200 and the second chin strap 400 increases to thus allow the angle between the first support 100 and the second support 300 to increase (from θ_1 to θ_2). Contrarily, if the length of the first chin strap 200 from the helmet 500 to the first support 100 is long or if the length of the second chin strap 400 from the helmet 500 to the second support 300 is long (See the change from FIG.3 to FIG.2), the angle between the first chin strap 200 and the second chin strap 400 decreases to thus allow the angle between the first support 100 and the second support 300 to decrease (from θ_2 to θ_1). As mentioned above, even if the angle between the first chin strap 200 and the second chin strap 400 become varied according to the length of the first chin strap 200 or the length of the second chin strap 400, the angle between the first support 100 and the second support 300 can be varied correspondingly to the varied angle between the first chin strap 200 and the second chin strap 400, thereby preventing the first chin strap 200 and the second chin strap 400 from twisting.

[0036] The first and second supports 100 and 300 will be in specific described with reference to FIGS.4a to 5b. One surface of the first support 100 is disposed to face one surface of the second support 300. The second support 300 has a protrusion portion 310 protruding from one surface thereof, and the first support 100 has an insertion hole 120 penetrated formed in a thickness direction thereof in such a manner as to insert the protrusion portion 310 thereinto (See FIG.5b). That is, the protrusion portion 310 of the second support 300 is inserted into the insertion hole 120 of the first support 100 so that the first support 100 and the second support 300 can be rotatably coupled to each other. In specific, the protrusion portion 310 has hooks 315 provided on the end thereof, and if the protrusion portion 310 passes through the insertion hole 120, the hooks 315 of the protrusion portion 310 are locked onto the end periphery of the insertion hole 120 (See FIG.5a). Like this, the hooks 315 of the protrusion portion 310 are locked onto the insertion hole 120, thereby preventing the first support 100 and the second support 300 from being arbitrarily separated from each other. In the above explanation, on the other hand, the protrusion portion 310 is formed on the second support 300 and the insertion hole 120 is formed on the first support 100. However, of course, the protrusion portion 310 may be formed on the first support 100 and the insertion hole 120 may be formed on the second support 300.

[0037] In addition, protection means 320 is inserted into the protrusion portion 310. In this case, the protrusion portion 310 protrudes to the form of a ring shape to form an empty space 317 at the center thereof in such a manner as to be divided into one or more divided sections 319 (See FIG.5b). In this case, the protection means 320 includes a protection body 323 having a shape of a cylinder inserted into the empty space 317 of the protrusion portion 310 and protection protrusions 325 protruding radially from the protection body 323 in such a manner as to be inserted into the divided sections 319. Accordingly, the protection body 323 is inserted into the empty space 317 of the protrusion portion 310, and the protection protrusions 325 are inserted into the divided sections 319, so that the protection means 320 is inserted into the protrusion portion 310. The protection means 320 prevents the protrusion portion 310, especially the hooks 315 from being broken and further prevents the hooks 315 from being arbitrarily separated from the insertion hole 120.

[0038] On the other hand, the second support 300 is rotatably coupled to the first support 100 only within a given angle with respect to the first support 100. In specific, the first support 100 has a concave portion 110 formed on one surface thereof in such a manner as to form a step 115 therefrom (See FIG.4b). Further, the second support 300 is rotatably coupled to the concave portion 110, and when the second support 300 has a given angle with respect to the first support 100, the side surface of the second support 300 comes into contact with the step 115 to prevent the second support 300 from rotating anymore. That is, the rotating angle of the second support 300 can be limited through the step 115 formed on the first support 100. In more specific, the step 115 includes a first step 115a facing one side surface of the second support 300 and a second step 115b facing the other side surface of the second support 300. In this case, if the second support 300 rotates in one direction (See FIG.2), one side surface of the second support 300 comes into contact with the first step 115a to limit the rotation of the second support 300, and if the second support 300 rotates in the other direction (See FIG.3), the other side surface of the second support 300 comes into contact with the second step 115b to limit the rotation of the second support 300. On the other hand, for example, the rotatable angle of the second support 300 with respect to the first support 100 is in the range of 50 to 80°. However, the rotatable angle in the range of 50 to 80° is just exemplary, and it may be freely changed, without being limited thereto.

[0039] Additionally, the first support 100 has the locker 160 for fixing the first chin strap 200 thereto (See FIGS.2 and 3). In specific, as shown in FIGS.4a and 4b, the first support 100 has a first guide portion 130 formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap 200. Further, the locker 160 is located on the first guide portion 130 and rotatably coupled to the first support 100. Accordingly, as shown in FIG.6a, when the locker 160 has a first angle with respect to the first support 100, while rotating with respect to the first support 100, the locker 160 pressurizes the first chin strap 200 to allow the first chin strap 200 to be fixed to the first support 100. Contrarily, as shown in FIG.6b, when the locker 160 has a second angle with respect to the first support 100, the locker 160 does not pressurize the first chin strap 200 to allow the first chin strap 200 to be freely moved, without being

fixed to the first support 100. For example, when the locker 160 has an angle of 180° with respect to the first support 100 (See FIG.6a), the locker 160 can pressurize the first chin strap 200, and when the locker 160 has an angle of 90° with respect to the first support 100 (See FIG.6b), the locker 160 cannot pressurize the first chin strap 200. In more specific, when the locker 160 is coupled to the first support 100 through a rotating shaft 163, the locker 160 is configured to have two surfaces 165 and 167 having different distances from the rotating shaft 163, and as the locker 160 rotates, it can pressurize the first chin strap 200 or cannot pressurize the first chin strap 200. That is, the locker 160 includes the first surface 165 having a first distance from the rotating shaft 163 and the second surface 167 having a second distance closer than the first distance from the rotating shaft 163 (See the enlarged portions of FIGS.6a and 6b). When the locker 160 has the first angle (for example, 180°) with respect to the first support 100 (See the enlarged portion of FIG.6a), the first surface 165 having a relatively long distance from the rotating shaft 163 pressurizes the first chin strap 200, together with the first guide portion 130. Contrarily, when the locker 160 has the second angle (for example, 90°) with respect to the first support 100 (See the enlarged portion of FIG.6b), the second surface 167 having a relatively short distance from the rotating shaft 163 does not pressurize the first chin strap 200, together with the first guide portion 130. As a result, the locker 160 rotates with respect to the first support 100 by a wearer to fix the first chin strap 200 to the first support 100 or to freely move the first chin strap 200 so that the first chin strap 200 is adjusted in length. On the other hand, the first support 100 has a stopper 170 for stopping the locker 160 when the locker 160 has the first angle (for example, 180°) with respect to the first support 100 (See FIG.6a). In this case, the stopper 170 and the first guide portion 130 are arranged side by side, and the first chin strap 200 passes through the space between the stopper 170 and the first guide portion 130.

[0040] Further, the second support 300 has the holder 330 for fixing the second chin strap 400 thereto (See FIGS.2 and 3). In specific, as shown in FIGS.4a and 4b, the second support 300 has a first bar 340 formed on one end thereof and a third through portion 345 formed at the inside of the first bar 340 in a thickness direction thereof. Further, the holder 330 has a second bar 350 formed on the end thereof and a fourth through portion 355 formed at the inside of the second bar 350 in a thickness direction thereof. The holder 330 is rotatably coupled to the second support 300 on the first bar 340 and the third through hole 345. In this case, as shown in FIGS.7a and 7b, the second chin strap 400 passes through the space between the first bar 340 of the second support 300 and the second bar 350 of the holder 330, and if the holder 330 rotates with respect to the second support 300 to allow the second bar 350 to be close to the first bar 340 (See FIG.7a), the second chin strap 400 is fixedly pressurized between the second bar 350 and the first bar 340. In more specific, the second chin strap 400 passes through the third through portion 345 and the fourth through portion 355, cover the second bar 350, and passes through the third through portion 345. In this case, if the second chin strap 400 (before first passing through the third through portion 345) positioned from the helmet 500 to the second support 300 is pulled, the holder 330 rotates to allow the second bar 350 to be close to the first bar 340, and accordingly, the second chin strap 400 is pressurizedly fixed between the second bar 350 and the first bar 340. Generally, if the chin strap is fastened, as shown in FIG.7a, a given tension is applied to the second chin strap 400 positioned from the helmet 500 to the second support 300, and through the tension of the second chin strap 400, accordingly, the second bar 350 is pulled toward the first bar 340, so that the second chin strap 400 is pressurizedly fixed between the second bar 350 and the first bar 340. Contrarily, as shown in FIG.7b, if the holder 330 rotates with respect to the second support 300 to allow the second bar 350 to be distant from the first bar 340, the second chin strap 400 is not pressurized between the second bar 350 and the first bar 340 and is thus freely movable. As the holder 330 rotates with respect to the second support 300 to allow the second bar 350 to be distant from the first bar 340, the second chin strap 400 is adjustable in length.

[0041] When the second support 300 is coupled to one surface of the first support 100, on the other hand, the other surface of the first support 100 faces the wearer's skin. Accordingly, as shown in FIG.8, the first chin strap 200 is extended along the other surface of the first support 100 so as to prevent the first support 100 made of plastic from coming into direct with the wearer's skin. As a result, the first chin strap 200, not the other surface of the first support 100, comes into contact with the wearer's skin, thereby enabling the wearer's sweat to be absorbed to the first chin strap 200. So as to allow the first chin strap 200 to be extended along the other surface of the first support 100, the first support 100 includes the first guide portion 130, a first through portion 140, and a second through portion 150. In specific, the first support 100 has the first guide portion 130 formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap 200 and the first through portion 140 formed at the inside of the first guide portion 130 in a thickness direction thereof. Further, the first support 100 has the second through portion 150 formed on the other end thereof in a thickness direction thereof. After the first chin strap 200 passes through the first guide portion 130 and the first through portion 140 sequentially, accordingly, the first chin strap 200 is extended along the other surface of the first support 100 and next passes through the second through portion 150. That is, the first chin strap 200 passes through the first through portion 140 and the second through portion 150 formed on both ends of the first support 100, and as a result, the first chin strap 200 is connected to the first support 100 and simultaneously extended along the other surface of the first support 100.

[0042] Further, as shown in FIG.8, the first chin strap 200 has marks 210 provided at regular intervals thereon so as to check the relative position of the first support 100 with respect to the first chin strap 200. For example, the first chin

strap 200 has dot-shaped marks 210 provided at regular intervals thereon so that the relative position of the first support 100 with respect to the first chin strap 200 can be checked by the wearer. Accordingly, the first support 100 can be adjusted in position, while the marks 210 are checked by the wearer, thereby adjusting the length of the first chin strap 200 positioned from the helmet 500 to the first support 100.

Mode for Invention

[0043] FIG.9 is a perspective view showing a helmet chin strap divider according to another embodiment of the present invention, and FIG.10 is a plan view showing the helmet chin strap divider according to another embodiment of the present invention. In one embodiment of the present invention as mentioned above, the second support 300 is rotatable only within a given angle with respect to the first support 100 by means of the stepped protrusion 115 (See FIG.4b), but of course, the stepped protrusion 115 may not be necessarily needed. For example, as shown in FIGS.9 and 10, the first support 100 has a rotation-limiting member 117 protruding from one surface thereof (See FIG.9). Further, the second support 300 is coupled to the first support 100 within the rotation-limiting member 117, and when the second support 300 has a given angle with respect to the first support 100, the side surface of the second support 300 comes into contact with the rotation-limiting member 117, thereby preventing the second support 300 from rotating anymore. That is, the rotatable angle of the second support 300 can be limited through the rotation-limiting member 117 on the first support 100.

[0044] FIGS. 11 and 12 are sectional views showing a helmet chin strap divider according to yet another embodiment of the present invention.

[0045] In the embodiment of the present invention as mentioned above, the hooks 315 are formed on the end of the protrusion portion 310 in such a manner as to be locked onto the end periphery of the insertion hole 120 (See FIG.5a), but the hooks 315 may not be necessarily needed. For example, as shown in FIG.11, after the protrusion portion 310 is inserted into the insertion hole 120, a screw 327 is coupled to the end periphery of the protrusion portion 310. Further, a washer 329 fits around the screw 327, and as the washer 329 is locked onto the insertion hole 120, the first support 100 and the second support 300 are not arbitrarily separated from each other. However, the washer 329 may not necessarily fit around the screw 327. That is, the screw 327 itself (for example, the head of the screw 327) may be locked onto the insertion hole 120.

[0046] Further, the formation of the protrusion portion 310 on the second support 300 and the formation of the insertion hole 120 on the first support 100 are not necessarily needed. For example, as shown in FIG.12, the contact surfaces of the first support 100 and the second support 300 are flattened, and the first support 100 and the second support 300 are rotatably coupled to each other around a fastening shaft 326. In this case, the fastening shaft 326 may be the screw 327 to which the washer 329 fits, but without being limited thereto, all types of fastening structures like elastic materials that are capable of rotatably coupling the first and second supports 100 and 300 to each other may be adopted as the fastening shaft 326.

[0047] In the embodiment of the present invention as mentioned above, the first and second chin straps 200 and 400 and the first and second supports 100 and 300, which are located on one side (left side) of the helmet 500, have been explained, but of course, the same components as above are also located on the other side (right side) of the helmet 500.

[0048] While the present invention has been described with reference to the particular illustrative embodiments, it is not to be restricted by the embodiments but only by the appended claims. It is to be appreciated that those skilled in the art can change or modify the embodiments without departing from the scope and spirit of the present invention.

[0049] Accordingly, persons skilled in the relevant art can appreciate that many modifications and variations are possible in light of the above teachings. It is therefore intended that the scope of the invention be limited not by this detailed description, but rather by the claims appended hereto.

Explanations of Reference Numerals

[0050]

100:	first support	110:	concave portion
115:	step	115a:	first step
115b:	second step	117:	rotation-limiting member
120:	insertion hole	130:	first guide portion
140:	first through portion	150:	second through portion
160:	locker	163:	rotating shaft
165:	first surface	167:	second surface
170:	stopper	200:	first chin strap
210:	mark	300:	second support

(continued)

310:	protrusion portion	315:	hook
317:	empty space	319:	divided section
320:	protection means	323:	protection body
325:	protection protrusion	326:	fastening shaft
327:	screw	329:	washer
330:	holder	340:	first bar
345:	third through portion	350:	second bar
355:	fourth through portion	400:	second chin strap
500:	support part		
θ1, θ2:	angle between first support and second support		

Industrial Applicability

[0051] The present invention relates to the helmet chin strap divider that is capable of allowing the first support connected to the first chin strap extended from the front of the side surface of the helmet and the second support connected to the second chin strap extended from the rear of the side surface of the helmet in such a manner as to be rotatably coupled to the first support, so that the angle between the first support and the second support can be varied according to the angle between the first chin strap and the second chin strap.

Claims

1. A helmet chin strap divider comprising:

a first support(100) connected to a first chin strap(200) extended from the front of the side surface of a helmet; and a second support(300) rotatably coupled to the first support(100) in such a manner as to be connected to a second chin strap(400) extended from the rear of the side surface of the helmet.

2. The helmet chin strap divider according to claim 1, wherein if the length of the first chin strap(200) from the helmet to the first support(100) is shortened or if the length of the second chin strap(400) from the helmet to the second support(300) is shortened, the angle between the first chin strap(200) and the second chin strap(400) increases.

3. The helmet chin strap divider according to claim 1, wherein the second support(300) is rotatably coupled to the first support(100) within a given angle with respect to the first support(100).

4. The helmet chin strap divider according to claim 3, wherein the first support(100) has a concave portion(110) formed on one surface thereof in such a manner as to form a step(115) therefrom, and the second support(300) is coupled to the concave portion(110), so that if the second support(300) has a given angle with respect to the first support(100), the side surface of the second support(300) comes into contact with the step(115).

5. The helmet chin strap divider according to claim 1, wherein one of the first support(100) and the second support(300) has a protrusion portion(310) protruding therefrom, and the other has an insertion hole(120) adapted to insert the protrusion portion(310) thereinto.

6. The helmet chin strap divider according to claim 5, wherein the protrusion portion(310) has hooks(315) provided on the end thereof in such a manner as to be locked onto the insertion hole(120).

7. The helmet chin strap divider according to claim 6, wherein the protrusion portion(310) protrudes to the form of a ring shape to form an empty space(317) at the center thereof in such a manner as to be divided into one or more divided sections(319), and the second support(300) comprises protection means(320) having a protection body(323) having a shape of a cylinder inserted into the empty space(317) of the protrusion portion(310) and protection protrusions(325) protruding from the protection body(323) in such a manner as to be inserted into the divided sections(319).

8. The helmet chin strap divider according to claim 1, wherein the second support(300) is coupled to one surface of

the first support(100), and the first chin strap(200) is extended along the other surface of the first support(100).

9. The helmet chin strap divider according to claim 8, wherein the first support(100) has a first guide portion(130) formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap(200), a first through portion(140) formed at the inside of the first guide portion(130) in a thickness direction thereof, and a second through portion(150) formed on the other end thereof in the thickness direction, so that after the first chin strap(200) passes through the first guide portion(130) and the first through portion(140) sequentially, the first chin strap(200) is extended along the other surface of the first support(100) and next passes through the second through portion(150).
10. The helmet chin strap divider according to claim 1, further comprising a locker(160) provided on the first support(100) to fix the first chin strap(200) to the first support(100).
11. The helmet chin strap divider according to claim 10, wherein the first support(100) has the first guide portion(130) formed on one end thereof in such a manner as to allow one surface to come into contact with the first chin strap(200), and the locker(160) is located on the first guide portion(130) and rotatably coupled to the first support(100), so that if the locker(160) has a first angle with respect to the first support(100), the locker(160) pressurizes the first chin strap(200), and if the locker(160) has a second angle with respect to the first support(100), the locker(160) allows the first chin strap(200) to move.
12. The helmet chin strap divider according to claim 11, wherein the locker(160) is coupled to the first support(100) by means of a rotating shaft(163) thereof and comprises a first surface(165) having a first distance from the rotating shaft(163) and a second surface(167) having a second distance closer than the first distance from the rotating shaft(163), so that if the locker(160) has the first angle with respect to the first support(100), the first surface(165) pressurizes the first chin strap(200), and if the locker(160) has the second angle with respect to the first support(100), the second surface(167) allows the first chin strap(200) to move.
13. The helmet chin strap divider according to claim 1, further comprising a holder(330) provided on the second support(300) to fix the second chin strap(400) to the second support(300).
14. The helmet chin strap divider according to claim 13, wherein the second support(300) has a first bar(340) formed on one end thereof and a third through portion(345) formed at the inside of the first bar(340) in a thickness direction thereof, and the holder(330) is located on the first bar(340) and the third through portion(345) and rotatably coupled to the second support(300), and the holder(330) has a second bar(350) formed on the end thereof and a fourth through portion(355) formed at the inside of the second bar(350) in a thickness direction thereof, so that the second chin strap(400) passes through the space between the first bar(340) and the second bar(350), and if the holder(330) rotates with respect to the second support(300) to allow the second bar(350) to be close to the first bar(340), the second chin strap(400) is pressurized between the second bar(350) and the first bar(340).
15. The helmet chin strap divider according to claim 14, wherein the second chin strap(400) passes through the third through portion(345) and the fourth through portion(355) sequentially, cover the second bar(350), and passes through the third through portion(345), so that if the second chin strap(400) positioned from the helmet to the second support(300) is pulled, the holder(330) rotates to allow the second bar(350) to be close to the first bar(340), and the second chin strap(400) is thus pressurized between the second bar(350) and the first bar(340).
16. The helmet chin strap divider according to claim 1, wherein the first chin strap(200) has marks(210) provided at regular intervals thereon so as to check the relative position of the first support(100) thereto.
17. The helmet chin strap divider according to claim 3, wherein the first support(100) has a rotation-limiting member(117) protruding from one surface thereof, and if the second support(300) has a given angle with respect to the first support(100), the side surface of the second support(300) comes into contact with the rotation-limiting member(117).
18. The helmet chin strap divider according to claim 5, wherein the protrusion portion(310) is coupled to a screw(327), and the screw(327) or a washer(329) fitting around the screw(327) is locked onto the insertion hole(120).
19. The helmet chin strap divider according to claim 1, wherein the first support(100) and the second support(300) are rotatably coupled to each other around a fastening shaft(326).

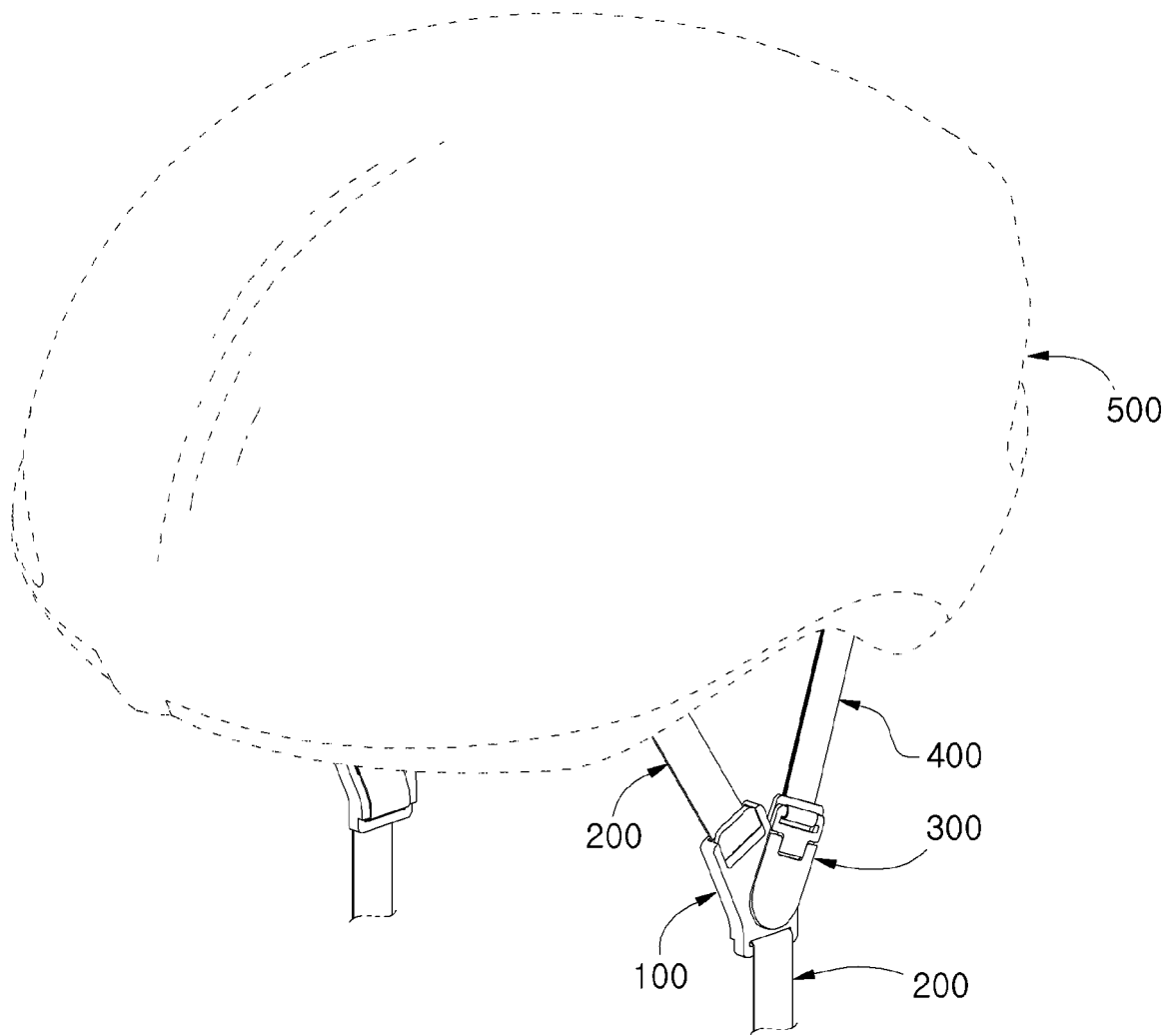


FIG. 1

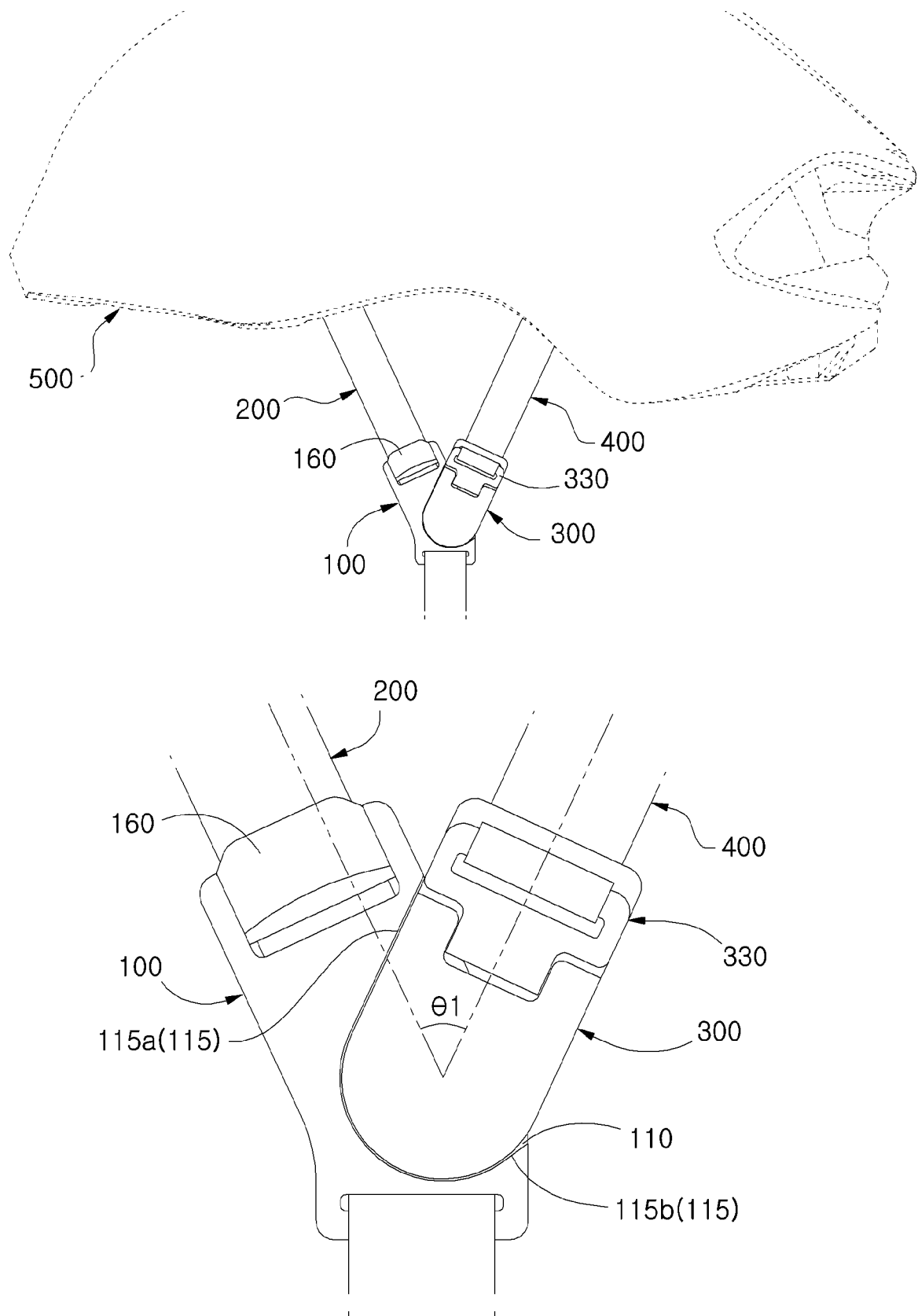


FIG. 2

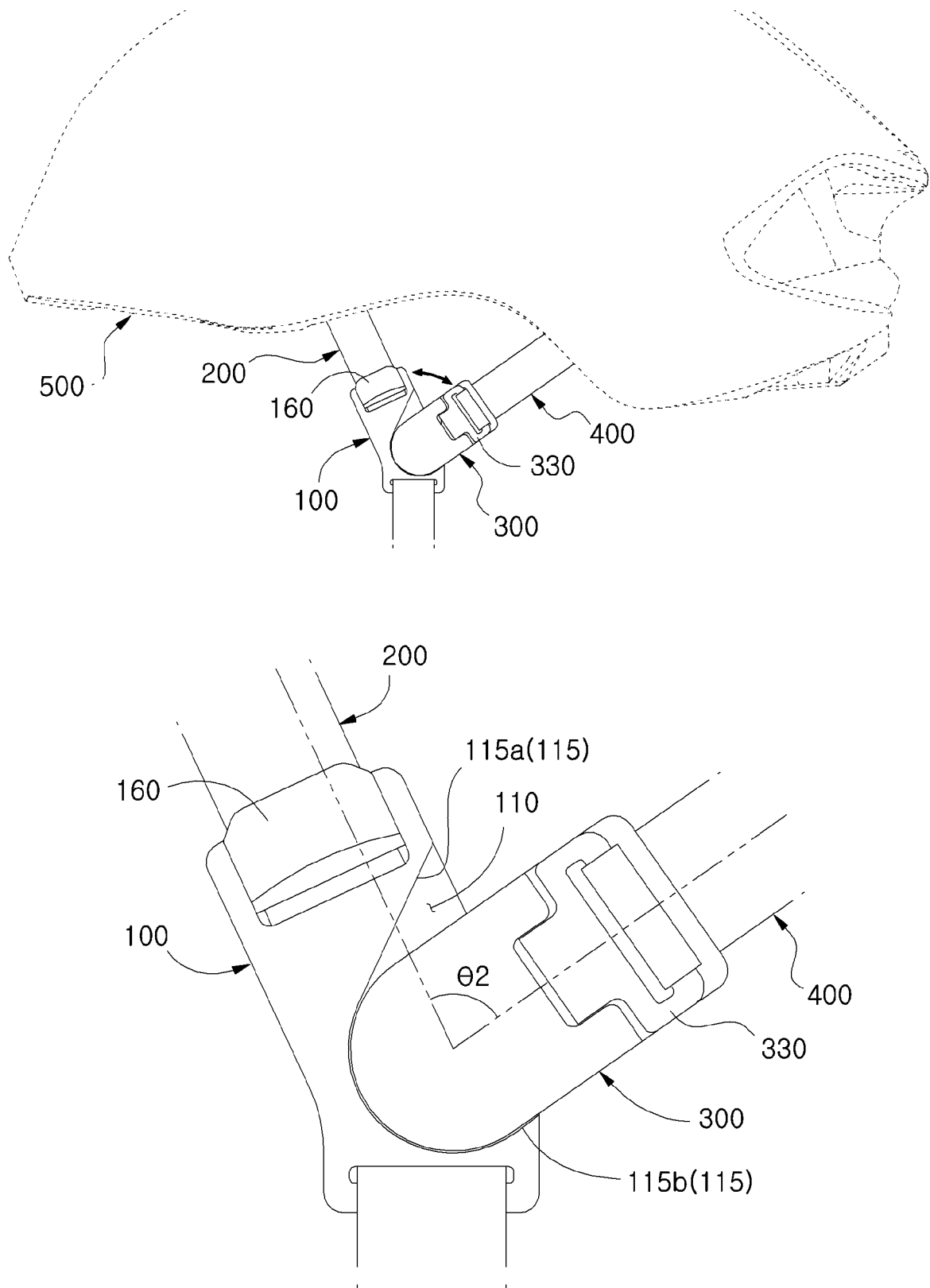


FIG. 3

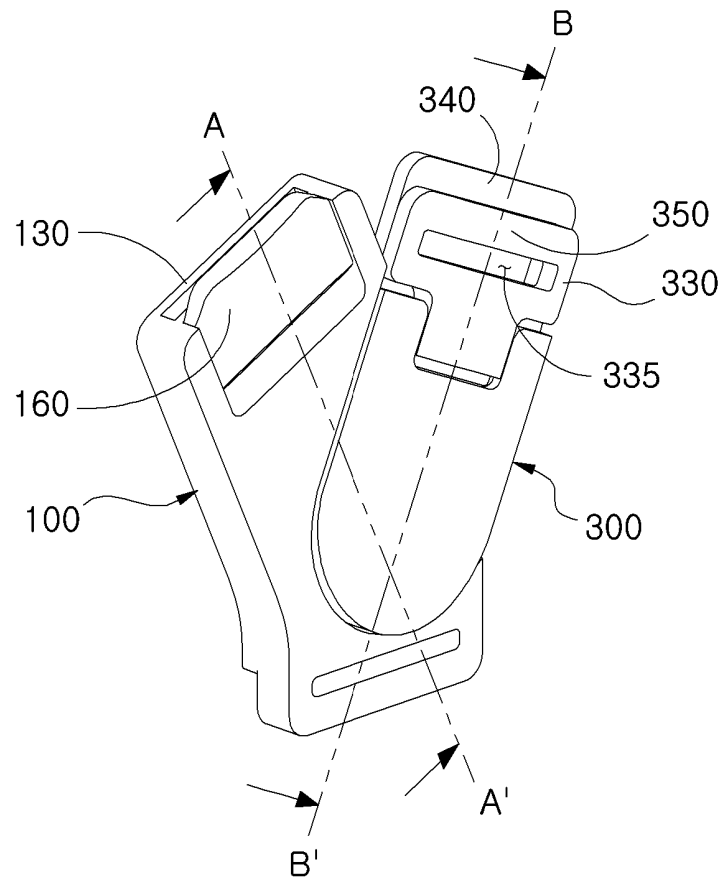


FIG. 4A

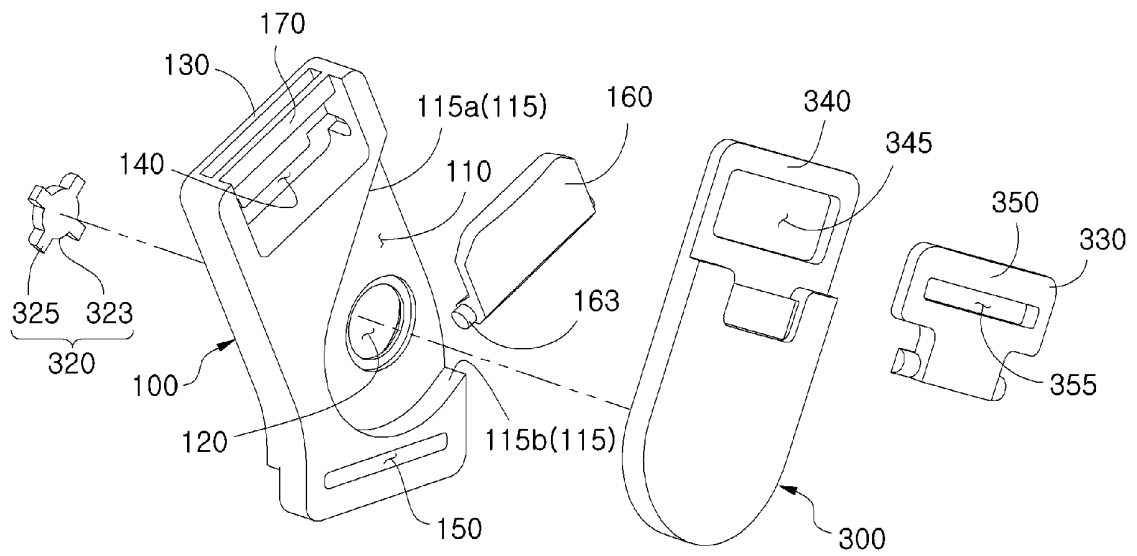


FIG. 4B

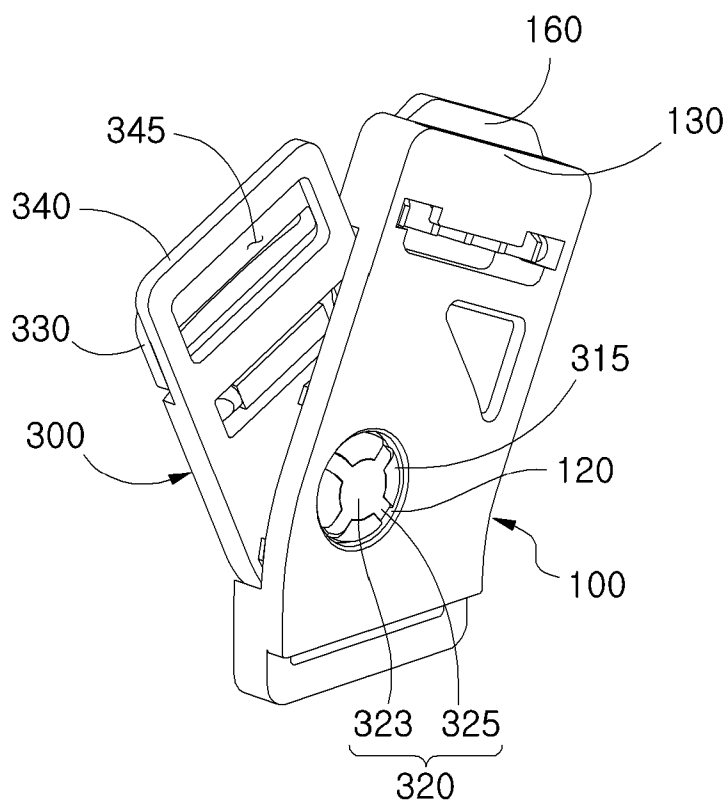


FIG. 5A

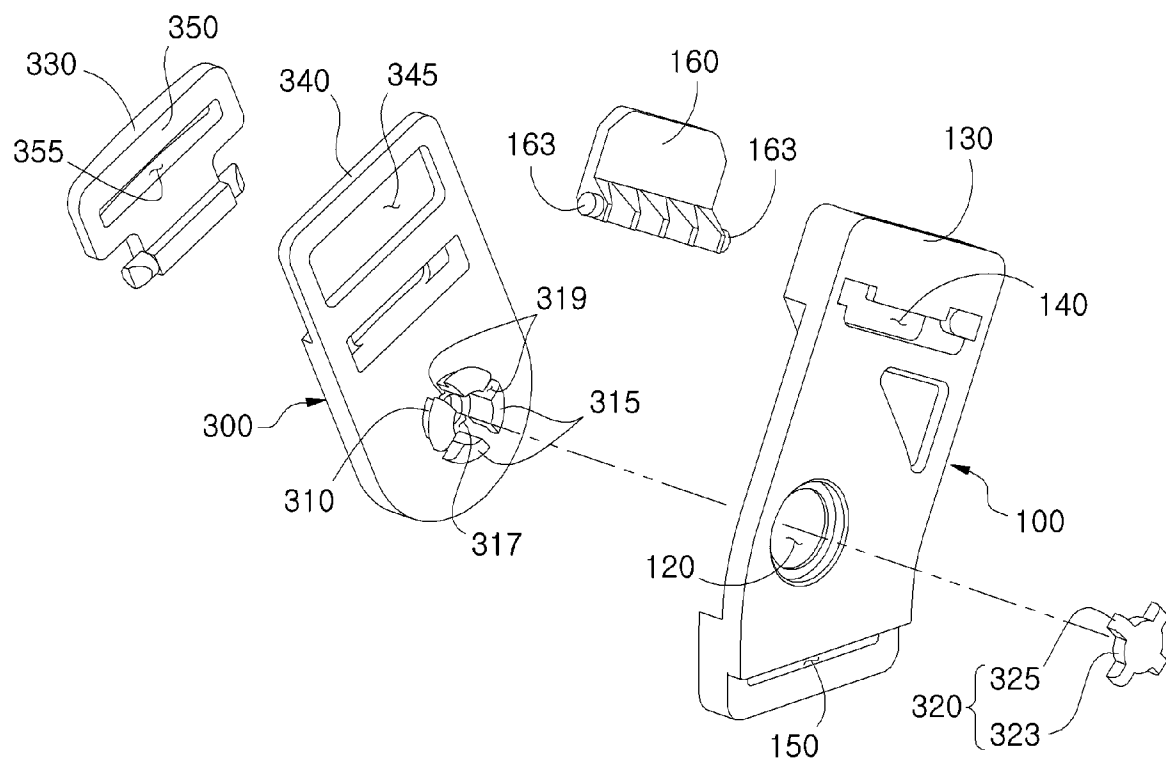


FIG. 5B

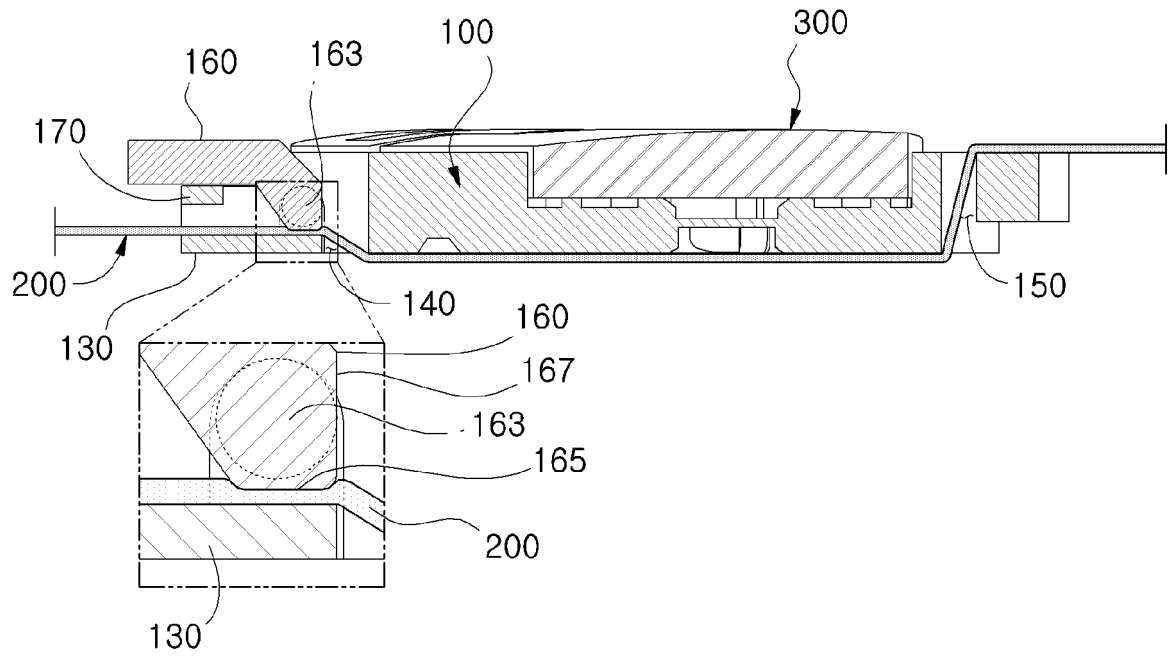


FIG. 6A

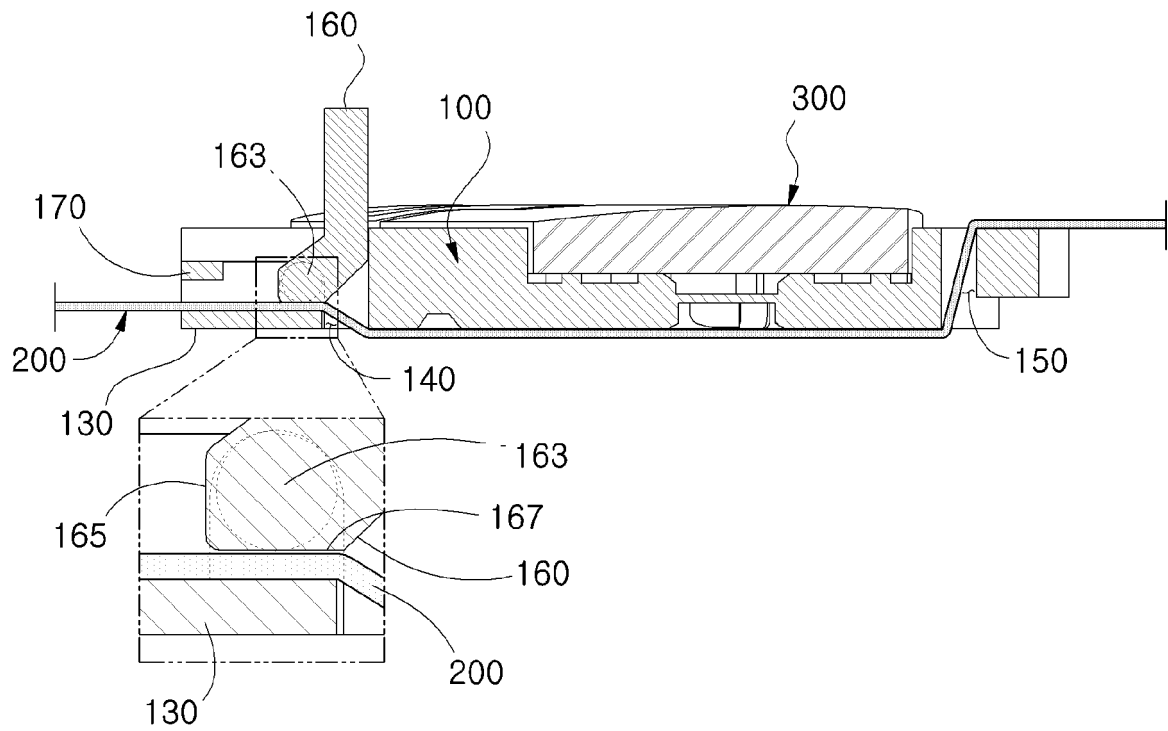


FIG. 6B

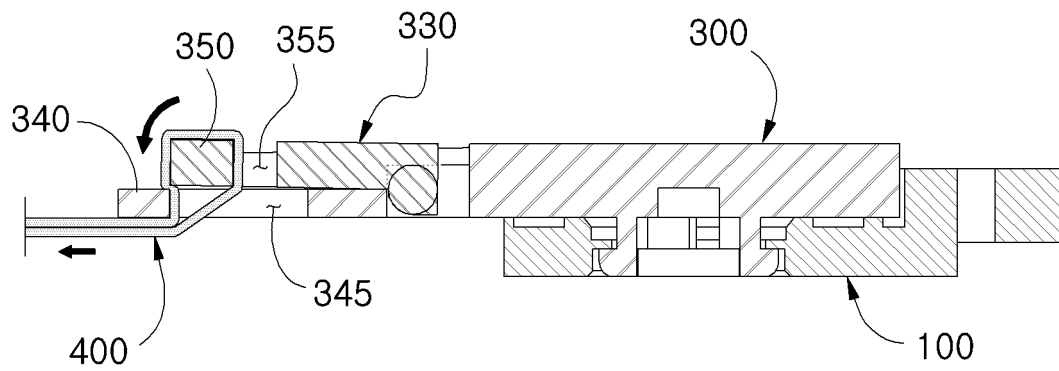


FIG. 7A

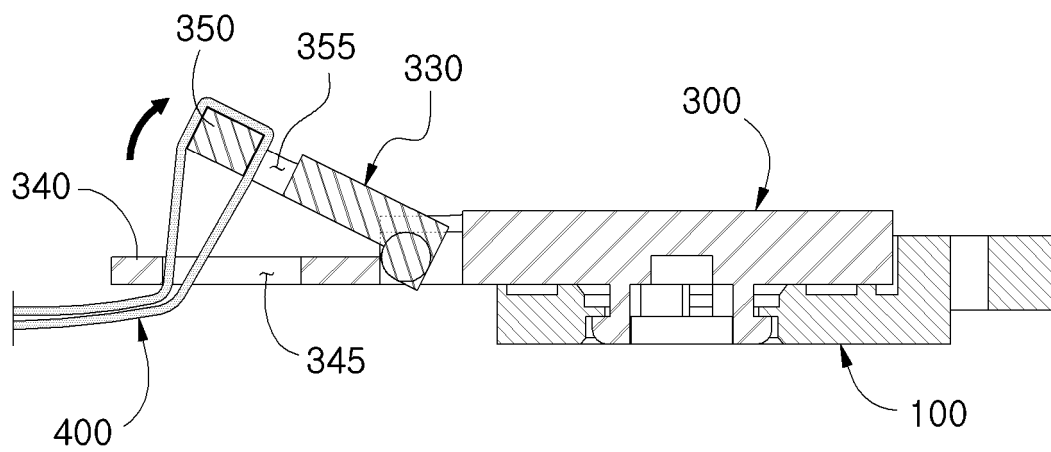


FIG. 7B

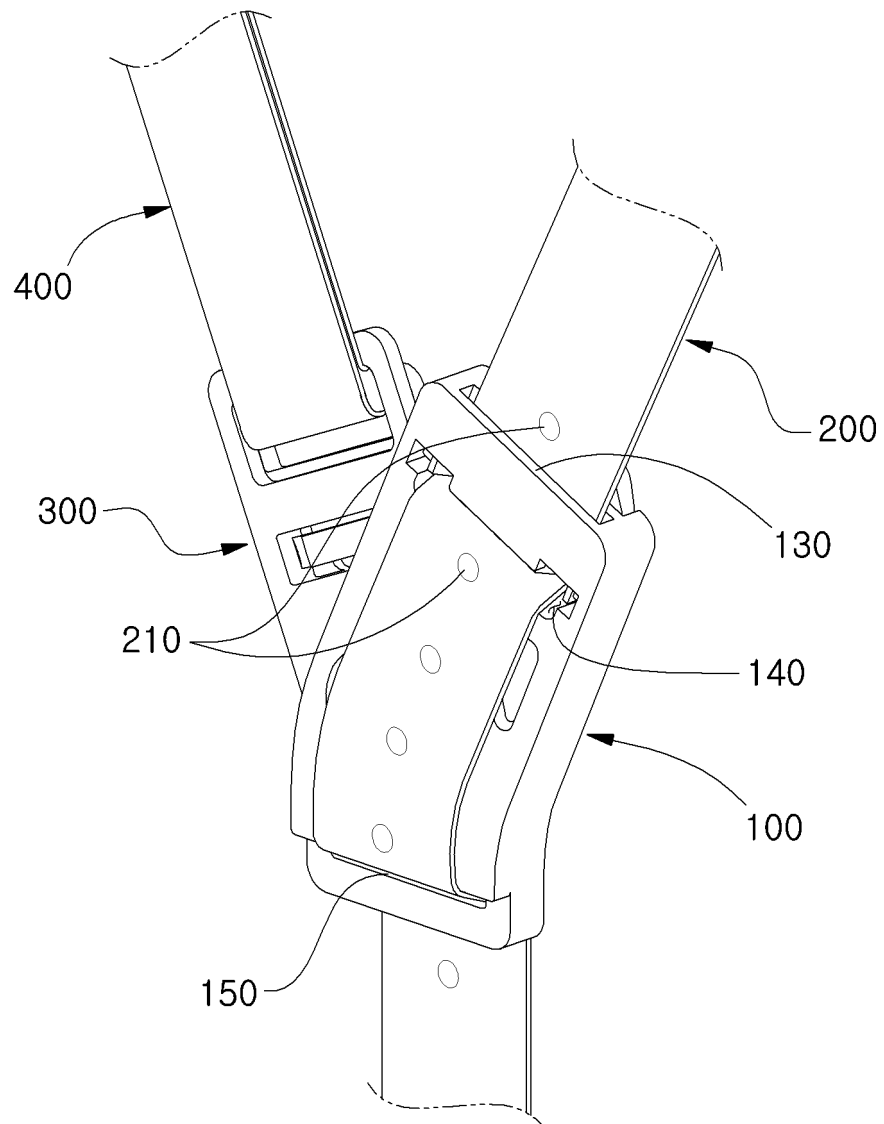


FIG. 8

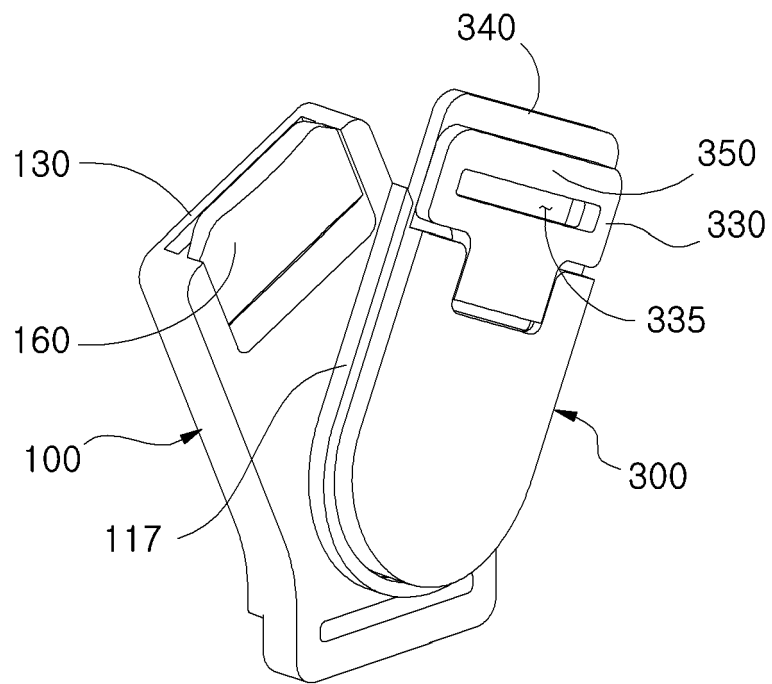


FIG. 9

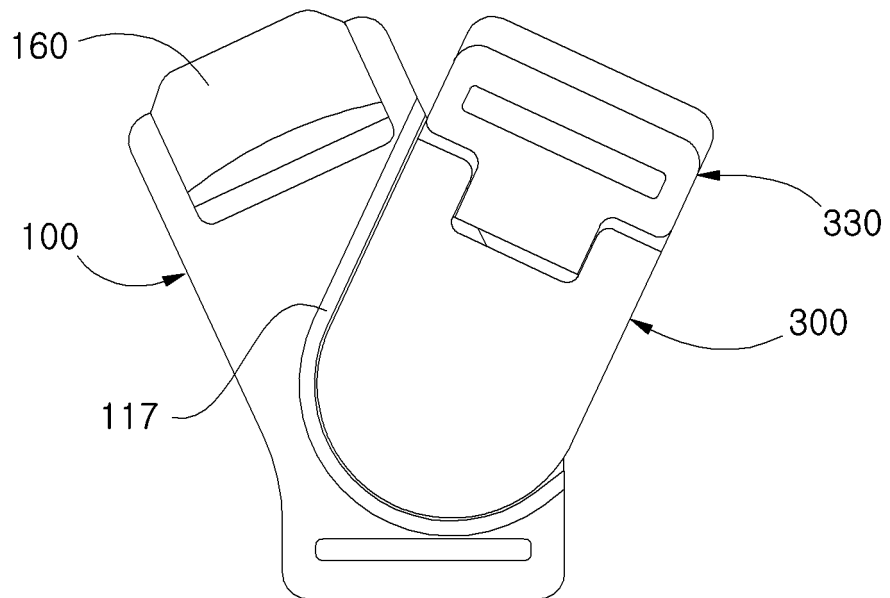


FIG. 10

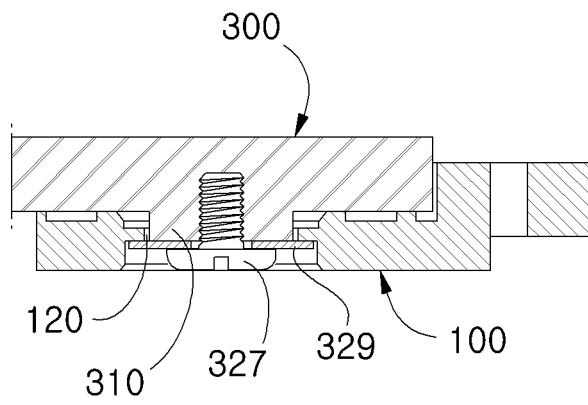


FIG. 11

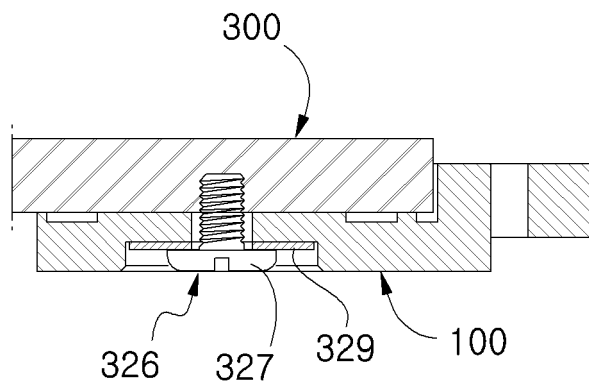


FIG. 12

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2019/018728

A. CLASSIFICATION OF SUBJECT MATTER

A42B 3/08(2006.01)i, 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 3/08; A44B 11/25; A45F 3/04; A45F 3/12; A42B 3/20

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, chin string, divider, rotating

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 5396201 B2 (TANIZAWA SEISAKUSHO LTD.) 22 January 2014 See claims 1, 6; figures 1-2, 7.	1-3,5-10,13,16-19
A		4,11-12,14-15
Y	JP 07-000210 A (YKK KK.) 06 January 1995 See claims 1, 2; the examples; paragraphs [0009]-[0010].	1-3,5-10,13,16-19
Y	KR 10-1333818 B1 (PARK, Sol) 02 December 2013 See claims 1-3, 15; paragraph [0046]; figure 2.	5-7,18
A	JP 06-006431 U (TOKYU KOKEN KK.) 28 January 1994 See abstract; claims 1, 2.	1-19
A	KR 10-1385672 B1 (LEE, Chang Woo) 15 April 2014 See abstract; claims 1, 9.	1-19

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

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"&" document member of the same patent family


Date of the actual completion of the international search

10 APRIL 2020 (10.04.2020)

Date of mailing of the international search report

13 APRIL 2020 (13.04.2020)

Name and mailing address of the ISA/KR



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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2019/018728

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		EP 0629362 A1	21/12/1994
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		TW 251228 B	11/07/1995
		US 5471716 A	05/12/1995
KR 10-1333818 B1	02/12/2013	None	
JP 06-006431 U	28/01/1994	None	
KR 10-1385672 B1	15/04/2014	WO 2014-163404 A1	09/10/2014

REFERENCES CITED IN THE DESCRIPTION

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