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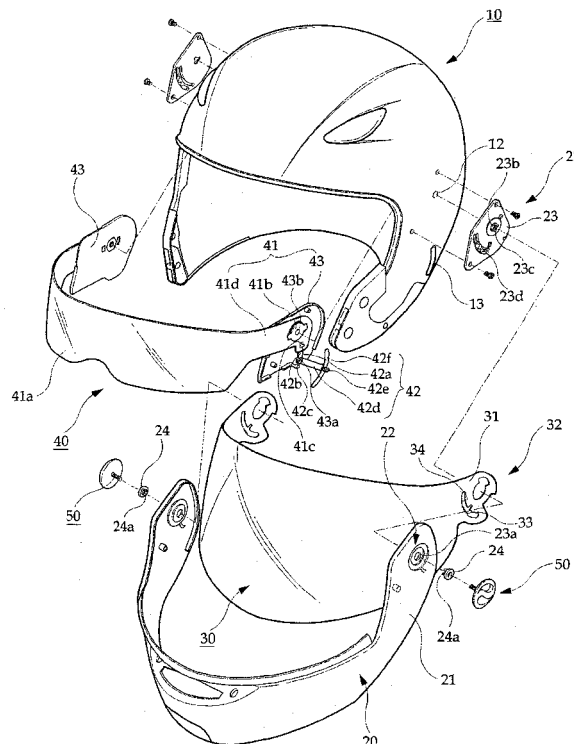
Remarks:

Amended claims in accordance with Rule 86 (2) EPC.

(54) **Motorcycle helmet**

(57) A motorcycle helmet having a jaw guard, shield and visor, all of which can be pivoted with one hinge point, is disclosed. The helmet comprises a helmet body 10, a jaw guard 20 which protects the jaw of the wearer by covering part of said opening 11 of said helmet body 10, a shield 30 which opens and closes the remaining part of said opening 11 above said jaw guard 20, a visor 40 which intercepts sunlight incoming into part of said opening 11 in said helmet body 10, and a fastening screw 50 which is screwed to pivot holes 12 on both left and right sides of said helmet body 10 so as to pivotably move all of the hinge portion 22 of said jaw guard 20, the latch pivot portion 32 of said shield 30, and the lever mechanisms 42 of said visor 40 by making pivot holes 12 as a hinge point.

【Fig. 2】



## Description

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

**[0001]** The present invention relates to a motorcycle helmet, and more specifically to a motorcycle helmet wherein a shield, visor and jaw guard are configured so as to be rotated with one hinge point to make it easy to assemble and use, while the operation and structure of the visor are modularized into one to reduce cost and improve productivity.

#### 2. Description of the Related Art

**[0002]** Motorcycle riders must wear a safety helmet to protect the head and the front of helmet should have a shield installed to prevent sight obstruction and breathing difficulty due to winds blowing from front.

**[0003]** And to protect the jaw of the wearer, a jaw guard is provided at the bottom of the helmet in the jaw portion. Both ends of this jaw guard are pivotably mounted on hinge portions installed on both left and right sides of the helmet body, so as to be adjusted suitably according to the shape of the face of the wearer.

**[0004]** Also, a visor can be provided to intercept sunlight coming directly into the eye in daytime. Such a visor is also pivotably mounted on the hinge portions installed on both left and right sides for use by moving up or down as necessary.

**[0005]** As described above, the conventional helmet has components that need to be opened or closed as necessary, such as the jaw guard, shield and visor, but conventionally there were no helmets in which these three components can be opened and closed around one shaft.

**[0006]** In the visor of the conventional helmet, the visor portion that can be opened or closed, the pivot for opening and closing this visor, and the operating lever are configured individually as separate parts and they are in such a structure that makes it very difficult to assemble these together with the shield and jaw guard, so it is not suitable for mass production.

### SUMMARY OF THE INVENTION

**[0007]** Accordingly, it is an object of the present invention to provide a motorcycle helmet having a jaw guard, shield and visor, all of which can be pivoted around one pivot shaft.

**[0008]** Another object of the present invention is to provide a motorcycle helmet wherein all the modules can be easily assembled in one place after the modularized visor parts of an opening and closing structure are produced separately in another production place.

**[0009]** In accordance with the present invention, there is provided a motorcycle helmet comprising: a helmet

body in which an opening for the face is provided on front and pivot holes are formed on both left and right sides; a jaw guard which protects the jaw of the wearer by covering part of the opening of the helmet body and which can be pivotably moved by hinge portions provided on the extending portions of both left and right sides as a hinge point; a shield which opens and closes the remaining part of the opening above the jaw guard and which can be pivotably moved by latch pivot portions provided on extending portions on both left and right sides as a hinge point; a visor which intercepts sunlight incoming into part of the opening in the helmet body and which can be pivotably moved by the lever mechanisms on both left and right sides having control levers as a hinge point; and a fastening screw which is screwed to pivot holes on both left and right sides of the helmet body so as to pivotably move all of the hinge portion of the jaw guard, the latch pivot portion of the shield, and the lever mechanisms of the visor by making pivot holes as a hinge point.

**[0010]** Preferably, the visor is modularized by comprising a visor body including a visor portion for intercepting sunlight incoming into part of the opening in the helmet body, and extending portions extended to left and right from the visor portions and having visor pivot holes and lever inserting holes formed at the position eccentric with the visor pivot hole; a control lever including a protuberance at one end thereof which is inserted into the lever inserting hole of the visor body, and a lever pivot hole at the other end thereof; a lever arm which is inserted into the lever pivot hole of the control lever; a fastening plate which has a visor pivot inserted into the visor pivot hole of the visor body and a lever pivot inserted into the lever pivot hole of the control lever, and which can fix these on the inside of the helmet body; a guide flap which is fixed at one end of the lever arm of the control lever to be introduced within a predetermined range of movement according to the rotation of the lever arm; and an adjusting knob which is joined to the lever arm of the control lever by passing through the guide flap and moves within a predetermined range along an arc hole formed on the side of the helmet body.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0011]** Other objects and aspects of the present invention will become apparent from the following description of embodiments with reference to the accompanying drawings in which:

Fig. 1 is a perspective view showing a helmet according to the present invention;

Fig. 2 is an exploded perspective view showing the helmet according to the present invention;

Fig. 3 is a partially sectional view showing the assembly structure of the helmet according to the present invention;

Fig. 4 is a lateral view showing the operation state of a jaw guard of the helmet according to the present

invention;

Fig. 5 is a lateral view showing the operation state of a shield of the helmet according to the present invention;

Fig. 6 is a lateral view showing the operation state of a visor of the helmet according to the present invention; and

Fig. 7 is a perspective view showing a visor according to the present invention in a modularized state.

## DETAILED DESCRIPTION OF THE INVENTION

**[0012]** Below will be described in more detail a motorcycle helmet according to the present invention with reference to the accompanying drawings.

**[0013]** Fig. 1 is a perspective view showing a helmet according to the present invention, and Fig. 2 is an exploded perspective view showing the helmet according to the present invention.

**[0014]** As shown in these drawings, the helmet according to the present invention includes a jaw guard 20 for covering the opening 11 in a helmet body 10, a shield 30 and a visor 40. These parts are provided all on one pivot shaft for each to operate pivotably.

**[0015]** For this, on both left and right sides of the helmet body 10 are formed pivot holes 12.

**[0016]** And, the jaw guard 20 for protecting the jaw of the wearer by covering part of the opening 11 of the helmet body 10 is pivotably mounted on the helmet body 10 by hinge portions 22 arranged on both sides of the extending portions 21 of the jaw guard 20.

**[0017]** And, the shield 30 that can close or open the remaining part of the opening 11 above the jaw guard 20 is mounted pivotably on the helmet body 10 by latch pivot portions 32 formed on both ends of the extending portions 31 of the shield 30.

**[0018]** The visor 40 that is arranged over the top of the opening 11 in the helmet body 10 to intercept sunlight is pivotably mounted on the helmet body 10 by lever mechanisms 42 installed at both ends of the visor 40. The lever mechanism 42 includes a control lever 42a for adjusting the angle of the visor 40.

**[0019]** To assemble, as shown in Fig. 3, the hinge portion 22 of the jaw guard 20, the latch pivot portion 32 of the shield 30 and the lever mechanism 42 of the visor 40 are pivotably mounted on both left and right sides of the helmet body 10 all by a fastening screw 50. The fastening screw 50 passes through the hinge portions 22 and the latch pivot portion 32 in sequence to be inserted into the pivot holes 12 formed on the left and right sides of the helmet body 10 before it is screwed to a fastening plate 43.

**[0020]** At this time, the jaw guard 20 and the shield 30, as shown in Fig. 3, are pivotably mounted on the helmet body 10 by the fastening screw 50 through a mounting plate 23. Also, a spacer 24 is sandwiched between the mounting plate 23 and the fastening screw 50.

**[0021]** As shown in Fig. 2 and Fig. 4, a hinge hole 23a,

into which the fastening screw 50 is inserted, is formed in the hinge portion 22 of the jaw guard 20 corresponding to the pivot hole 12, and a through hole 23b corresponding to the hinge hole 23a is formed in the mounting plate 23, so that the fastening screw 50 passes through these hinge holes 23a, through holes 23b and the pivot holes 12 of the helmet body 10 in sequence to be screwed to the fastening plate 43.

**[0022]** The mounting plate 23 is provided with a guide lip 23c and the spacer 24 is provided with a concave-convex portion 24a corresponding to the guide lip 23c so as to make it possible to fix the jaw guard 20 in a desired position. This is roughly similar to the structure of a conventional motorcycle helmet, so detailed description of this is omitted.

**[0023]** Also, in order to adjust and fix the height of the shield 30 at a desired position, as shown in Figs. 2 to 5, an arc slot 34 having a latch 33 is formed in the latch pivot portion 32 and a latch protuberance 23d having elasticity is formed in the mounting plate 23. Therefore, it is possible to fix the shield 30 by adjusting the height to a desired position by rotating around the pivot hole 12 by the latch 33 of the latch pivot portion 32 and the latch protuberance 23d of the mounting plate 23.

**[0024]** Meanwhile, the visor 40, as shown in Fig. 2, 6 and 7, has a structure entirely different from the conventional one.

**[0025]** Namely, the visor 40 is modularized with a visor body 41, the control lever 42a, the fastening plate 43, a guide flap 42f and an adjusting knob 42 so as to have a structural characteristic for improving the productivity and assemblability of parts.

**[0026]** The visor body 41 comprises a visor portion 41a for intercepting part of the opening 11 in the helmet body 10, and extending portions 41d extended to the left and right from the visor portion 41a. In the extending portion 41d of the visor body 41 are formed a visor pivot hole 41b into which the visor pivot 43b of the fastening plate 43 is inserted and a lever inserting hole 41c for connecting the control lever 42a.

**[0027]** And, the control lever 42a includes a protuberance 42b at one end thereof which is inserted into the lever inserting hole 41c of the visor body 41, and a lever pivot hole 42c at the other end thereof. A lever arm 42d is inserted into the lever pivot hole 42c of the control lever 42a.

**[0028]** The fastening plate 43 has a visor pivot 43b which is inserted into the visor pivot hole 41b of the visor body 41, and a lever pivot 43a which is inserted into the lever pivot hole 42c of the control lever 42a, and which can fix these on the inside of the helmet body 10.

**[0029]** Also, as shown in Fig. 6, the control lever 42a has a guide flap 42f which is fixed at the end of the lever arm 42d. When the end of the lever arm 42d pivots, this guide flap 42f allows it be introduced along a predetermined range of motion. And, at the end of the lever arm 42d is joined the adjusting knob 42e after passing through the guide flap 42f. This adjusting knob 42e rotates the

lever arm 42d, when the height of the visor 40 is to be adjusted using the control lever 42a. The lever arm 42d can be moved by the adjusting knob 42e within a predetermined range along an arc hole 13 formed on the side of the helmet body 10.

[0030] And, on the inside of the arc hole 13 are formed a plurality of catch slots 13a in which the protruded portion of the adjusting knob 42e is inserted. Therefore, as shown in Fig. 6, it is possible to fix the visor 40 in a desired ascent or descent position by matching the adjusting knob 42e with any one of these catch slots 13a.

[0031] Accordingly, when the helmet wearer holds the adjusting knob 42e and moves along the arc hole 13, the lever arm 42d moves pivotably in the lever pivot hole 42c as a hinge point. Since the visor body 41 is moved up or down with the visor pivot hole 41b as a hinge point according as the control lever 42a is moved, the visor 40 can be accurately moved into the position of the wearer's field of vision.

[0032] Because the protruded portion of the adjusting knob 42e is inserted in the catch slot 13a in a state operated like this, it is possible to maintain the moved position as it is, even after the adjusting knob 42e is moved to a desired position.

[0033] As described above, it is possible to enhance productivity by reducing cost and assembly time by reducing the related parts, because the present invention has made the jaw guard, shield and visor move pivotably centering on one hinge point. Also, since the wearer is provided with all of the jaw guard, shield and visor, he can use each element easily when necessary.

[0034] Furthermore, because it was made possible to produce the visor separately in another production place by modularizing the parts of its opening and closing structure, the productivity and assemblability for all the modules are improved.

[0035] Although the present invention has been described in connection with the exemplary embodiments illustrated in the drawings, it is only illustrative. It will be understood by those skilled in the art that various modifications and equivalents can be made to the present invention. Therefore, the true technical scope of the present invention should be defined by the appended claims.

## Claims

### 1. A motorcycle helmet comprising:

a helmet body 10 in which an opening 11 for the face is provided on front and pivot holes 12 are formed on both left and right sides;  
a jaw guard 20 which protects the jaw of the wearer by covering part of said opening 11 of said helmet body 10 and which can be pivotably moved by hinge portions 22 provided on the extending portions 21 of both left and right sides

as a hinge point;

a shield 30 which opens and closes the remaining part of said opening 11 above said jaw guard 20 and which can be pivotably moved by latch pivot portions 32 provided on extending portions 31 on both left and right sides as a hinge point; a visor 40 which intercepts sunlight incoming into part of said opening 11 in said helmet body 10 and which can be pivotably moved by the lever mechanisms 42 on both left and right sides having control levers 42a as a hinge point; and a fastening screw 50 which is screwed to pivot holes 12 on both left and right sides of said helmet body 10 so as to pivotably move all of the hinge portion 22 of said jaw guard 20, the latch pivot portion 32 of said shield 30, and the lever mechanisms 42 of said visor 40 by making pivot holes 12 as a hinge point.

2. The motorcycle helmet according to claim 1, wherein said visor 40 is modularized by comprising a visor body 41 including a visor portion 41a for intercepting sunlight incoming into part of said opening 11 in said helmet body 10, and extending portions 41d extended to left and right from said visor portions 41a and having visor pivot holes 41b and lever inserting holes 41c formed at the position eccentric with the visor pivot hole 41b;  
a control lever 42a including a protuberance 42b at one end thereof which is inserted into the lever inserting hole 41c of the visor body 41, and a lever pivot hole 42c at the other end thereof;  
a lever arm 42d which is inserted into the lever pivot hole 42c of the control lever 42a;  
a fastening plate 43 which has a visor pivot 43b inserted into the visor pivot hole 41b of said visor body 41 and a lever pivot 43a inserted into the lever pivot hole 42c of said control lever 42a, and which can fix these on the inside of said helmet body 10;  
a guide flap 42f which is fixed at one end of the lever arm 42d of said control lever 42a to be introduced within a predetermined range of movement according to the rotation of the lever arm 42d; and  
an adjusting knob 42e which is joined to the lever arm 42d of said control lever 42a by passing through said guide flap 42f and moves within a predetermined range along an arc hole 13 formed on the side of said helmet body 10.

### Amended claims in accordance with Rule 86(2) EPC.

#### 1. A motorcycle helmet comprising:

a helmet body (10) in which an opening for the face is provided on front and pivot holes (12) are formed on both left and right sides;  
a jaw guard (20) which protects the jaw of the

wearer by covering part of said opening (11) of said helmet body (10) and which can be pivotably moved by hinge portions (22) provided on the extending portions (21) of both left and right sides as a hinge point; 5

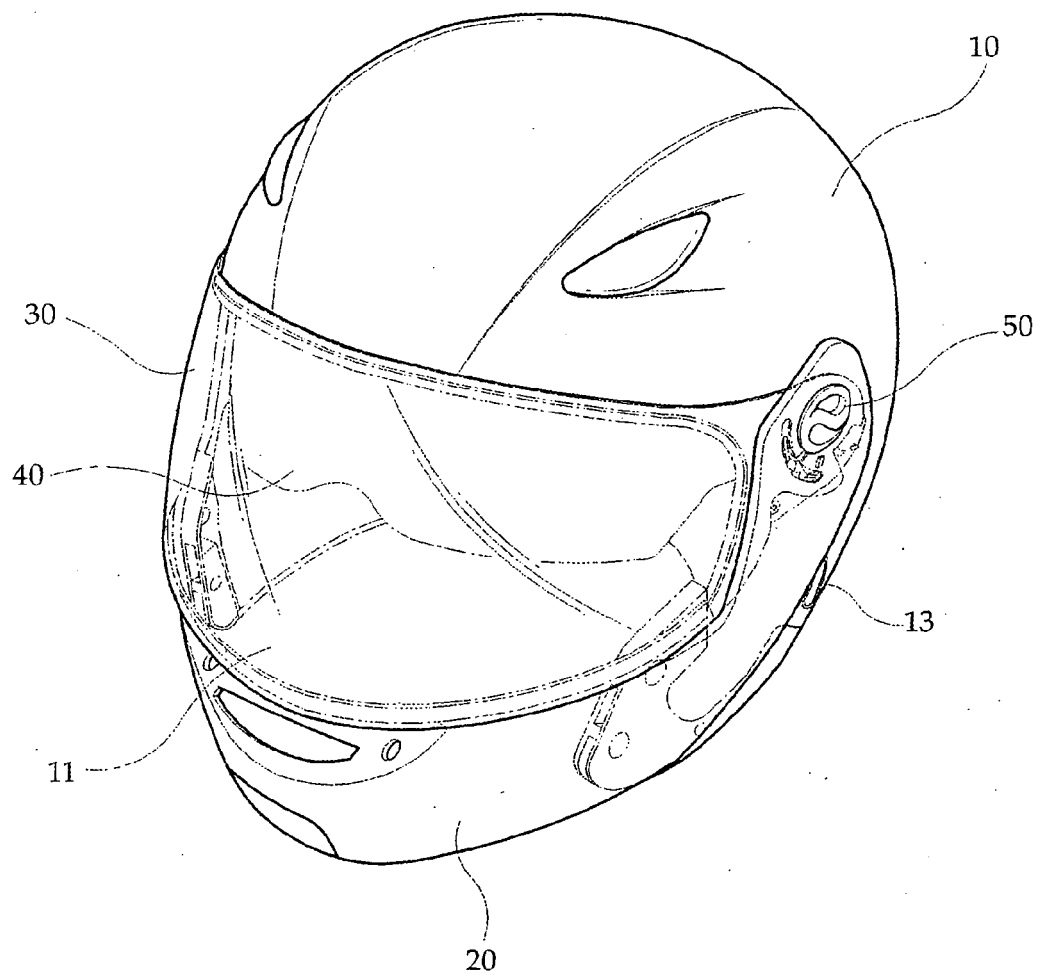
a shield (30) which opens and closes the remaining part of said opening (11) above said jaw guard (20) and which can be pivotably moved by latch pivot portions (32) provided on extending portions (31) on both left and right sides as a hinge point; 10

a visor (40) which intercepts sunlight incoming into part of said opening (11) in said helmet body (10) and which can be pivotably moved by the lever mechanisms (42) on both left and right sides having control levers (42a) as a hinge point; **characterized by** 15

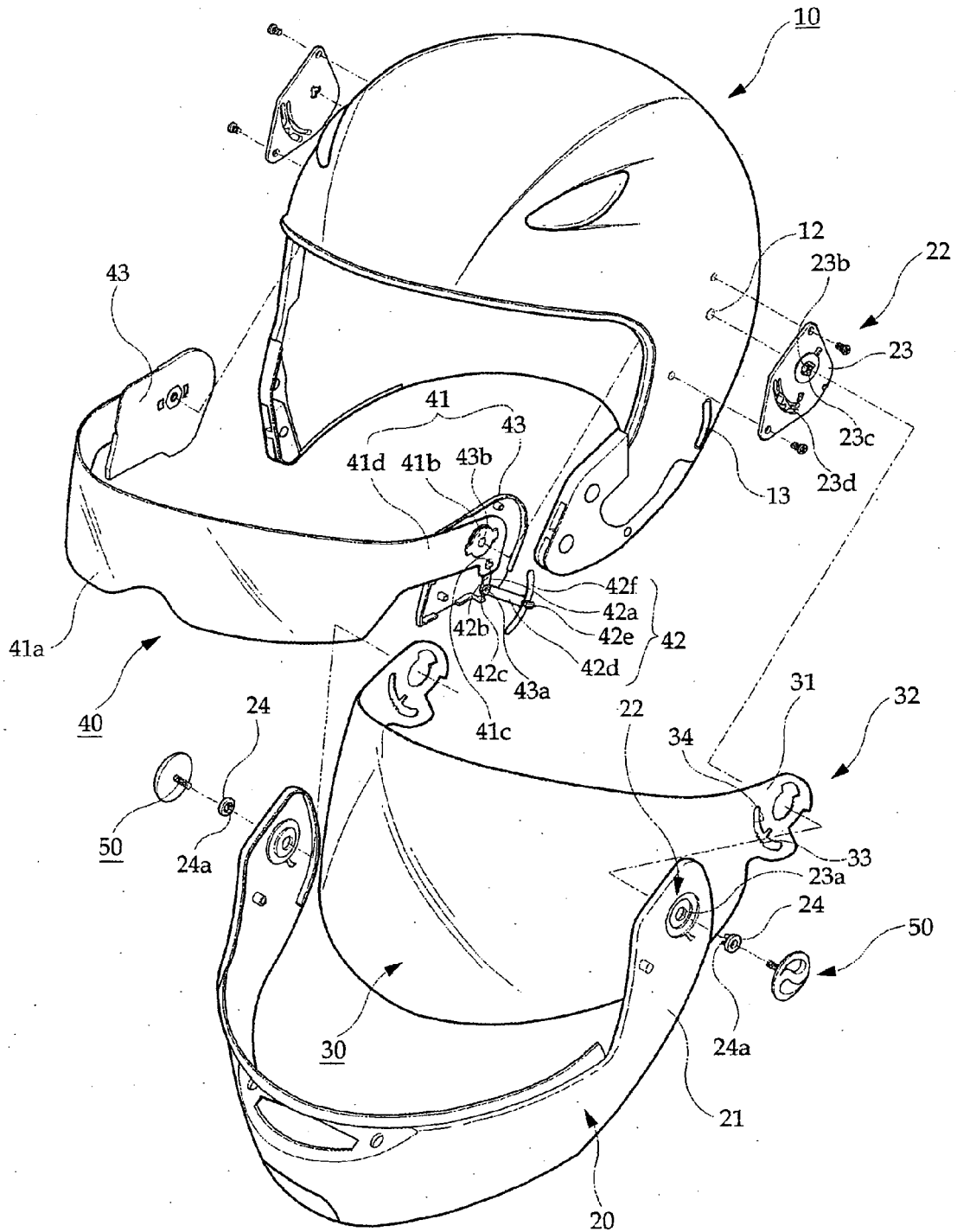
a fastening screw (50) which is screwed to pivot holes (12) on both left and right sides of said helmet body (10) so as to pivotably move all of the hinge portion (22) of said jaw guard (20), the latch pivot portion (32) of said shield (30), and the lever mechanisms (42) of said visor (40) by making pivot holes (12) as a hinge point. 20

- 25
2. The motorcycle helmet according to claim 1, wherein said visor (40) is modularized by comprising a visor body (41) including a visor portion (41a) for intercepting sunlight incoming into part of said opening (11) in said helmet body (10), and extending portions (41d) extended to left and right from said visor portions (41a) and having visor pivot holes (41b) and lever inserting holes (41c) formed at the position eccentric with the visor pivot hole (41b); 30
- a control lever (42b) including a protuberance (42b) at one end thereof which is inserted into the lever inserting hole (41c) of the visor body (41), and a lever pivot hole (42c) at the other end thereof; 35
- a lever arm (42d) which is inserted into the lever pivot hole (42c) of the control lever (42a); 40
- a fastening plate (43) which has a visor pivot (43b) inserted into the visor pivot hole (41b) of said visor body (41) and a lever pivot (43a) inserted into the lever pivot hole (42c) of said control lever (42a), and which can fix these on the inside of said helmet body (10); 45
- a guide flap (42f) which is fixed at one end of the lever arm (42d) of said control lever (42a) to be introduced within a predetermined range of movement according to the rotation of the lever arm (42d); and 50
- an adjusting knob (42e) which is joined to the lever arm (42d) of said control lever (42a) by passing through said guide (42f) and moves within a predetermined range along an arc hole (13) formed on the side of said helmet body (10). 55

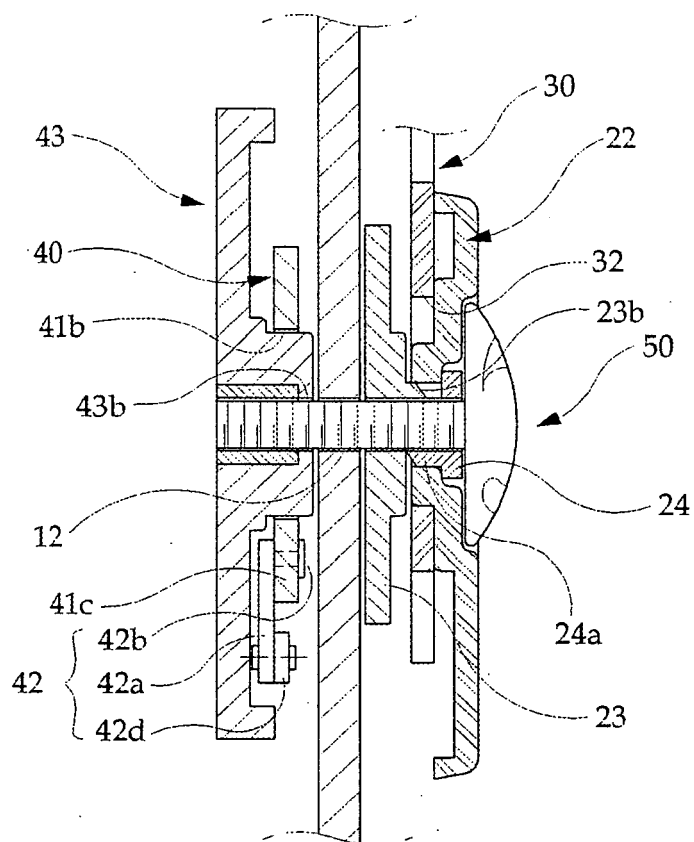
【Fig. 1】



【Fig. 2】

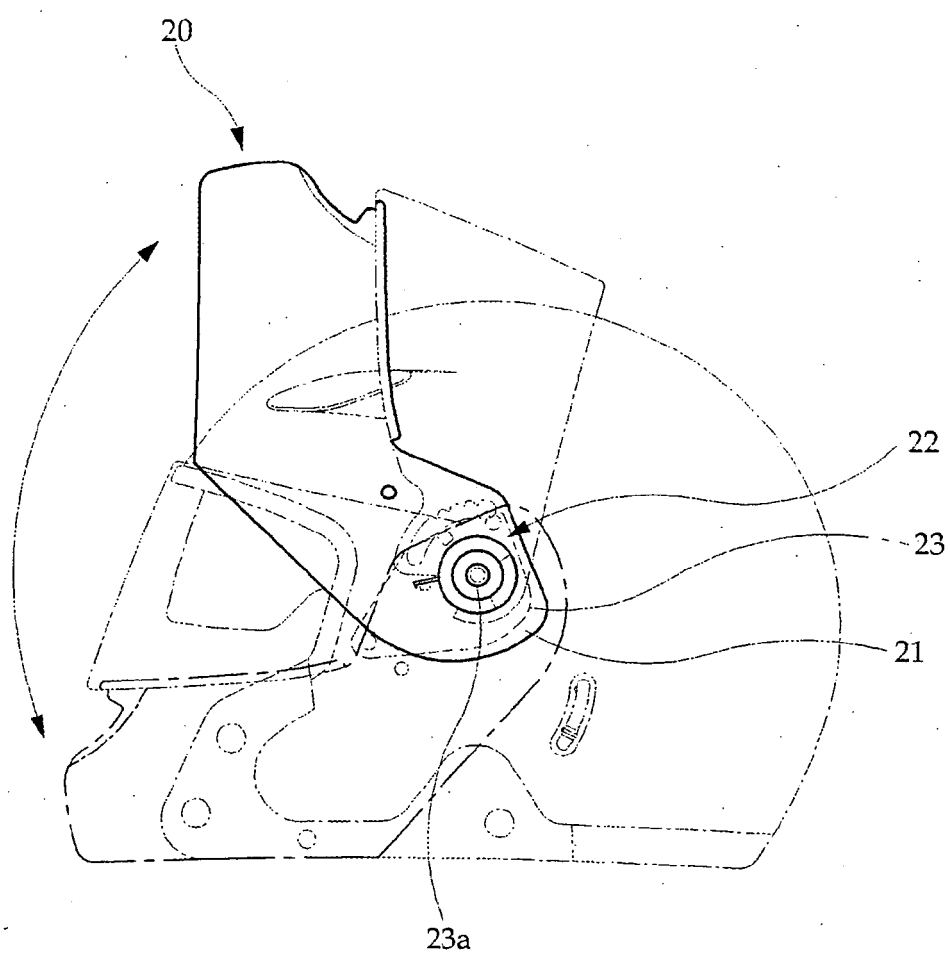


【Fig. 3】

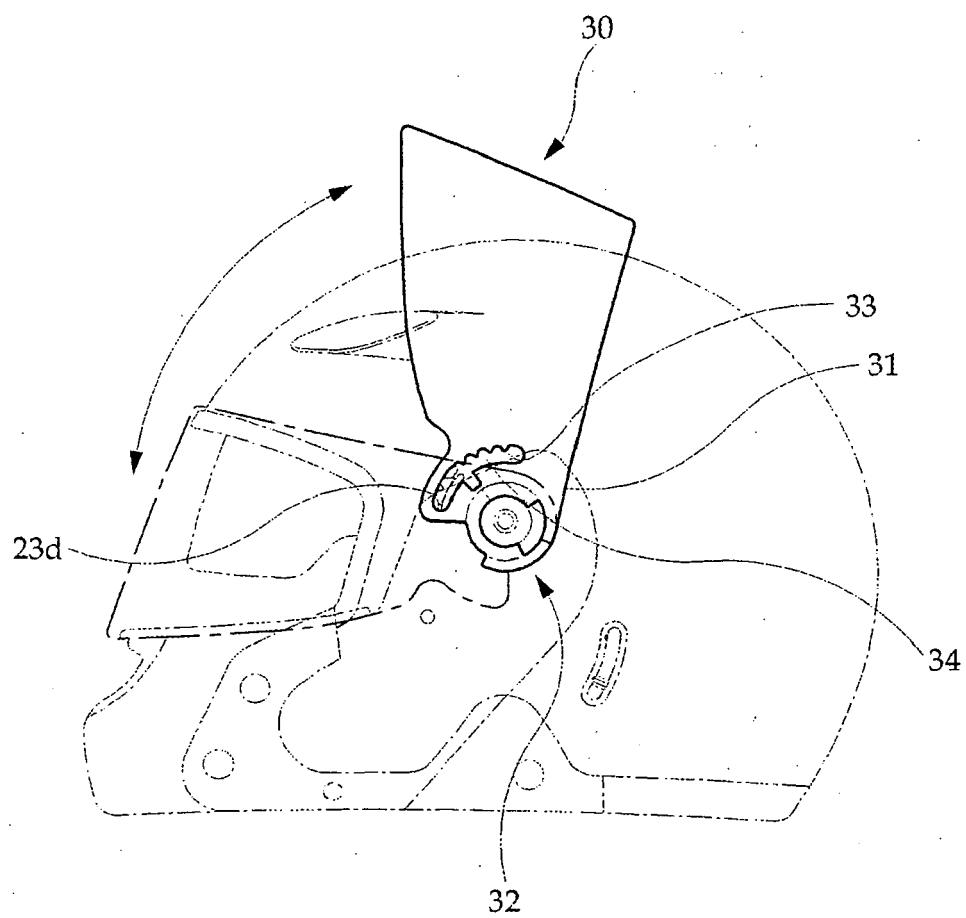




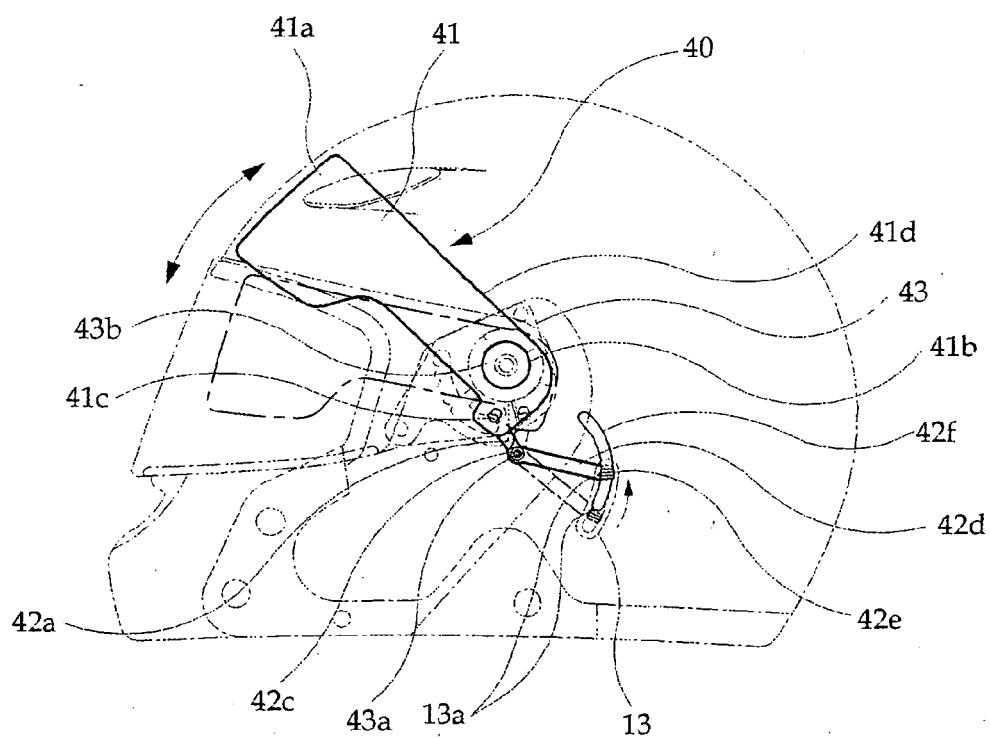
【Fig. 4】



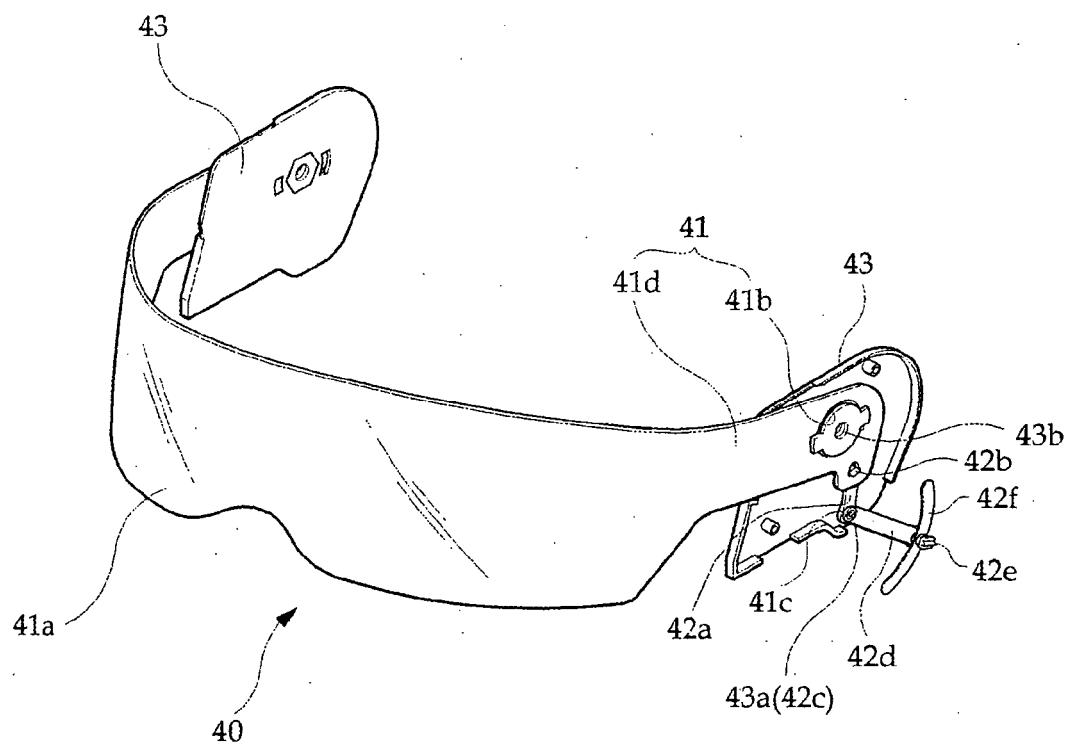
【Fig. 5】



【Fig. 6】



【Fig. 7】





European Patent  
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# EUROPEAN SEARCH REPORT

Application Number  
EP 06 00 1321

DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 February 2007	Examiner Hannam, Martin
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 00 1321

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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09-02-2007

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