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(54) PROTECTIVE HELMET FOR MOTORCYCLISTS

(57) The invention relates to a protective helmet for motorcyclists, comprising: side mechanisms for mounting a transparent visor (20) such that it can rotate; a first guide (102) for the movement of a first visor attachment (202); and a movable part (103) for locking and unlocking the visor (20), provided with a second guide (104) for the movement of a second visor attachment (203) in a visor mounted position. The side mechanisms comprise a flexible tab (105) which tends to stay in an operative position in which the movable part (103) is retained in the unlocked visor (20) position, and which, during the mounting of the visor (20), is moved by the visor (20) into an inoperative position in which the movable part (103) is released, allowing it to return automatically to the locked visor (20) position.

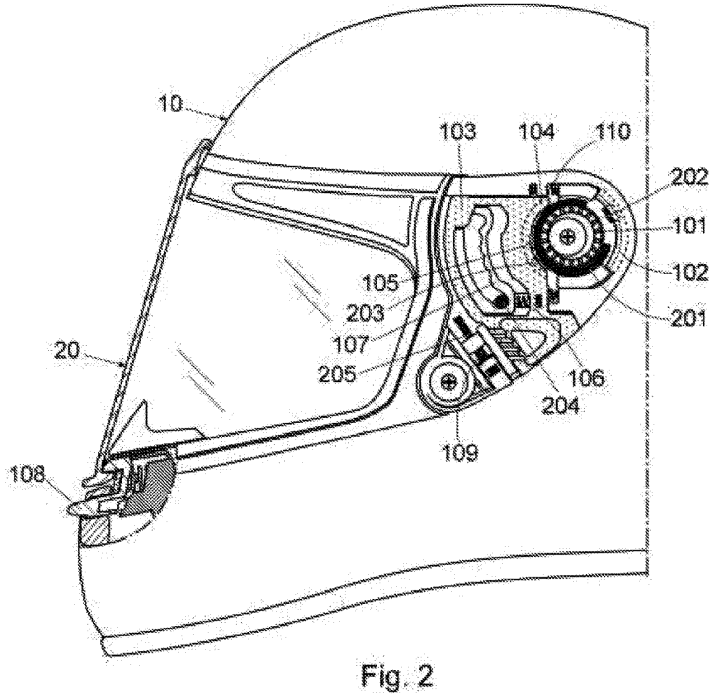

Fig. 2

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Description

OBJECT OF THE INVENTION

[0001] The object of the invention is a protective helmet for motorcyclists comprising a front window and side mechanisms for mounting the respective sides of a transparent visor such that it can rotate between an open position and a closed position of the front window.

[0002] This helmet has improvements aimed at facilitating the manipulation of the side mechanisms and at allowing the disassembly of the visor using only one hand.

FIELD OF APPLICATION OF THE INVENTION

[0003] This invention is applicable in protective helmets for motorcyclists.

STATE OF THE ART

[0004] Currently the visors installed in protective helmets for motorcyclists allow their disassembly for their cleaning or replacement. These helmets have side mechanisms for mounting and releasing the visor. Said mechanisms consist of a part which is movable between an unlocked position in which the disassembly of the visor is allowed and a locked position in which the disassembly of the visor is prevented and the rotation of the visor with respect to the helmet is allowed between extreme open and closed positions.

[0005] This movable part, for locking and unlocking the visor, moves in a lateral direction with respect to the axis of rotation of the visor and tends to remain permanently in the locked position by the action of pushing means; this determines that the mentioned part must be manually held in the unlocked position for disassembling the visor from the helmet.

[0006] The drawback of this mechanism is that both hands must be used to disassemble the visor, one to keep said part in the unlocked position and the other one to grip and disassemble the visor.

DESCRIPTION OF THE INVENTION

[0007] The protective helmet for motorcyclists object of this invention has features related to the mounting and securing of the visor with respect to the helmet. Said features are aimed, on one hand, at allowing, once the movable part is actuated towards the position for unlocking and releasing the visor, said movable part to remain in said open position until the visor is mounted in the helmet again, allowing the visor to be disassembled with only one hand; and on the other hand, at incorporating in the helmet a mechanism for locking the visor in a closed position, and which upon being actuated unlocks the visor and causes its rotation automatically until a first open position.

[0008] The features of the invention will be better understood in view of the embodiment shown in the attached figures which are described below.

DESCRIPTION OF THE FIGURES

[0009] To complement the description which is being made and with the aim of facilitating the understanding of the features of the invention, a set of drawings is attached to this specification in which the following has been depicted in an illustrative and non-limiting manner:

- Figure 1 shows a schematic perspective view of an embodiment of the protective helmet for motorcyclists according to the invention
- Figure 2 shows a partial profile view of the helmet of the previous figure with the visor sectioned and in which the elements of the visor which interact with one of the side mechanisms for mounting the visor, in this case depicted in a closed position, have been depicted shaded.
- Figure 3 shows a detail for mounting one of the sides of the visor in one of the side mechanisms of the helmet, the visor having been depicted in a maximum open position.
- Figure 4 shows an enlarged lower plan detail of a horizontal section of one of the ends of the visor coupled with one of the side mechanisms for mounting the helmet.
- Figures 5 and 6 show respective views similar to Figure 4 in different phases of disassembly of the visor.
- Figure 7 shows a side view of the visor disassembled from the helmet.
- Figures 8 and 9 show respective views similar to Figures 4, 5, 6 in different phases of disassembly of the visor
- Figure 10 shows a side view of the helmet, once the locking latch of the visor in the closed position has been released and said visor has been moved towards a first open position by pushing means arranged on the sides of the helmet.

PREFERRED EMBODIMENT OF THE INVENTION

[0010] As can be observed in Figure 1 the protective helmet for motorcyclists comprises an actual calotte or helmet (10) provided with a front window and of side mechanisms for mounting the respective sides of a transparent visor (20), such that it can rotate between an open position shown in Figure 3 and a closed position of the front window shown in Figures 1 and 2.

[0011] The side mechanisms for mounting the visor (20) in the helmet comprise a cylindrical configuration (101) which can be coupled in a cavity (201) of the corresponding end of the visor (20) and which defines an axis of rotation of the visor (20) between open and closed positions.

[0012] Said side mechanisms comprise a first curved guide (102) suitable for the reception in a radial direction and the circumferential movement about the axis of rotation of a first radial attachment (202) of the visor (20); and a radially movable part (103), in a front-rear direction, between positions for locking and unlocking the visor (20). Said movable part (103) comprises a second curved guide (104) for the reception in a radial direction and the circumferential movement of a second radial attachment (203) of the visor (20) in the mounted position of the visor (20) with respect to the helmet (10).

[0013] According to the invention the side mechanisms for mounting the visor comprise a flexible tab (105) which tends to stay, due to the elasticity of the material forming it, in an operative position in which the movable part (103) is retained in the unlocked position of the visor (20), depicted in Figures 5, 6 and 7.

[0014] Starting from the mounting position depicted in Figures 3 and 4, the visor (20) can be disassembled with only one hand, as shown in Figures 5 and 6, given that once the movable part (103) is placed in the unlocked position of the visor (20), said movable part (103) is retained in said unlocked position by the flexible tab (105), it being able possible to initially carry out the release of the second radial attachment (203) from the second curved guide (104) and then the release of the first radial attachment (202) from the first curved guide (102).

[0015] As can be observed in Figures 8 and 9, during the mounting of the visor (20) the flexible tab (105) is moved by the visor (20) itself toward an inoperative position, in which it is introduced underneath the movable part (103), releasing said movable part (103) and allowing its automatic return to the locked position of the visor (20).

[0016] The side mechanisms for mounting the visor comprise springs (106) which are compressed when the movable part (103) moves towards the unlocked position of the visor (20) and which return it to the locked position when the flexible tab (105) is moved towards the inoperative position.

[0017] The side mechanisms for mounting the visor (20) comprise retaining means for retaining the visor in successive progressive open positions between a closed position depicted in Figures 1 and 2 and a maximum open position depicted in Figure 3. Said retaining means comprise a corrugated profile part (107) against which a lug (204) of the visor (20) acts laterally, said corrugated profile (107) determining the different open positions of the visor (20).

[0018] As can be observed in Figures 2 and 10, the helmet comprises in the front area a locking latch (108) of the visor in the closed position and on the sides elastic pushing means (109) for pushing the visor towards an open position. In Figures 1 and 2 the visor (20) is retained in the closed position by the locking latch (108) and in said closed position the elastic means (109) remain compressed by the visor (20) itself. In the example shown, the visor (20) acts against the elastic means (109) by means of a stop (205) defined therein.

[0019] As shown in Figure 10, when the locking latch (108) is released from the visor (20) in the closed position, said elastic means (109) acts against the visor, more specifically against the stop (205) of the visor, causing the rotation of the visor (20) from the closed position shown in Figures 1 and 2 towards a first open position depicted in Figure 10.

[0020] In the example shown, the cylindrical configuration (101) which can be coupled in the cavity (201) of the corresponding end of the visor (20) is defined in a part mounted on the helmet (10) and which can be slightly moved in the same direction as the movable part (103), tending to stay separated from said movable part by the action of a spring (110).

[0021] Having sufficiently described the nature of the invention, as well as a preferred embodiment, it is stated for the relevant purposes that the materials, shape, size and arrangement of the elements described may be modified, provided that this does not entail an alteration of the essential features of the invention which are claimed below.

Claims

1. A protective helmet for motorcyclists; comprising a front window and side mechanisms for mounting the respective sides of a transparent visor (20) such that it can rotate between an open position and a closed position of the front window; said side mechanisms comprising a cylindrical configuration (101) which can be coupled in a cavity (201) of the corresponding end of the visor (20) and which defines an axis of rotation of the visor (20) between open and closed positions; a first curved guide (102) suitable for the reception in a radial direction and the circumferential movement about the axis of rotation of a first radial attachment (202) of the visor; and a movable part (103) in a radial direction between positions for locking and unlocking the visor (20), said movable part (103) defining a second curved guide (104) for the reception in a radial direction and the circumferential movement of a second radial attachment (203) of the visor (20) in a mounted position of the visor; **characterized in that** the side mechanisms comprise a flexible tab (105) which tends to stay in an operative position in which the movable part (103) is retained in the unlocked position of the visor (20);and which during the mounting of the visor (20) is moved by the visor (20) itself towards an inoperative position for releasing the movable part (103), allowing its automatic return to the locked position of the visor (20).

2. Protective helmet according to the previous claim; **characterized in that** the side mechanisms comprise retaining means (107) for retaining the visor (20) in successive open positions, between a closed

position and a maximum open position; the helmet comprising in the front area a locking latch (108) of the visor (20) in the closed position.

3. Protective helmet according to claim 2, **characterized in that** the helmet laterally comprise elastic pushing means (109) for pushing the visor towards an open position and, in the closed position of the visor (20) said elastic means remain compressed by the visor (20) itself such that when the locking latch (108) is released from the visor (20) in the closed position said elastic means (109) cause the rotation of the visor from the closed position towards a first open position.

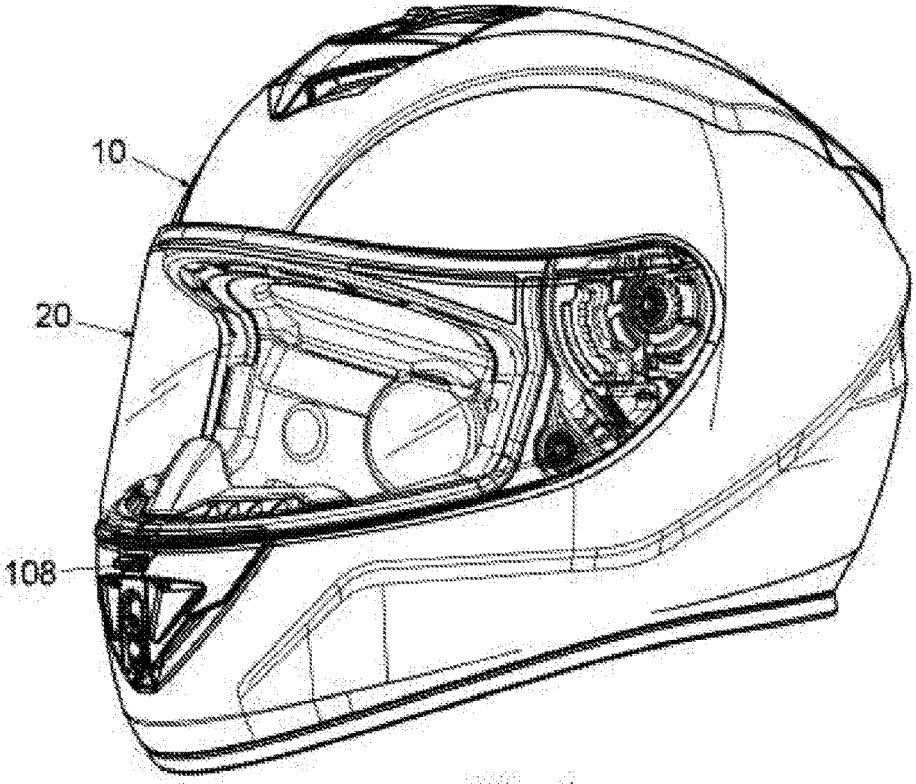

Fig. 1

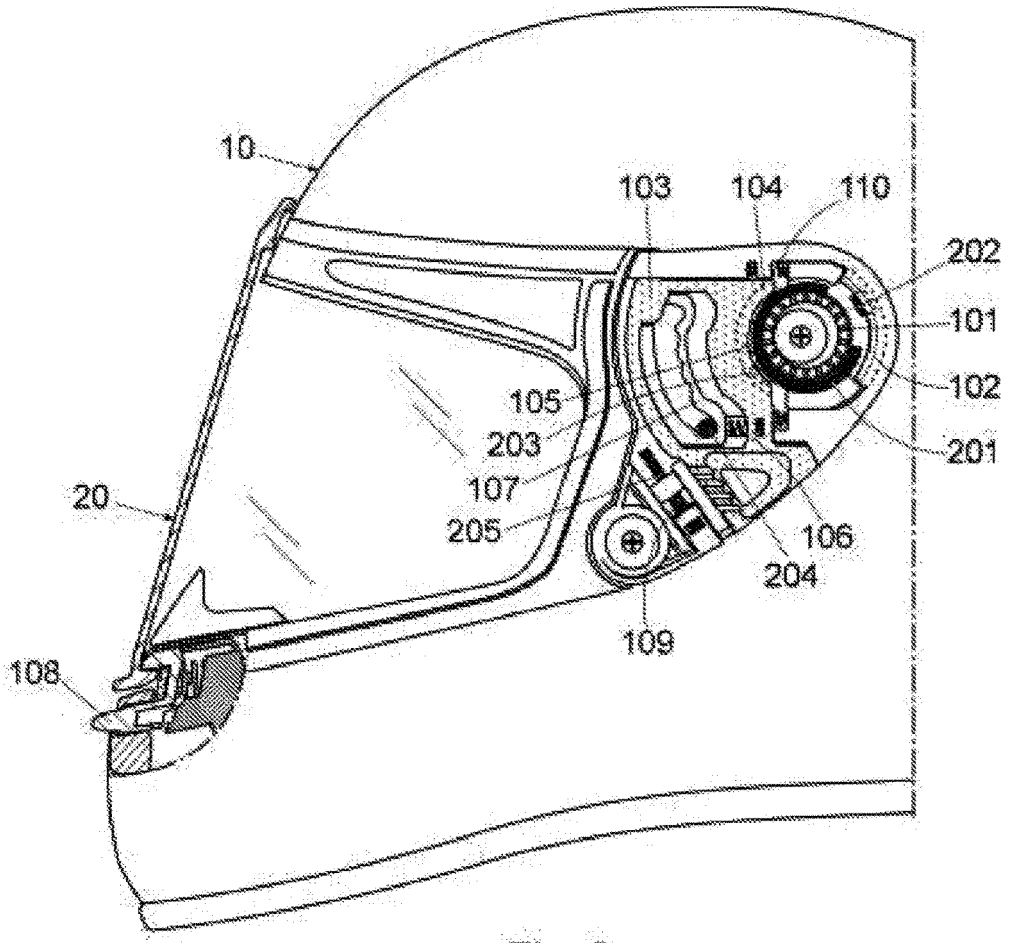

Fig. 2

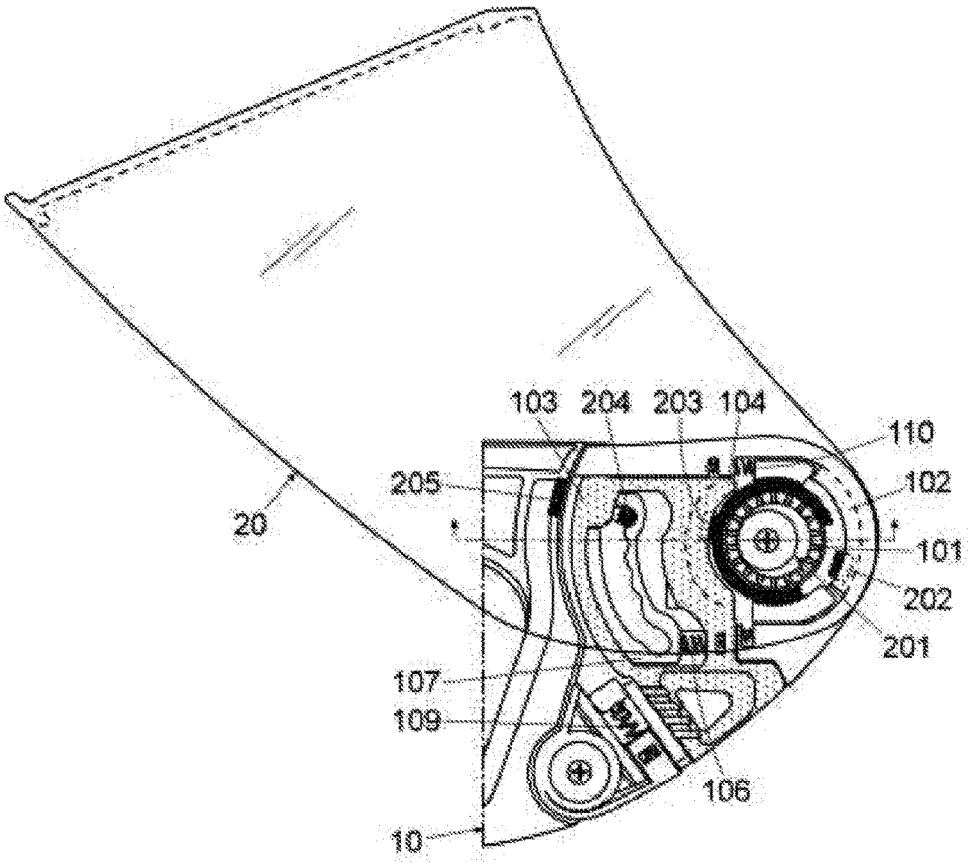

Fig. 3

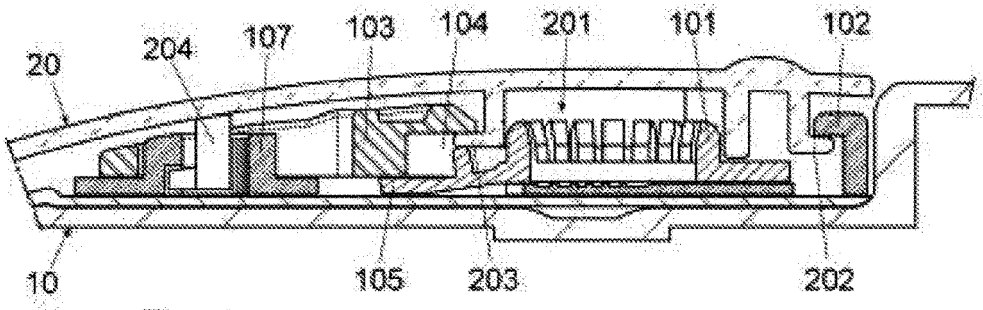

Fig. 4

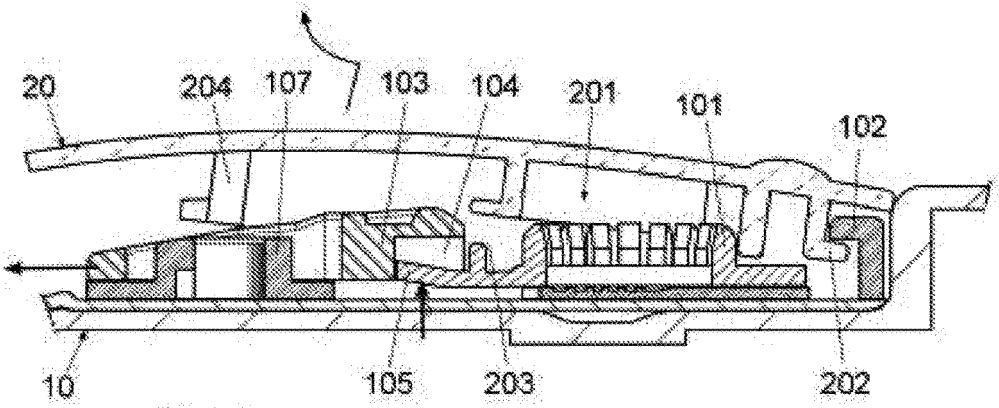

Fig. 5

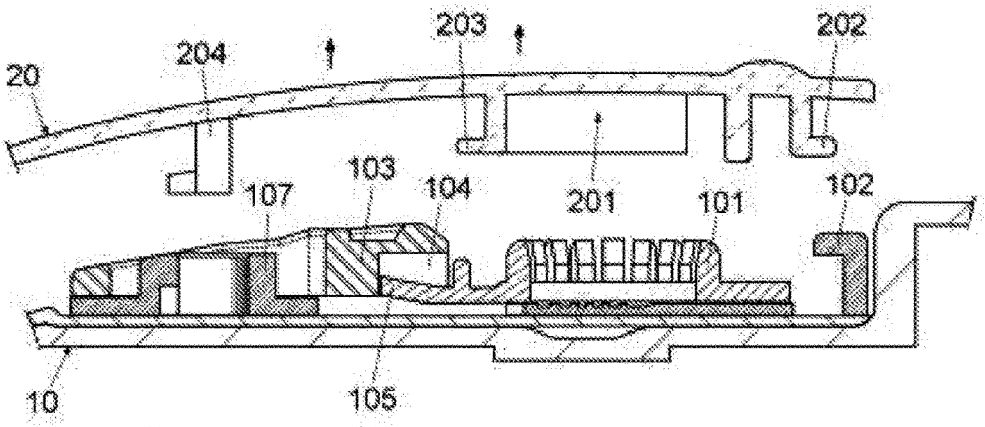

Fig. 6

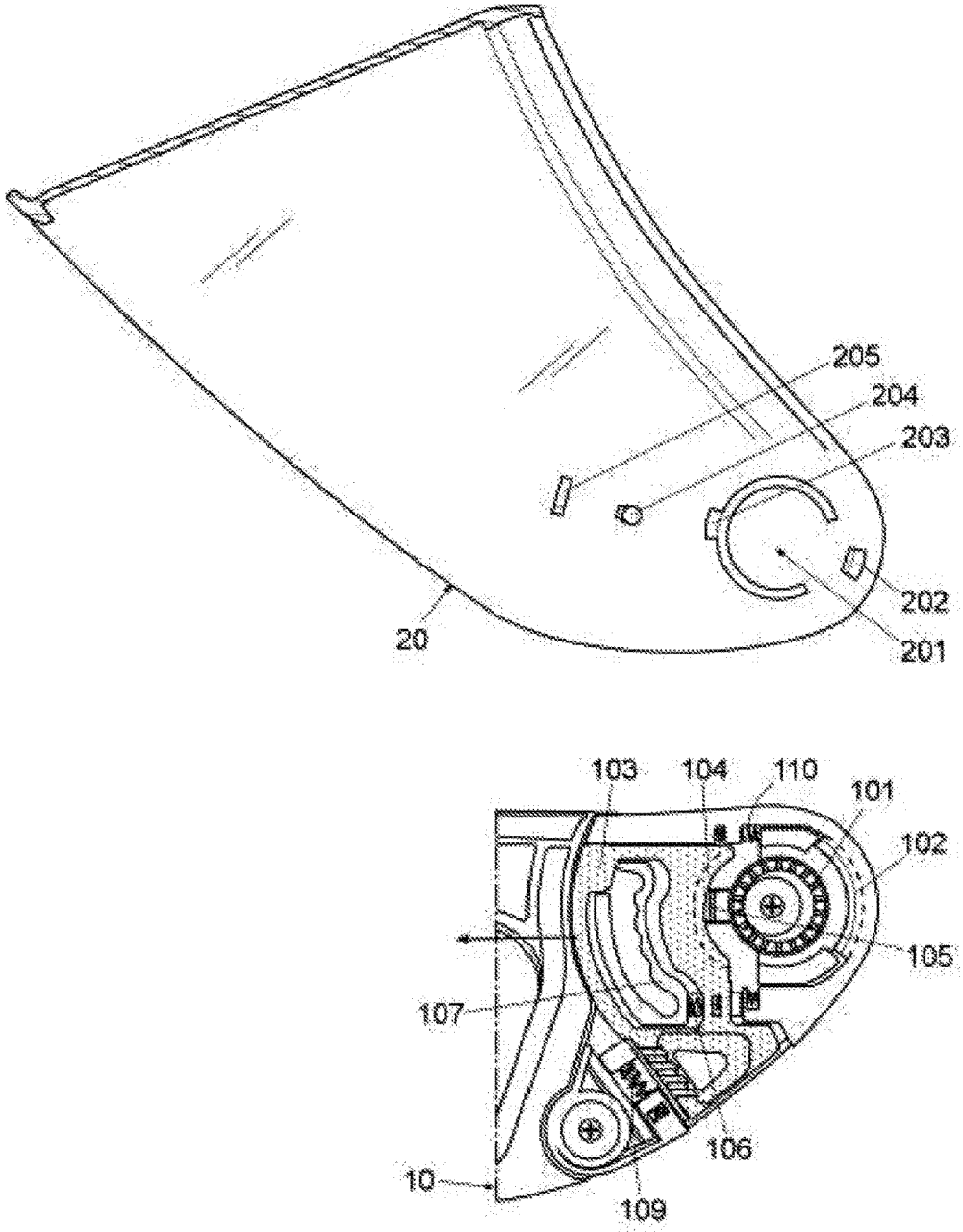

Fig. 7

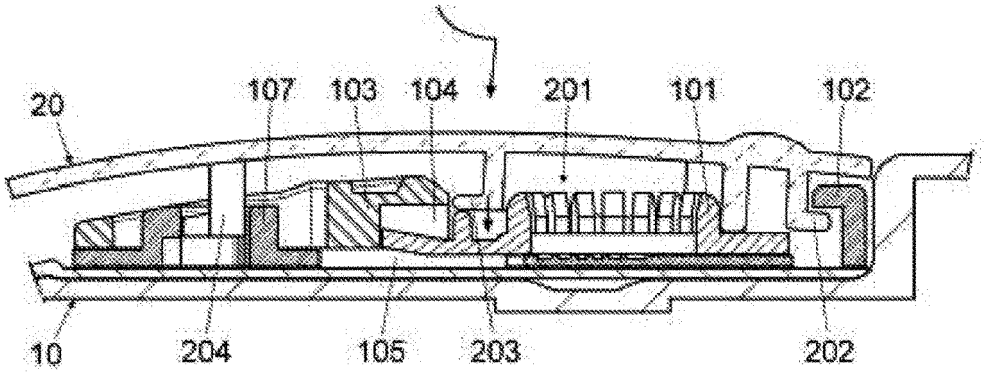
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Fig. 8

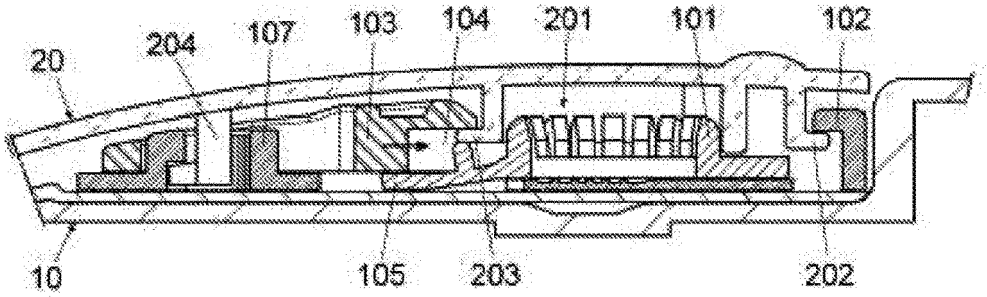
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Fig. 9

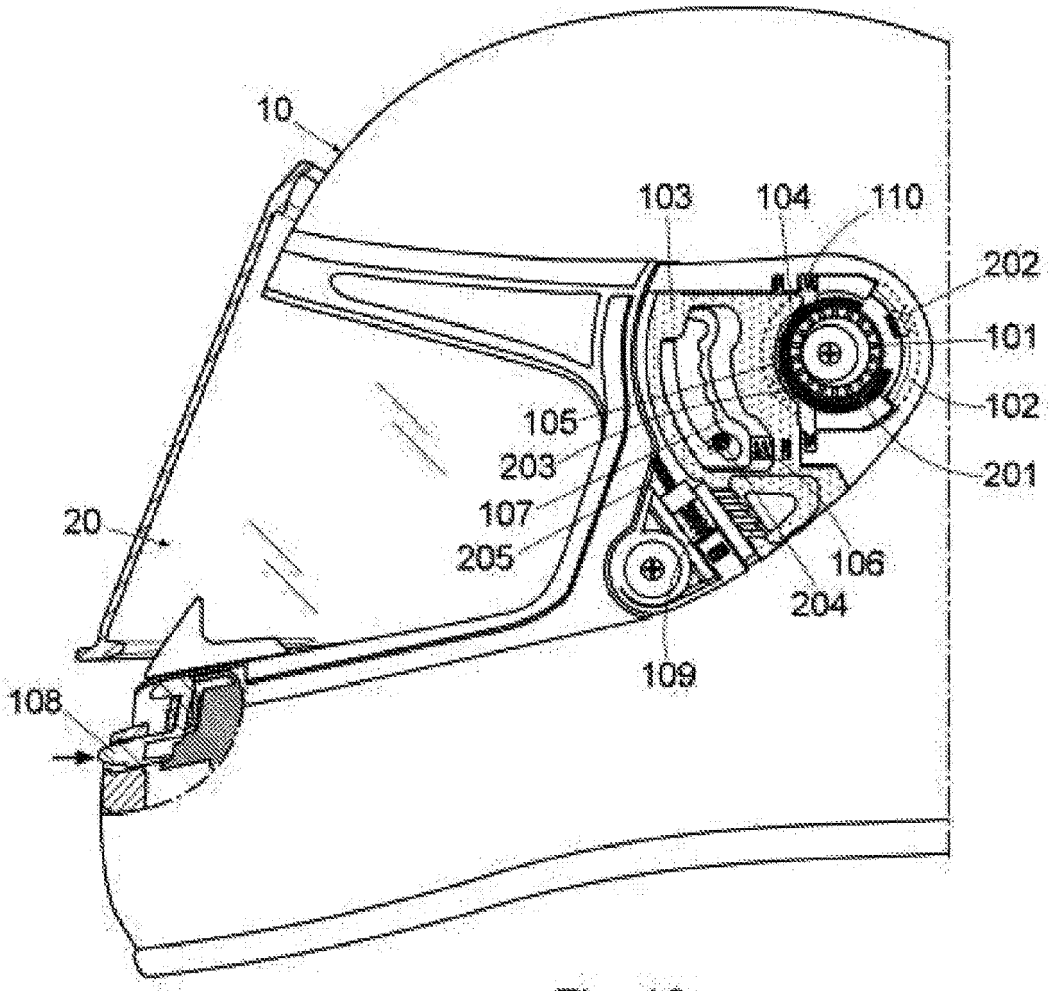

Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2018/070719

A. CLASSIFICATION OF SUBJECT MATTER

A42B3/22 (2006.01)

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

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5177816 A (SCHMIDT DANIEL J ET AL.) 12/01/1993, column 2, line 60 - column 4, line 60; figures.	1-3
A	EP 0270368 A1 (HELMETS LTD) 08/06/1988, column 2, line 51 - column 4, line 52; figures.	1-3
A	DE 3441078 A1 (FOEHL ARTUR) 27/03/1986, pages 5 - 8; figures.	1-3
A	GB 2024000 A (NOLAN SPA) 09/01/1980, the whole document.	1-3

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13/03/2019	**(15/03/2019)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer G. Villarroel Álvaro Telephone No. 91 3498571

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
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