



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 293 139 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.03.2003 Bulletin 2003/12

(51) Int Cl.7: **A42B 3/22**

(21) Application number: **01830588.8**

(22) Date of filing: **14.09.2001**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

• **Salveti, Alberto**
I-24124 Bergamo (IT)
• **Tomasoni, Gabriele**
I-24050 Bariano (BG) (IT)

(71) Applicant: **OPTICOS S.r.l.**
24030 Brembate di Sopra (BG) (IT)

(74) Representative: **Trupiano, Federica**
Marietti, Gislone e Trupiano S.r.l.
Via Larga, 16
20122 Milano (IT)

(72) Inventors:
• **Gafforio, Luca**
I-24040 Comun Nuovo (BG) (IT)

(54) **Device for reseably fastening the visor from the shell of a crash-helmet, in particular for motorcyclists**

(57) Device for fastening/unfastening the visor (105) from the cap (107) of a helmet (101) of the type with front opening (106) and two side devices (102) for rotating the visor (105) from an operative position of interception of the front opening (106) to a raised position of the visor (105) itself, comprising, for each rotating device (102), an elastic cursor (3) fitted in such a way that it can be turned and can slide axially in a seat in the same rotation device (102). This elastic cursor (3), in its relative movement with respect to the seat, can translate from an engaged to a disengaged position with a retaining hole (104) made in a rear end (103) of the visor (105). The device further comprises means for allowing the axial sliding of the elastic cursor (3) with respect to the seat exclusively in one or more predefined angular positions assumed by the same cursor with respect to the seat.

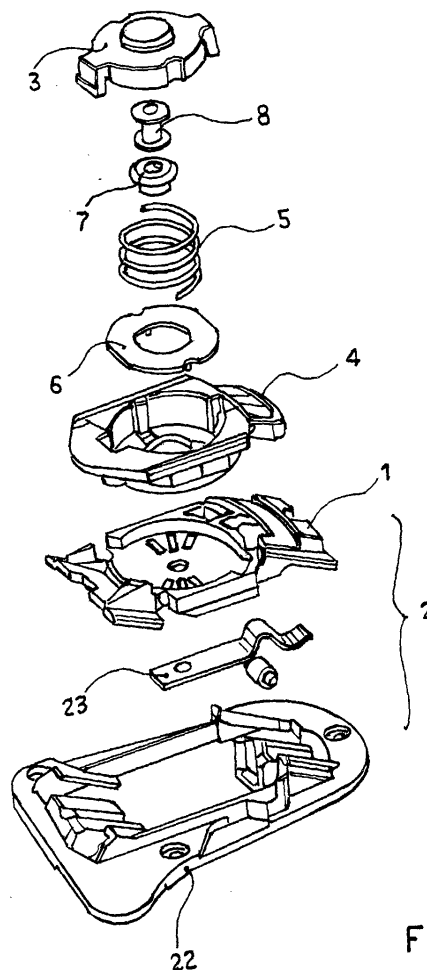


FIG.2

EP 1 293 139 A1

Description

[0001] The present invention refers to a device for fastening or unfastening (unhooking) the visor from the cap (shell) of a helmet for motorcycling or for other sports use of the type comprising a front opening and two side devices for rotating the visor with respect to the front opening.

[0002] In motorcycle helmets, and particularly in crash-helmets (or full helmets) in which the cap completely protects the user's head apart from a front opening over the nose and eyes, it is common practice to provide a pair of side devices for rotating the visor to which are respectively fixed the rear ends of the visor itself, so that it can rotate from a position where it intercepts the front opening to a raised position. These rotating devices usually present a support integral with the cap, which may be simply a seat created in the cap itself or a structural detail connected to it, on which the visor is hinged and fixed by means of mechanical catches of various kinds.

[0003] To unfasten the visor from the helmet rotating devices in order to clean it or, in case of wear or scratching, to replace it with a new one, these mechanical catches must be expressly deactivated by the user by means of suitable tools.

[0004] However this solution, while guaranteeing considerable simplicity and economy, is not very practical in situations where the user does not have the suitable tool to deactivate the mechanical catch or when the visor has to be replaced quickly, for example during competitive use.

[0005] In the application for a French patent FR 2.785.505 A1 in the name of SHARK S.A., it has been proposed to make a hole of suitable dimensions in each of the two rear ends of the visor and to engage these holes on pins protruding laterally from opposite parts of the cap. In turn, each pin presents retractable transverse catches, in particular spheres which, depending on their position, block or release the visor with respect to the pin. These catches are controlled by an elastic button which, when pressed, causes retraction of the catches and release of the visor.

[0006] This solution does not require the use of specific tools and seems to be able to allow a considerable speed in the manoeuvres to be performed to unfasten the visor, but the mechanism adopted is structurally complex, thus entailing a possible unreliability of the device, a certain difficulty in production and poor economy.

[0007] Moreover the SHARK device enables the visor to be unfastened even when it is in its normal position of use, that is when it intercepts the front opening of the helmet. In fact, the mechanism is not provided with safety blocks which, with the visor in closed position, would prevent the elastic button from being shifted for any reason, determining the consequent retraction of the spherical catches and the subsequent possible release of the visor.

[0008] In the most modern crash-helmets, the rotating visor, in its normal using position where it intercepts the front opening of the helmet, is set in so that it is flush with the helmet itself. This precaution, as well as being aesthetically pleasing, has proved to be particularly useful for obtaining an efficient aerodynamic configuration of the helmet and thus favouring the forward movement of the rider in the air at high speeds and reducing the corresponding aerodynamic rustling.

[0009] In these last realisations, to allow the visor to assume the inset position protecting the helmet opening and the raised position in which the visor is turned away from the cap and rotated so as not to intercept the opening, the rotation devices on the sides of the helmet contemplate both a lifting support which, connected to the visor, may be manoeuvred by the user so that it lifts with respect to the cap, moving the visor away from the same, and a rotating body integral with the visor and constrained in rotation to the lifting support.

[0010] When the user wants to lift the visor, allowing the air flow to enter the opening, he must extract the visor, thanks to the lifting support, and then rotate it, together with the rotating body, with respect to the cap.

[0011] In this type of helmet too it is frequently necessary to unfasten the visor from the rotating device in order to clean it or replace it with a new one if it is worn or scratched.

[0012] For this purpose it is common practice to provide, for each rotating device, a visor release device composed of a button, or cursor, sliding axially with respect to the support and fitting into a corresponding retaining hole situated in a rear end of the visor. Each button is engaged in the hole in the visor by an elastic element, such as a flat spring, and it may be pressed by the user so as to release it from the hole in the visor and thus free the visor from the rotating device.

[0013] More particularly, in recent realisations of the prior art, each rear end of the visor, engaging in each rotating device, slides on guides provided on a rotating body, secured in turn in a rotating manner on the support, and is held in the guides, preventing free sliding, by the engaging of the elastic button in the hole in the end of the visor. The button, as described above, is made elastic by a suitable elastic flat spring which, connected to the same button and bent when the latter is pressed, is deformed in such a way as to allow the button to translate by a sufficient distance to be released from the helmet. Moreover, in these devices the button can move (translate) with respect to the flat spring in a direction parallel to that of the guides in which the visor slides so as to allow optimum regulation of the positioning of the visor with respect to the cap. When the visor is in the normal using position in which it intercepts the front opening of the helmet and is inset so as to be flush with the cap, the button and its elastic element cannot be deformed by bending to such an extent as to allow the release of the visor thanks to the presence, in the mechanism itself and in the side rotating and lifting de-

vices connected to it, of suitable rests, strikers and interposed parts which limit the effects of any pressure exerted, for any cause, on the button. Such a mechanism is described, for example, in the application for a patent EP 1.057.418 A1 in the name of OPTICOS S.r.l.

[0014] So, to unfasten the visor, the user must first open the visor by activating the lifting system which, moving away from the side areas of the cap, causes the release of the safety blocks that control the elastic element; then press the two buttons that engage the holes in the ends of the visor itself to as to release the latter from the rotation devices and subsequently free it from the guides provided in the rotating body.

[0015] The unfastening device described above is extremely rapid to operate and ensures that in the normal using position of the visor, that is when it is intercepting the front opening of the helmet, the visor cannot be released, but its structure is very complex so it is not simple to make. Moreover, the force needed to cause the necessary bending of the flat spring and the extent of the spring deformation are variable according to the position of the button with respect to the spring, which means that there is a certain heterogeneity in the response of the unfastening device and it is necessary for this device to be oversized in order to prevent certain relative positions of the button with respect to the flat spring from causing axial sliding of the button which is insufficient to free the visor from the same device.

[0016] An aim of the present invention is to provide a device for unfastening the visor from the cap of a full helmet (or crash-helmet) which does not present the inconvenient aspects of the prior art and which is therefore extremely rapid to operate and, at the same time, particularly reliable.

[0017] Another aim of the present invention is to provide a device for unfastening the visor which does not allow the visor to be unfastened when it is intercepting the front opening of the helmet during use, and which is particularly efficient while being structurally simple.

[0018] These and other aims are achieved by the device in the present invention, as claimed in the first independent claim and in the subsequent dependent claims.

[0019] According to the present invention, the device for fastening/unfastening the visor from the cap of a helmet of the type with front opening and two side devices for rotating the visor from an operative position of interception of the front opening to a raised position of the visor itself comprises, for each rotating device, an elastic cursor fitted in such a way that it can be turned and can slide axially in a seat in the same rotation device. This elastic cursor, in its relative movement with respect to the seat, can move from an engaged to a disengaged position with a retaining hole made in a rear end of the visor. The device further comprises means for allowing the axial sliding of the elastic cursor with respect to the seat exclusively in one or more predefined angular positions assumed by the same cursor with respect to the

seat. Preferably these means for allowing sliding of the cursor act by interposition of parts.

[0020] The elastic cursor of the device for fastening and unfastening the helmet, according to a preferred aspect of the present invention, can rotate together with the visor and the angular positions in which the cursor can slide axially with respect to the seat of the rotating device coincide with the angular position assumed by the cursor when the visor is in a raised position.

[0021] According to a particular aspect of the present invention, the cursor comprises projecting parts which, during its rotation with respect to the seat, rest and slide on a surface of the support itself. This sliding surface comprises housings in which these projecting parts can be engaged to allow the traverse movement of the cursor with respect to the seat of the rotating device.

[0022] According to another aspect of the present invention, the cursor is rendered elastic by a helical spring inserted operatively between the abovementioned seat and the cursor itself.

[0023] A preferred embodiment of the present invention will now be illustrated, purely as an example without limitation, with the aid of the enclosed figures, in which:

figures 1a, 1 b are schematic side views of a crash-helmet of the type in which the visor may be set in flush with the cap, on which it is possible to fit a device according to the present invention;

figure 2 is an exploded view of a rotating device comprising a device for unfastening the visor of a full helmet in a preferential embodiment of the present invention;

figure 3 is a top plan view of a lifting support of the embodiment in figure 2;

figure 4 is a top plan view of a rotating body of the embodiment illustrated in figure 2;

figure 5 is a side section view of a cursor of the visor unfastening device in figure 2;

figure 6 is a side section view of an intermediate plate of the embodiment in figure 2;

figure 7 is a side section view of the rotating device and of the visor unfastening device assembled and in a position in which the visor is raised with respect to the cap of the helmet;

figure 8 is a top plan view of the embodiment in figure 7.

[0024] Figures 1a, 1b show two side views, respectively with the visor raised and with the visor closed, of a crash-helmet 101 of the type in which the visor 105 intercepts the front opening 106 of the helmet 101 in an inset position flush with the cap 107. The helmet 101 presents laterally, on opposite sides, two devices 102 suited for engaging with the rear ends 103 of the visor 105.

[0025] Figure 2 illustrates, in an exploded view, a device 102 for rotating the visor 105 which may be applied on a full helmet of the type shown figures 1a and 1b. In

these helmets, when the visor 105 is in its inset position intercepting the front opening 106 (figure 1b) and the user wants to turn it, the rotating devices 102 situated on the sides of the cap 107 must first move the visor 105 away from the cap itself, so that the visor 105 is no longer embedded in the opening 106 of the helmet, and only later allow the rotation of the visor 105 into a raised position (figure 1a).

[0026] For this purpose, the rotating device in figure 2 comprises an assembly 2 for lifting and moving forward the visor 105 and a rotating body 4, constrained to the assembly 2 so as to be able to turn in relation to the latter, on which is connected the rear end 103 of the visor 105.

[0027] More particularly, the assembly 2 is composed of a base 22, fixed firmly to the cap 107, and of elastic means 23 suited for retaining the visor in two stable positions, as well as a lifting support 1, connected to the visor 105, which allows it to be extracted from the opening 106 and lifted with respect to the cap 107.

[0028] The support 1 is provided with bottom surfaces coupled in a sliding manner to sloping slides, of a wedge shape, with their higher portion facing towards the front of the helmet, present on the base 22, and it is retained in a position of stable equilibrium by the means 23. The relative sliding of the lifting support 1 with respect to the base 22 on the slides determines the moving of the visor 105 away from the cap 107 in a lateral direction and forward in a longitudinal direction. Moreover, the means 23 allow the support 1 to remain in a stable position whether it is raised or close to the base 22. This solution for the extraction of the visor 105, described briefly above, is the object of an application for a patent deposited at the same time by the Applicant and is not a part of the present invention.

[0029] In the embodiment in figure 2, moreover, the rotating body 4 is coupled to the support 1 by means of a bush 7 and a rivet 8 which define the axis of rotation around which said body 4 is free to turn with respect to the support 1. The body 4 is also secured to one of the rear ends 103 of the visor 105 and rotates together with said visor 105. The device illustrated therefore allows the visor 105 to be extracted, moving it away from the front opening 106 and forward with respect to the cap 107, thanks to the lifting support 1, and then turned, thanks to the rotating body 4.

[0030] The device illustrated also comprises an elastic cursor 3, fitted in an elastic fashion, sliding and turning on the body 4, an intermediate plate 6, the function of which will be described below, and a helical spring 5 inserted between the plate 6 and the cursor 3. The cursor 3, the spring 5 and the support 1 are part of the device for fastening/unfastening the visor in the present invention.

[0031] More generally, the device according to the present invention comprises a support 1 for the rotating device, which may be simply a fixed seat made in the cap 107, to which is connected, in such a way as to be

able to turn and slide relatively, an elastic cursor 3 suited for engaging in a corresponding retaining hole 104 located in the rear end 103 of the visor 105. The elastic cursor 3, in its axial movement with respect to the support 1, is also able to translate axially from a raised position, in which it is engaged in the hole 104 in the visor 105, to a lowered position, in which it is disengaged from the hole 104, only when corresponding to predefined angular positions reached by the same cursor 3 with respect to the support 1. For this purpose means are provided, preferably of the type with interfering parts, suited for allowing sliding of the cursor 3 with respect to the support 1 exclusively in these predefined angular positions.

[0032] Preferably, the cursor 3 rotates together with the visor 105 and the angular positions in which the cursor 3 can slide with respect to the support 1 to free the visor 105, disengaging from the hole 104, correspond to the above-mentioned raised position of the same visor 105 (figure 1a).

[0033] It must be observed that the device in the present invention, as it will be clear to a technician of the sector, cannot be applied only to the extraction assembly 2 described above, but may also be generally used with visor extraction mechanisms of the prior art (for example the one described in the application for a patent EP 1.057.419 - A1 in the name of OPTICOS S.r.l.) or even with helmets in which the visor is not inset and therefore said extraction assembly 2 is not present. In the latter case, the support 1 and the base 22 coincide and the rotating body 4 can therefore rotate with respect to the cap 107.

[0034] Now with reference to the figures 3-8, the preferred realisation of the present invention illustrated in figure 2 will be described in detail.

[0035] Figure 3 shows a support 1, according to a preferred aspect of the present invention, which comprises a base surface 11 surrounded by a frame 9 within which the rotating body 4 may be engaged in rotation, and a hole 13 in which is inserted, for assembly, the rivet 8. The surface 11 presents a plurality of grooves or holes 12 and the frame 9 is provided with two slots 10a, 10b, diametrically opposite each other, which constitute interruptions in the same frame 9.

[0036] The rotating body 4, with reference in particular to figure 4, comprises a lower cylindrical portion, or cup, suited for engaging with the support 1 and provided with a hole 17 for engaging with the bush 7 and the rivet 8, two through openings 15a, 15b diametrically opposite and other two openings 16a, 16b offset at a 90° angle with respect to the first ones. The upper portion of the body 4 is also provided with two parallel guides 18a, 18b within which may be inserted, by sliding, the rear end portion 103 of the visor 105.

[0037] The bush 7 and the rivet 8 perform the function of a hinge for the body 4 with respect to the support 1 and may obviously be substituted with any other constraint able to hold together the body 4 and the support

1 in a relatively rotating manner.

[0038] The elastic cursor 3 comprises, as shown in figure 5, two shaped projecting parts 19a, 19b and is shaped in order to engage by catching in the retaining hole 104 in the rear end 103 in the visor 105. The cursor 3 is kept away from the rotating body 4, and therefore from the support 1, thanks to the helical spring 5 which exerts a pushing action on the internal surface of the cursor 3 and on the intermediate plate 6.

[0039] During use, therefore, the visor 105 is inserted in a removable fashion between the guides 18a, 18b, arranged on a plane at a right angle to the axis of rotation of the body 4, which allow the integral rotation of the visor 105 with the same body 4, and it is kept integral with the entire rotating device by the engaging of the elastic cursor 3 in the hole 104 thanks to the pushing action of the spring 5.

[0040] The projecting parts 19a, 19b of the cursor 3 engage in the through openings aperture 15a, 15b of the rotating body 4 and are shaped so that they guarantee that the same cursor 3 can rotate together with the body 4 and at the same time can travel with respect to the latter, in a direction coinciding with the axis of rotation, for a stroke of a given length.

[0041] The bottom ends of the projecting parts 19a, 19b, moreover, rest on the top surface of the frame 9 present on the support 1 and can slide on it during the relative rotation of the rotating body 4, and therefore of the cursor 3, with respect to the same support 1. The rotation of the body 4 therefore leads the projecting parts 19a, 19b to slide resting on the frame 9, until these projecting parts 19a, 19b are in the angular position corresponding to the housings (slots) 10a, 10b.

[0042] The possible engaging of the projecting parts 19a, 19b in the housings 10a, 10b, which is obtained by exerting force on the cursor 3 sufficient to overcome the thrust of the spring 5, allows the axial sliding of the same cursor 3 with respect to the body 4 and to the support 1.

[0043] The projecting parts 19a, 19b of the cursor 3, the housings 10a, 10b and the frame 9 of the support 1, together with the helical spring 5, in this particular embodiment of the present invention, constitute the means for allowing the axial sliding of the cursor exclusively in predefined angular positions of the same cursor 3 with respect to the support 1.

[0044] The location of the housings 10a, 10b, as already mentioned, is such that it is only when the visor 105 is in the raised position shown in figure 1a, and therefore when the body 4 and the cursor 3 assume the corresponding angular position with respect to the lifting support 1, that the projecting parts 19a, 19b are arranged corresponding to the same housings 10a, 10b. In this configuration it is therefore possible to exert pressure on the same cursor 3 to provoke its movement towards the support 1, overcoming the resistance of the spring 5. This movement has a sufficient stroke to free the hole 104 in the visor 105 from the same cursor 3 and thus allow sliding of the rear end 103 of the visor 105,

which is no longer held back by the cursor, within the guides 18a, 18b of the rotating body 4.

[0045] It must be observed that, in a more essential embodiment of the present invention, which is not illustrated, the device for rotating the visor 105 might not present the rotating body 4 and the visor might only be held back by the cursor 3 in an integral manner with it, without being moved away from the object of the present invention. In this essential embodiment, the cursor 3 could be directly constrained, in rotation and in axial movement, to the support 1.

[0046] Figure 6 shows a side section of the intermediate plate 6 which, in the embodiment illustrated, rests on the bottom surface of the cylindrical portion of the rotating body 4 while the spring 5 rests on the plate 6. The plate 6 comprises a central hole 20 and is provided with two teeth 21a, 21b which are inserted in the openings 16a, 16b of the body 4 and, passing through the rear wall of the latter, engage in the grooves or holes 12 provided on the surface 11 of the support 1.

[0047] The plate 6 is therefore integral with the body 4, thanks to the insertion of the teeth 21 a, 21 b in the openings 16a, 16b, and is elastically held in position by the helical spring 5.

[0048] The function of the teeth 21a, 21b which engage in the grooves 12 is to provide predefined angular positions which are substantially stable for rotating the visor. This plate 6 and the corresponding grooves 12 may be omitted without this structurally or functionally influencing the device of the present invention.

[0049] A general view in side section of the device in figure 2 assembled and in a position in which the lifting support is in a raised position and the cursor 3 is held back by the spring 5 is illustrated in figures 7 and 8 (for the sake of clarity the visor is not shown).

[0050] To unfasten the visor 105 from the rotating device illustrated, therefore, the user must first extract the visor 105 from the front opening 106 and at the same time move it away from the cap 107, then rotate it in a raised position and afterwards unfasten it.

[0051] In fact it is not possible, in the full helmet 101 illustrated, to turn the visor 105 before it is extracted from the front opening 106, because of the interference of parts between the visor 105 and the cap 107, due to the inset position flush with the cap 107 which the visor 105 itself assumes when it is set to intercept the front opening 106.

[0052] The preliminary operation of extracting and rotating the visor thus contemplates that the user, if necessary using suitable means not illustrated for pushing the visor 105, should first provoke the raising and advance of the lifting support 1 with respect to the base 22 and then the rotation of the visor 105 with respect to the cap 107 and, consequently, the rotation of the rotating body 4 and of the retaining cursor 3 with respect to the support 1 in a raised position. Due to the interference between the teeth 21a, 21b of the plate 6 and the grooves 12 of the support 1, interference maintained

thanks to the pushing action of the spring 5, the visor 105 can be lifted in steps in stable angular positions, identified by the geometric arrangement of the same grooves 12.

[0053] During the rotation of the visor 105, the projecting parts 19a, 19b slide on the top surface of the frame 9, resting on it and thus preventing, in the intermediate positions assumed during the rotation of the cursor 3 with respect to the support 1, the possible occurrence for any reason of an axial movement of the same cursor 3 towards the support 1.

[0054] Once the visor 105 has reached the completely raised position, on the other hand, the angular position of the projecting parts 19a, 19b with respect to the support 1 coincides with the location in which the housings 10a, 10b have been made in the frame 9 and so the bottom ends of the projecting parts 19a, 19b are no longer resting on the frame 9. So, in this position, any pressure of the cursor 3 that overcomes the resistance of the helical spring 5 determines its axial sliding approaching the support 1 and its disengagement from the retaining hole 104 in the rear end 103 of the visor 105. With the cursor 3 pressed it is therefore possible to move the visor 105 away from the rotating device, making it slide out of the guides 18a, 18b of the rotating body 4.

[0055] This operation, repeated for both the lateral rotating devices on the helmet 101, allows the rapid release of the visor 105 from the same helmet 101 and its possible substitution. The impossibility of unfastening the helmet in positions other than that of normal use in which it intercepts the front opening of the helmet is entrusted to the fact that only in the raised position of the visor 105 (figure 1a) can the cursor 3 be pressed to release (unhook) the visor 105.

[0056] The fastening of a new visor to the rotating devices of the type illustrated in the figures is performed by repeating the above-mentioned unfastening operations in reverse order and so, for each lateral device 102 of the helmet 101, it may be achieved by keeping the rotating body 4 in the visor unfastening position and inserting, while holding down the cursor 3, the rear end 103 of the new visor in the guides 18a, 18b of the rotating body 4, until the hole 104 corresponds to the cursor 3. At this point, to secure the visor it is sufficient to release the cursor 3 which, pushed by the spring 5, engages with the hole 104 and thus prevents sliding of the visor 105 in the guides 18a, 18b.

[0057] The device illustrated above, as will be clear to an expert in the field, may be simply adapted to rotating devices which do not contemplate the prior extraction of the visor and moreover, in a possible embodiment, the rotation of the cursor 3 may be independent of the rotation of the visor itself.

[0058] From the above description it is clear that the new device for fastening and unfastening the visor from the cap of a helmet is particularly effective, considering the high speed of operation of each cursor 3, structurally simple and at the same time able to prevent the unfastening of the visor 105 when, during normal use of the helmet, the visor 105 is in the position of interception of the front opening 106.

tening of the visor 105 when, during normal use of the helmet, the visor 105 is in the position of interception of the front opening 106.

Claims

1. Device for fastening/unfastening the visor from the cap of a helmet of the type with front opening and two side devices for rotating the visor from an operative position of interception of the front opening to a raised position of the visor, comprising, for each rotating device, an elastic cursor fitted in such a way that it can be turned and can slide axially in a seat in the same rotation device, the elastic cursor being movable between an engaged and a disengaged position with a retaining hole made in a rear end of the visor, **characterised in that** it comprises means to allow the axial sliding of said cursor with respect to said seat exclusively in one or more predefined angular positions assumed by the same cursor with respect to said seat.
2. Device according to claim 1, wherein said visor, in its operative position, may be set in flush with the cap and wherein each of said rotating devices comprises at least one rotating body for turning the visor with respect to the cap and said seat is a lifting support for moving the visor away from or towards the cap.
3. Device according to either of the previous claims, **characterised in that** said cursor rotates together with the visor.
4. Device according to claim 3, wherein said angular positions in which the cursor can slide axially with respect to said support coincide with the angular position assumed by the cursor when the visor is in said raised position.
5. Device according to any one of the preceding claims, **characterised in that** said means for allowing axial sliding act through interference of parts.
6. Device according to claim 5, **characterised in that** said means for allowing axial sliding comprise one or more projecting parts integral with said cursor and a sliding surface of said seat for said projecting parts to rest on, said sliding surface being provided with one or more housings in which the projecting parts can be engaged for the axial sliding of the cursor.
7. Device according to any one of the preceding claims, **characterised in that** it comprises a rotating body connected to said seat in such a way that it is free to turn.

8. Device according to claim 7, **characterised in that** said rotating body comprises grooved guides within which said side end of the visor may be inserted.
9. Device according to claim 7 or 8, wherein said rotating body is interposed between said cursor and said seat, the cursor being constrained to said sliding body in an axially sliding manner. 5
10. Device according to any one of the previous claims, **characterised in that** it comprises elastic means acting on said cursor moving away from said seat. 10
11. Device according to claim 9 and 10, **characterised in that** said elastic means are composed of a helical spring interposed between said cursor and said rotating body. 15
12. Device according to claim 7, **characterised in that** it comprises a plate integral with said rotating body, said plate being provided with at least one tooth that can engage removably in corresponding grooves or holes present in said seat. 20

25

30

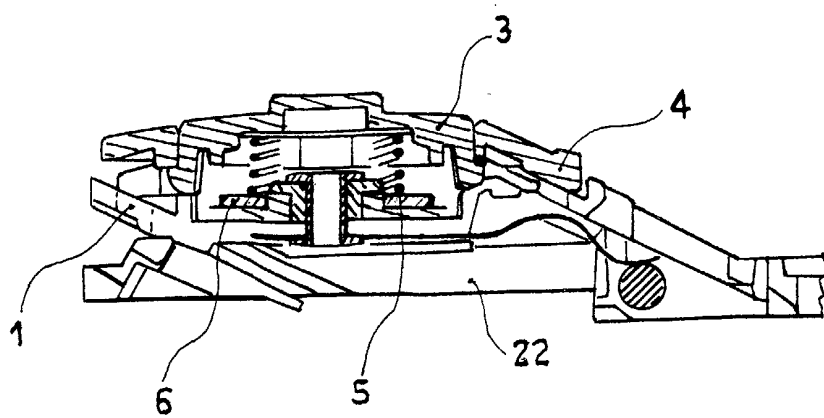
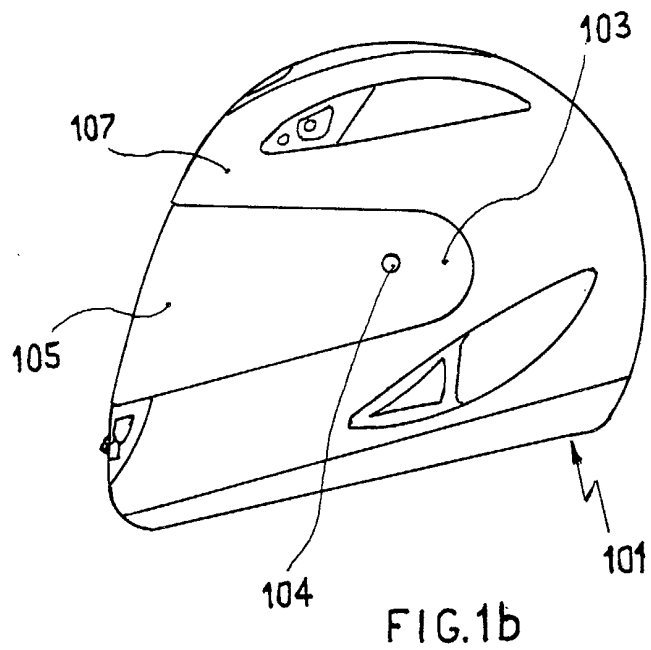
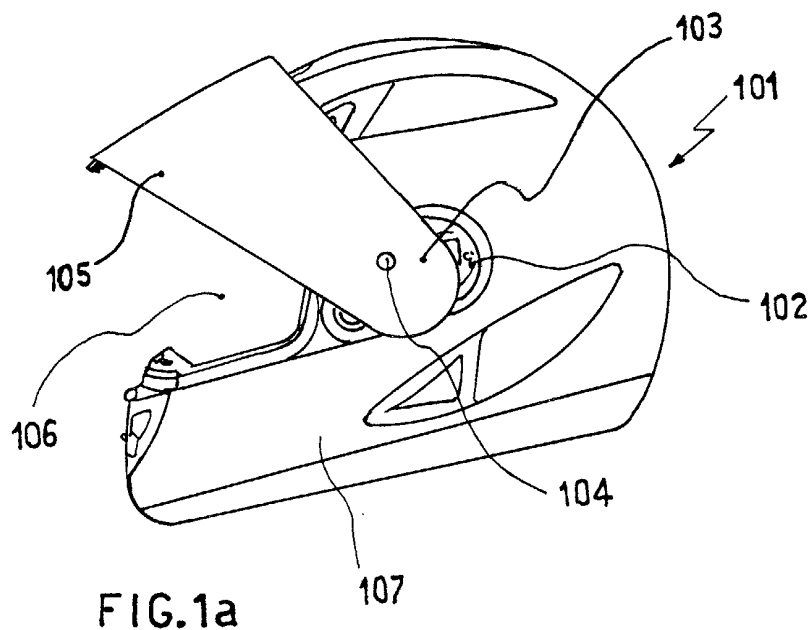
35

40

45

50

55



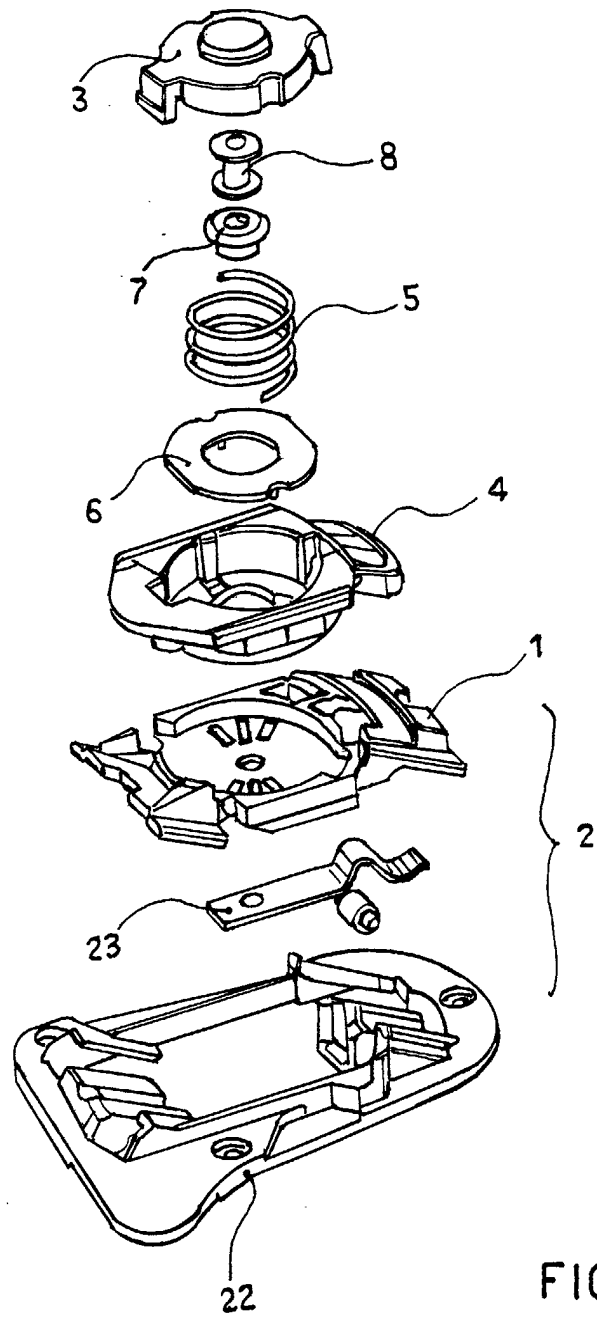


FIG.2

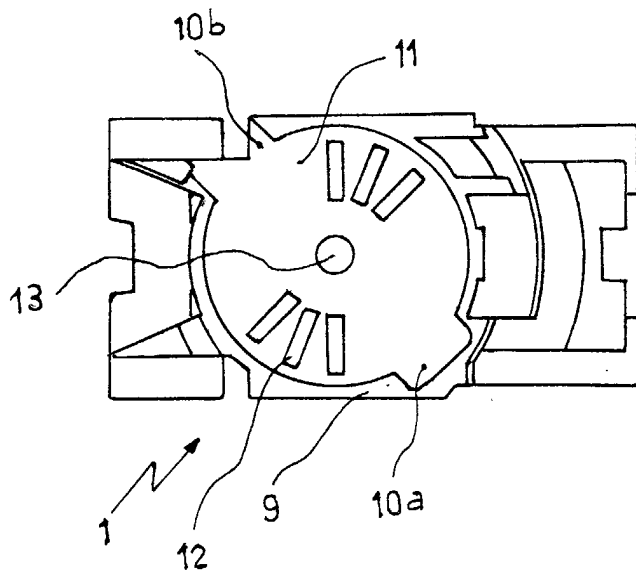


FIG. 3

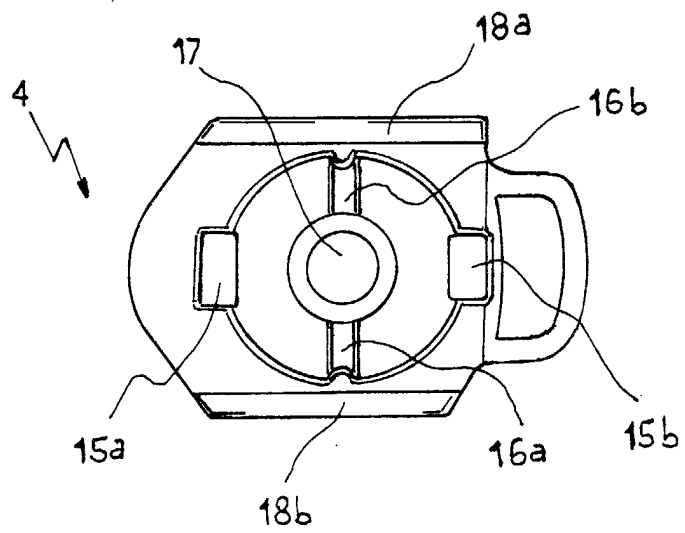


FIG. 4

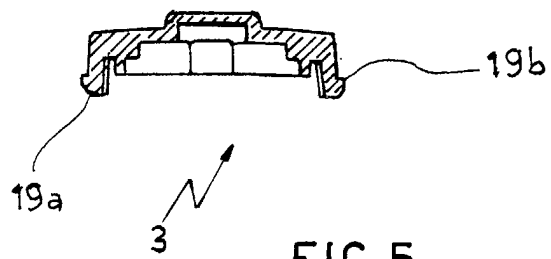


FIG. 5

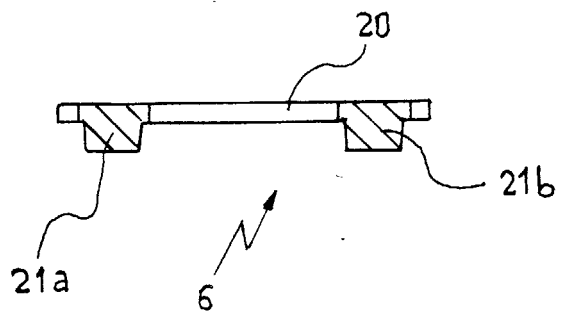


FIG. 6

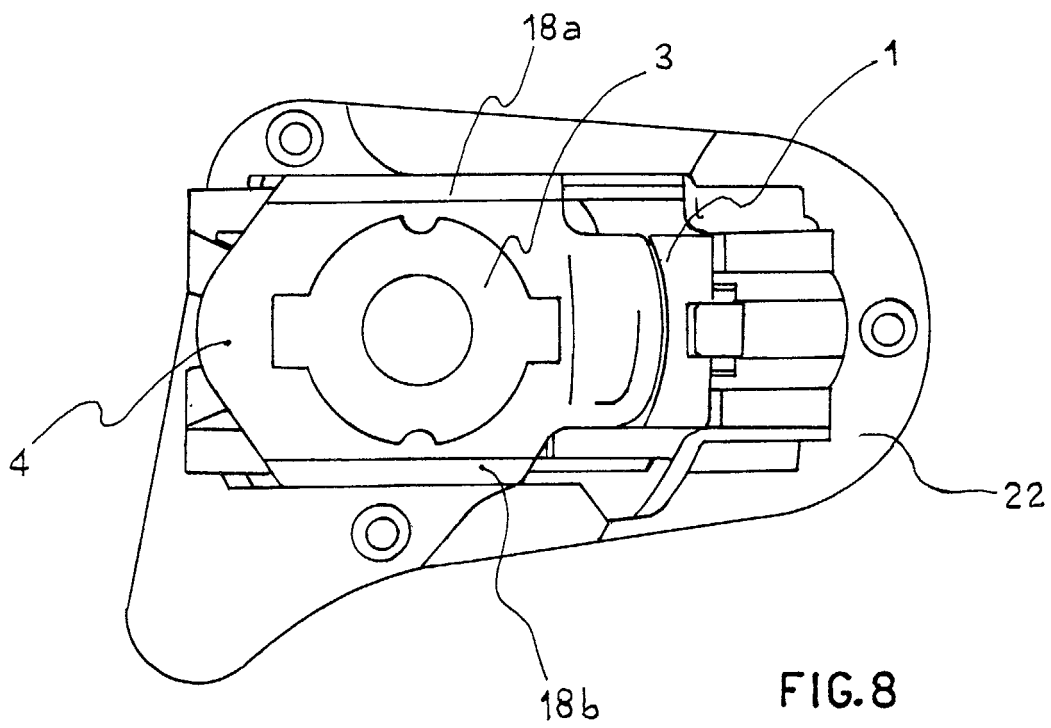


FIG. 8



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 83 0588

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
D,A	EP 1 057 418 A (OPTICOS S.R.L.) 6 December 2000 (2000-12-06) ----		A42B3/22
D,A	FR 2 785 505 A (SHARK SA) 12 May 2000 (2000-05-12) ----		
A	EP 0 482 731 A (SHOEI KAKO KABUSHIKI KAISHA) 29 April 1992 (1992-04-29) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A42B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 March 2002	Examiner Bourseau, A-M
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			

EPO FORM 1503 03 92 (P04C01)

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

EP 01 83 0588

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-03-2002

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 1057418	A	06-12-2000	EP	1057418 A1	06-12-2000
			AU	3646100 A	30-11-2000
FR 2785505	A	12-05-2000	FR	2785505 A1	12-05-2000
EP 0482731	A	29-04-1992	JP	1921554 C	07-04-1995
			JP	4163306 A	08-06-1992
			JP	6047762 B	22-06-1994
			CA	2037753 A1	25-04-1992
			DE	69104009 D1	20-10-1994
			DE	69104009 T2	26-01-1995
			EP	0482731 A1	29-04-1992
			KR	9303887 B1	15-05-1993
			US	5062162 A	05-11-1991

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82