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(54) **Prospective helmet for vehicle drivers**

(57) A protective helmet (1) for vehicle drivers, comprising a shell (10), a visor (20) and a mouth guard (30), in which the said visor (20) and the said mouth guard (30) rotate substantially independently of each other with respect to the said shell (10) and in which the said

visor (20) and the said mouth guard (30) rotate about their own axes of rotation, positioned a suitable distance apart.

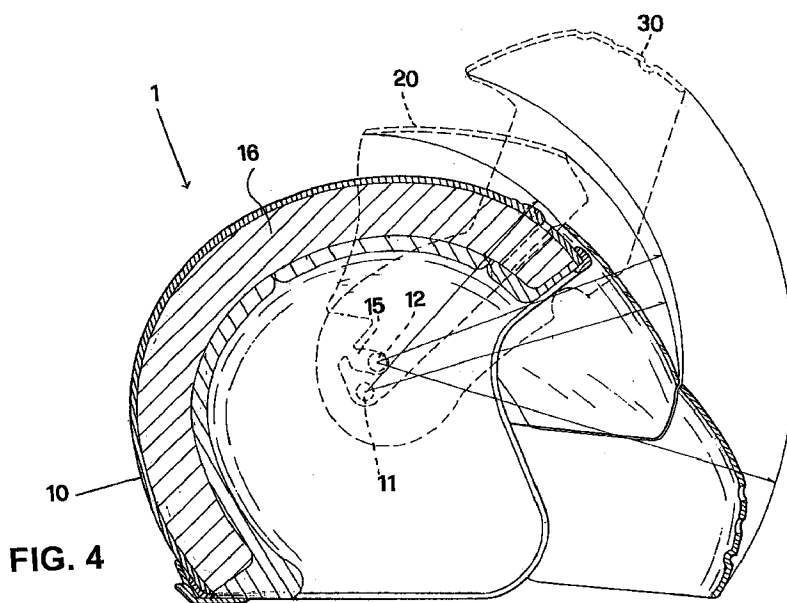


FIG. 4

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Description

[0001] The present invention relates to a protective helmet for vehicle drivers. More specifically, the present invention relates to a helmet of the integral type comprising a shell, a visor and a mouth guard, in which the said mouth guard and the said visor rotate with respect to the said shell substantially independently of each other.

[0002] Protective helmets for vehicle drivers are known in which the mouth guard rotates with respect to the shell of the helmet, carrying the visor with it. These helmets have the disadvantage that the visor cannot be used when the mouth guard is raised.

[0003] In order to overcome this disadvantage, a type of helmet has been proposed in which the mouth guard and the visor rotate independently of each other about the same axis.

[0004] The inventors of the present invention have realized that in this type of helmet there are large gaps between the visor and the mouth guard when these are both closed (lowered). This is because one of these elements (the visor) is set back with respect to the other (the mouth guard). This gives rise to a number of disadvantages such as, for example, water infiltration and draughts which generate whistling noises and reduce the aerodynamics of the helmet. Not even a complex system of seals is sufficient to overcome these problems. Moreover, even the most sophisticated seals tend to deteriorate rapidly over time when exposed to atmospheric agents. Furthermore, when the mouth guard is in the closed position, these seals impede closure of the visor and are subjected to strong mechanical stresses each time the visor is forced in an attempt to close it.

[0005] The inventors have perceived that the drawbacks of this helmet are due to the fact that both the visor and the mouth guard rotate about a single axis and that the trajectory of one of these two elements has a larger radius than the trajectory of the other element in order to allow the first to rotate outside the second.

[0006] As a result of these observations, the inventors also perceived that all the abovementioned drawbacks can be overcome by rotating the mouth guard and the visor about their own axes of rotation, positioned a suitable distance apart.

[0007] Therefore, in a first aspect the present invention provides a protective helmet for vehicle drivers, comprising a shell, a visor and a mouth guard, in which the said visor and the said mouth guard rotate substantially independently of each other with respect to the said shell, characterized in that the said visor and the said mouth guard rotate about their own axes of rotation, positioned a suitable distance apart.

[0008] Preferably, the said visor and the said mouth guard follow trajectories which intersect each other in such a way that, in the closed position, the bottom profile of the said visor sits substantially flush with the top profile of the said mouth guard.

[0009] Characteristics and advantages of the invention will now be described with reference to embodiments which have been illustrated, by way of non-limiting example, in the attached drawings, in which:

- Fig. 1 is a left side view of a helmet shell according to the invention;
- Fig. 2 is a left side view of the helmet shell of Fig. 1 with a visor;
- Fig. 3 is a left side view of the helmet shell of Fig. 1 with a visor and a mouth guard; and
- Fig. 4 is a longitudinal section through the helmet of Fig. 3 in which dashed lines represent the mouth guard and the visor in the raised position.

[0010] According to the embodiment shown in Fig. 1, a helmet 1 according to the invention comprises a shell 10 of the jet type and a first cavity 11 and a second cavity 12, both of which are threaded to take a first screw 13 and a second screw 14. The said second cavity 12 is a suitable distance away from the said first cavity 11. The right side view (not shown) is, of course, the mirror image of the left side view shown in Fig. 1.

[0011] As may be seen in Figures 2 and 3, the said helmet 1 also comprises a visor 20 and a mouth guard 30. The said visor 20 is hinged so as to rotate on the said shell 10 by means of the said first screw 13 while the said mouth guard 30 is hinged so as to rotate on the said shell 10 by means of the said second screw 14. The said visor 20 also has a slot 15 which engages with the said second screw 14, delimiting the end-of-travel positions of the said visor 20.

[0012] Fig. 4 is a longitudinal section through the helmet of Fig. 3 in which dashed lines represent the mouth guard 30 and the visor 20 in the raised position. The said Fig. 4 further shows the trajectories followed by the said visor 20 and the said mouth guard 30 as they are raised. Lastly, 16 is a general reference for the padding inside the helmet 1.

[0013] Preferably, the said helmet 1 is also fitted with conventional retention means (not shown) designed to hold the said visor 20 and/or the said mouth guard 30 securely in the closed and/or open position, even while the driver is travelling at high speed.

[0014] The said visor 20 preferably consists of a single polycarbonate body. The said material also preferably undergoes a treatment to make it scratch resistant. The mouth guard 30 and the shell 10, on the other hand, preferably each consist of a single body made of polycarbonate or a composite material.

[0015] In the embodiment illustrated in Figures 1 to 4 the mouth guard 30 can rotate through approximately 180° around the said shell 10, passing over the said visor 20 and coming to a position substantially opposite its closed position. In turn, the slot 15 allows the visor 20 to rotate through approximately 90°. One or more conventional retention devices (not shown) will enable the said visor 20 and the said mouth guard 30 to be

securely fixed in various open positions so that they cannot close or open accidentally.

[0016] A further advantage of the helmet 1 illustrated in Figures 1 to 4 is that it is extremely aerodynamic.

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Claims

1. Protective helmet (1) for vehicle drivers, comprising a shell (10), a visor (20) and a mouth guard (30), in which the said visor (20) and the said mouth guard (30) rotate substantially independently of each other with respect to the said shell (10), characterized in that the said visor (20) and the said mouth guard (30) rotate about their own axes of rotation, positioned a suitable distance apart.
2. Helmet according to Claim 1, characterized in that the said visor (20) and the said mouth guard (30) follow different trajectories which intersect each other in such a way that, in the closed position, the bottom profile of the said visor (20) sits substantially flush with the top profile of the said mouth guard (30).

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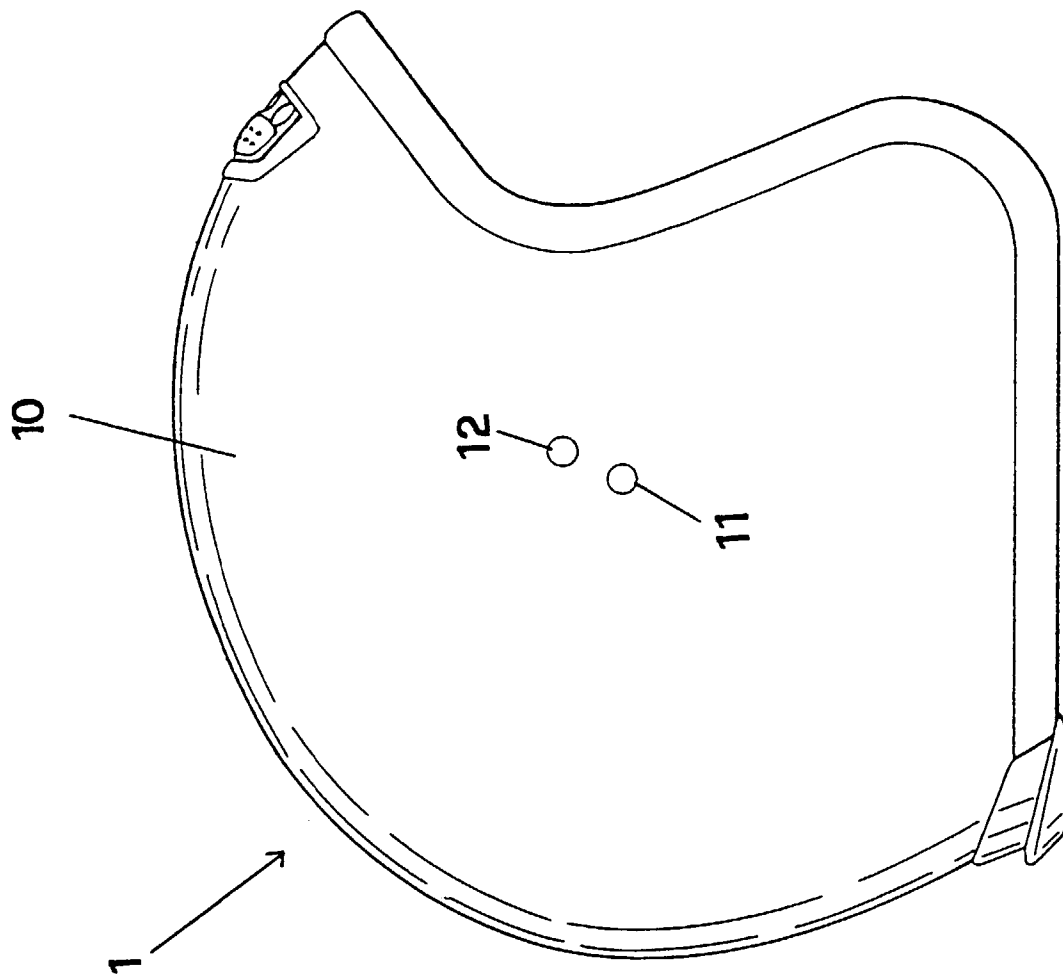
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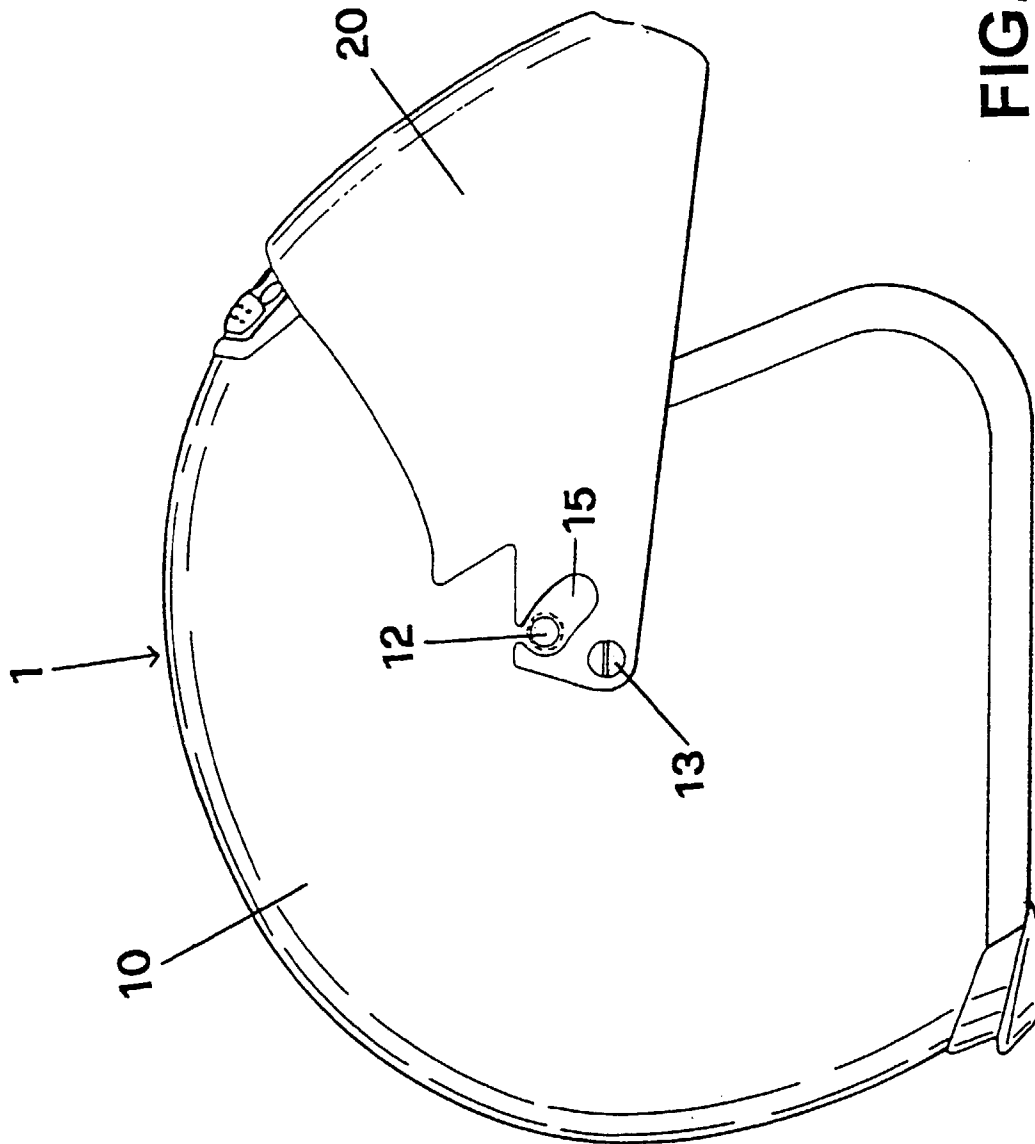


FIG. 2

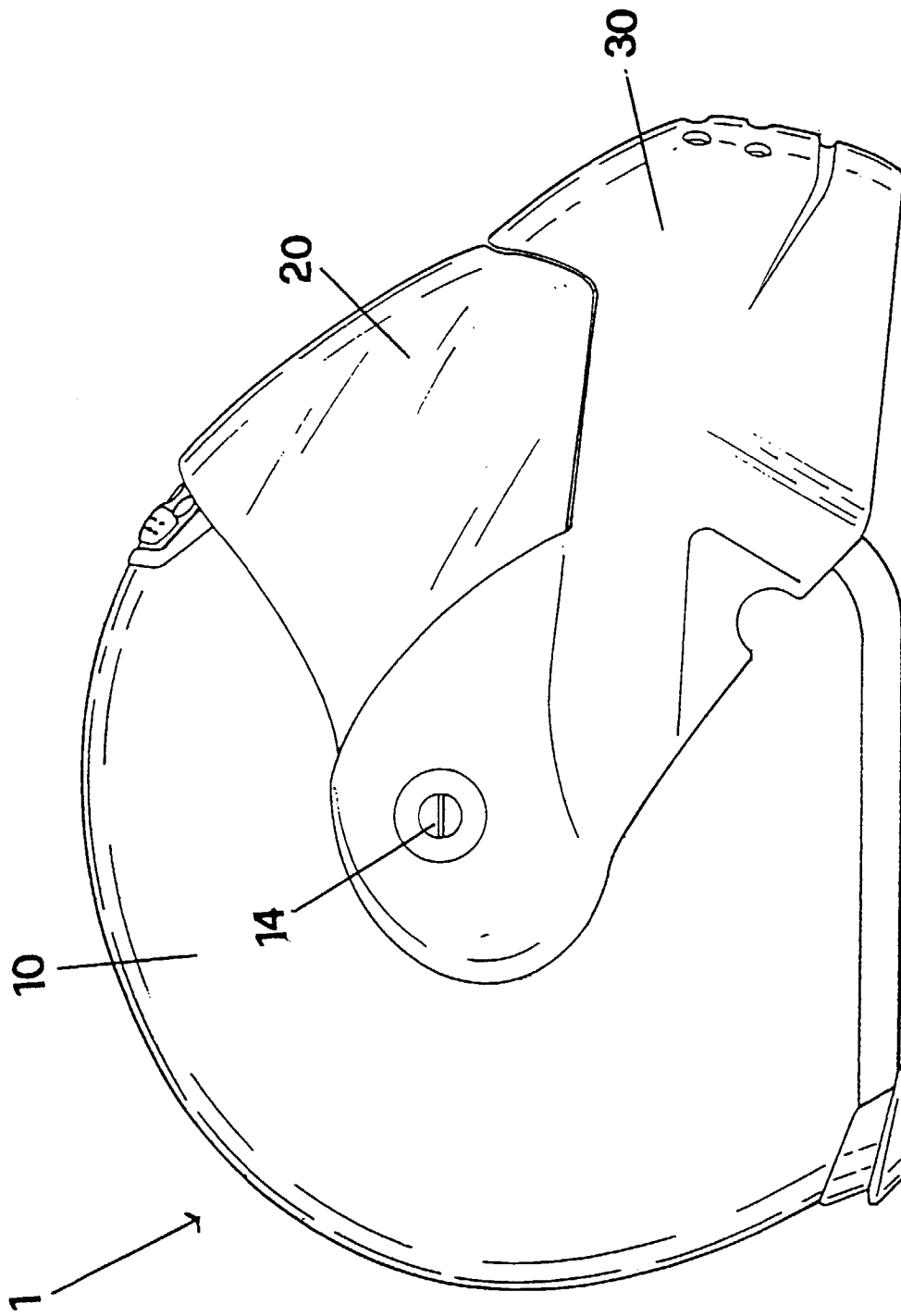


FIG. 3

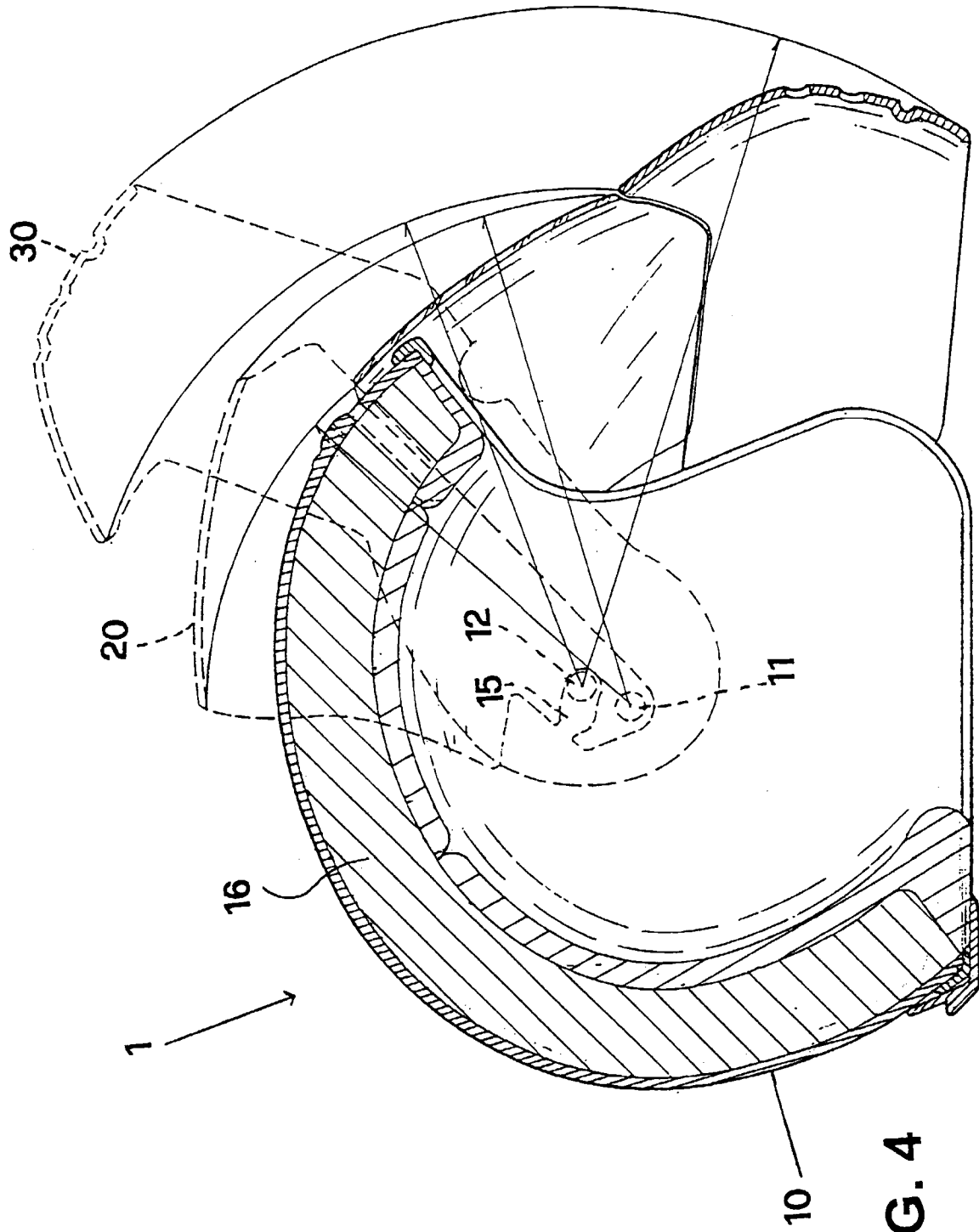


FIG. 4