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(54) **OLD STYLE HELMET WITH IMPROVED DOUBLE RING**

HELM IN ALTEM STIL MIT DOPPELRINGSCHNALLE

CASQUE A L'ANCIENNE A BOUCLE DOUBLE PERFECTIONNEE

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Description

Technical field

[0001] The present invention relates to a helmet for motor-cyclists which is open and is called "open face" or "jet" helmet, and more particularly it relates to this kind of helmets having a look like an old style helmet, comprising a portion made of fabric, skin or the like which covers the nape of the neck and the ears of the user and which is fixed to the shell or cap.

Background Art

[0002] Various types of known modern helmets satisfying type test rules are designed to imitate the old helmets used by motor-cyclists, which shall be referred to as "old style" in the following.

[0003] The particular difficulty in these attempts is due to the fact that old style helmets had a shape like a cap "cut along a plane", while a skin portion covered the nape of the neck and the ears of the user.

[0004] Obviously this skin portion did not suitably protect the user in case of accident, but since type test rules were unknown, no problem arose in this respect.

[0005] Nowadays, since several motor-cyclists appreciate again the classical motor-cycle like Harley Davidson, Ducati and Triumph, it seems likely that old style helmets which are however provided with protection features in accordance with actual law, could also be appreciated.

[0006] The attempts made until now are embodied by so-called "Jet" type helmets, wherein the lower protection portion at the site of the ears and the nape of the neck has a different colour than that of the upper portion of the cap.

[0007] In order words, a clear separation line between the two convex portions of the cap (shell) of the helmet (which in fact form a single piece) is obtained, wherein the lower part which (for instance is black painted) should "recall" the skin portion of old style helmets. Said separation line can also be obtained by a small ribbon of skin or fabric or in any other suitable way.

[0008] It is obvious that said merely graphic attempts do not solve the technical problem of adapting an old style helmet to modern type test rules like those required for modern helmets.

[0009] US 3,500,475 discloses a crash helmet with an earpiece shell body made of a synthetic resin having a large bending elasticity compared to the shell body.

[0010] This solution does not comply with type test rules, in particular E2203-04, since the earpiece shell body is not rigid and in case of accident, the rider may hurt himself.

[0011] The helmet of US-A-3,500,475 is simply an old style crash helmet without any safety provisions.

Disclosure of Invention

[0012] A helmet according to the present invention is defined in claim 1. Advantageous embodiments are defined in claims 2-7.

[0013] An object of the present invention is to satisfy the type-test rules, by proposing a real old style helmet having a fastening system for the strap or band which makes use of a double ring (like that used long before), eliminating also the drawbacks of said fastening system, i.e. the difficulty in taking on or off the crash helmet Another object of the present invention is that of providing a different system for fixing a removable visor (so called forehead cover element) on the helmet, which allows a quick separation of the forehead cover element from the cap or shell in case of fall, giving however the sensation that this visor or forehead cover element is integral with the cap as in case of classical helmets used until the seventies, in contrast with the fixing means used nowadays for the visor, which are visible and are embodied by snappers or screws. In fact, according to type-test rules, the visor or forehead cover element must detach itself in case the user falls down, so that it does not cling to the ground. This forehead cover element is of rigid material but is provided with toungues to form springs allowing immediate separation of the forehead element in case of fall.

Brief Description of Drawings

[0014] Other features of the invention and its specific advantages will follow from the description made below of a particular embodiment thereof, which is set forth illustrative and non-limitative purposes and which is shown is the annexed drawings, wherein:

Fig. 1 is an exploded perspective view of the cap and of a rigid lower portion, which are connected to each other by means of rivets;

Fig. 2 is a cross section along the line A-A of Fig. 1;

Fig. 3 is a cross section similar to that of Fig. 2, but with the cap assembled to the rigid lower portion;

Fig. 4 is a cross section which shows the fixing system for connecting the removable forehead cover element or visor to the helmet;

Fig. 5 is a perspective view of the disassembled forehead cover element;

Fig. 6a is a perspective view of the helmet of the present invention;

Fig. 6b is a perspective view similar to Fig. 6a, wherein the strap is in a position which allows the user to take off the helmet;

Fig. 7a is a detail showing the strap and the double ring system, in the fastening position;

Fig. 7b is a detail of the strap and the double ring system, in the travel end position of the detent which prevents separation of the strap from the double ring.

[0015] With reference to the drawings, the same numerals denote always identical parts of the helmet.

Best Mode of Carrying out the Invention

[0016] Figs. 1,2 and 3 show the two components of the helmet 1,2 and the way they are assembled. The component 1, or upper part, is the cap or shell which has a spherical shape "cut along a plane", as in old helmets. The lower part 2, which is also rigid, is made of a material not necessarily identical to that of the cap: glass fiber, carbon fiber, polycarbonate, nylon etc. The lower part 2 has a different geometrical shape with respect to the convex shape of the cap 1, since it does not form a simple extension of the cap or shell 1. The object to be attained is to satisfy the type-test rules which state that the surface extension must be such that the shell covers also the region of the ears of the user. This rigid lower portion 2 is inserted in an element 3 made of skin, synthetic skin or fabric, as shown in Fig. 6, so that it is not recognizable at all. An observer will have the impression that the old style helmet of the present invention (Fig. 6) is substantially formed by a single rigid part, that is the cap 1. In order to "camouflage" in a perfect way the rigid lower part 2 inside the skin, synthetic skin or fabric element 3, it is obviously necessary to select an adequate shape which differs from that of the cap 1, since when the element 3 made of skin, synthetic skin of fabric is stretched by fastening the strap 4 below the chin, it would be possible to notice that a rigid portion is indeed present inside it.

[0017] As shown in Figs. 1,2,3 the lower part 2 is laterally concave.

[0018] Moreover, at the site of the nape of the user's neck, said lower part 2 has a planer shape, that is it imitates perfectly the shape of the skin or fabric element when the helmet is fastened. The concave form of the lower part 2 at the site of the user's ears is clearly shown in Figs. 2 and 3.

[0019] As described above, the curvature of the lower part 2 will vary according to the position along the edge of the cap 1.

[0020] Referring again to Figs. 1,2,3, the lower rigid part 2 has a depression 5 with an extension 6.

[0021] Said depression 5 forms a step which engages a corresponding recess 7 on the inner edge of the cap 1.

[0022] Rivets 8a,8b which are introduced through spaced holes 9,10 provided respectively on the cap 1 and on the lower portion 2, along the depression 5 which forms a step, are used to fix to each other the components 1,2. Fig. 3 shows the situation after assembling. Figs 4 and 5 show the fixing system for removably connecting the forehead cover 11 to the cap 1. The numeral 12 denotes the inner polystyrene coating. Fig. 5, which is a perspective view of the forehead cover element of the cap or shell, shows that the forehead cover 11 whose cross-section is illustrated by a continous line in Fig. 4, has a front curved portion 11a substantially shaped like a "half-moon" which ends rearwardly by forming a circular groove 11b and a circular vertical wall 11c. The circular vertical wall 11c has vertical slits 12a, 12b, 12c, 12d, so that the tongues 13,13' of the vertical circular wall 11c will form two springs. Said springs 13,13' are provided with rounded projections 14,14'.

[0023] The assembling of the forehead cover 11 is carried out by inserting the circular vertical wall 11c inside the gap 15 between the cap 1 and polystyrene coating 12, until the projections 14,14' engage respective holes 16 obtained on the cap 1.

[0024] This arrangement insures that the forehead cover element or visor is fixed or hooked on the helment cap 1, in such a way that fixing means, like snap fasteners or the like cannot be noted from outside, so that it will seem that the forehead cover 11 is integral with the cap and forms a single piece with it.

[0025] In case of fall or collision of the forehead cover element 11, this arrangement insures, an immediate separation of the forehead cover element 11, as with so-called modern open face standard helmets and in accordance with type-test rules.

[0026] Figs. 6a,6b,7a and 7b respectively show the helmet of the present invention and the "classical" double ring system.

[0027] Nowadays, various arrangements for quickly fastening or releasing the helmet have been realized.

[0028] These arrangements have a serious drawback as regards safety: they are difficult to "understand" by a succourer.

[0029] They also have the disadvantage to be complex and to be realized using a plurality of components which could break.

[0030] A long time ago the double ring system was generally used, which is considered even now the safest system with regard to the homologation rules of this technical field, because of its resistance and easy "understanding" of its operation.

[0031] According to the present invention it is possible to render more quick the operation of putting on or taking off the helmet, even if a double ring system is employed.

[0032] The arrangement shown in Figs. 6a, 6b, 7a and 7b comprises a double ring 20 which fastens the strap 4 made of a very tough fabric. The detent 22 made of plastic or another rigid material, is ridigly connected to the strap 4 at its end 23. This detent 22 may for instance form half of a snap fastener, or any other protruding element made of plastic or metal.

[0033] Besides said detent 22 which prevents the strap 4 from unlacing, as shown in Fig. 7b (travel end of the strap 4), the system of the present invention comprises a velcro portion 30 (velcro: registered trade mark of Velcro SA CH, Switzerland), which is distant from the end 23 and which is located on the strap 4. This velcro portion 30 may be replaced by a hook, a snap fastener or any other means suited to keep said portion of the strap at the position 31 defined in the following.

[0034] Making the strap 4 rotate foreward in the direction of the arrow F, said velcro portion 30 may be pressed against a corresponding portion located on the edge of the helmet, at the lower end of the polystyrene coating, immediately behind the visor 11.

[0035] The region inside the crash helmet which defines the portion associated to the velcro portion 30 and which is used to fix the strap 4, is schematically denoted by the hatched region 31.

[0036] Said portion is located immediately behind the forehead cover element 11, on the front lower edge of the polystyrene coating 12. As has been said above, in order to reach the fixing portion 31, the strap must be independent from the two lateral elements 32a,b of the stuffing which are provided for comfort purposes, are made of skin, synthetic skin or the like, and are used for putting on or taking off the helmet. Said lateral elements 32a,b form extensions of the skin element 3, and the latter must be sufficiently open in the region indicated by 40, so as to allow rotation and said fixing of the band or strap 4.

[0037] The user, in order to take off the helmet carries out the following steps:

a) by acting on the tongue 41, pulling it towards the outside, he causes the strap 4 to slide and loosens said strap until the detent 22 reaches the position of Fig. 7b (abutment on the double ring 20, travel end position), starting from the position of Fig. 7a;

b) the user lifts the strap 4 by rotating it forward (arrow F) and "hooks" the velcro portion 30 (see Fig. 6b) on the portion 31 (the velcro portion 30 may be replaced by a snap fastener, a hook, etc.);

c) he seizes the lateral stuffing elements 32a,b and takes off the helmet.

[0038] The inverse operations will be carried out in order to put on the helmet. In order to tighten the strap 4 it suffices to pull the latter seizing its end 23.

[0039] This double ring system allows to avoid a complete separation of one end of the strap from the double ring and avoids to reinsert the same in the rings, so that this arrangement is practical, safe and may be operated quickly.

[0040] Moreover, this arrangement recalls the old helmets, so-called open face, since the double ring system was generally used; this system may be used on all kinds of helmets, even on crash helmets, and not only on so-called jet helmets.

[0041] It is obvious, furthermore, that many modifications of the described embodiment are possible, always attaining the same object and the same advantages.

[0042] For example, the cap 1 could also be integral with the lower rigid part 2. However, the lower portion 2 will be concave and/or planar and such as to form a demarcation or boundary line between the two zones, giving rise to the sensation that the cap ends. In any case, the type-test rules which state that a minimum surface including in any case the ear, must be protected, are satisfied.

Claims

1. A helmet comprising a cap or shell (1) whose edged is substantially a circle, an inner coating of polystyrene (12), an element (3) made of skin synthetic skin or fabric (3) having lateral stuffing elements (32a,32b), a band or strap (4) fixed to the cap (1) by rivets or the like, a visor or forehead cover element (11) which is removable, and a fastening system embodied by a double ring (20) for said band or strap (4), said skin element (3) hiding therein a lower rigid portion (2) rigidly connected to the cap (1) along part of its substantially circular edge, wherein said lower rigid portion (2) is planar near the nape of the user's neck and is concave near the ears so being suited to completely camouflage said lower rigid portion (2) also during use of the helmet when the strap (4) is in stretched condition.

2. A helmet as claimed in claim 1 characterised in that said double ring system (20) comprises a detent (22) at the free end (23) of the strap (4) which prevents said strap (4) from coming out, when the user's hand pulls said double ring (20) by seizing a tongue (41).

3. A helmet according to claim 1, characterised in that said strap (4) has a central portion (30) for hooking the strap (4) on a portion (31) which is located on the lower edge of the polystyrene coating (12) immediately in front of the visor and in that said strap (4) is movable independently from the lateral stuffing elements (32a,32b), that is it can swing forward (F) with respect to said stuffing elements which allow to put on or take off the helmet.

4. A helmet according to claim 3, characterised in that said central hooking portion (30) is a Velcro® portion, a snap fastener, a hook or the like.

5. A helmet according to claim 1, characterised in that said forehead cover element (11) has a rear vertical circular wall (11c) which is inserted inside a gap

(15) between the polystyrene coating (12) and the cap (1), and the front edge of the cap (1) engages a circular groove (11b) of the forehead cover element which limits forwardly said vertical circular wall (11c) and which is obtained between the latter and the front part (11a) of the forehead cover element (11), shaped like a "half-moon"; and the forehead cover element is further characterised in that the vertical circular wall (11c) includes slits (12a,12b,12c,12d) which form springs (13,13') allowing rounded projections (14) of the springs themselves, to engage by a click mechanism a plurality of holes (16) obtained on the front edge of the cap (1).

6. A helmet according to claim 1 characterised in that said lower rigd portion (2) is integral with the cap (1).

7. A helmet according to claim 1 characterised in that said lower rigid portion (2) forms a separate component assembled with the cap (1) by rivets (8a,8b) or the like, and in that the connection between the lower edge of the cap (1) and the upper edge of the lower rigid portion (2), is obtained using a "step" configuration of said edges.

Patentansprüche

1. Helm, umfassend eine Kappe oder Schale (1), deren Rand im wesentlichen ein Kreis ist, eine innere Beschichtung aus Penylstyrol (12), ein Element (3) aus Leder, synthetischem Leder oder Stoff (3), welcher seitliche Polsterelemente (32a, 32b) aufweist, ein Band oder einen Riemen (4), welcher an der Kappe (1) durch Nieten oder ähnliches befestigt ist, ein Visier oder Stirnbedeckungselement (11), das abnehmbar ist, und ein Befestigungssystem, ausgeführt durch einen Doppelring (20) für das Band oder den Riemen (4), wobei das Lederelement (3) darin einen unteren starren Teil (2), der starr mit der Kappe (1) entlang eines Teils ihres im wesentlichen kreisförmigen Randes verbunden ist, verbirgt, worin der untere starre Teil (2) nahe dem Nacken des Benutzers ebenflächig und nahe den Ohren gewölbt ist, wodurch es dazu in der Lage ist, den unteren starren Teil (2) völlig zu verbergen, und dies auch während der Benutzung des Helms, wenn der Riemen (4) sich in gedehntem Zustand befindet.

2. Helm nach Anspruch 1, dadurch gekennzeichnet, daß das Doppelringsystem (20) eine Sperrung (22) am freien Ende (23) des Riemens (4) aufweist, die verhindert, daß der Riemen (4) heraustritt, wenn die Hand des Benutzers den Doppelring (20) durch Greifen einer Zunge (41) zieht.

3. Helm nach Anspruch 1, dadurch gekennzeichnet, daß der Riemen (4) einen mittleren Teil (30) zum Einhaken des Riemens (4) an einen Teil (31), der sich am unteren Rand der Penylstyrolbeschichtung (12) unmittelbar vor dem Visier befindet, aufweist, und daß der Riemen (4) unabhängig von den seitlichen Polsterelementen (32a, 32b) beweglich ist, wodurch er in bezug auf die Polsterelemente, die es erlauben, den Helm aufzusetzen oder abzunehmen, nach vorne (F) schwingen kann.

4. Helm nach Anspruch 3, dadurch gekennzeichnet, daß der mittlere Hakenteil (30) ein Teil aus Velcro®, ein Druckknopf, ein Haken oder ähnliches ist.

5. Helm nach Anspruch 1, dadurch gekennzeichnet, daß das Stirnbedeckungselement (11) eine hintere Vertikalkreiswand (11c) aufweist, die in eine Lücke (15) zwischen der Penylstyrolbeschichtung (12) und der Kappe (1) eingeführt wird, und der vordere Rand der Kappe (1) in eine kreisförmige Rille (11b) des Stirnbedekkungselementes eingreift, das die Vertikalkreiswand (11c) nach vorne begrenzt und die zwischen dem letzteren und dem vorderen Teil (11a) des Stirnbedeckungselementes (11), das die Form eines "Halbmondes" hat, gebildet wird; und das Stirnbedeckungselement weiterhin dadurch gekennzeichnet ist, daß die Vertikalkreiswand (11c) Schlitze (12a, 12b, 12c, 12d) umfaßt, welche Federn (13, 13') bilden, die es rundlichen Vorsprüngen (14) der Federn selbst erlauben, durch einen Klickmechanismus in mehrere Löcher (16), die an dem vorderen Rand der Kappe (1) vorhanden sind, zu greifen.

6. Helm nach Anspruch 1, dadurch gekennzeichnet, daß der untere starre Teil (2) in die Kappe (1) integriert ist.

7. Helm nach Anspruch 1, dadurch gekennzeichnet, daß der untere starre Teil (2) einen getrennten Bestandteil bildet, der mit der Kappe (1) durch Nieten (8a, 8b) oder ähnliches verbunden ist, und daß die Verbindung zwischen dem unteren Rand der Kappe (1) und dem oberen Rand des unteren starren Teils (2) durch die Verwendung einer "stufenartigen" Bauform der Ränder erreicht wird.

Revendications

1. Casque comprenant une calotte ou coque (1), dont le bord est sensiblement un cercle, un revêtement interne en polystyrène (12), un élément (3) en cuir, en cuir synthétique ou en tissu (3) ayant des éléments latéraux de garniture (32a,32b), une courroie ou sangle (4) fixée à la calotte (1) par des rivets ou similaires, une visière ou élément abritant le front (11) qui est amovible, et un système d'attache

de ladite courroie ou sangle (4) sous forme de double boucle (20), ledit élément en cuir (3) dissimulant à l'intérieur une partie inférieure rigide (2) rattachée rigidement à la calotte (1) le long d'une partie de son bord sensiblement circulaire, où ladite partie inférieure rigide (2) est plane au voisinage de la nuque de l'utilisateur et est concave au Voisinage des oreilles, de façon à permettre de camoufler complètement ladite partie inférieure rigide (2) aussi pendant l'utilisation du casque lorsque la courroie (4) se trouve en condition tendue.

2. Casque selon la revendication 1, caractérisé en ce que ledit système à double boucle (20) comprend un arrêt (22) sur l'extrémité libre (23) de la courroie (4), qui évite que ladite courroie (4) ne s'échappe, lorsque l'utilisateur tire ladite double boucle (20) en saisissant une languette (41).

3. Casque selon la revendication 1, caractérisé en ce que ladite courroie (4) a une partie centrale (30) destinée à accrocher la courroie (4) sur une partie (31) qui est située sur le bord inférieur du revêtement en polystyrène (12) immédiatement devant la visière et en ce que ladite courroie (4) est mobile de façon indépendante par rapport aux éléments latéraux de garniture (32a,32b), c'est-à-dire qu'elle peut basculer vers l'avant (F) par rapport aux dits éléments de garniture, ce qui permet de mettre ou de retirer le casque.

4. Casque selon la revendication 3, caractérisé en ce que ladite partie centrale d'accrochage (30) est une partie en Velcro®, un bouton à pression, un crochet ou similaire.

5. Casque selon la revendication 1, caractérisé en ce que l'élément abritant le front (11) a une paroi circulaire verticale arrière (11c) qui est insérée à l'intérieur d'une ouverture (15), entre le revêtement en polystyrène (12) et la calotte (1), et l'arête frontale de la calotte (1) s'engage dans une gorge circulaire (11b) de l'élément abritant le front qui limite à l'avant ladite paroi circulaire verticale (11c) et qui est obtenue entre cette dernière et la partie avant (11a) de l'élément abritant le front (11), de forme semblable à une "demi-lune"; et l'élément abritant le front est de plus caractérisé en ce que la paroi circulaire verticale (11c) comprend des fentes (12a,12b,12c,12d) qui forment des ressorts (13,13'), permettant à des saillies (14), de forme arrondie, des ressorts eux-mêmes de s'engager par un mécanisme d'encliquetage dans une pluralité de trous (16) disposés sur l'arête avant de la calotte (1).

6. Casque selon la revendication 1, caractérisé en ce que ladite partie inférieure rigide (2) est intégrée à la calotte (1).

7. Casque selon la revendication 1, caractérisé en ce que la partie inférieure rigide (2) forme un composant séparé assemblé avec la calotte (1) par des rivets (8a,8b) ou similaires, et en ce que la liaison entre l'arête inférieure de la calotte (1) et l'arête supérieure de la partie inférieure rigide (2) est obtenue en utilisant une configuration en gradin desdites arêtes.

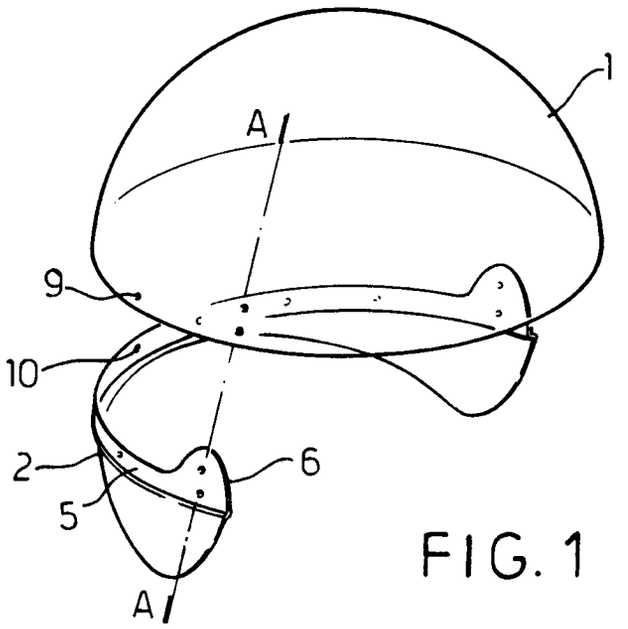

FIG. 1

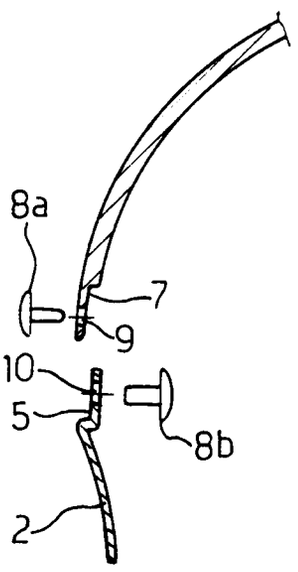

FIG. 2

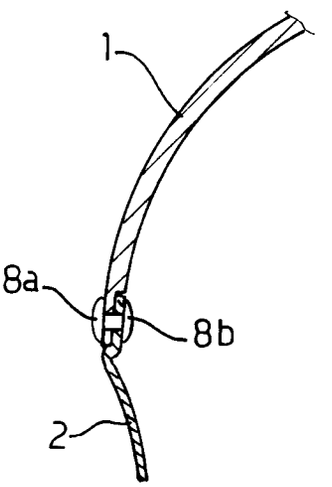

FIG. 3

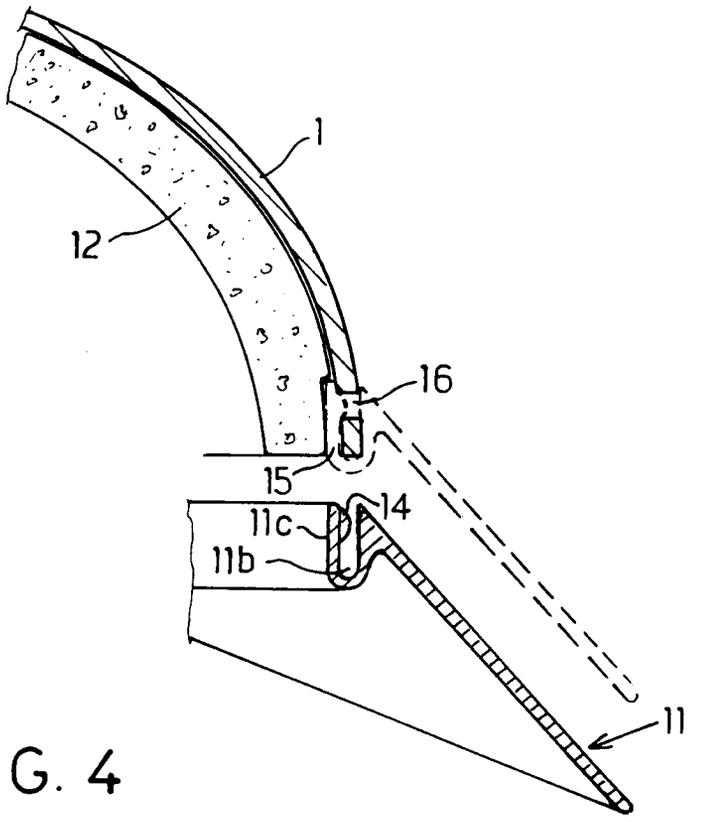

FIG. 4

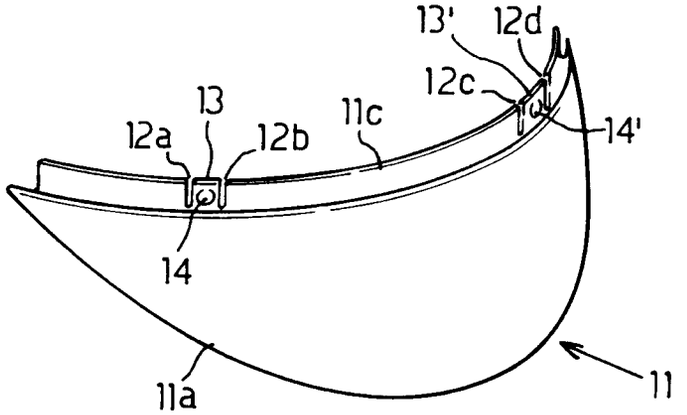

FIG. 5

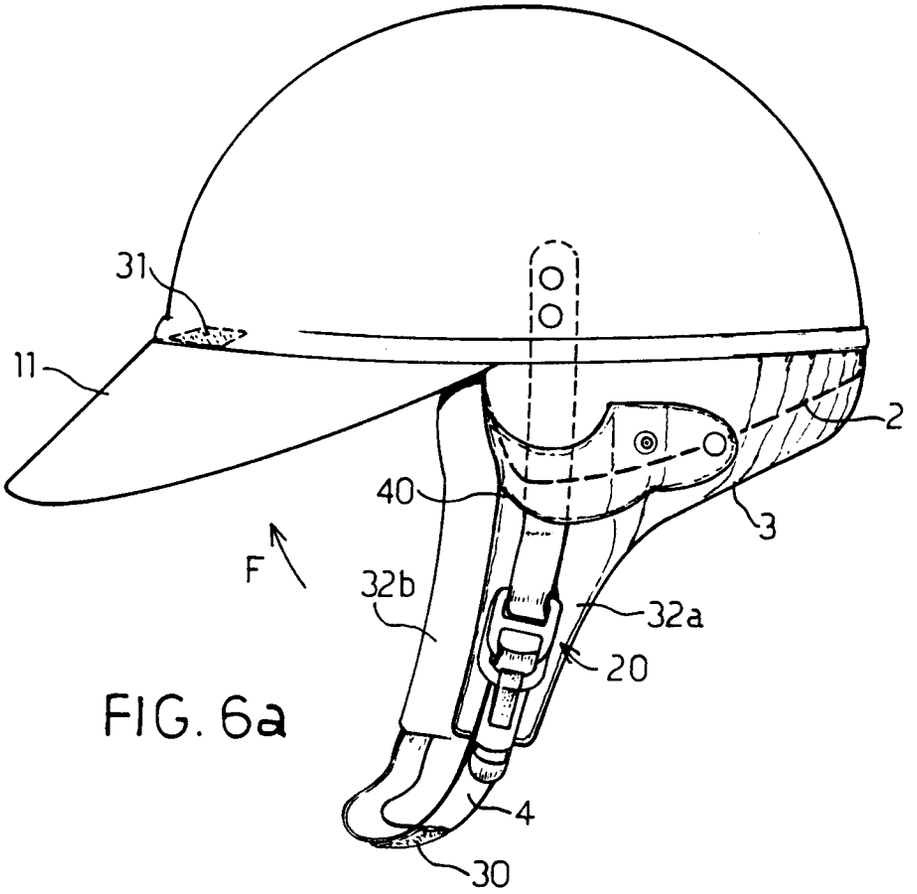

FIG. 6a

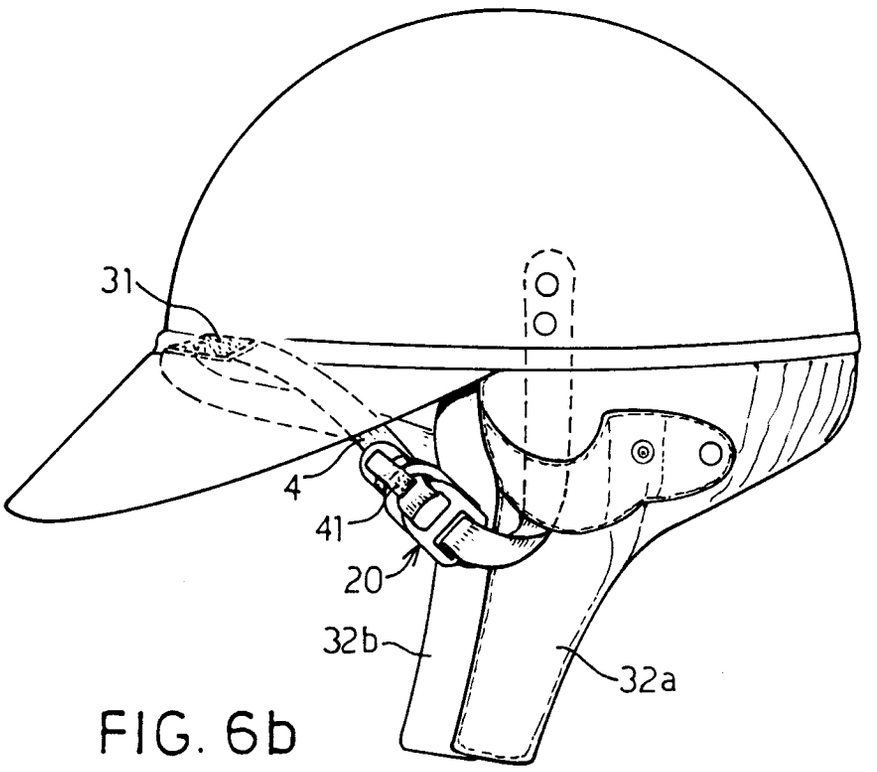

FIG. 6b

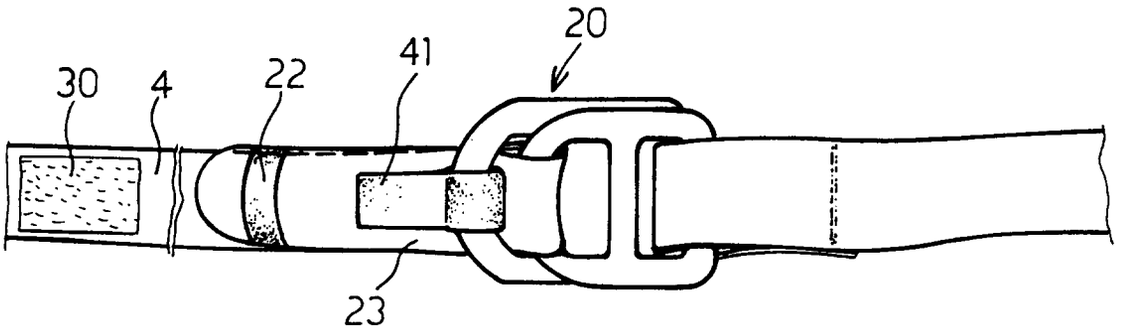

FIG. 7a

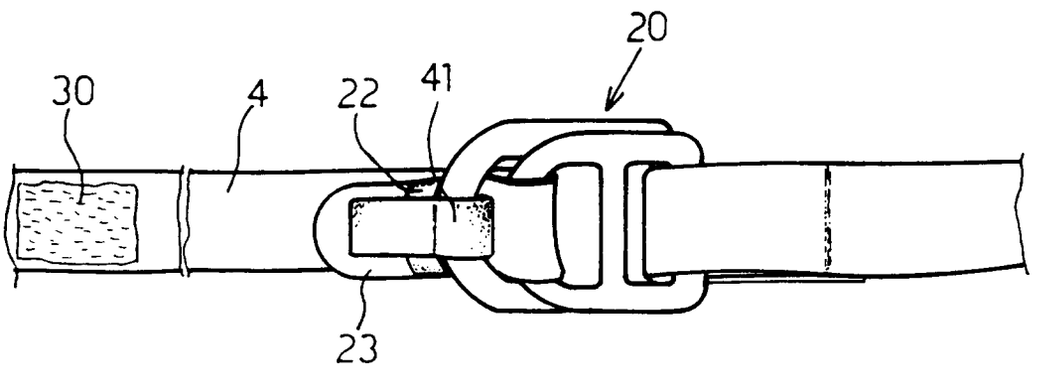

FIG. 7b