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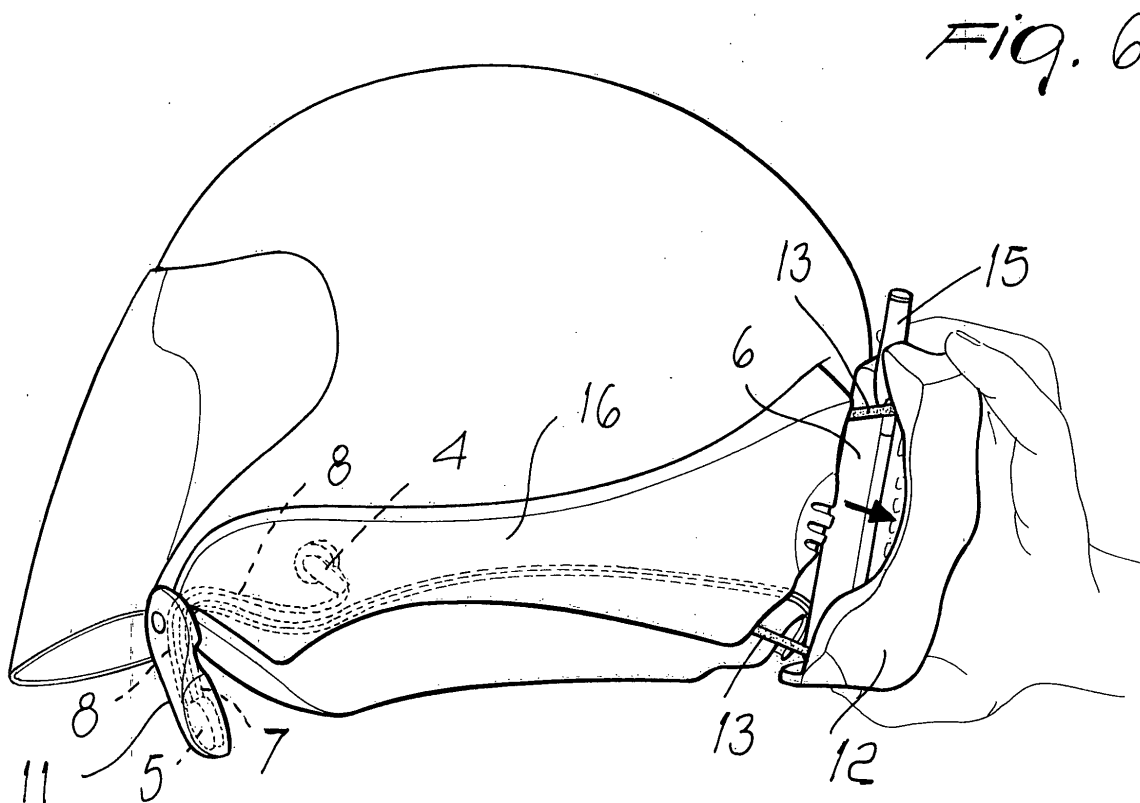
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(54) **Crash helmet for use with a cellular telephone, particularly for motorcyclists**

(57) A crash helmet (1) for use with a cellular telephone which includes a telephone body (6) and a conversation device such as a so-called handsfree set constituted by at least one earpiece (4) and at least one

microphone (5) connected to the body (6) of the telephone by means of a cable. The helmet (1) comprises a shell (2), provided with an association means for detachably associating at least the conversation device with the shell (2).



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Description

[0001] The present invention relates to a crash helmet for use with a cellular telephone, particularly for motorcyclists.

[0002] The use of the cellular telephone is so widespread that for some years now it has no longer been possible to consider it as an accessory or as a simply useful item but rather as an indispensable tool; for this reason it is practically almost mandatory, especially during work, to be reachable by cellular telephone.

[0003] Furthermore, for anyone who spends considerable time traveling, it is important that the cellular telephone be usable also during the use of a means of transportation.

[0004] However, while it is possible to use a cellular telephone in a car, apart from considerations linked to applicable laws regarding the use of telephones while driving, it is difficult to use a cellular telephone while driving a moped, motorcycle or scooter.

[0005] Since mopeds and motorcycles are used increasingly for travel, especially in high-traffic areas, the need has arisen to be able to use the cellular telephone even while using a motorcycle and therefore even while wearing a crash helmet, which is notoriously mandatory by law in most countries.

[0006] Although crash helmets, also for motorcyclists, provided with transceiver equipment have long been known, none of these helmets can be used with a cellular telephone of the normally commercially available type.

[0007] GB-A-2099680 discloses an earphone mounting, in a safety helmet, that allows to adjust the position of the earphone by means of a circular mounting plate. The mounting could be used with a cell phone earphone but there are no provisions for mounting the microphone and the cell phone itself.

[0008] DE-U-29908846 discloses a cell phone mounting for a head cover wherein the cell phone body is mounted in a socket on a side of the head cover. Such mounting is suitable only for use at very low speeds and is unsuitable for use with motorcycle crash helmets.

[0009] The aim of the present invention is to provide a crash helmet that allows to use a cellular telephone of the standard type while wearing the helmet.

[0010] An object of the invention is to provide a helmet that offers all the assurances of safety and functionality of a conventional helmet.

[0011] Another object of the invention is to provide a helmet that is simple and easy to use.

[0012] Another object is to provide a helmet whose cost is not significantly different from that of an equivalent conventional helmet.

[0013] This aim, these objects and others that will become better apparent hereinafter are achieved by a crash helmet for use with a cellular telephone, as claimed in the appended claims.

[0014] Further characteristics and advantages will be-

come better apparent from the description of preferred but not exclusive embodiments of the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

FIG. 1 is a side perspective view of the helmet according to the invention;

FIG. 2 is a front perspective view of the helmet of Figure 1 of the open-front type, known as jet helmet; FIG. 3 is a front perspective view of the helmet according to the invention in the version that is closed at the front, known as full-face helmet;

FIG. 4 is a side perspective view of the helmet preset for the application of the handsfree conversation device of the cellular telephone;

FIG. 5 is a side perspective view of a step of the application of the handsfree conversation device of the cellular telephone;

FIG. 6 is a view, similar to Figure 5, of the application of the body of the cellular telephone to the helmet according to the invention;

FIG. 7 is a rear elevation view of the helmet according to the invention, schematically illustrating the placement of the body of the cellular telephone.

[0015] With reference to the above cited figures, the crash helmet according to the invention, generally designated by the reference numeral 1, comprises, in a per se known manner, a shell 2, which is open at the front, in the so-called jet version shown in Figures 1, 2, 4 and 5, or closed by a front chin-guard 3, in the so-called full-face version of the helmet, designated by the reference numeral 101 and shown in Figure 3.

[0016] According to the invention, the helmet 1, 101 is provided with a means for detachably associating a handsfree conversation device with the shell 2. The handsfree conversation device is of a per se known and commonly commercially available type, and comprises at least one earpiece or speaker 4 and at least one microphone 5 which are connected to the body 6 of a cellular telephone by means of cables.

[0017] More particularly, the body 6 of the cellular telephone, which includes the transmission devices, the keypad, a display et cetera, is connected to the microphone 5 by means of a conductor 7 constituted by a pair of cables, one of which, designated by the reference numeral 8, continues from the microphone 5 to the earpiece 4.

[0018] The microphone 5 is normally provided with an activation button, not visible in the figures, that allows activation of the system, in case of a call, without acting on the telephone keypad.

[0019] The means for associating the conversation device includes an earpiece seat 9, constituted by a through hole formed in the shell 2 at the position of the ear of the user who wears the helmet.

[0020] The through hole includes a slot or recess that allows to position the earpiece, which is pear-shaped,

so that the cable 8 is external to the shell.

[0021] The association means also comprises a microphone seat 10, which is formed proximate to the mouth of the user who wears the helmet and is adapted to receive the microphone 5, a portion of the cable 8, and a portion of the conductor 7 that arrives from the body 6 of the cellular telephone.

[0022] The microphone seat 10 is formed in an oscillating member 11 pivoted at the front edge of the jet helmet 1 so that in a closed position shown in Figures 1, 2 and 5 it is substantially incorporated in the contour of the helmet, while in an open position, shown in Figures 4 and 6, it is external to the contour, moving the microphone 5 in a position more suitable for conversation, for example closer to the user's mouth.

[0023] In the case of a full-face helmet, the microphone seat 10 can be formed in the oscillating member 11, as shown in Figure 3, or even in the chin-guard of the helmet, according to the specific requirements.

[0024] Moreover, the association means may comprise a member for supporting the body 6 of the cellular telephone, constituted by a shaped cover 12 that is elastically associated with the shell 2, for example by means of four elastic bands 13, of which only two lateral ones are visible in Figure 6.

[0025] The shaped cover 12 receives the body of the cellular telephone and is shaped internally so as to allow the insertion and retention of various kinds of cellular telephone bodies of different shapes and dimensions.

[0026] The shaped cover 12 has an upper opening 14 that allows the protrusion of an antenna 15 with which the telephone might be equipped.

[0027] In the specific case, the contoured cover 12 is located in a rearward position of the helmet 1, which has a shaped channel 16 that can receive the portion of the conducting cable 7 that connects the body of the telephone 6 to the microphone 5 and a portion of the cable 8 that connects the microphone 5 to the earpiece 4.

[0028] The shaped channel 16 can also cover the seat 9 of the earpiece 4 and the earpiece itself.

[0029] The shaped channel 16 can be hinged, at one of its ends, to the shell 2, and can have a means for snap fastening at its other end.

[0030] As shown in Figure 7, the helmet may have two symmetrically identical contoured channels 16, one for each side, for aesthetic as well as functional reasons such as, for example, aerodynamics.

[0031] The helmet may have the seats 9 and 10 on both sides of the shell.

[0032] The operation of the helmet according to the invention is as follows.

[0033] The helmet according to the invention, in the condition for use without the cellular telephone, substantially has the appearance of an ordinary helmet, since the shaped members 11, 16 and 12 are perfectly blended with each other and with the outer shell 2. This is advantageous from an aesthetic point of view and most of all from a functional point of view, for minimizing

the noise due to the flow of air on the outer surface of the helmet.

[0034] If one wishes to apply a cellular telephone, one acts on the contoured channel, opening it as shown in Figure 4, and also opening the oscillating member 11, thus exposing the seats 9 and 10 respectively for the earpiece 4 and the microphone 5.

[0035] At this point, the earpiece 4 is inserted in the earpiece seat 9 and the microphone 5 is inserted in the microphone seat 10, as shown in Figure 5, taking care to insert the portions of cable 8 and of the conductor 7 in the seat 10 and in the shaped channel 16, closing the channel.

[0036] Finally, the conductor 7 is connected to the body of the cellular telephone 6, the telephone is inserted in the shaped cover 12, as shown in Figure 6, and the helmet is ready to be used.

[0037] In case of a call, which can be detected either by way of the ringer or by way of the optional vibrating alert device of the cellular telephone, it is possible to answer by pressing with one finger, usually the thumb, the button of the microphone 5 by acting from the inside of the helmet. For better transmission, it is possible to extract the oscillating member 11, as shown in Figure 6, turning it so as to place the microphone 5 closer to the mouth of the user, thus limiting background noise.

[0038] Once the conversation has ended, the oscillating member 11 can be stored inside the contour of the helmet.

[0039] It should be noted that the earpiece 4 is located inside the helmet and, with respect to the user's ear, behind the optional lining that is present in the ear region as well.

[0040] In any case, the earpiece is located near to the outer ear but obviously is not inserted therein. However, it has been found in practice that by way of the internal shape of the helmet in this region audibility is perfect even at high speeds and therefore in the presence of airflow noise.

[0041] Furthermore, the placement of the earpiece outside the outer ear is advantageous, since some legal systems forbid the use of earpieces when driving a vehicle.

[0042] The device for fastening the body of the cellular telephone, constituted by the contoured body elastically associated with the shell, is particularly advantageous thanks to its quick installation and because it allows to remove quickly the telephone from the helmet, disconnecting the cable for connection to the conversation device, which can be left inside the helmet. This allows the user to remove the helmet and store it, for example in the appropriately provided compartment available in many scooters, mopeds and motorcycles, rapidly and easily disconnecting the cellular telephone from the helmet so that the telephone can be used normally.

[0043] In practice it has been observed that the invention achieves the intended aim and objects, a helmet having been provided which allows to use a cellular tel-

ephone of the standard type while wearing the helmet.

[0044] An important advantage of the invention is that it is usable with ordinary cellular telephones provided with a handsfree device which is easily commercially available and is used very commonly in practice.

[0045] A further important advantage is the great ease of installation of the handsfree device in the helmet.

[0046] A further important advantage is economic, since the helmet according to the invention is not significantly more expensive than a conventional helmet and allows the use of a normal cellular telephone provided with a normal accessory, which the user may already own, without requiring the user to purchase special, and therefore expensive, additional accessories.

[0047] When the helmet is used without the cellular telephone, its weight and dimensions are substantially similar to those of a conventional helmet.

[0048] A further important advantage of the invention is constituted by the absolute safety of the helmet from the structural point of view, because the means for associating the handsfree device or headset and the body of the cellular telephone is external to the shell, which accordingly is not substantially altered from a structural point of view.

[0049] The helmet according to the invention is susceptible of numerous modifications and variations, within the scope of the appended claims. All the details may be replaced with technically equivalent elements.

[0050] The materials used, as well as the dimensions, may of course be any according to requirements and to the state of the art.

Claims

1. A crash helmet for use with a cellular telephone, comprising a telephone body and a conversation device constituted by at least one earpiece and at least one microphone connected to the body of the telephone by means of a cable, said helmet comprising a shell, **characterized in that** it comprises an association means for detachably associating at least said conversation device with said shell.
2. The helmet according to claim 1, **characterized in that** said association means is adapted to detachably associate said body of the cellular telephone with said shell.
3. The helmet according to claim 1 or 2, **characterized in that** said association means comprises an earpiece seat that is constituted by a through hole formed in the shell at the position of the ear of the user who wears the helmet.
4. The helmet according to one or more of the preceding claims, **characterized in that** said through hole comprises a slot or recess that allows to position

the earpiece and is pear-shaped so that said cable is external to the shell.

5. The helmet according to one or more of the preceding claims, **characterized in that** said association means comprises a microphone seat, which is formed proximate to the mouth of the user who wears the helmet and is adapted to receive said microphone and portions of said cable.
6. The helmet according to one or more of the preceding claims, **characterized in that** said microphone seat is formed in an oscillating member that is hinged to the shell of the helmet so that in a closed position it is substantially incorporated in the contour of the helmet, while in an open position it is external to the contour, placing the microphone closer to the mouth of the user.
7. The helmet according to one or more of the preceding claims, **characterized in that** said association means comprises a member for supporting the body of the cellular telephone, said supporting member being constituted by a contoured cover that is elastically associated with the shell.
8. The helmet according to one or more of the preceding claims, **characterized in that** said contoured cover has an upper opening that allows the protrusion of an antenna with which the telephone might be equipped.
9. The helmet according to one or more of the preceding claims, **characterized in that** it comprises a contoured channel that is adapted to receive said cable that connects to body of the telephone to the microphone and to the earpiece.
10. The helmet according to one or more of the preceding claims, **characterized in that** said contoured channel is adapted to cover the seat of the earpiece and the earpiece itself, as well as the portion of cable that connects said microphone to said earpiece.
11. The helmet according to one or more of the preceding claims, **characterized in that** said contoured channel is pivoted at one of its ends and has, at its other end, a means for snap fixing to said shell.
12. The helmet according to one or more of the preceding claims, **characterized in that** it comprises two contoured channels, one for each side, which are symmetrically identical.
13. The helmet according to one or more of the preceding claims, **characterized in that** it comprises an earpiece seat and a microphone seat on each side.

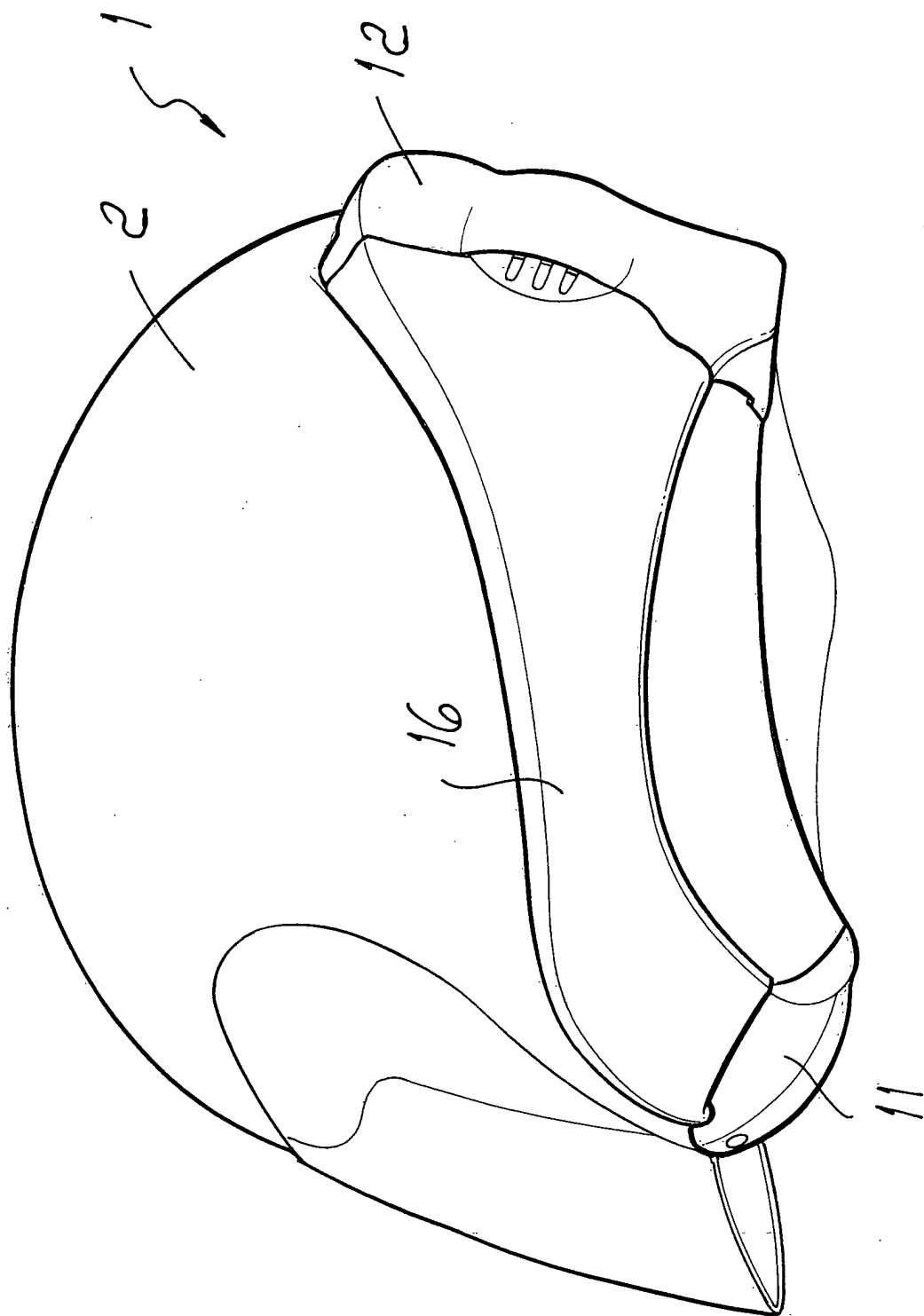
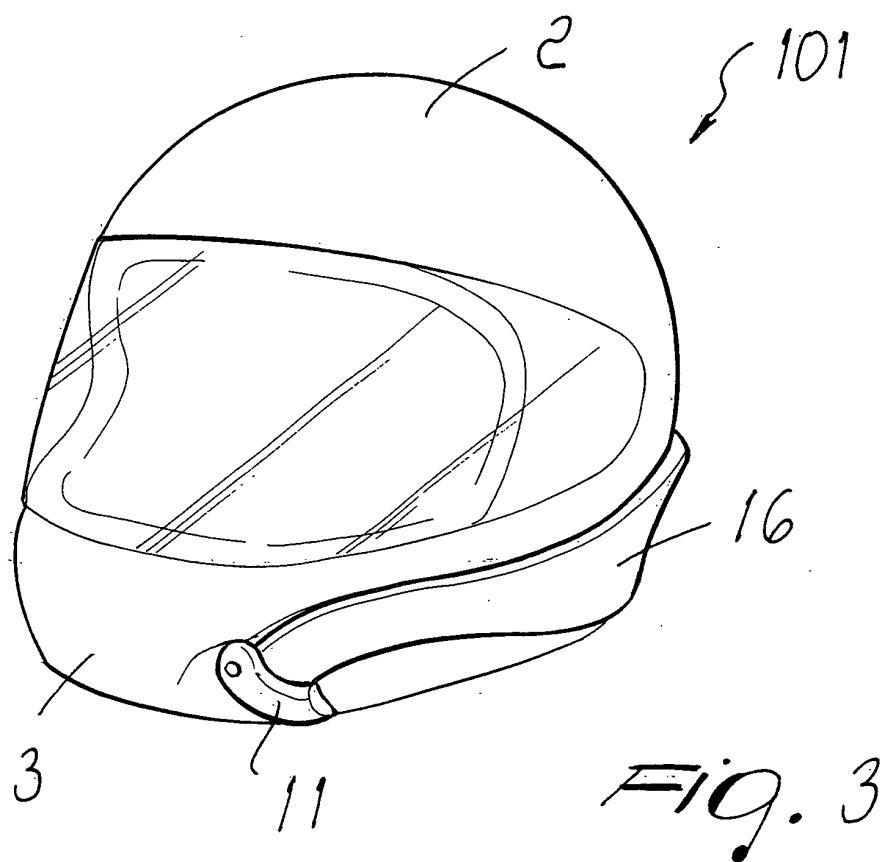
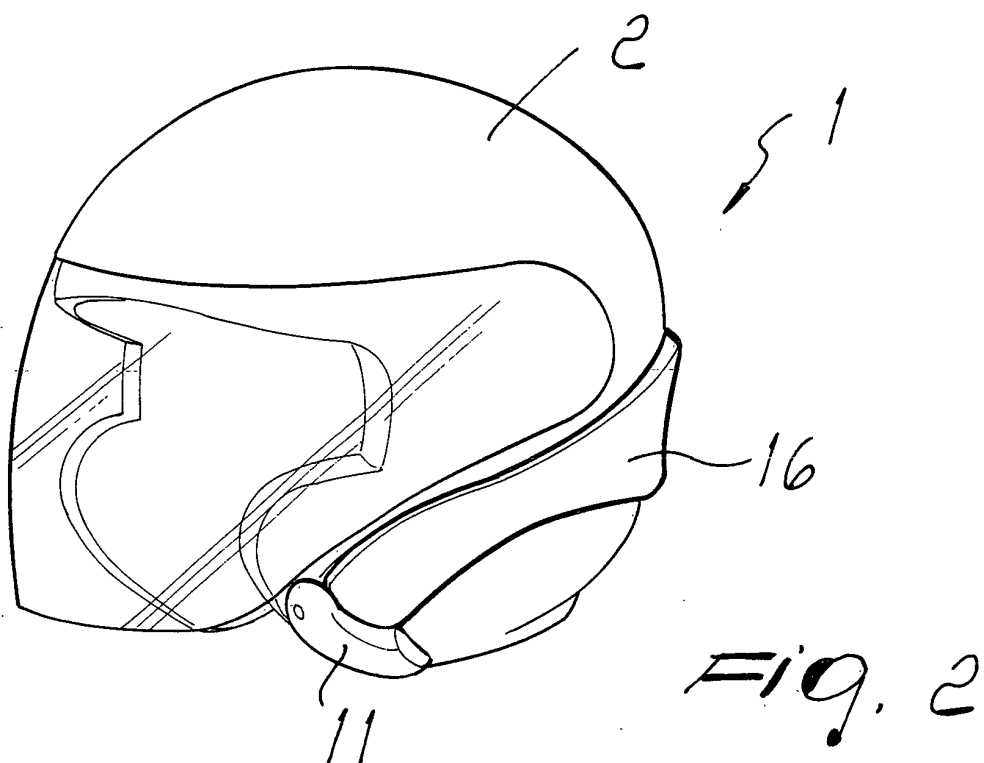
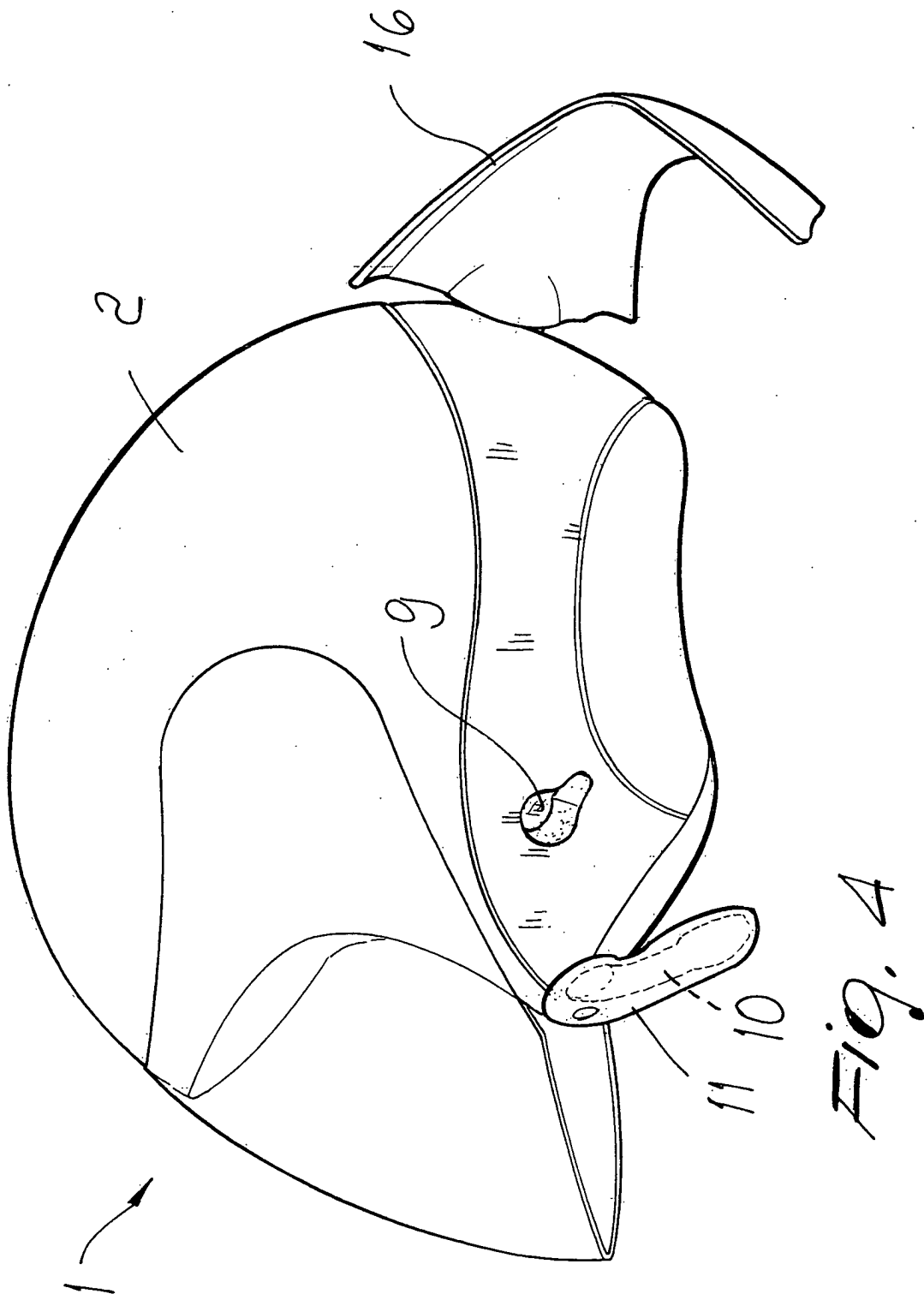


Fig. 1





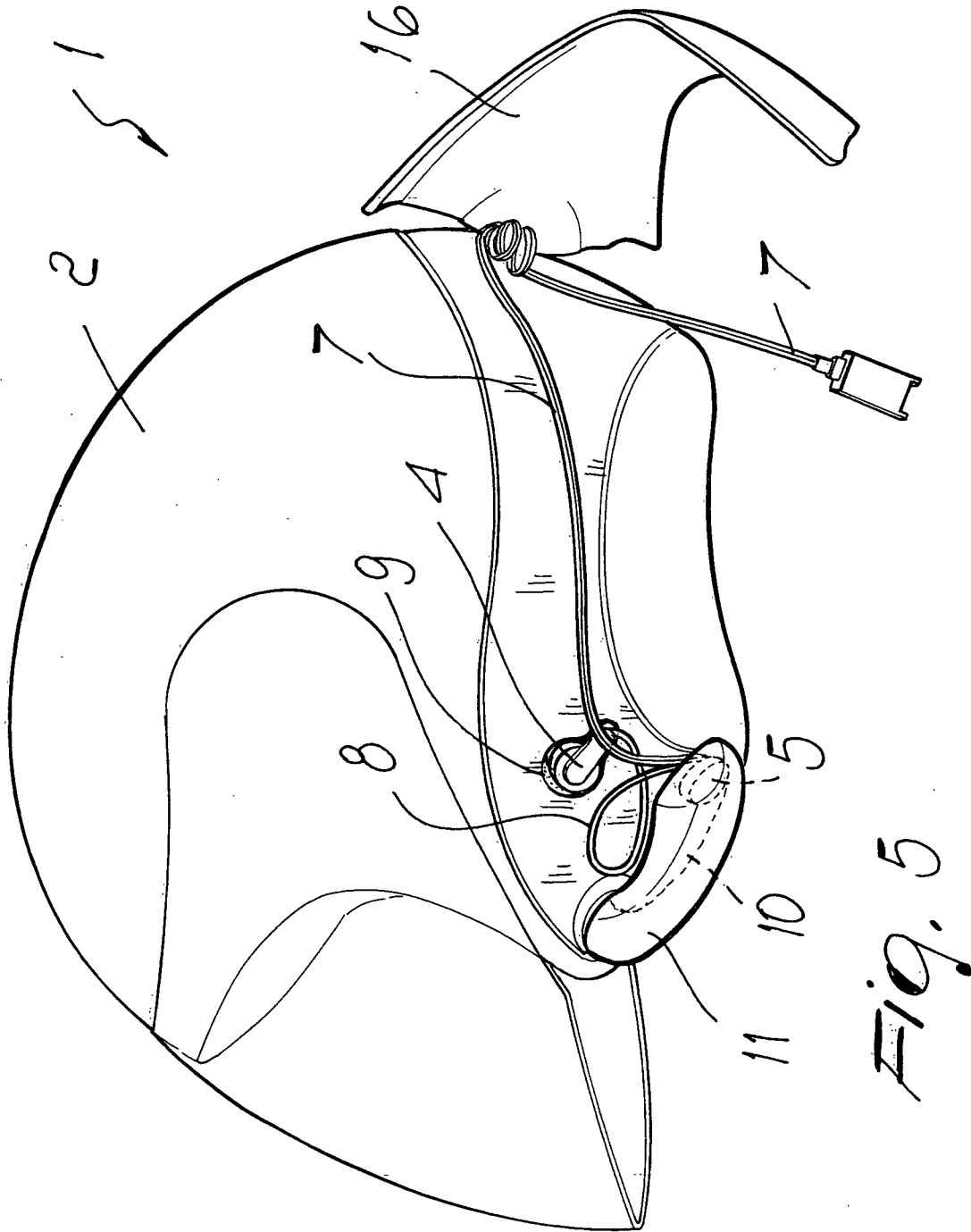
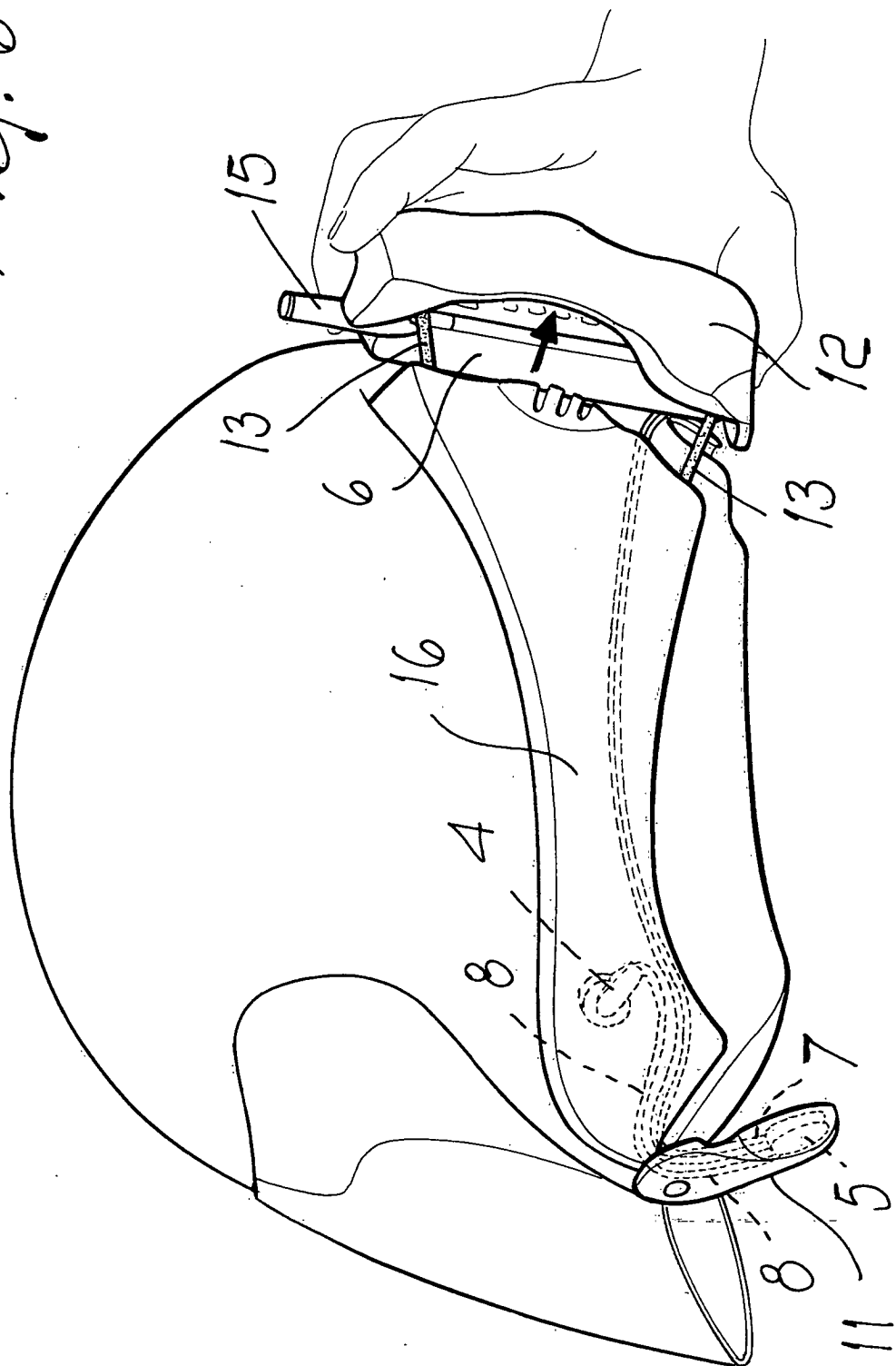


Fig. 6



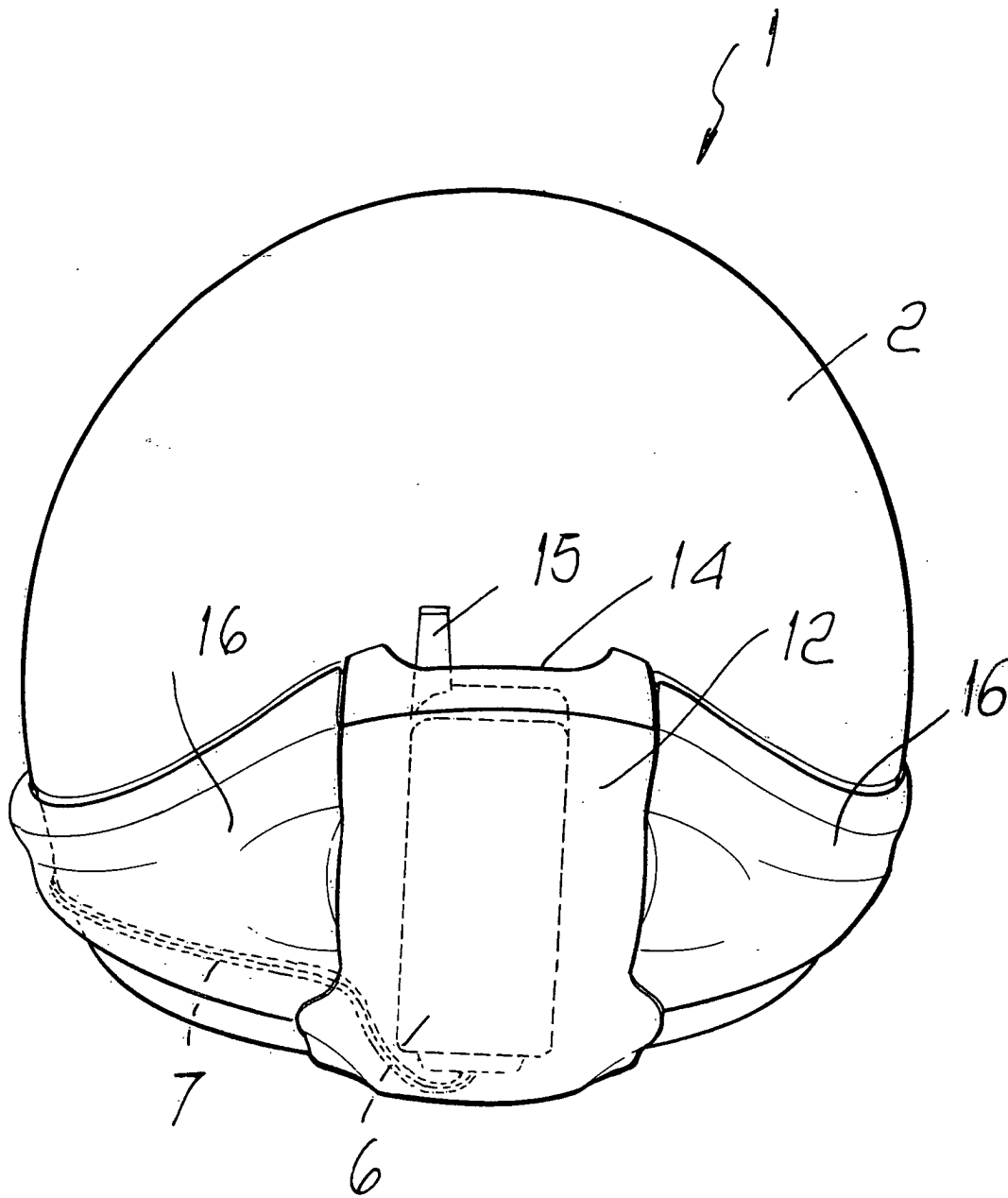


Fig. 7



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EUROPEAN SEARCH REPORT

Application Number
EP 02 01 9417

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Y	DE 94 09 319 U (F. BERLIN) 6 July 1995 (1995-07-06) * page 6, last paragraph * * page 7 * * page 8, paragraph 1 - paragraph 3 * * page 9, paragraph 1 * * figures 2,3 *	7,9,10, 12,13	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A42B
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 9 December 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 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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