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(54) PROTECTIVE HELMET

(57) The present invention relates to a protective helmet (1), particularly for sport and similar activities, comprising an external protective cap (2), at least a first protective shell (10) positioned inside said external protective cap (2), a protective internal liner positioned at least partially inside said first protective shell (10) and removably fixed thereto and adapted to come into contact with the head of a user, whereby said protective internal liner comprises a first portion (21) adapted to surround at least a portion of the skull of a user and a second (22) and a third (23) portion adapted to protect at least partially the left and right lateral portion of the face of a user, said first, second and third portion (21, 22, 23) of said protective internal liner being fixable to/removable from said first protective shell (10) independently from each other, said second and third portion (22, 23) of said protective liner being each provided with first magnetic coupling means (41) that cooperate with corresponding second magnetic coupling means (42) positioned on said first protective shell (10) to maintain in position said second and third portion (22, 23) of said protective liner with respect to said first protective shell (10) and first mechanical centring means (51) that cooperate with corresponding second mechanical centring means (52) positioned on said first protective shell (10) to centre said second and third portion (22, 23) of said protective liner with respect to said first protective shell (10), said first magnetic coupling means (41) and said second magnetic coupling means (42) being respectively spaced apart from said first mechanical centring means (51) and from said second mechanical centring means (52).

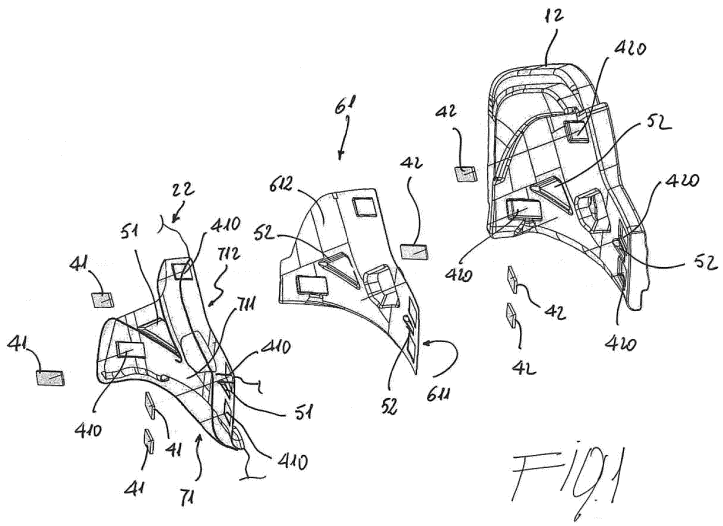

Fig. 1

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Description

[0001] The present invention relates to a protective helmet, and more in particular to a protective helmet for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, having improved characteristics of safety and comfort.

[0002] It is known that in given activities, for example in sport activities at high risk of accidents due to falls or impacts, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, it is necessary to protect the head of the user to avoid, or at least to minimize, damage in the event of a fall or violent impact. For this purpose, there are normally provided protective helmets, of various shapes and with various characteristics according to use, the aim of which is in fact to protect the user's head from otherwise damaging impacts.

[0003] Known helmets normally consist of a rigid outer cap, normally coupled to which is a relatively soft and compressible inner protective shell, capable of absorbing the impact forces, minimizing impact damage to the user's head.

[0004] A further internal liner of the inner shell is also normally provided, both to increase protection and to improve the comfort of the user. This internal liner normally consists of one or more portions of soft material that cover the upper internal portion of the shell (destined to come into contact with the upper and rear portion of the head of the user) and the lateral parts of the shell/chin guard (destined to come into contact with the left and right lateral parts of the face of a user).

[0005] The internal liner is normally removable from the inner shell, both for reasons of hygiene (i.e. to be washed/replaced after a certain period of use), and for safety reasons (to facilitate removal of the helmet in the event of an accident). In this latter case, it is normally only the lateral portions of the internal liner (cheek pads) that can be removed.

[0006] In helmets of known type, removability is guaranteed by using reversible fixing systems, such as press studs, Velcro strips or similar devices. Although these systems allow removal and fixing many times, they are generally complicated to manage, given that a certain dexterity/skill is required to find the correct position in the seat of the internal liner when it requires to be re-fitted to the helmet after removal.

[0007] Moreover, conventional systems for fixing the internal liner to the shell do not generally allow removal of the lateral portions of the internal liner in the event of an accident, without performing movements that are dangerous and potentially harmful for the user in the event of concussions or traumatic brain injuries of various extent and nature.

[0008] Therefore, it would be desirable to provide a protective helmet, and more in particular a protective helmet for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, which is able to solve the aforesaid problems.

[0009] An object of the present invention is therefore to provide a protective helmet, in particular for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, which allows easy removal of the protective internal liner.

[0010] A further object of the present invention is to provide a protective helmet, in particular for sport activities, such as motorcycling, motocross, cycling, car racing, mountain biking, skiing/snowboarding and similar sports, which does not require complicated mechanical solutions for the removable fixing of the internal liner to the shell of the helmet.

[0011] Another object of the present invention is to provide a protective helmet, in particular for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, in which it is possible to remove at least the lateral parts of the internal liner (cheek pads) when the helmet is worn and fastened.

[0012] One more object of the present invention is to provide a protective helmet, in particular for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, which is easy to manufacture at competitive costs.

[0013] This requirement is met with the solution provided by the present invention, which relates to a protective helmet, in particular a protective helmet for sport activities such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, of improved type.

[0014] Therefore, the subject-matter of the present invention is a protective helmet, particularly for sport and similar activities, which comprises an external protective cap, at least a first protective shell positioned inside said external protective cap, a protective internal liner positioned at least partially inside said first protective shell and removably fixed thereto and adapted to come into contact with the head of a user. The helmet according to the present invention is characterized in that said protective internal liner comprises a first portion adapted to surround at least a portion of the skull of a user and a second and a third portion adapted to protect at least partially the left and right lateral portion of the face of a user, said first, second and third portion of said protective internal liner being fixable to/removable from said first protective shell independently from each other, said second and third portion of said protective liner being each provided with first magnetic coupling means that cooperate with corresponding second magnetic coupling means positioned on said first protective shell to maintain in position said second and third portion of said protective liner with respect to said first protective shell and first mechanical centring means that cooperate with corresponding second mechanical centring means positioned on said first

protective shell to centre said second and third portion of said protective liner with respect to said first protective shell, said first magnetic coupling means and said second magnetic coupling means being respectively spaced apart from said first mechanical centring means and from said second mechanical centring means

[0015] In this way, it is possible to obtain a protective helmet, in particular for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, that fully satisfies the aforesaid objects.

[0016] In particular, the division of the protective internal liner into three different portions, each provided with reversible fixing systems based on magnetic means, allows easy and rapid removal of all or part of the protective liner.

[0017] At the same time, the presence of the mechanical centring means spaced apart and independent from the magnetic coupling means makes it possible to greatly speed up the fixing operations, without loss of time and/or without requiring particular manual skills, given that, as illustrated in more detail below, thanks to the presence of the mechanical centring means the system is practically self-centring.

[0018] A further important characteristic is given by the fact that in the helmet according to the present invention, the lateral portions of the protective internal liner can be removed even while the helmet is still on and fastened, thereby considerably improving safety in the event of an accident.

[0019] In a greatly preferred embodiment of a protective helmet, particularly for sport and similar activities, according to the present invention, the first protective shell advantageously comprises a first portion of central protection and a second and third portion of lateral protection, said second magnetic coupling means being positioned in corresponding seats of said first portion of central protection and of said second and third portion of lateral protection.

[0020] In this case, in a preferred embodiment of a protective helmet according to the present invention, said second and third portion of lateral protection each comprise a corresponding first closing plate having a first interface surface with said second and third portion of lateral protection of said first shell and a second interface surface with the corresponding second and third portion of said protective liner, said second mechanical centring means being positioned on said second interface surface.

[0021] From a point of view of production, in a particularly preferred embodiment of the helmet according to the present invention, said second and third portion of said protective internal liner are each provided with a first interface plate having a first coupling surface with said second and third portion of said protective liner and a second coupling surface with the corresponding second and third portion of lateral protection of said first protective shell. Said first coupling surface is advantageously provided with housing seats of said first magnetic coupling means, while said first mechanical centring means are advantageously positioned on said second coupling surface of said first interface plate.

[0022] To facilitate fixing and removal of the first portion of the protective internal liner, in an embodiment of the protective helmet of the present invention said first portion of central protection of said first protective shell comprises at least a second closing plate having a third interface surface with said first portion of central protection of said first protective shell and a fourth interface surface with said first portion of said protective internal liner. In this case, the second mechanical centring means are advantageously positioned on said fourth interface surface.

[0023] In this embodiment of the protective helmet according to the present invention, said first portion of said protective internal liner is preferably provided with at least a second interface plate having a third coupling surface with said first portion of said protective internal liner and a fourth coupling surface with said first portion of central protection of said first protective shell.

[0024] In this case, said third coupling surface is advantageously provided with housing seats of said first magnetic coupling means, while said first mechanical centring means are preferably positioned on said fourth coupling surface of said second interface plate.

[0025] In a particularly preferred embodiment of a protective helmet, particularly for sport and similar activities, according to the present invention, said first portion of central protection of said first protective shell is advantageously provided with a frontally positioned second closing plate and with a rear positioned second closing plate. In the same way, said first portion of said protective internal liner is advantageously provided with a second frontally positioned interface plate and with a rear positioned second interface plate. In this embodiment, the first portion of said protective internal liner is fixed to the shell in diametrically opposite positions corresponding to the forehead and to the nape of the user, guaranteeing stable positioning while maintaining the characteristics of ease of removal and insertion.

[0026] In a particular embodiment of a protective helmet, particularly for sport and similar activities, according to the present invention, said first portion of central protection of said first protective shell comprises third magnetic coupling means and said first portion of said protective internal liner comprises fourth magnetic coupling means associable with said third magnetic coupling means.

[0027] In particular, said third magnetic coupling means can advantageously be housed in a seat provided in first mechanical retaining means, said first mechanical retaining means comprising a male element provided with snap-locking means and positioned in a corresponding seat of said first protective shell, and a female element adapted to engage said snap-locking means of said male element, said first mechanical retaining means being pro-

vided with a conical seat for housing a corresponding conical element positioned on said first portion of said protective internal liner and housing said fourth magnetic coupling means. In a further particular embodiment of a protective helmet, particularly for sport and similar activities, according to the present invention, said first portion of central protection of said first protective shell is preferably provided with a frontally positioned second closing plate and said first portion of said protective internal liner is provided with a frontally positioned second interface plate, while said first portion of central protection of said first protective shell is preferably provided with rear positioned third magnetic coupling means and said first portion of said protective internal liner is provided with fourth magnetic coupling means couplable to said third magnetic coupling means.

[0028] In particular, said third magnetic coupling means are housed in a seat advantageously provided in rear positioned first mechanical retaining means which comprises a male element provided with snap-locking means positioned in a corresponding rear seat in said first protective shell, and a female element adapted to engage said snap-locking means of said male element, said first mechanical retaining means being further provided with a conical seat for housing a corresponding conical element rear positioned on said first portion of said protective internal liner and housing said fourth magnetic coupling means.

[0029] This embodiment is particularly useful and advantageous in the case in which the protective helmet of the present invention comprises a second protective shell positioned between said external protective cap and said first protective shell. Helmets of this kind are described in the Italian patent application IT 102017000126486, with the title "CASCO PROTETTIVO" by the same applicant. Therefore, the description of this patent application should be considered as fully incorporated herein by reference.

[0030] Further characteristics and advantages of a protective helmet for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, according to the present invention, will be more apparent from the description of preferred embodiments, illustrated by way of non-limiting examples in the accompanying figures, wherein:

- Fig. 1 is a first exploded perspective view of some details relating to the fixing and centring system of the lateral parts (cheek pads) of a protective liner on the inner portion of a protective helmet according to the present invention;
- Fig. 2 is a first exploded perspective view of some details relating to the fixing and centring system of the central portion of a protective liner on the inner portion of a protective helmet according to the present invention;
- Fig. 3 is a second exploded perspective view of further details relating to the fixing and centring system of the central portion of a protective liner on the inner portion of a protective helmet according to the present invention;
- Fig. 4 is a perspective view of a particular embodiment of the magnetic coupling means between the central portion of an internal liner and the central portion of a shell in a protective helmet according to the present invention;
- Fig. 5 is a detailed view of some details of the device of Fig. 4;
- Fig. 6 is a bottom plan view of an embodiment of a protective helmet according to the present invention in which the devices of Fig. 4 and 5 are utilized;
- Fig. 7 is a detailed view of some details of the embodiment of the protective helmet according to the present invention illustrated in Fig. 6;
- Fig. 8 is a sectional view of the embodiment of a protective helmet according to the present invention in which the devices of Fig. 1-3 are utilized.

[0031] With reference to the accompanying figures, a protective helmet, particularly for sport and similar activities, according to the present invention, designated with the reference numeral 1, comprises - in the embodiment of the accompanying figures - an external protective cap 2, generally made of a rigid material.

[0032] The helmet 1 further comprises at least a first protective shell 10 positioned inside said an external protective cap 2. The shell 10 is advantageously made with relatively soft and compressible materials capable of absorbing at least part of the forces in the event of a collision or violent impact. Typically, the shell 10 is made of expanded polymer materials, for example expanded polystyrene, polypropylene or polyurethane.

[0033] Moreover, the helmet 1 comprises a protective internal liner - destined to come into contact with the head of a user - which is positioned at least partially inside said first protective shell 10 and is removably fixed thereto.

[0034] One of the peculiar characteristics of the helmet 1 according to the present invention is given by the fact that said protective internal liner comprises a first portion 21 adapted to surround at least a portion of the skull of a user and a second 22 and a third 23 portion adapted to protect at least partially the left and right lateral portion of the face of a user (cheek pads). The first 21, the second 22 and the third 23 portion of said protective internal liner are fixable to/removable from said first protective shell 10 independently from each other. Moreover, each of said second 22 and third 23 portion of said protective liner is advantageously provided with first magnetic coupling means 41 that cooperate with corresponding second magnetic coupling means 42.

[0035] These latter are positioned on said first protective shell 10 and thanks to the interaction with the first magnetic coupling means 41 ensure that said second 22 and third 23 portion of said protective liner are maintained in position with respect to said first protective shell 10.

[0036] Each of said second 22 and third 23 portion of said protective liner is further provided with first mechanical centring means 51 that cooperate with corresponding second mechanical centring means 52. These are positioned on said first protective shell 10 and - cooperating with the second mechanical centring means 52 - guarantee substantially automatic centring of said second 22 and third 23 portion of said protective liner with respect to said first protective shell 10.

[0037] As is apparent from the accompanying figures, a further peculiar characteristic of the helmet 1 according to the present invention is given by the fact that said first magnetic coupling means 41 and said second magnetic coupling means 42 are independent and spaced apart respectively from said first mechanical centring means 51 and from said second mechanical centring means 52.

[0038] With reference to Figs. 1-3, in the embodiment illustrated, said first protective shell 10 preferably comprises a first portion of central protection 11 and a second 12 and third 13 portion of lateral protection. In this case, said second magnetic coupling means 42 are advantageously positioned in corresponding seats 420 of said first portion of central protection 11 and of said second 12 and third 13 portion of lateral protection.

[0039] In the embodiment illustrated of the protective helmet 1 according to the present invention, said second 12 and third 13 portion of lateral protection each comprise a corresponding first closing plate 61.

[0040] The plate 61 has a first interface surface 611 with said second 12 and third 13 portion of lateral protection of said first shell 10 and a second interface surface 612 with the corresponding second 22 and third 23 portion of said protective liner.

[0041] In this case, said second mechanical centring means 52 are advantageously positioned on said second interface surface 612.

[0042] With particular reference to the accompanying Fig. 1, in the embodiment illustrated, said second 22 and third 23 portion of said protective internal liner are each provided with a first interface plate 71 having a first coupling surface 711 with said second 22 and third 23 portion of said protective liner and a second coupling surface 712 with the corresponding second 12 and third 13 portion of lateral protection of said first protective shell 10.

[0043] The first coupling surface 711 is advantageously provided with housing seats 410 of said first magnetic coupling means 41, while said first mechanical centring means 51 are advantageously positioned on said second coupling surface 712 of said first interface plate 71. With particular reference to the accompanying Figs. 2-3, in the embodiment illustrated, said first portion 11 of central protection of said first protective shell 10 comprises at least a second closing plate 62, 63 having a third interface surface 621, 631 with said first portion 11 of central protection of said first protective shell 10 and a fourth interface surface 622, 632 with said first portion 21 of said protective internal liner. In this embodiment, said second mechanical centring means 52 are advantageously positioned on said fourth interface surface 622, 632.

[0044] With reference once again to the accompanying Figs. 2-3, in the embodiment illustrated, said first portion 21 of said protective internal liner is provided with at least a second interface plate 72, 73 having a third coupling surface 721, 731 with said first portion 21 of said protective internal liner and a fourth coupling surface 722, 732 with said first portion 11 of central protection of said first protective shell 10.

[0045] Said third coupling surface 721, 731 is advantageously provided with housing seats 410 of said first magnetic coupling means 41, while said first mechanical centring means 51 are advantageously positioned on said fourth coupling surface 722, 732 of said second interface plate 72, 73.

[0046] As illustrated in the aforesaid figures and as explained above, the protective helmet 1 of the present invention is preferably characterized in that the first portion 11 of central protection of said first protective shell 10 is provided with a frontally positioned second closing plate 62 and with a rear positioned second closing plate 63. In the same way, said first portion 21 of said protective internal liner is provided with a second frontally positioned interface plate 72 and with a second rear positioned interface plate 73, thereby guaranteeing stable and safe fixing of the protective internal liner to the protective shell 10 of the helmet 2 in two diametrically opposite points corresponding to the forehead and to the nape of the user.

[0047] With particular reference to Figs. 4-7, a particular embodiment of a protective helmet 1, according to the present invention, is characterized in that said first portion of central protection 11 of said first protective shell 10 comprises third magnetic coupling means 80 and in that said first portion 21 of said protective internal liner comprises fourth magnetic coupling means 90 associable with said third magnetic coupling means 80.

[0048] In detail, with reference to the aforesaid figures, said third magnetic coupling means 80 are advantageously housed in a seat 81 provided in first mechanical retaining means 82. These first mechanical retaining means 82 advantageously comprise a male element 83, which is provided with snap-locking means 84 and is positioned in a corresponding seat of said first protective shell 10.

[0049] The first mechanical retaining means 82 further comprise a female element 85 adapted to engage said snap-locking means 84 of said male element 83. Moreover, said first mechanical retaining means 81 are provided with a seat, for example a conical seat 86, for housing a corresponding conical element 91 positioned on said first portion 21 of said protective internal liner. The conical element 91 houses therein said fourth magnetic coupling means 90, thereby producing both the mechanical coupling and the mechanical centring of the central portion 21 of the internal liner with the first central portion 11 of the shell 10.

[0050] In a particularly preferred embodiment of the

present invention, the helmet 1 comprises a combination of the previously described embodiments of Figures 1-3 and 4-7. In particular, in such embodiment, the first portion of central protection of said first protective shell 10 is provided with a frontally positioned second closing plate 62 and the first portion 21 of said protective internal liner is provided with a frontally positioned second interface plate 72. Furthermore, the first portion of central protection 11 of said first protective shell 10 is provided with rear positioned third magnetic coupling means 80 and the first portion 21 of said protective internal liner is provided with fourth magnetic coupling means 90 couplable to said third magnetic coupling means 80.

[0051] In more details, said third magnetic coupling means 80 are housed in a seat 81 provided in rear positioned first mechanical retaining means 82 which comprises a male element 83 provided with snap-locking means 84 positioned in a corresponding rear seat in said first protective shell 10 and a female element 85 adapted to engage said snap-locking means 84 of said male element 83. Moreover, said first mechanical retaining means 82 are provided with a conical seat 86 for housing a corresponding conical element 91 rear positioned on said first portion 21 of said protective internal liner and housing said fourth magnetic coupling means 90.

[0052] This embodiment is particularly useful and advantageous in the event in which the protective helmet 1 of the present invention comprises a second protective shell 100 positioned between said external protective cap 2 and said first protective shell 10. Helmets of this type are described in the Italian patent application IT 102017000126486, with the title "CASCO PROTETTIVO" by the same applicant. The description of this patent application should be considered as fully incorporated herein by reference.

[0053] In particular, the first mechanical retaining means described herein can advantageously coincide with the mechanical retaining means (40) described in said patent application, greatly simplifying the construction and assembly of a protective helmet with double protective shell of the type described in the Italian patent application IT 102017000126486. In general, the magnetic coupling means can be retained in the corresponding seats according to various embodiment. For instance, they can be glued or similarly fixed in the corresponding seat or they can be retained in their seats using snap-fit means, e.g. a retaining edge provided in the seats.

[0054] In practice, it has been seen, as is apparent from the description and from the accompanying drawings, that the technical solutions adopted in the protective helmet for sport activities, such as motorcycling, motocross, cycling, mountain biking, car racing, skiing/snowboarding and similar sports, according to the present invention, allow the intended tasks and objects to be fully implemented.

[0055] On the basis of the description provided, other characteristics, modifications or improvements are possible and evident to a person skilled in the art. These characteristics, modifications and improvements should therefore be considered a part of the present utility model. In practice, the materials used, the dimensions and contingent shapes can be any according to requirements and to the state of the art.

Claims

1. A protective helmet (1), particularly for sport and similar activities, comprising an external protective cap (2), at least a first protective shell (10) positioned inside said external protective cap (2), a protective internal liner positioned at least partially inside said first protective shell (10) and removably fixed thereto and adapted to come into contact with the head of a user, **characterized in that** said protective internal liner comprises a first portion (21) adapted to surround at least a portion of the skull of a user and a second (22) and a third (23) portion adapted to protect at least partially the left and right lateral portion of the face of a user, said first (21), second (22) and third (23) portion of said protective internal liner being fixable to/removable from said first protective shell (10) independently from each other, said second (22) and third (23) portion of said protective internal liner being each provided with first magnetic coupling means (41) which cooperate with corresponding second magnetic coupling means (42) positioned on said first protective shell (10) to maintain in position said second (22) and third (23) portion of said protective internal liner with respect to said first protective shell (10), and with first mechanical centering means (51) which cooperate with corresponding second mechanical centering means (52)) positioned on said first protective shell (10) to center said second (22) and third (23) portion of said protective internal liner with respect to said first protective shell (10), said first magnetic coupling means (41) and said second magnetic coupling means (42) being respectively spaced apart from said first mechanical centering means (51) and said second mechanical centering means (52).

2. The protective helmet (1), particularly for sport and similar activities, according to claim 1, **characterized in that** said first protective shell (10) comprises a first portion of central protection (11) and a second (12) and a third (13) portion of lateral protection, said second magnetic coupling means (42) being positioned in corresponding seats (420) in said first portion of central protection (11) and in said second (12) and third (13) portion of lateral protection.

3. The protective helmet (1), particularly for sport and similar activities, according to claim 2, **characterized in that** said second (12) and third (13) portion of lateral protection each comprises a first closing

plate (61) having a first interface surface (611) with said second (12) and third (13) portion of lateral protection of said first protective shell (10), and a second interface surface (612) with the corresponding second (22) and third (23) portion of said protective internal liner, said second mechanical centering means (52) being positioned on said second interface surface (612).

4. The protective helmet (1), particularly for sport and similar activities, according to one or more of the preceding claims, **characterized in that** said second (22) and third (23) portion of said protective internal liner is each provided with a first interface plate (71) having a first coupling surface (711) with the corresponding second (22) and third (23) portion of said protective internal liner provided with housing seats (410) for said first magnetic coupling means (41), and a second coupling surface (712) with the corresponding second (12) and third (13) portion of lateral protection of said first protective shell (10), said first mechanical centering means (51) being positioned on said second coupling surface (712) of said first interface plate (71).

5. The protective helmet (1), particularly for sport and similar activities, according to one or more of claims 2 to 4, **characterized in that** said first portion of central protection (11) of said first protective shell (10) comprises at least a second closing plate (62, 63) having a third interface surface (621, 631) with said first portion of central protection (11) of said first protective shell (10) and a fourth interface surface (622, 632) with said first portion (21) of said protective internal liner, said second mechanical centering means (52) being positioned on said fourth interface surface (622, 632).

6. The protective helmet (1), particularly for sport and similar activities, according to claim 5, **characterized in that** said first portion (21) of said protective internal liner is provided with at least a second interface plate (72, 73) having a third coupling surface (721, 731) with said first portion (21) of said protective internal liner provided with housing seats (410) for said first magnetic coupling means (41), and a fourth coupling surface (722, 732) with said first portion of central protection (11) of said first protective shell (10), said first mechanical centering means (51) being positioned on said fourth coupling surface (722, 732) of said second interface plate (72, 73).

7. The protective helmet (1), particularly for sport and similar activities, according to claim 6, **characterized in that** said first portion of central protection (11) of said first protective shell (10) is provided with a frontally positioned second closing plate (62) and a rear positioned second closing plate (63) and **in that** said first portion (21) of said protective internal liner is provided with a frontally positioned second interface plate (72) and a rear positioned second interface plate (73).

8. The protective helmet (1), particularly for sport and similar activities, according to one or more of the preceding claims, **characterized in that** said first portion of central protection (11) of said first protective shell (10) comprises third magnetic coupling means (80) and **in that** said first portion (21) of said protective internal liner is provided with fourth magnetic coupling means (90) couplable to said third magnetic coupling means (80).

9. The protective helmet (1), particularly for sport and similar activities, according to claim 8, **characterized in that** said third magnetic coupling means (80) are housed in a seat (81) provided in first mechanical retaining means (82), said first mechanical retaining means (82) comprising a male element (83) provided with snap-locking means (84) and positioned in a corresponding seat in said first protective shell (10), and a female element (85) adapted to engage said snap-locking means (84) of said male element (83), said first mechanical retaining means (82) being provided with a conical seat (86) for housing a corresponding conical element (91) positioned on said first portion (21) of said protective internal liner and housing said fourth magnetic coupling means (90).

10. The protective helmet (1), particularly for sport and similar activities, according to claims 6 and 8, **characterized in that** said first portion of central protection (11) of said first protective shell (10) is provided with a frontally positioned second closing plate (62) and said first portion (21) of said protective internal liner is provided with a frontally positioned second interface plate (72), and **in that** said first portion of central protection (11) of said first protective shell (10) is provided with rear positioned third magnetic coupling means (80) and said first portion (21) of said protective internal liner is provided with fourth magnetic coupling means (90) couplable to said third magnetic coupling means (80).

11. The protective helmet (1), particularly for sport and similar activities, according to claim 10, **characterized in that** said third magnetic coupling means (80) are housed in a seat (81) provided in rear positioned first mechanical retaining means (82), said first mechanical retaining means (82) comprising a male element (83) provided with snap-locking means (84) positioned in a corresponding rear seat in said first protective shell (10), and a female element (85) adapted to engage said snap-locking means (84) of said male element (83), said first mechanical retaining means (82) being provided with a conical seat

(86) for housing a corresponding conical element (91) rear positioned on said first portion (21) of said protective internal liner and housing said fourth magnetic coupling means (90).

12. The protective helmet (1), particularly for sport and similar activities, according to one or more of the preceding claims, **characterized in that** it comprises a second protective shell (100) positioned between said external protective cap (2) and said first protective shell (10).

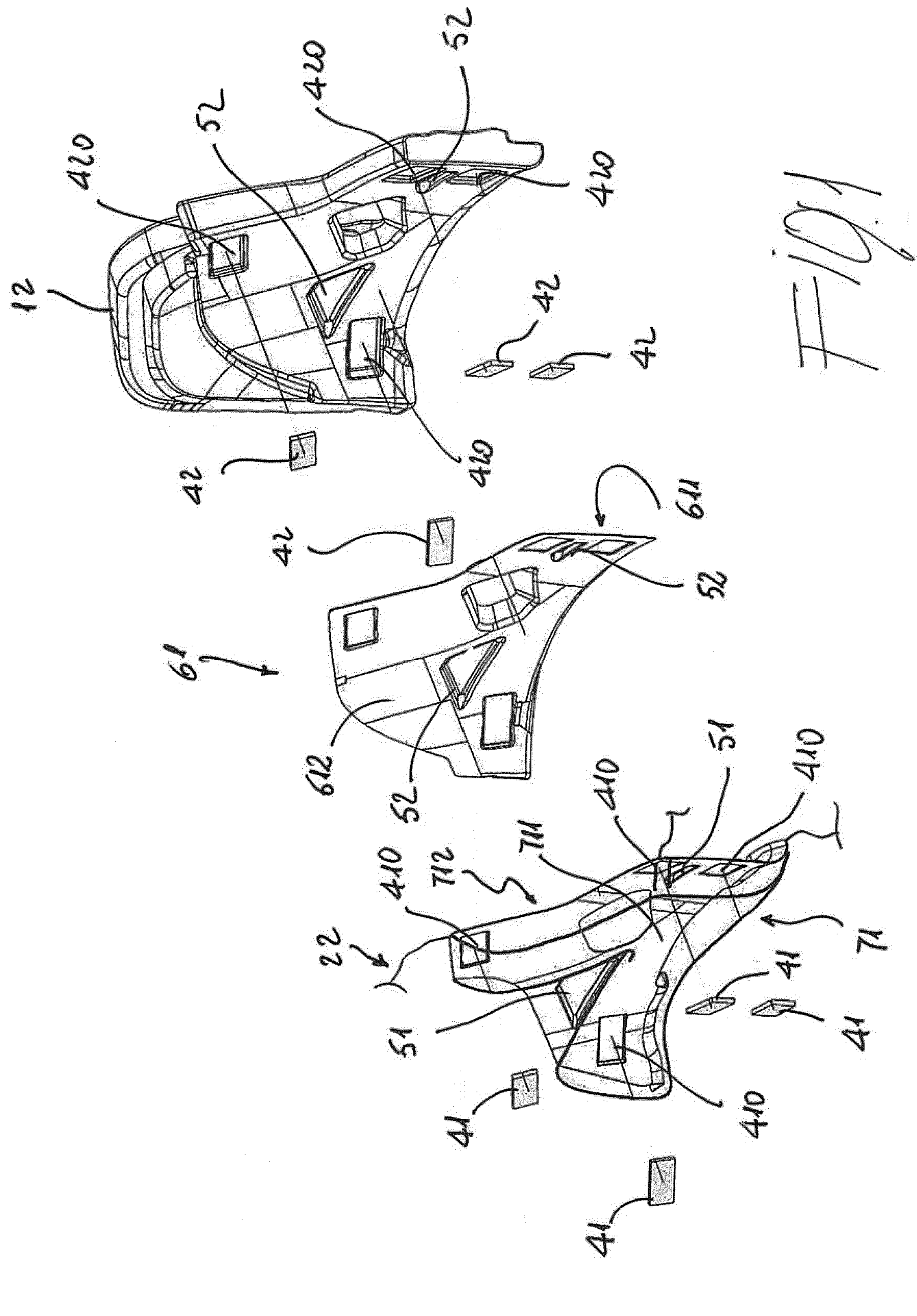
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Fig. 1

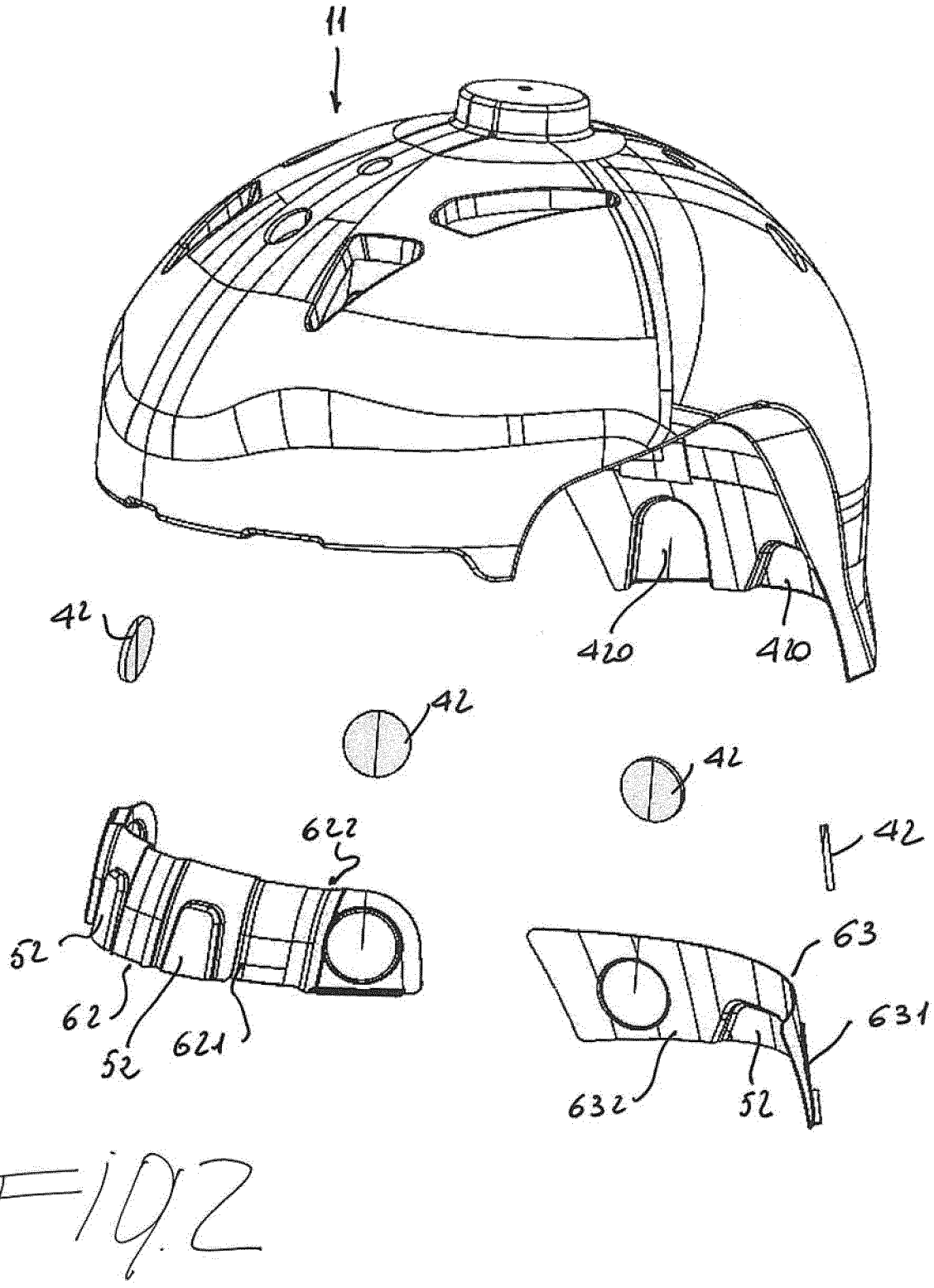


Fig. 2

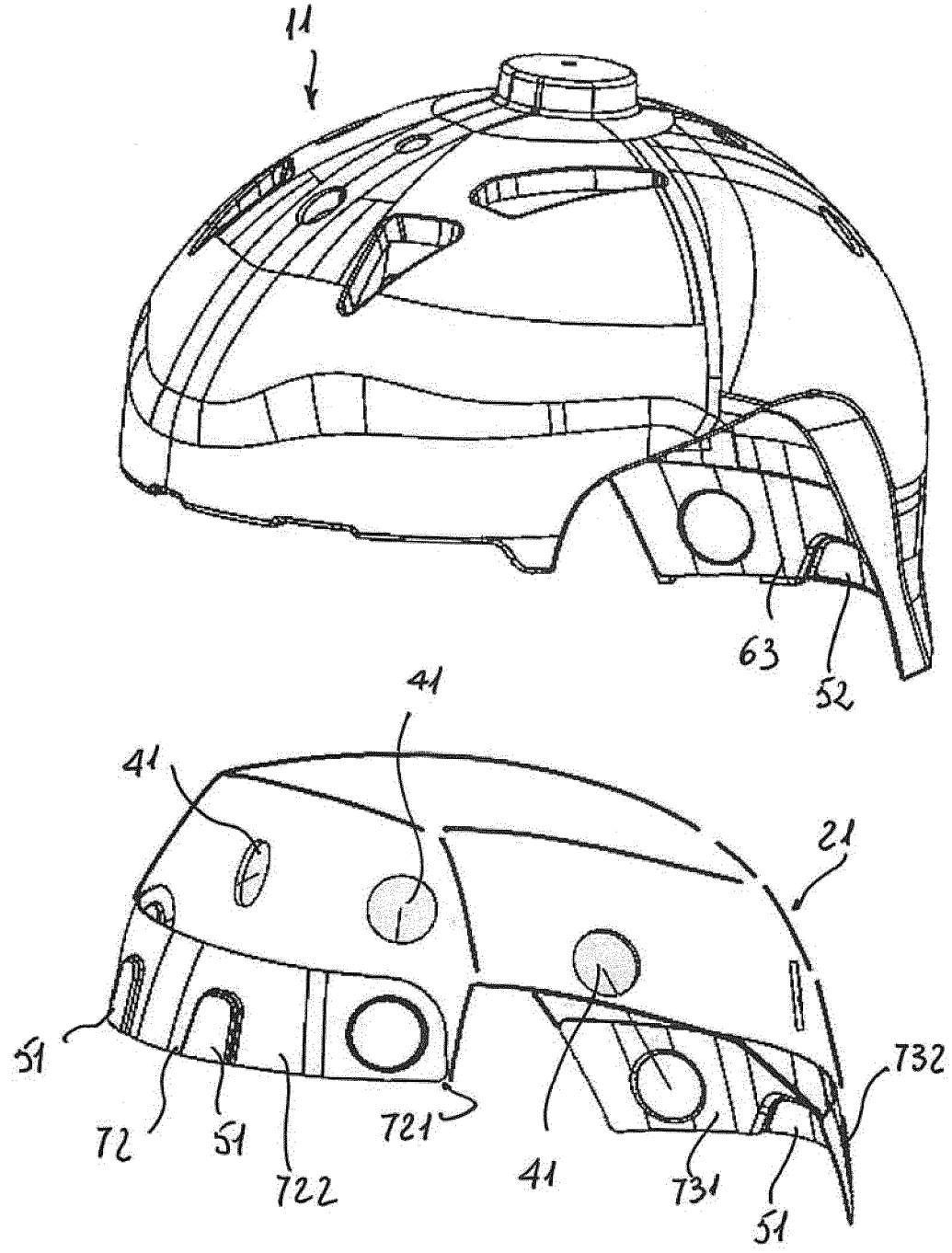


Fig. 3

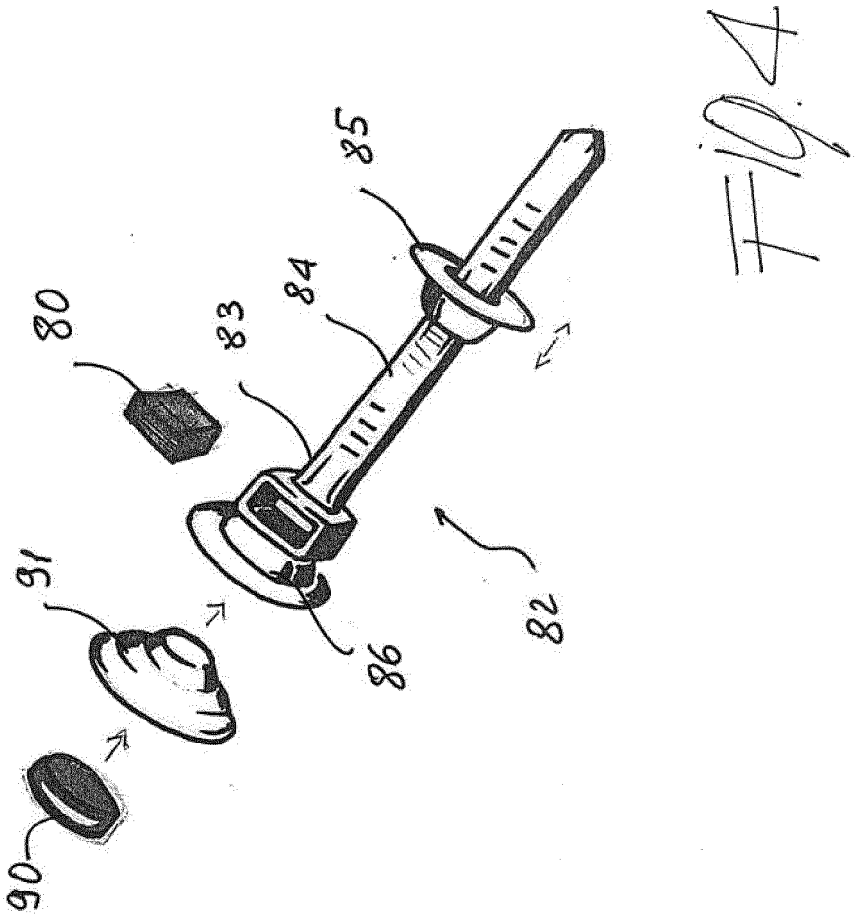


Fig. 4

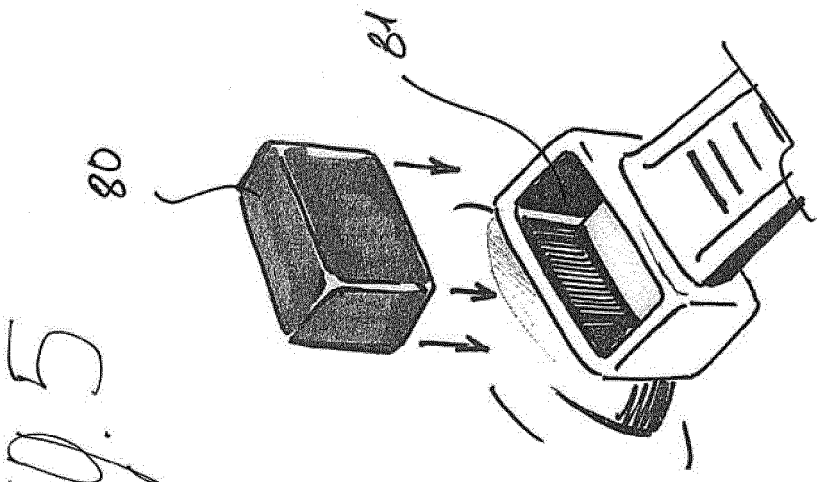


Fig. 5

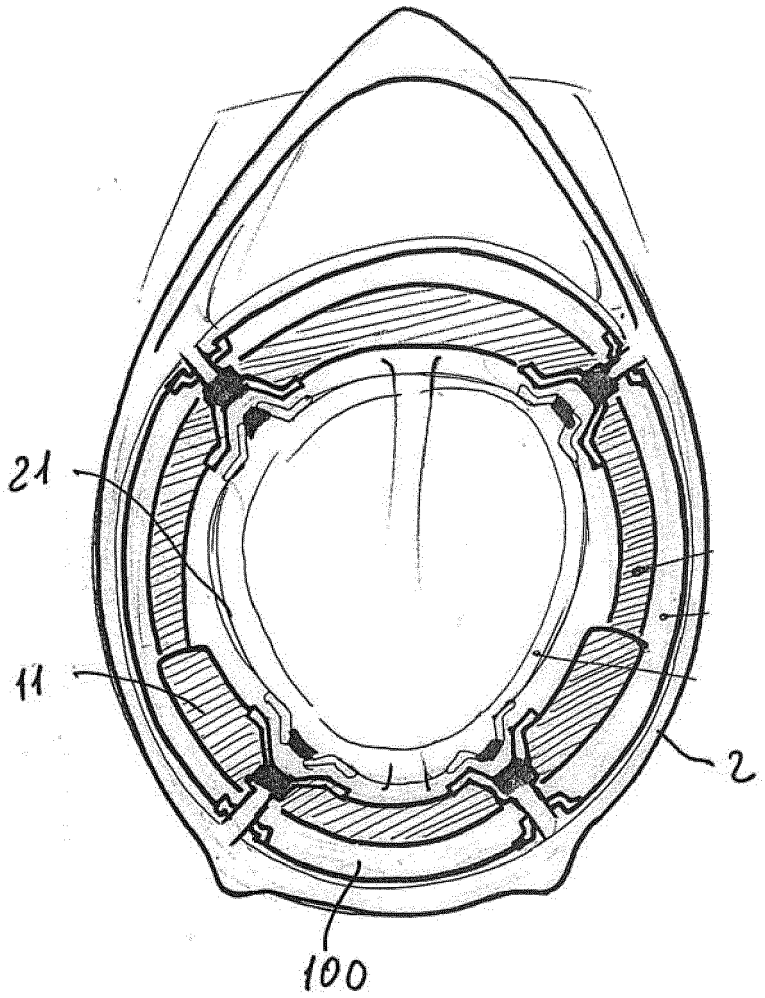


Fig.6

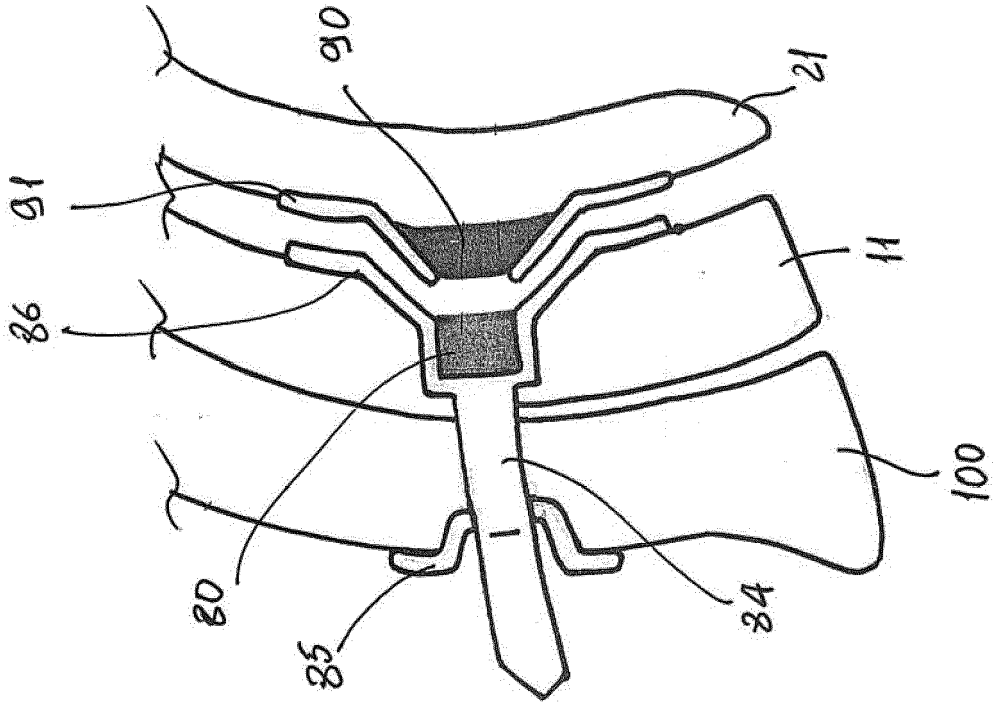
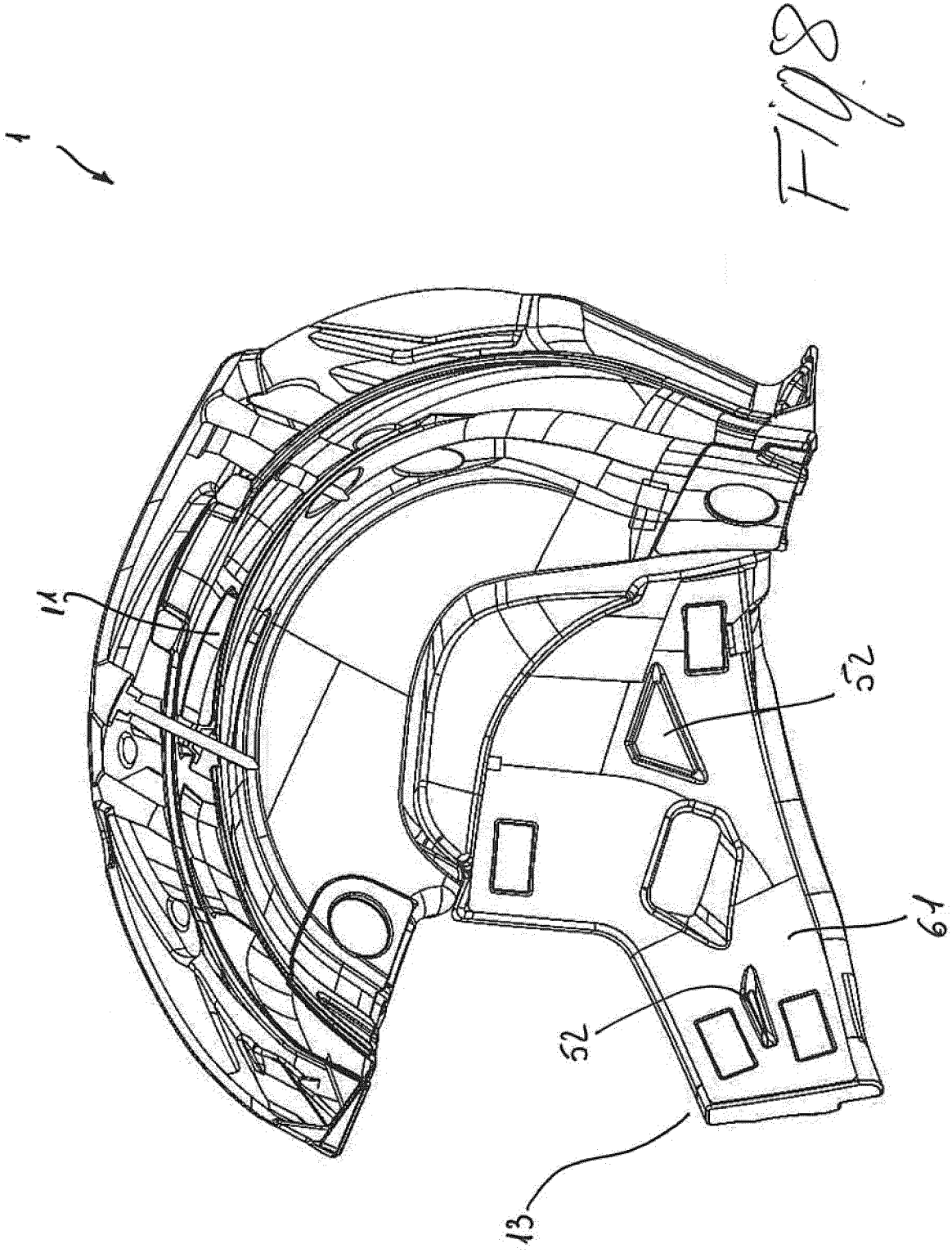


Fig. 7

Fig. 8



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Application Number
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The Hague	26 March 2019	Guisan, Thierry

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