



EUROPEAN PATENT APPLICATION

(43) Date of publication:
23.06.2021 Bulletin 2021/25

(51) Int Cl.:
A42B 3/12 (2006.01)

(21) Application number: **20214724.5**

(22) Date of filing: **16.12.2020**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
**BA ME
KH MA MD TN**

(30) Priority: **20.12.2019 IT 201900025081**

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(54) **PADDING FOR A PROTECTIVE HELMET**

(57) The present disclosure relates to a helmet padding (100) which includes a cushioning body (101) and a component of a coupling device (10) for removably connecting the cushioning body (101) to a remaining helmet portion. The component of the coupling device comprises one of a sliding element (11) and a sliding guide (12). The sliding element comprises a head (23) and a stem (24), while the sliding guide (120) comprises a seat with at least one insertion terminal mouth (34) and a longitudi-

dinal opening (31) configured to allow passage of the stem (24) and insertion of the head (23) of the sliding element (11) itself via the insertion terminal mouth (34) and prevent the head (23) from coming out of the seat (23).

The present disclosure also relates to a helmet (1000) comprising such a helmet padding (100) and a method for coupling a helmet padding (100) to a remaining helmet portion.

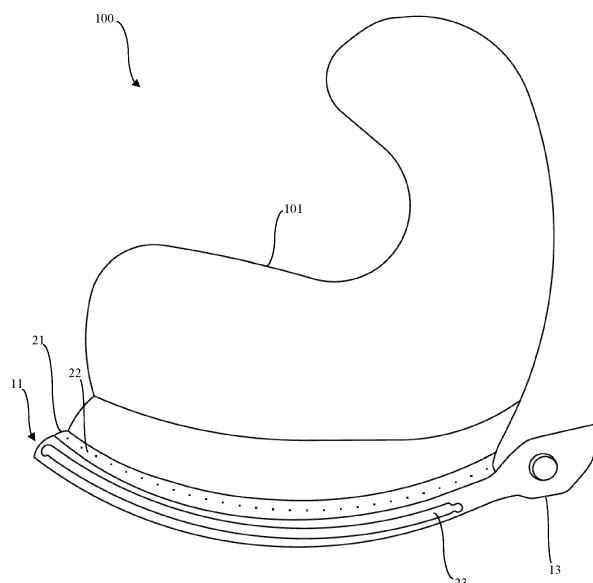


Fig. 1

Description

[0001] The present disclosure relates in general to the technical sector of protective helmets. More particularly, the present disclosure relates to cheek pads for protective helmets. The protective helmet may be particularly suitable for dynamic activities and sports such as motorcycling, skiing, horse-riding, cycling, motorcycling, American football and other similar sports where the use of a protective helmet is required.

[0002] Conventionally, helmets comprise a cap-like shell formed by an outer shell of rigid plastic material and an inner layer of polystyrene or other material configured to absorb an impact or knock. The outer shell has mainly an anti-penetration function, while the inner layer has an impact energy absorbing function.

[0003] Moreover, the known helmets comprise a soft inner layer, generally composed of one or more inserts, intended to provide a sense of comfort for the user. This soft inner layer generally comprises so-called cheek pads which are positioned opposite the user's cheeks and the so-called "neck roll" which is instead positioned in a rear zone of a user's head. In particular, the cheek pads consist of a pair of cushions of suitable shape which are intended to be positioned on the right-hand and left-hand sides of a user's face, in particular between the layer of polystyrene of the helmet and the user's face. The neck roll is instead usually U-shaped or C-shaped and is positioned so as to surround at least partially a rear bottom portion of a user's head. Preferably, moreover, the neck roll may extend also towards a top zone of a user's head.

[0004] The inserts are provided with fastening elements for removable connection of the cheek pad to a remaining helmet portion, for example to the inner layer of polystyrene or directly to the rigid shell. Conventionally, said fastening elements consist of one or more snap buttons for each soft inner insert and a plastic portion configured to be interposed between the rigid shell and the polystyrene layer. More specifically, each insert generally includes at least one first button portion which is configured to be joined together with a second button portion located, for example, on the inner polystyrene layer of a helmet.

[0005] These conventional fastening elements often constitute a problem for the inserts of the known helmets.

[0006] In general, the known fastening elements make difficult or complicate the operations of joining the insert to a remaining portion of the helmet, for example following washing of the said insert.

[0007] Moreover, the snap buttons make the operations of fastening an insert of the helmet to a remaining portion of the said helmet particularly difficult. In fact, generally, a same insert comprises a plurality of fastening buttons for ensuring a better connection between the said insert and the remaining portion of the helmet, for example the inner polystyrene layer. However, during connection of the insert, following closing of the first button of the insert, the closing or connection of the other buttons

is particularly complex or awkward.

[0008] Moreover, a further drawback of the known fastening elements consists in the fact that the snap buttons do not ensure a stable and reliable connection between an insert and a remaining portion of the helmet. In fact, movements of the head inside the helmet and/or repeatedly putting on and taking off a helmet may result in less efficient engagement between the insert and a remaining portion of the helmet.

[0009] Finally, the fastening elements such as snap buttons do not ensure optimum isolation of the interior of the helmet with respect to the external environment and favour, for example, the diffusion of noise also inside the helmet which may disturb and/or trouble a user.

[0010] The present disclosure proposes providing a helmet padding which is able to overcome the drawbacks mentioned above with reference to the prior art and/or achieve further advantages.

[0011] This is obtained by means of a helmet padding, a helmet and a method for coupling a helmet padding to remaining helmet portion, as defined in the respective independent claims. Secondary characteristics and particular embodiments forming the subject of the present disclosure are defined in the corresponding dependent claims.

[0012] The helmet padding according to the present disclosure comprises a cushioning body and a component of a coupling device configured to removably connect the cushioning body to a remaining helmet portion. In other words, the component associated with the padding forms part of a coupling device which allows a reversible connection of the said padding with a remaining portion of a helmet, for example with an inner layer of polystyrene or with the shell of the helmet itself.

[0013] The component of the coupling device which is associated with the helmet padding comprises one of the sliding element and a sliding guide. The sliding element comprises a head and a stem, while the sliding guide comprises a seat with at least one insertion terminal mouth and a longitudinal opening. The latter is configured to allow passage of the stem of the sliding element and insertion of the head of the sliding element itself via the insertion terminal mouth. In other words, the insertion terminal mouth is open at the end in an insertion direction to allow insertion of the head in the sliding direction.

[0014] At the same time, the longitudinal opening is further configured to prevent the head of the sliding element from coming out of the longitudinal guide.

[0015] In other words, the sliding guide is configured to constrain the sliding element and prevent the movement away from each other of the sliding guide and the sliding element. Expressed in yet other words, the sliding guide allows sliding of the sliding element inside the seat along a sliding direction and prevents separation of the sliding element from the guide in a direction different from said sliding direction. Expressed differently again, the sliding element is slidably engageable inside the sliding guide.

[0016] As a result, therefore, the padding according to the present disclosure may be easily coupled to a remaining helmet portion by means of an insertion starting from the terminal mouth. Moreover, compared to conventional coupling elements, it ensures a more effective, or tighter, connection to the remaining helmet portion and allows the noise to be reduced inside the helmet itself.

[0017] According to a preferred aspect of the present disclosure, the component of the coupling device is sewn to the cushioning body. In other words, the sliding element or the sliding guide is associated with the cushioning body of the helmet padding by means of stitching. In this way, advantageously, the component of the coupling device is firmly fastened to the padding, in particular to the cushioning body of the padding. As a result, it is possible to obtain effective coupling together of the padding and the remaining helmet portion.

[0018] According to a further preferred aspect of the present disclosure, the sliding guide comprises an abutment element configured to define the longitudinal opening and prevent, during use, the head from coming out of the longitudinal opening, in a direction orthogonal to a sliding direction.

[0019] More preferably, the insertion terminal mouth and said sliding guide define a sliding direction and the terminal mouth is open in said sliding direction to allow said insertion of the head of the sliding element starting from said mouth. Consequently, during use, the helmet padding is effectively associated with the remaining helmet portion. In fact, the abutment element prevents the movement away, or separation, of the padding itself from the remaining helmet portion, but a longitudinal insertion is not prevented.

Preferably, the coupling device includes, or is associated with, an impedance element designed to prevent further relative sliding of the sliding element and the sliding guide. In practice, once inserted into the sliding guide starting from the terminal mouth, there is an impedance element or other blocking device to prevent further sliding or a coming out of the sliding element from the guide.

[0020] According to a preferred aspect, the coupling device is a first coupling device. Moreover, according to this aspect, the padding according to the present disclosure comprises a second component of a second coupling device of the male-female type configured to couple, or connect, removably the cushioning body to a remaining helmet portion. In other words, the helmet padding comprises a male element or a female element of a coupling device of the male-female type for further coupling the cushioning body of the helmet padding to a remaining helmet portion. As a result, according to this aspect, the coupling together of the helmet padding and a remaining helmet portion is further improved. In fact, according to this aspect, the helmet padding comprises two components of two different coupling devices. In other words, according to this aspect, the padding is further fastened to the remaining helmet portion by means of a second coupling device. Preferably, according to an as-

pect of the present disclosure, the second removable coupling device is a snap button.

[0021] According to a further preferred aspect, the first coupling device comprises a ring element. This ring element is configured, during use, to be interposed between a male element and a female element of the second coupling device. Consequently, during use, the ring element of the first coupling device is configured to prevent relative sliding of the sliding element and the sliding guide of the first coupling device itself. In other words, the ring element interposed between the male portion and the female portion prevents, during use, a relative movement of the padding and the remaining helmet portion. It can be understood that, in this embodiment, the ring element acts as the aforementioned impedance element.

[0022] The present disclosure also relates to a helmet comprising a helmet padding, according to anyone of the above-described embodiments and preferred aspects. According to this aspect, the helmet comprises the other one of the sliding element and the sliding guide. In other words, the helmet according to the present disclosure comprises a padding which comprises a sliding element or a sliding guide, while the helmet with which said padding is associated comprises the other one of the sliding element and the sliding guide.

[0023] According to a preferred aspect, said other one of the sliding element and the sliding guide is associated with a layer of the helmet configured to absorb energy. In other words, the component of the coupling device associated with the helmet is associated with the layer configured to absorb energy of the helmet, for example a layer on the inside of a shell of helmet, for example a polystyrene layer. Expressed differently, according to this aspect, the remaining helmet portion is a layer of the helmet itself, configured to absorb energy. Alternatively, the remaining helmet portion may be a rigid shell of said helmet.

[0024] The present disclosure also relates to a method for coupling a helmet padding to a remaining helmet portion. This method involves sliding a sliding element of a coupling device inside a sliding guide of the said coupling device, that is in a sliding direction. According to this aspect, one of the sliding element and the sliding guide is associated with the helmet padding, while the other one of the sliding element and the sliding guide is associated with the remaining helmet portion. Preferably, this remaining helmet portion is a layer configured to absorb energy. Alternatively, the remaining helmet portion is a rigid shell of said helmet. As a result, according to this aspect, coupling together of the padding and the helmet is simple and effective.

[0025] According to a further aspect of the present disclosure, the coupling device is a first coupling device and the method comprises the further step of coupling by means of a second coupling device of the male-female type the helmet padding to the remaining helmet portion. As a result, the efficiency of coupling together of the padding and the helmet is further improved.

[0026] Even more preferably the sliding element is inserted in a sliding direction in the sliding guide starting from an insertion terminal mouth which is open in said sliding direction, so as to facilitate the coupling of the padding with the remaining portion of the helmet.

[0027] Furthermore, in a preferred embodiment of the invention, once the element is inserted in the sliding guide, further sliding of the sliding element along the sliding guide is prevented. According to a preferred aspect of the present disclosure, the method involves the further step of inserting, or arranging, a ring element of the first coupling device between a male portion and a female portion of the second coupling device. In this way, as an example, the ring element is configured, during use, as said above, to prevent relative sliding of the sliding element and the sliding guide. Moreover, according to this aspect, said insertion step is carried out before the step of coupling the second coupling device.

It is any case evident that each embodiment of the subject of the present disclosure may have one or more of the advantages listed above; in any case it is not required that each embodiment should have simultaneously all the advantages listed. Other advantages, characteristics and methods of use of the object of the present disclosure will become evident from the following detailed description of some of its preferred embodiments, given by way of example and not of limitation.

[0028] Reference will be made to the figures of the attached drawings in which:

- Figure 1 shows a view of a sliding guide of a first removable coupling device according to an embodiment of the present disclosure;
- Figure 2 shows a view of a sliding guide of a first removable coupling device according to an embodiment of the present disclosure;
- Figure 3 shows a view of an element configured to slide inside the sliding guide of a first removable coupling device according to an embodiment of the present disclosure;
- Figure 4 shows a cross-sectional view of coupling together of said sliding guide and said element configured to slide inside the sliding guide of a first coupling device according to an embodiment of the present disclosure;
- Figure 5 shows a front view of a helmet comprising an insert according to an embodiment of the present disclosure, in which said helmet is shown partially cross-sectioned.

[0029] With reference to the attached figures, an embodiment of a helmet padding is indicated by the reference number 100.

[0030] In particular, Figure 1 shows a helmet padding 100 according to one aspect of the present disclosure. More specifically, the padding 100 shown in Figure 1 is a cheek pad configured to be arranged inside a shell of a helmet. Preferably, the cheek pad is configured to be

associated with a layer configured to absorb energy. The cheek pad is also configured to be arranged in a cheek zone of a user.

[0031] The present disclosure relates however to any padding intended to be arranged, during use, inside a helmet, for example a neck roll, a cheek pad, a head cap or a complete single-piece padding.

[0032] In connection with the present disclosure, moreover, every spatial reference such as inner, outer, right-hand, left-hand, above or below is to be understood as referring to the head of a user when wearing the helmet. It follows that, for example, an inner side of the helmet is a side of the helmet directed towards the head of the user, and an outer side of the helmet is a side of the helmet directed towards an outer zone opposite the user's head; or a zone at the top of the helmet is to be understood as being a zone which, when the helmet is worn, is located above the user's head.

[0033] The padding 100 according to the present disclosure comprises a cushioning body 101 configured to provide a sense of comfort for the user when wearing a helmet with the padding 100.

[0034] The padding 100 comprises furthermore a component of a coupling device 10 configured to removably connect the cushioning body 101 to a remaining helmet portion. In other words, the insert 100 is configured to be removably connected to a remaining helmet portion, for example to an inner layer, preferably made of polystyrene, of the helmet.

[0035] This removable connection is performed by means of the removable coupling device 10.

[0036] Said component of the coupling device 10 of the padding 100 comprises either one of a sliding element 11 and a sliding guide 12. In other words, the component of the coupling device 10 associated with the padding 100 is a sliding element 11 or a sliding guide 12. Preferably, the other of said sliding element 11 and the sliding guide 12 is associated with a remaining helmet portion.

[0037] For example, according to an embodiment shown in Figures 1 and 5, said component is a sliding element 11. According to this embodiment, a sliding guide 12 configured to receive and constrain this sliding element 11 is associated with a remaining helmet portion. Alternatively, the padding 100 may comprise this sliding guide 12, while the remaining helmet portion may comprise the sliding element 11.

[0038] Preferably, this component of the coupling device 10 is associated with the cushioning body 101 of the padding 100, preferably by means of stitching 22. For example, the sliding element 11 is made of plastic material suitable for being fixed, for example by means of a stitching, to the padding 100, preferably to the cushioning body 101 of the padding 100. Preferably, the sliding element 11 and the sliding guide 12 each comprise a connecting portion 21 and 32 for a connection with the padding 100 and with a remaining helmet portion, respectively, or vice versa.

[0039] Preferably, moreover, the sliding guide 12 is

fixed, for example by means of fixing means, to a remaining helmet portion, for example to an inner layer of a helmet made of polystyrene or other material configured to absorb energy, or a rigid-material shell of a helmet.

[0040] According to one aspect of the present disclosure, the sliding element 11 includes a head 23 and a stem 24. In other words, the stem 24 of the sliding element 11 is an element projecting for example from said connecting portion 21, while the head 23 is a protuberance of said stem 24 located in an end region of the said stem 24. For example, the sliding element comprises a T-shaped or mushroom-like element.

[0041] As can be seen in Figure 2, the sliding guide 12 comprises a seat with at least one insertion terminal mouth 34 and a longitudinal opening 31. In other words, the sliding guide is configured to define a sliding seat which comprises an insertion terminal mouth 34 and a longitudinal opening 31. As shown in Figure 4, the longitudinal opening 31 is configured to allow passage of the stem 24 of the sliding element 11 and insertion of the head 23 of the sliding element via the said terminal mouth 34. The terminal mouth 34 is thus open in a sliding direction S.

[0042] Moreover, this longitudinal opening 31 is configured to prevent the head 23 from coming out of the sliding seat of the sliding guide 12. In other words, the sliding guide 12 is configured to allow the sliding of a sliding element 11 inside a sliding seat along the sliding direction S. The sliding guide 12 is preferably further configured to prevent the movement away, or separation, of the sliding element 11 from the sliding guide 12 itself in a direction other than said sliding direction S, such as, for example, a direction substantially orthogonal to the sliding direction S.

[0043] Preferably, according to one aspect of the present disclosure, the sliding guide comprises at least one abutment element 33 which defines the longitudinal opening 31 and which is configured to prevent the head 32 of the sliding element 12 from coming out of the longitudinal opening 31 itself.

[0044] Even more preferably, a locking device or an impedance element may be provided to prevent the sliding element from coming out or further sliding of the sliding element into the sliding guide after insertion.

[0045] According to a preferred aspect of the present disclosure, the aforementioned coupling device 10 is a first coupling device. According to this aspect, the helmet padding 100 comprises a second component of a second coupling device configured to removably connect the cushioning body 101 to a remaining helmet portion.

[0046] In other words, the helmet padding 110 comprises two connecting elements, i.e. of a first and a second removable connection device, respectively. Expressed in yet other words, the helmet padding 100 is configured to be coupled, or connected, removably to a remaining helmet portion by means of two coupling devices.

[0047] According to this aspect, the second remova-

ble coupling device is of the male-female type. Preferably, this second coupling device is a snap button.

[0048] For example, the padding 100 comprises a male element of a male-female coupling device, while a remaining helmet portion on which said padding 100 is intended to be coupled comprises a female portion of said male-female coupling device.

[0049] According to a further preferred aspect, the first coupling device 10 comprises a ring element 13.

[0050] Preferably, the ring element 13 is associated with the component of the first coupling device 10 associated with the helmet padding 100. For example, the ring element 13 is associated with the sliding element 11.

[0051] This ring element 13 is configured, during use, to be interposed between a male element and a female element of the second coupling device. Preferably, the ring element 13 is arranged along said sliding direction S. In this way, relative sliding of the sliding element 11 and the sliding guide 12 along the sliding direction S is prevented.

[0052] The ring element 13 therefore acts, by way of example, as a locking device to prevent further sliding of the sliding element 11 after it has been inserted in the correct position.

[0053] More specifically, the ring element 13 is an element comprising a through-hole. During use, the male element of the male-female coupling device is configured to be inserted inside said through-hole and be coupled with the female element of the male-female coupling device so that the ring element 13 is interposed between said male element and said female element. In this way the relative sliding of the sliding element and the sliding guide of the first removable coupling device 10 is prevented.

[0054] In yet other words, according to an embodiment of the present disclosure, the snap button prevents the relative sliding of the sliding guide 12 and the sliding element 11 of the first coupling device 10.

[0055] The present disclosure also relates to a helmet 1000 comprising a helmet padding 100. This helmet padding 100 may be a cheek pad, a neck roll, a head cap or a complete single-piece insert.

[0056] The helmet 100 also comprises a further helmet portion with which the padding 100 is intended to be associated.

[0057] Preferably, this further helmet portion is for example a layer 1001 of this helmet 100, for example a polystyrene layer, configured to absorb energy. Preferably, this layer 1001 is arranged on the inside of a rigid-material shell 1002 of the helmet 1000 itself. Alternatively, the further helmet portion is the shell 1002 itself of the helmet 1000.

[0058] In particular, according to one aspect of the present disclosure, the further helmet portion comprises the other one of the sliding element 11 and the sliding guide 12. In other words, the padding 100 of the helmet 100 comprises one of the sliding element 11 and the sliding guide 12, while the further helmet portion intended

for coupling with this padding 100 comprises the other one of the sliding element 11 and the sliding guide 12.

[0059] For example, according to an embodiment of the present disclosure, the sliding element 11 is associated with the padding 100, while the sliding guide 12 is associated with a layer 1001 of the helmet 1000 configured to absorb energy.

[0060] According to a preferred aspect, the helmet 1000 further comprises a coupling device of the male-female type configured to removably connect the helmet padding 100, in particular the padding body 101, to the remaining helmet portion.

[0061] The present disclosure also relates to a method for coupling a helmet padding 100 to a remaining helmet portion. This remaining helmet portion may be for example a layer 1001 configured to absorb energy, for example made of polystyrene. This layer 1001 configured to absorb energy may be arranged on the inside of a rigid-material shell 1002 of the helmet 1000 itself.

[0062] Alternatively, the remaining helmet portion may be the shell 1002 of a helmet 1000.

[0063] In the description of this method, the elements of the padding 100 involved in the method and having the same function and the same structure as the elements described above retain the same reference number and are not described again in detail.

[0064] The method involves sliding a sliding element 11 of a coupling device 10 inside a sliding guide 12 of the coupling device 10. Said sliding is carried out preferably along a sliding direction S, starting from a terminal mouth 34 which is open in the sliding direction S. Once inserted in the sliding guide, the sliding element 11 can be blocked or prevented from further sliding, or from an outcoming in the sliding direction.

[0065] One of the sliding element 11 and the sliding guide 12 is associated with the helmet padding 100, while the other one of the sliding element 11 and the sliding guide 21 is associated with the remaining helmet portion.

[0066] For example, according to the embodiment shown in Figures 1 and 5, the helmet padding 100 comprises a sliding element 11. Said sliding element 11 is associated with a cushioning body 101 of the helmet padding 100.

[0067] According to this embodiment, the remaining helmet portion, for example a layer 1001 configured to absorb energy, comprises a sliding guide 12 intended, during use, to receive the sliding element 11 of the padding 100.

[0068] According to a preferred aspect of the present disclosure, the coupling device 10 is a first coupling device and the method comprises a step of coupling, by means of a second coupling device of the male-female type, the helmet padding 100, in particular the cushioning body 101 of the helmet padding 100, to the remaining helmet portion, for example to the layer 1001 configured to absorb energy.

[0069] Moreover, according a further preferred aspect of the present disclosure, the method furthermore in-

volves a step of inserting a ring element 13 of the first coupling device between a male portion and a female portion of the second coupling device, so as to prevent, as mentioned above, a relative sliding of the sliding element 11 and the sliding guide 12 of the first coupling device 10.

[0070] Preferably, the step of inserting the ring element 13 between the male portion and the female portion of the second coupling device is carried out before the step of coupling the second coupling device.

[0071] In particular, the ring element 13 comprises a through-hole. The insertion step involves inserting the male portion of the second coupling device into said through-hole and coupling said male portion with the respective female portion of the second coupling device.

[0072] The subject-matter of the present disclosure has been described hitherto with reference to embodiments thereof. It is to be understood that other embodiments relating to the same inventive idea may exist, all of these falling within the scope of protection of the claims which are provided below.

Claims

1. Helmet padding (100), wherein said helmet padding (100) includes a cushioning body (101) and a component of a coupling device (10) configured to removably connect the cushioning body (101) to a remaining helmet portion, wherein said component of the coupling device (10) comprises either one of a sliding element (11) and a sliding guide (12), wherein the sliding element (11) includes a head (23) and a stem (24), and said sliding guide (12) comprises a seat with at least one insertion terminal mouth (34) and a longitudinal opening (31), said longitudinal opening (31) being configured to allow passage of the stem (24) of the sliding element (11) and insertion of the head (23) of the sliding element (11) itself via said insertion terminal mouth (34) and prevent the head (23) from coming out of said seat.
2. Helmet padding (100) according to the preceding claim, wherein said component of the coupling device (10) is sewn to the cushioning body (101).
3. Helmet padding (100) according to claim 1 or 2, wherein said sliding guide (12) includes an abutment element (33) adapted to define said longitudinal opening (31) and prevent the head (23) of the sliding element (11) from coming out of said longitudinal opening (31), and wherein said insertion terminal mouth (34) and said sliding guide (12) define a sliding direction (S) and said terminal mouth (34) is open in said sliding direction (S) to allow said insertion of the head (23) of the sliding element (11) starting from said mouth.

4. Helmet padding (100) according to any one of the preceding claims, wherein said coupling device (10) includes, or is associated with, an impedance element or blocking device, adapted to prevent further relative sliding of the element sliding (11) and the sliding guide (12). 5
5. Helmet padding (100) according to any one of the preceding claims, wherein the coupling device (10) is a first coupling device and wherein the helmet padding (100) comprises a second component of a second coupling device configured for detachably connecting the cushioning body (101) to a remaining helmet portion, wherein said second removable coupling device is of the male-female type. 10 15
6. Helmet padding (100) according to the claim 4 and claim 5, wherein said first coupling device (10) comprises a ring element (13) configured to be interposed, during use, between a male element and a female element of said second coupling device, wherein said ring element (13) acts as said impedance element and it is configured, during use, to prevent relative sliding of the sliding element (11) and the sliding guide (12). 20 25
7. Helmet padding (100) according to claim 5 or 6, wherein said second coupling device is a snap button. 30
8. Helmet (1000) including a helmet padding (100) according to any one of the preceding claims and a remaining helmet portion, wherein said remaining helmet portion comprises the other one of said sliding element (11) and said sliding guide (12). 35
9. Helmet (1000) according to the preceding claim, wherein the other one of said sliding element (11) and said sliding guide (12) is associated with a layer (1001) of said helmet (1000) configured to absorb energy. 40
10. Helmet (1000) according to claim 8 or 9, further comprising a coupling device of the male-female type configured to removably connect said helmet padding (100) to said remaining helmet portion. 45
11. Method for coupling a helmet padding (100) to a remaining helmet portion, wherein said method comprises a step of sliding a sliding element (11) of a coupling device (10) inside a sliding guide (12) of the coupling device (10), wherein one of said sliding element (11) and said sliding guide (12) is associated with said helmet padding (100) and the other one of said sliding element (11) and said sliding guide (12) is associated with said remaining helmet portion. 50 55
12. Method according to the preceding claim, wherein said remaining helmet portion is a layer (1001) configured to absorb energy.
13. Method according to claim 11 or 12, wherein the sliding element (11) is inserted into the sliding guide (12) according to a sliding direction starting from an insertion terminal mouth (34) which is open in said sliding direction.
14. Method according to any one of claims 11 to 13, wherein once the element is inserted into the sliding guide, further sliding of the sliding element along the sliding guide (12) is prevented by means of an impedance element or locking device.
15. Method according to anyone of claims 11 to 14, wherein said coupling device (10) is a first coupling device, the method further comprising the step of coupling by means of a second coupling device said helmet padding (100) to said remaining helmet portion, said second coupling device being of the male-female type.
16. Method according to the preceding claim, comprising a step of inserting a ring element (13) of the first coupling device (10) between a male portion and a female portion of the second coupling device, wherein said insertion step is carried out before said step of coupling the second coupling device.

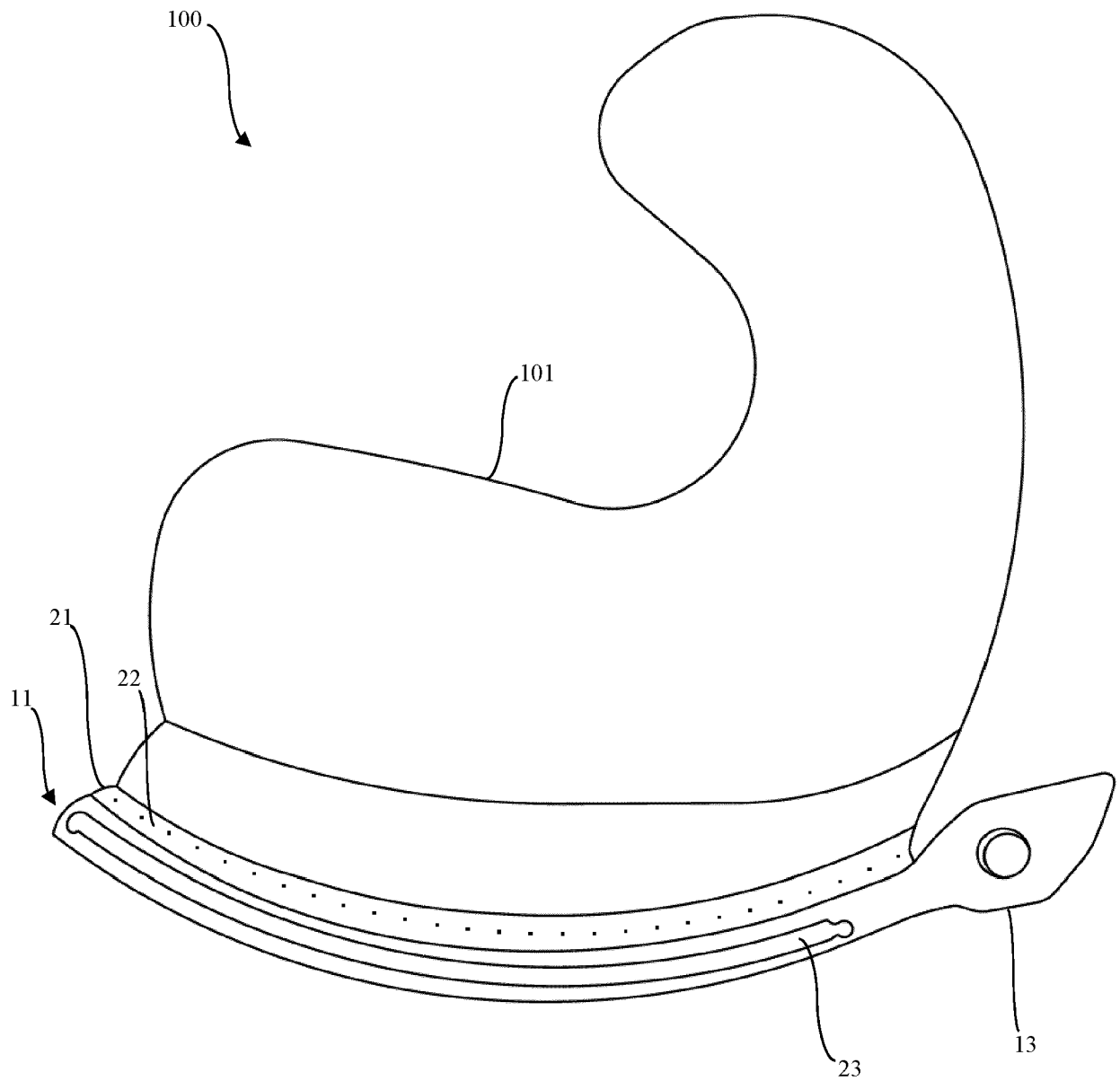


Fig. 1

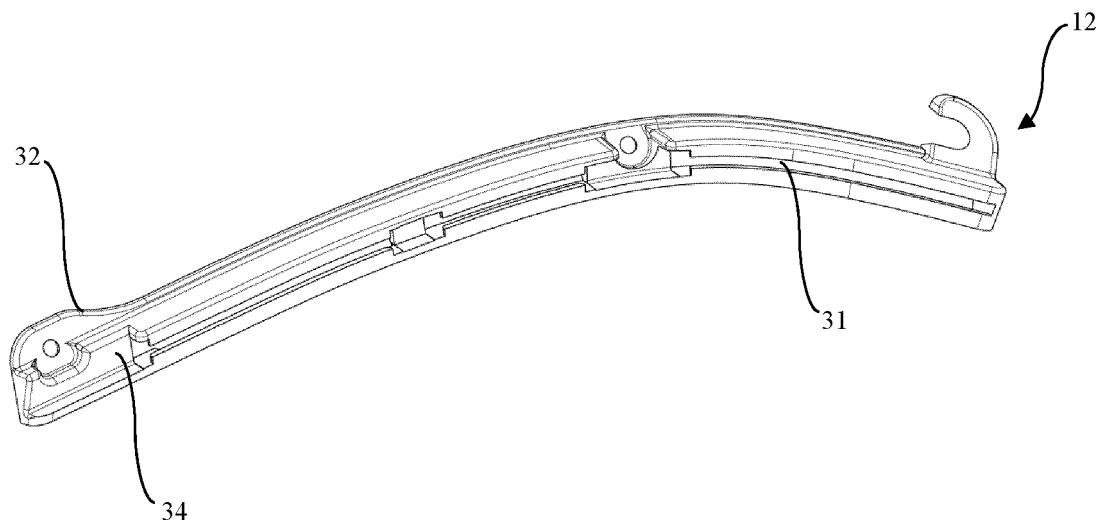


Fig. 2

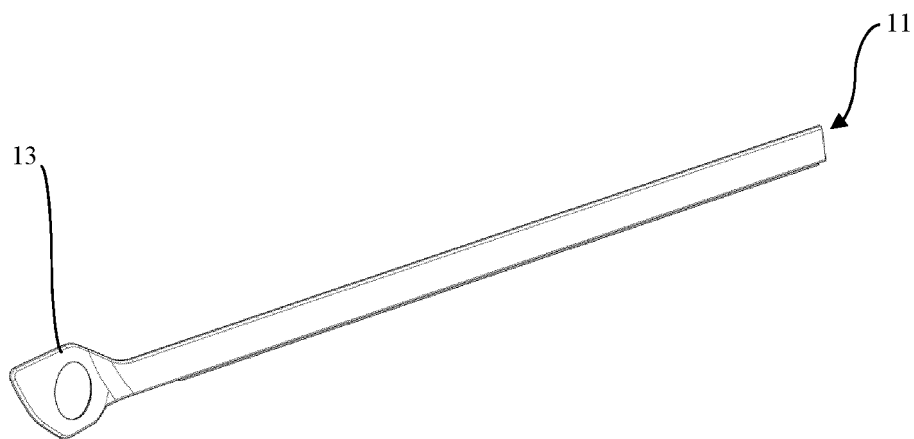


Fig. 3

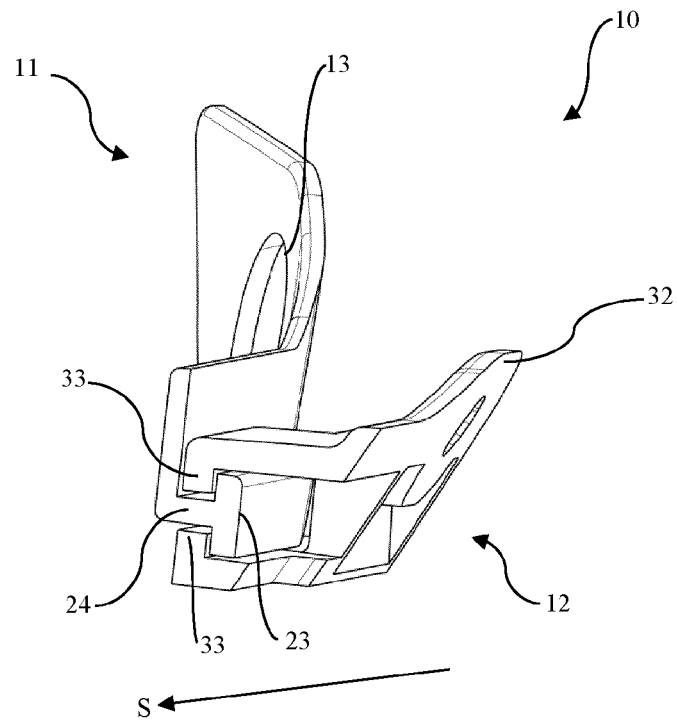


Fig. 4

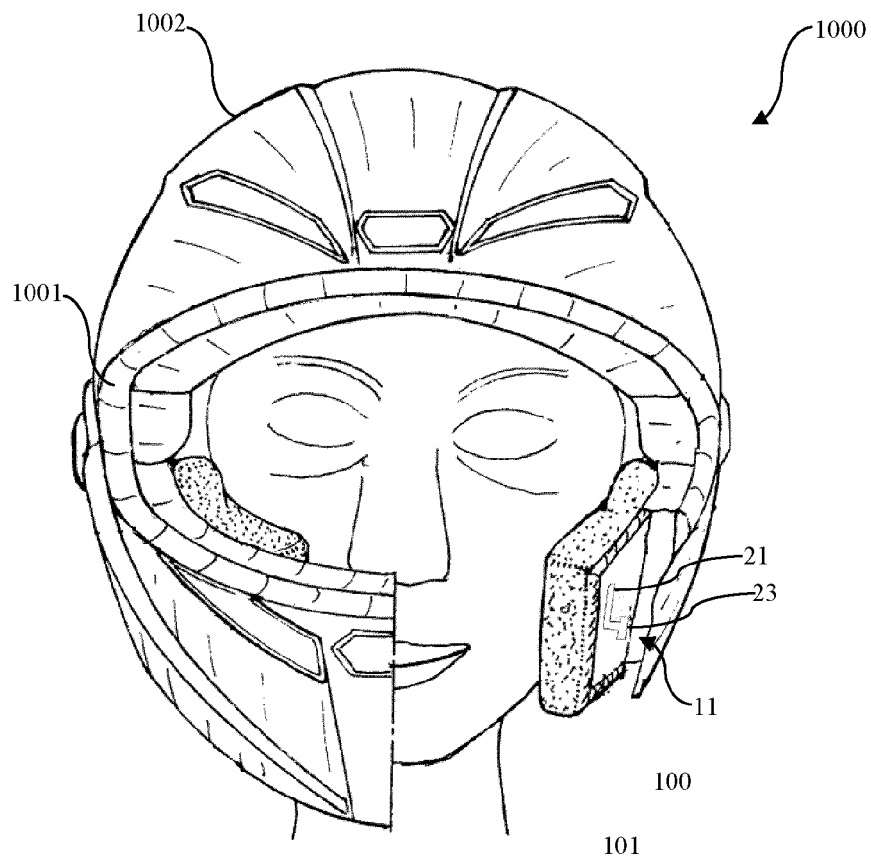


Fig. 5



EUROPEAN SEARCH REPORT

 Application Number
 EP 20 21 4724

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 022 358 A2 (SHOEI CO LTD [JP]) 11 February 2009 (2009-02-11)	1-5,7-15	INV. A42B3/12
A	* paragraph [0050] - paragraph [0054] * * paragraph [0064] * * figures 4-9 *	6,16	
X	US 3 495 272 A (TEMPELHOF HERMANN) 17 February 1970 (1970-02-17)	1-5,7-15	
A	* page 2, line 37 - line 60 * * figures 1,2,3,4,6,7 *	6,16	
X	US 5 365 607 A (BENEVENTO JR VINCENZO P [US] ET AL) 22 November 1994 (1994-11-22) * figures 7,8 * * column 6, line 29 - line 59 *	1,3,8, 11,13	
			TECHNICAL FIELDS SEARCHED (IPC)
			A42B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 May 2021	Examiner Guisan, Thierry
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			

 1
 EPO FORM 1503 03.02 (P04C01)

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

EP 20 21 4724

5

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

10-05-2021

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15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2022358 A2	11-02-2009	EP 2022358 A2	11-02-2009
		JP 5041906 B2	03-10-2012
		JP 2009041126 A	26-02-2009
		US 2009038054 A1	12-02-2009

US 3495272 A	17-02-1970	AT 286665 B	28-12-1970
		BE 688631 A	31-03-1967
		CH 467591 A	31-01-1969
		DE 1660749 A1	20-04-1972
		DK 114378 B	23-06-1969
		GB 1162402 A	27-08-1969
		IL 26766 A	19-08-1970
		JP S4831338 B1	28-09-1973
		NL 6614546 A	19-05-1967
		SE 314525 B	08-09-1969
		US 3495272 A	17-02-1970

US 5365607 A	22-11-1994	NONE	
