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(54) **PROTECTIVE GARMENT**

(57) A protective garment (1000) having a visible external surface and an internal surface designed to face, during use, the body of a user is described. The protective garment (1000) comprises an inflatable element (50) intended to at least partially protect an area of the body of a user and an inflation device (10) configured to inflate said inflatable element (50). The protective garment (1000) further comprises an aerodynamic hump (70) configured to at least partially protect a back area of a user and defining a housing cavity (71) facing said internal surface and configured to accommodate said inflation device (10). The inflation device (10) comprises at least one gas generator (12) and a container (14) for containing said at least one gas generator (12). The container (14) and the gas generator (12) form a structurally independent assembly configured to be handled as a single body with respect to said inflatable element (50). The inflation device (10) comprises a coupling component (18) and the inflatable element (50) has a coupling counter-component (52). The coupling component (18) is configured to be coupled in a detachable manner with the coupling counter-component (52) associated with said inflatable element (50).

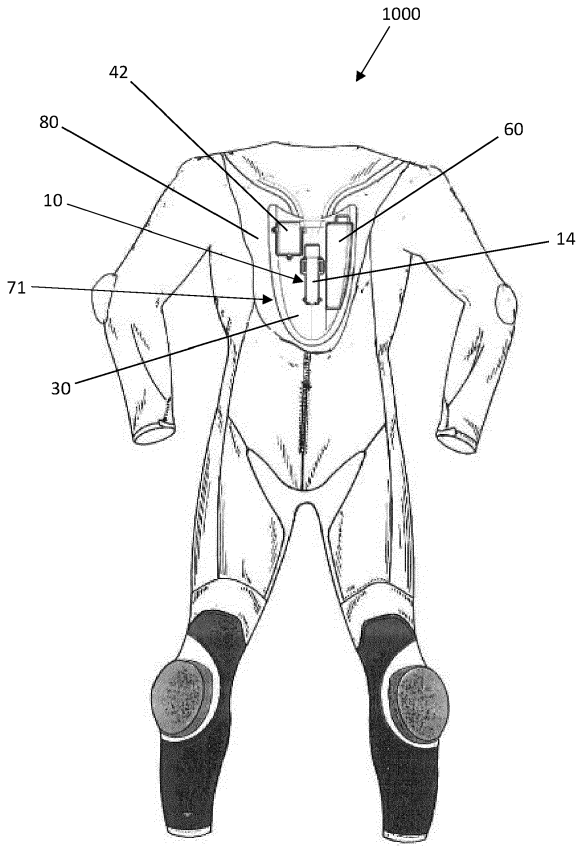

FIG. 7

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Description

[0001] The present invention relates in general to the sector of providing protection by means of an inflatable element for protecting a user from falls and/or impacts during use of a vehicle, preferably a two-wheeled vehicle. More particularly, the present disclosure relates to a protective garment, preferably for motorcycling, for example a motorcycle suit, containing an inflation device for inflating an inflatable element designed to protect a user in the event of falls and/or impacts of various types.

[0002] In particular, in the motorcycling sector it is known to use personal protection devices which include inflatable elements. A personal protection device normally includes an inflatable element or inflatable bag, an inflation device, sensors for detecting the fall or the impact and at least one control unit for managing the activation of the inflation device in order to inflate the inflatable element. The inflatable element is placed in fluid communication with the inflation device, which is configured to inflate the inflatable element in the event of an impact or fall.

[0003] Generally, such an inflation device is formed by a fluid source, such as a canister which contains pressurised gas and which is opened by means of a punch or a small explosion which is managed by means of an electric activation signal. Any form of fluid source intended to determine the outflow of pressurised gas into an inflatable element is referred to in the continuation of the present disclosure by the term "gas generator".

[0004] Normally, the gas generator is arranged inside the inflatable element, for reasons of convenience, so as to facilitate the fluid connection with the inflatable element. The entire protection device is then associated with the protective garment, inside which it is integrally inserted.

[0005] In other words, the inflatable element and the gas generator are housed together inside the protective garment, for example inside an internal pocket of the same protective garment, underneath an external protection layer.

[0006] Such a garment, although advantageous from many points of view, has a number of drawbacks.

[0007] It has been noted that, in particular in the present protective garments, for example in existing motorcycle suits, the protection device is arranged so that its components are in a zone or region of the protective garment which are difficult for the user to access, and this condition requires the user to perform many operations in order to change, if necessary, the inflatable element or other components.

[0008] Consequently, one of the drawbacks consists in the fact that, for example, in the event of an impact or fall and consequently activation of the inflation device intended to inflate the inflatable device, in order to be able to restore the garment to its working condition and continue to ensure the protection by the inflatable element, the protection device must be fully replaced before it can be used again.

[0009] In particular, it is generally required to replace the entire protection device formed by inflatable element and inflation device.

[0010] For the reasons listed above, in the event of having to replace the protection device, it is required to seek the services of a specialized technician who is able to deal with the delicate operations involving removal and replacement of the said device, and also provide the certification regarding correct positioning of the inflatable element. It is clear that this procedure is time-consuming and is not an operation which can be performed by the average user of such a garment.

[0011] The problem underlying the invention described below is therefore that of providing a protective garment, for example a motorcycling suit, which allows a user to restore the protection device to its working condition in a simplified manner, for example following initial inflation, and/or which is able to provide further advantages.

[0012] This is obtained by means of a protective garment including a protection device according to the independent Claim 1. Secondary characteristics of the subject of the present invention are defined in the corresponding dependent claims.

[0013] The present invention is based on the recognition by the inventor that it is possible to incorporate a gas generator inside a special container so as to form a single body, which results in simple and safe handling by the user, and that the single body formed by the gas generator and the container may be easily coupled and uncoupled together with/from the inflatable element by means of a removable coupling device.

[0014] Furthermore, it is possible to insert the single body, formed by the gas generator and container, which is in fact an inflation device, inside the aerodynamic hump present in the protective garments, in particular in motorcycle suits, for example inside a housing cavity. In this way, after initial activation of the inflatable element, it is merely required to change the single body and to access the latter inside the garment with the aerodynamic hump, without changing the inflatable element.

[0015] Preferably, it is possible to gain access to the aerodynamic hump from the inside of the protective garment, for example via a lining, so that access to the inflation device by the user is simplified.

[0016] "Inside" is understood as meaning the side of the protective garment which faces the user's body.

[0017] The access to the aerodynamic hump therefore allows a user to disconnect and reconnect easily the inflation device from/to the inflatable element, owing to the removable coupling device, in such a way as to allow rapid replacement of the gas generator, while the inflatable element may be configured to be used again for several successive inflation operations, without having to be replaced. It follows that a condition for removal of said inflation device corresponds to a condition for access to the aerodynamic hump from the internal surface of said garment.

[0018] The main advantage of the invention consists in having a protective garment, for example a motorcycle suit, which contains the inflatable element inside it and in which the aerodynamic hump of the garment accommodates the inflation device inside the housing cavity so that it can be handled independently of the inflatable element, in such a way that the inflation device is easily accessible for a user by means of access to the aerodynamic hump, preferably from the inside of the garment.

[0019] If the inflation device needs to be replaced, a user may easily access the housing cavity of the aerodynamic cage by means of, for example, an internal lining and disconnect the inflatable element, being then able to connect it up again easily once the gas generator has been replaced.

[0020] Even more preferably, the protective garment, for example a motorcycle suit, includes a support plate arranged inside the housing cavity and configured to support the inflation device and, if necessary, other components. The support plate preferably has a mechanical coupling component for allowing mechanical coupling with the inflation device, for example consisting of a clip-action coupling.

[0021] Mechanical coupling is performed preferably together with the gas generator container.

[0022] In other words, the housing cavity of the aerodynamic hump houses a support plate able to be connected to the inflation device by means of a mechanical coupling component. The mechanical coupling component is positioned in a coupling portion of the support plate. The mechanical coupling component may be clip or more than one clip for example with a C shape and elastic behaviour, which receives between the arms of the C the container of the inflation device.

[0023] Gripping elements, for example in the form of a ribbon or strip, may be provided, being connected to the container, in order to facilitate removal of the inflation device.

[0024] Preferably, the housing cavity of the aerodynamic hump also houses the electronic control unit, which has the function of controlling activation of the personal protection device and therefore inflation of the inflatable element by the gas generator. The control unit may be arranged on the support plate, for example alongside the inflation device, and may be connected to the support plate in a fixed manner, for example by means of screws.

[0025] Even more preferably, the garment includes a container or reservoir for drinkable liquids, referred to as "drinking bottle", which is arranged inside the housing cavity. In other words, the housing cavity of the aerodynamic hump also houses a liquids container. Preferably, the liquids container is configured to occupy inside the housing cavity the space around the inflation device.

[0026] For example, in one embodiment the liquids container has an arc shape, or a curved shape along an arc trajectory, which defines a concavity. In this way, the empty zone defined by the concavity of said arc shape may accommodate the inflation device.

[0027] Preferably, the embodiment of the liquids container described above allows the container to be inserted inside the housing cavity by means of a rotational movement about the inflation device, wherein the liquids container passes through a receiving cavity of the support plate. This allows the container to be extracted and inserted back inside the aerodynamic hump, in order to fill it and/or empty it, without necessarily having to remove or displace the other components contained inside the housing cavity. In other words, the liquids container may be inserted inside the housing cavity of the aerodynamic hump by means of rotation about an axis which coincides with the longitudinal axis of the inflation device, when the latter is already positioned on the support plate and is located inside the housing cavity, passing through a receiving cavity of the support plate.

[0028] Further advantages, characteristic features and modes of use forming the subject of the present disclosure will become clear from the following detailed description of a number of preferred examples of embodiment thereof, provided by way of a non-limiting example.

[0029] It is nevertheless evident that each embodiment may have one or more of the advantages listed above; in any case it is nevertheless not necessary that each embodiment should have simultaneously all the advantages listed.

[0030] Reference will be made to the figures of the attached drawings in which:

- Figure 1 shows a lateral perspective view from above of an embodiment of a personal protection device for a garment according to Figure 7;
- Figure 2 shows a top plan view of the personal protection device according to Figure 1;
- Figure 3 shows a side view of the personal protection device according to Figure 1;
- Figure 4 shows a view from another side of the personal protection device according to Figure 1;
- Figure 5 shows another view of the protection device corresponding to a view from the inside of the garment;
- Figure 6a shows an exploded view of the personal protection device according to Figure 1;
- Figure 6b shows an exploded view of an alternative embodiment of the personal protection device according to Figure 1;
- Figure 7 shows a front view of a garment according to the present disclosure, in which the garment is partially cut so that the housing cavity of the aerodynamic hump is visible from the inside of the suit;

- Figure 8 shows a shoulder view of the garment according to Figure 7, in which the garment is partially cut so that the aerodynamic hump is visible from the outside of the suit;

- Figure 9 shows a shoulder view of the garment according to Figure 7, in which the garment is partially cut so that the housing cavity of the aerodynamic hump is visible from the outside of the suit;

- Figure 10 shows a detailed view from the inside of the suit of the housing cavity of the aerodynamic hump of the garment according to Figure 7, in which the access zone is completely open;

- Figure 11 shows a detailed view from the inside of the suit of the housing cavity of the aerodynamic hump of the garment according to Figure 7, in which the access zone is partially closed;

- Figures 12a and 12b show a container according to the embodiment of Figure 6b.

[0031] With reference to the attached figures, the reference number 1000 indicates a protective garment such as a motorcycle suit, containing the personal protection device 100 according to an embodiment of the present invention and an aerodynamic hump 70.

[0032] The term "aerodynamic hump" is understood as meaning a component - known in the motorcycling sector - which is shaped in the manner of a protuberance and used in the high part of the back with an aerodynamic function since it stabilizes a rider at high speeds. The aerodynamic hump 70 may be made with any form known to the person skilled in the art.

[0033] What is of importance for the present disclosure is that the aerodynamic hump defines a cavity 71 which is accessible for a user, as will be explained below.

[0034] The personal protection device 100 includes an inflatable element 50 which is configured to assume a deflated condition and an inflated condition and which is inflated when necessary, for example in the event of danger or an impact, or a fall. The term "inflatable element" is understood as meaning any body, member, device (also formed by several units) which may be inflated if necessary between the deflated condition and the inflated condition. The inflatable element may be realized using any technology known to the person skilled in the art.

[0035] The personal protection device 100 further comprises an inflation device 10 able to inflate the inflatable element 50 and an electronic control unit 42. In particular, in the event of a fall or an impact, the inflation device 10 inflates the inflatable element 50, under the control of the electronic unit 42 which is in turn operatively connected to impact detection sensors. More particularly, with regard to inflation of the inflatable element 50, in the event of a fall and/or sliding and/or sudden impact involving a user or a vehicle being ridden, the protection device 100 is adapted to cooperate with special activation means (normally consisting of the aforementioned control unit and sensors) which are operatively connected for example to the inflation device. It should also be noted that the activation modes, although being an aspect of particular importance for effective operation of the device, will not be further described in greater detail since they are methods which are essentially already known to a person skilled in the art of protection of an individual from sudden impacts.

[0036] More preferably, the protective garment 1000 further includes a support plate 30 and a container or reservoir for drinkable liquids, referred to hereinbelow as "drinking bottle 60".

[0037] The inflatable element 50 is intended to protect the upper zone of the torso of a user wearing the protective garment 1000.

[0038] Preferably, the inflation device 10, the support plate 30, the control unit 42 and the drinking bottle 60 are positioned inside the housing cavity 71 of the aerodynamic hump 70 of the protective garment 1000.

[0039] Furthermore, the garment 1000 comprises an access zone 15 which allows a user wearing the suit 1000 to access the housing cavity 71 from the inside 80 of the said suit. The access zone 15 is identified for example by a zip 20 or other opening zip fastener, formed on a lining of the garment 1000.

[0040] The electronic unit 42 is located preferably on one side of the inflation device in order to optimize the space inside the housing cavity 71.

[0041] Preferably, the access zone 15 is located in the vicinity of the aerodynamic hump 70. In particular, the access zone 15 is located on an inner surface or inner side 80 of the housing cavity 71.

[0042] The inner side 80 is a side facing the zone which accommodates the body of a user when the protective garment 1000 is worn. In other words, it consists of a side facing a hidden zone of the protective garment 100 which is not visible when the garment is closed or worn.

[0043] The access zone 15 may be configured to open or close in a simple manner the access to the housing cavity 71 by a user of the garment 1000, for example by means of a zip fastener or zip 20 associated with a lining of the garment 1000. In other words, the access zone 15 allows a user wearing the garment 1000 to access easily the housing cavity 71 of the aerodynamic hump from the inside of the protective garment 1000, so as to handle the components inserted inside the said cavity. for example in order to extract or reinsert them.

[0044] It is also pointed out that the inflation device 10 includes at least one gas generator 12 and a container 14 for containing said at least one gas generator 12. The gas generator 12 is provided with a region 16 intended for the passage of gas, namely a region which, when the gas generator 12 is activated, allows gas to pass towards the inflatable element 50. In said region 16, the gas generator 12 may be provided, as is known, with a shut-off valve, not visible in the drawings.

[0045] The gas generator 12 may be a canister containing compressed cold gas, such as helium. Alternatively, the gas generator 12 may be a gas generator of the pyrotechnic or hybrid type or of other types known in the state of the art.

[0046] According to one aspect of the present disclosure, the container 14 and the at least one gas generator 12 form a structurally independent assembly configured to be handled as a single body with respect to said inflatable element 50. Even more particularly, the inflation device 10 comprises a coupling component 18 configured to be removably coupled with a coupling counter-component 52 associated with said inflatable element 50.

[0047] Such an inflation device 10 may be positioned on the support plate 30 to which it is coupled by means of a mechanical type coupling. In other words, the support plate 30 has a coupling portion 31 inside which the inflation device 10 may be housed. The coupling between the inflation device 10 and the support plate 30 is a mechanical type coupling which allows the two components to be easily disconnected and connected together again, for example consisting of a clip-action coupling. The clip has a C-shaped form with arms which are able to stably receive the container of the inflation device 10. The presence of the container allows a stable mechanical coupling to be obtained.

[0048] A gripping element, for example of a flexible nature, may be provided in order to facilitate removal of the container 14 with the gas generator 12 contained therein.

[0049] Preferably, the container 14 has the form of a tubular shell body defining an internal housing chamber 130 for housing the gas generator 12. In other words it consists of a body which may be easily gripped by a user. In order to allow easy opening of the container 14, and replacement of the gas generator 12, the container 14 includes two half-shells coupled together by means of conventional mechanical connection means so as to form said shell.

[0050] In an alternative embodiment, the container 14 may comprise a main body 31, having a tubular shape, and a shell in the form of a closing cover 232, configured to close off the main body in the manner of a hood. It therefore consists of an end shell for closing off the main body 231 of the container 14. The container 14 may in turn comprise an end cover which closes off an end zone of the main body 231. The end cover may be a slider body configured to be able to slide in at least one insertion guide positioned in the proximity of the end zone of the main body 231.

[0051] Consequently, in this embodiment, the main body 231 defines preferably a first open end 221, which may accommodate the coupling component 18 of the gas generator 12, and an opening in the vicinity of the end region, namely a second open end 222.

[0052] According to a preferred aspect of the present embodiment, the main body 231 and the closing cover 232 are, as mentioned, initially connected together to form one piece, as shown in Figure 12a. In other words, the container 14 is a closed single-piece body and connection means may be provided between the main body 231 and the closing cover 232. For example, the connection means may be calibrated breakage bridge-pieces, also called breakable bridge-pieces. These calibrated breakage bridge-pieces may be broken by a user by means of relative rotation of the main body 231 and the closing cover 232 in opposite directions. For example, a user who is holding the container 14 may rotate at least one of the main body 231 and the closing cover 232 in order to break the calibrated bridge-pieces so as to be able to separate the main body 231 and the closing cover 232, a shown in Figure 12b.

[0053] In this way, it is possible to ensure safe management of the closed gas generator and allow access thereto only when needed for coupling with the inflatable element 50.

[0054] The mechanical coupling between the inflation device 10 and the support plate 30 is therefore configured to allow easy connection and disconnection of the container 14 to/from the coupling portion 31 of the support plate 30. For example, the coupling portion 31 has a housing with a form suitable for accommodating the tubular form of the container 14 and allowing the aforementioned clip-action coupling.

[0055] Preferably, the shell is made of rigid material. The rigid material facilitates the screw-type closure or generally mechanical coupling together with the coupling counter-component of the inflatable element 50. Preferably, the support plate 30 is also made of rigid material, so as to favour the mechanical coupling between the support plate 30 and the inflation device 10.

[0056] Preferably, the coupling which is formed between the inflation device 10 and the inflatable element 50 is a mechanical coupling, for example a so-called quick-release coupling, quick-fit coupling, screw connection or a similar mechanical coupling which is known to the person skilled in the art. More preferably, it consists of a mechanical coupling of the male/female type. The inflation device therefore comprises either one of the male coupling component or a female coupling counter-component. The advantage of the male/female coupling is that a user is able to perform a connection in a quick and easy manner. Another advantage of a male/female coupling is that it is able to provide a high-pressure seal.

[0057] Preferably, the coupling component 18 is placed in the region 16 of the gas generator 12 intended for the outflow of the inflation gas. The coupling component 18, for example the aforementioned male or female component, may surround the region 16 intended for the gas outflow and be coupled with the other coupling component 52 which in turn may surround a gas intake opening of the inflatable element. In this way, as soon as the inflation device 10 is coupled together with the inflatable element 50, it is possible to establish fluid communication between the gas generator 12 and the inflatable element 50 when the gas generator 12 is activated.

[0058] Preferably, the gas generator 12 comprises

said coupling component 18. In other words, the gas generator 12 is suitably modified to allow coupling. This solution ensures a greater pressure-tightness, considering the fact that the pressure comes from the gas generator. Even more preferably, the gas generator 12 is shaped to comprise said coupling component as one piece or integrally. The coupling component 18 and the gas generator 12 therefore preferably form a single piece, namely they are components which are integrally made as a single body.

[0059] Preferably, the gas generator 12 is canister-shaped and, as mentioned above, said container 14 has a tubular form for accommodating the gas generator 12, and even more preferably the gas generator 12 is modified to include the coupling component 18 which, in the embodiment, is a male engaging component.

[0060] As is visible in the figures, the container 14 has a first open end 21, wherein said first open end 21 accommodates said coupling component 18 of the gas generator 12. Owing to the configuration of the aforementioned parts the gas generator 12 may be inserted inside the container 14 and then, together with the latter, may be handled as a single body by a user. The gas generator 12 may then be coupled to the coupling counter-component 52 of the inflatable element 50 by means of direct gripping of the container 14. The container 14 therefore acts as a handle or gripping body for the gas generator 12.

[0061] It is pointed out that the container 14 may be advantageously configured to include a second open end 22.

[0062] The second open end 22 may accommodate a component 40 for electrical connection with the control unit 42, so as to control activation of the gas generator 12. The container 14 may therefore be designed so as not to hinder, on the one hand, coupling with the inflatable element 50 and, on the other hand, connection with the control unit 42. In particular, the inflatable element 50 may project partially inside the aerodynamic hump 70 so as to allow connection together with the inflation device 10. In other words, a portion of the inflatable element, in particular the portion associated with the coupling counter-component 52, may be positioned partially inside the aerodynamic hump 70 so as to allow connection together of the coupling component 18, associated with the inflation device 10, and the coupling counter-component 52, associated with the inflatable element 50.

[0063] Preferably, the control unit 42 is positioned in the vicinity of the inflation device 10 and inside the housing cavity 71 of the aerodynamic hump 70. Even more preferably, the control unit 42 is positioned on the support plate 30, to which it is coupled by means of a fixed coupling. For example, the fixed coupling is a screw-type coupling. In other words, screws may be present for connecting in a fixed manner the control unit 42 and the support plate 30. Preferably, the control unit 42 is positioned on the support plate 30 alongside the inflation device 10, along the longitudinal direction of the latter.

[0064] Preferably, the drinking bottle 60 is positioned inside the housing cavity 71 of the aerodynamic hump 70. Furthermore the drinking bottle 60 has an arc shape or a curved shape along an arc trajectory. Even more preferably, the shape of the drinking bottle 60 is comparable to the shape of the external surface of the aerodynamic hump 70, which has a curved shape along an arc trajectory.

[0065] The aforementioned shape allows the drinking bottle 60 to occupy at least partially the space inside the housing cavity 71 situated between the inflation device 10 and the external surface of the aerodynamic hump 70. In other words, the drinking bottle 60 is positioned inside the housing cavity 71 in an intermediate space between the inflation device 10 and the external wall of the aerodynamic hump 70 of the protective garment 1000.

[0066] As can be seen in the figures, the support plate 30 may have a receiving cavity 32 through which the drinking bottle 60 may be passed so as to be inserted into (or extracted from) the housing cavity 71. Said receiving cavity 32 is located in the vicinity of the inflation device 10, in particular is located alongside it, relative to the longitudinal direction of the inflation device 10. In particular, the receiving cavity 32 is located on the opposite side to the control unit 42, relative to the inflation device 10. In other words, the inflation device 10 is located in the centre of the support plate and is situated between the control unit 42 and the receiving cavity 32.

[0067] Preferably, in order to insert (or extract) the drinking bottle 60 into/from the housing cavity 71, the drinking bottle is rotated about the inflation device 10 so as to pass between a position outside the housing cavity 71 into a position inside the latter. In other words, the drinking bottle 60 is rotated about an axis corresponding to the longitudinal axis of the inflation device 10, when the latter is positioned in the coupling portion 31 of the support plate 30. In this way, the drinking bottle 60 may be easily inserted inside (or removed from) the housing cavity 71 of the aerodynamic hump 70 in order to be emptied or filled, without having to displace or extract the other components present inside the same housing cavity 71.

Claims

1. Protective garment (1000) having a visible external surface and an internal surface (80) suitable for facing, during use, the body of a user; the protective garment (1000) comprising an inflatable element (50) intended to protect at least partially an area of the body of a user and an inflation device (10) configured to inflate said inflatable element (50), said protective garment (1000) further comprising an aerodynamic hump (70) configured to at least partially protect an area on the back of a user and defining a housing cavity (71) facing said internal surface (80) and configured to accommodate said inflation device

(10), wherein said inflation device (10) comprises at least one gas generator (12) and a container (14) for containing said at least one gas generator (12), wherein the container (14) and the at least one gas generator (12) define a structurally independent assembly, and are configured to be handled as a single body, with respect to said inflatable element (50), and wherein the inflation device (10) comprises a coupling component (18) and the inflatable element (50) has a coupling counter-component (52), wherein the coupling component (18) is configured to be coupled in a removable manner with the coupling counter-component (52) associated with said inflatable element (50).

2. Protective garment (1000) according to the preceding claim, comprising an access zone (15) configured to allow access to said housing cavity (71).

3. Protective garment (1000) according to the preceding claim, wherein said protective garment (1000) comprises a lining and said access zone (15) is an opening formed in the lining of said garment.

4. Protective garment (1000) according to any one of the preceding claims, wherein said container (14) has the shape of a tubular shell defining an internal housing chamber (130) for housing said gas generator (12).

5. Protective garment (1000) according to the preceding claim, wherein said container (14) includes a main body (231) and a closing cover (232) for said main body (231), wherein the main body (231) has the form of a tubular shell defining an internal housing chamber (230) for housing the gas generator (12) and wherein the main body (231) has a first open end (221), wherein said first open end (221) accommodates said coupling component (18) of the gas generator (12).

6. Protective garment (1000) according to the preceding claim, wherein said main body (231) and said closing cover (232) are joined together as one piece and can be detached from each other only once or in an irreversible manner or are connected by calibrated breakage means.

7. Protective garment (1000) according to any one of the preceding claims, wherein said coupling component (18) is configured to be coupled with the coupling counter-component (52) associated with said inflatable element (50) in said aerodynamic hump (70).

8. Protective garment (1000) according to any one of the preceding claims, wherein said coupling counter-component (52) is arranged in said housing cavity (71) of the aerodynamic hump (70).

9. Protective garment (1000) according to the preceding claim, wherein a portion of said inflatable element (50), fixed to said coupling counter-component (52), is arranged in said housing cavity (71) of the aerodynamic hump (70).

10. Protective garment (1000) according to any one of the preceding claims, wherein said protective garment (1000) comprises a support plate (30) arranged in said housing cavity (71) of the aerodynamic hump (71) and wherein said support plate (30) comprises a coupling portion (31) configured for a connection with the inflation device (10).

11. Protective garment (1000) according to the preceding claim, wherein a connection between said coupling portion (31) of the support plate (30) and the inflation device (10) is a mechanical coupling.

12. Protective garment (1000) according to claim 10 or 11, wherein said container (14) and said support plate (30) are made of rigid material.

13. Protective garment (1000) according to any one of the preceding claims, comprising a control unit (42) operatively associated with said inflation device (10) for controlling activation of the gas generator (12).

14. Protective garment (1000) according to the preceding claim, wherein said control unit (42) is arranged inside the housing cavity (71) of the aerodynamic hump (70).

15. Protective garment (1000) according to the preceding claim in combination with claim 10, 11 or 12, wherein said control unit (42) is associated with said support plate (30) on one side of said inflation device (10).

16. Protective garment (1000) according to any one of the preceding claims, wherein said housing cavity (71) of said aerodynamic hump further comprises a container for drinkable liquids (60).

17. Protective garment (1000) according to the preceding claim, wherein said container for drinkable liquids (60) has an arc shape, or a curved shape along an arc trajectory, and wherein the inflation device (10) is positioned inside a concavity formed by the container for drinkable liquids (60).

18. Protective garment (1000) according to claim 17 in combination with any one of claims 10, 11, 12 or 15, wherein the support plate (30) comprises a passage cavity (32) configured to allow a passage of the container for drinkable liquids (60) towards the inside

and towards the outside of the housing cavity (71) of the aerodynamic hump (70).

19. Protective garment (1000) according to any one of the preceding claims, wherein said protective garment (1000) is a motorcycle garment or a motorcycle suit.

20. Protective garment (1000) according to any one of the preceding claims, wherein a condition for removal of said inflation device corresponds to a condition for access to the aerodynamic hump from the internal surface of said garment (1000).

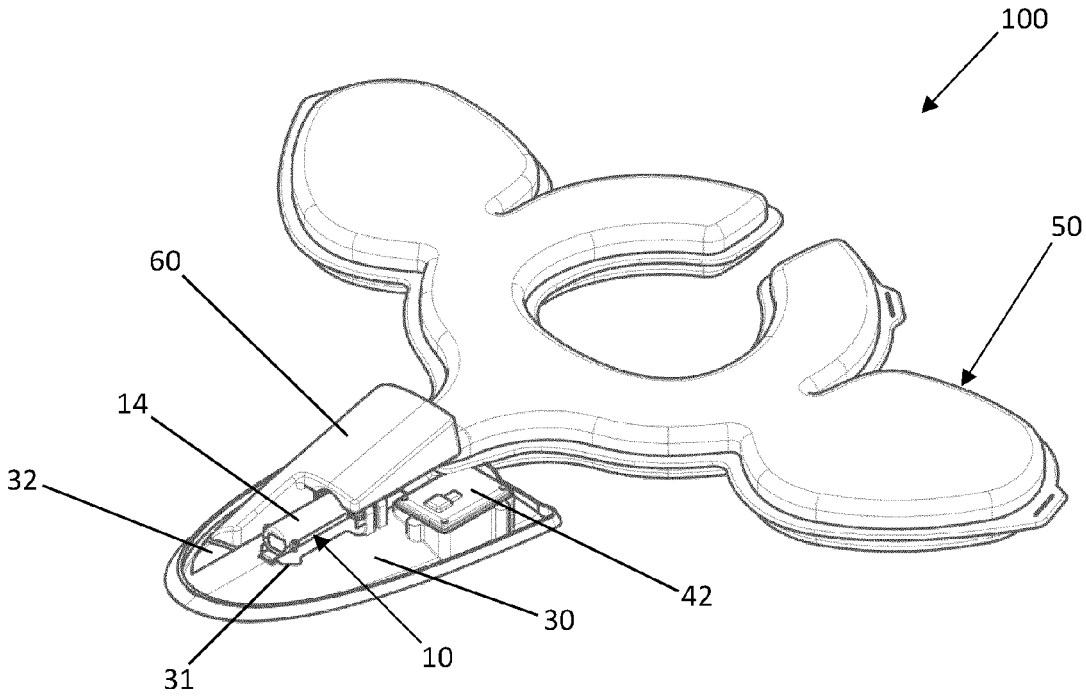

FIG. 1

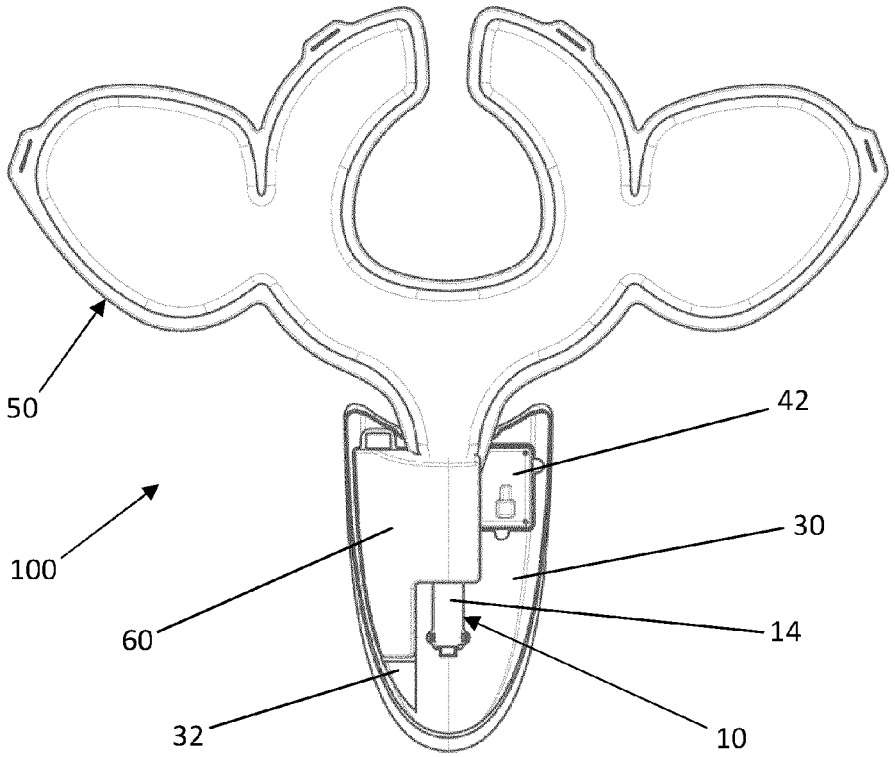

FIG. 2

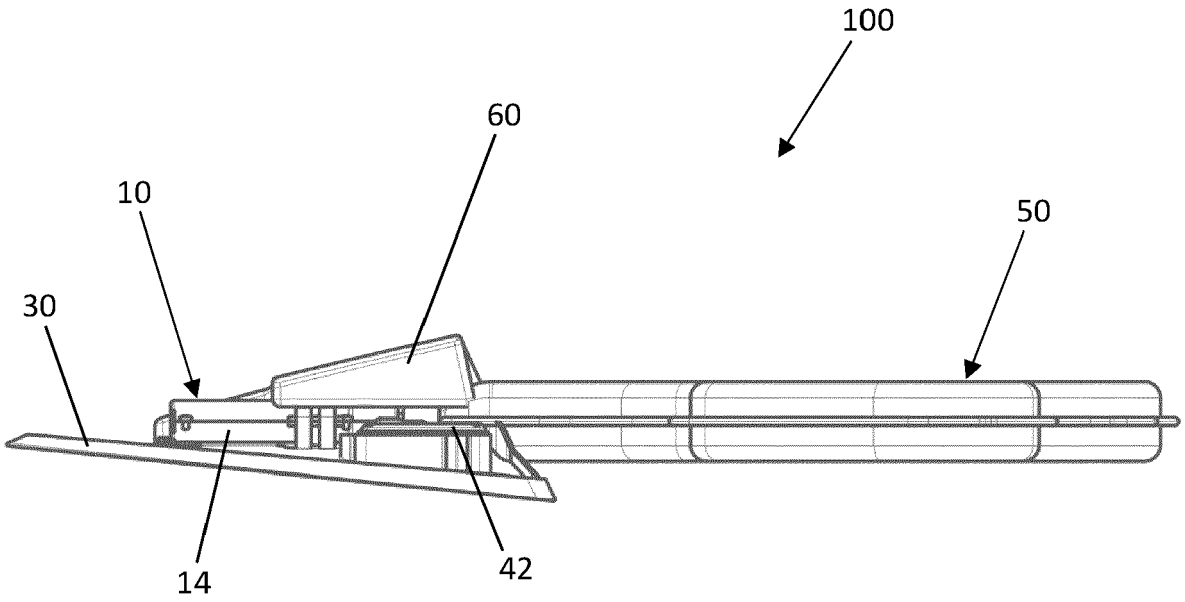

FIG. 3

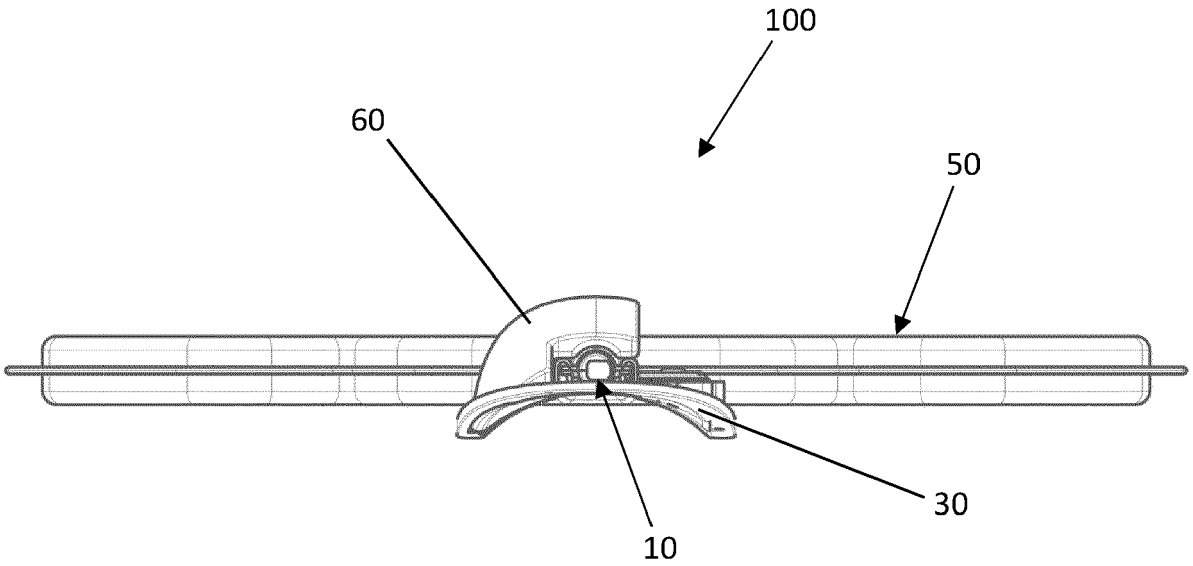

FIG. 4

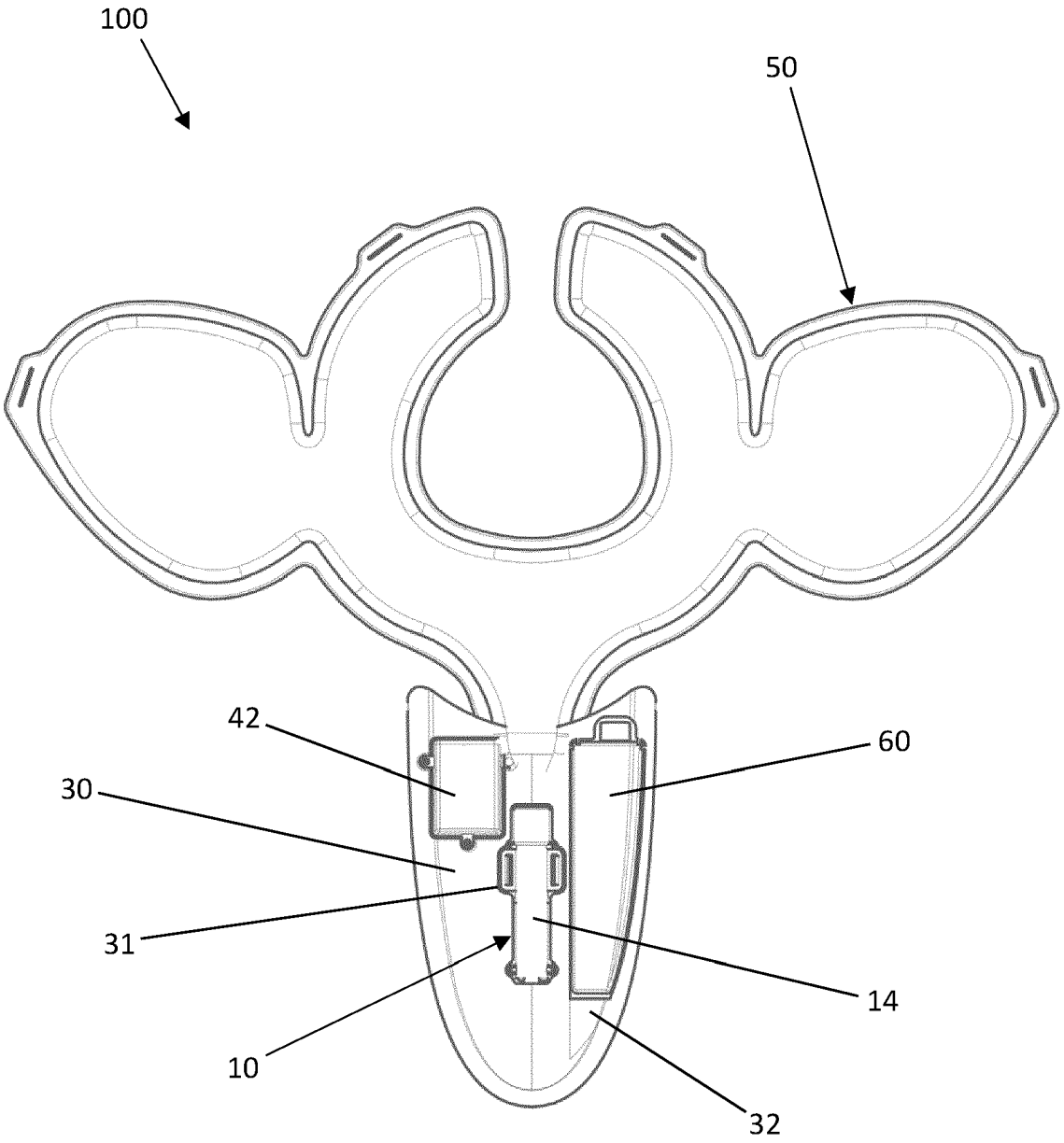

FIG. 5

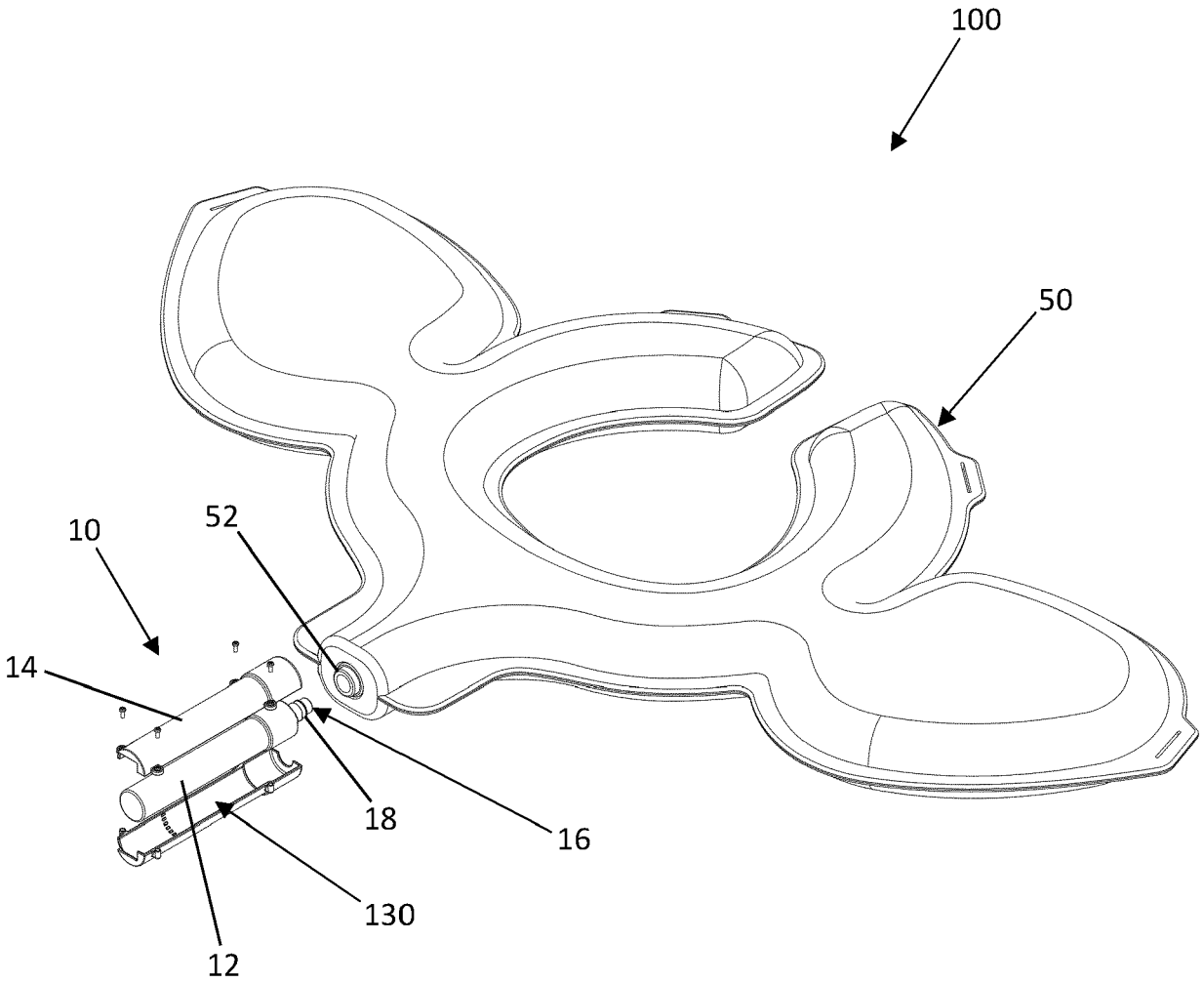

FIG. 6a

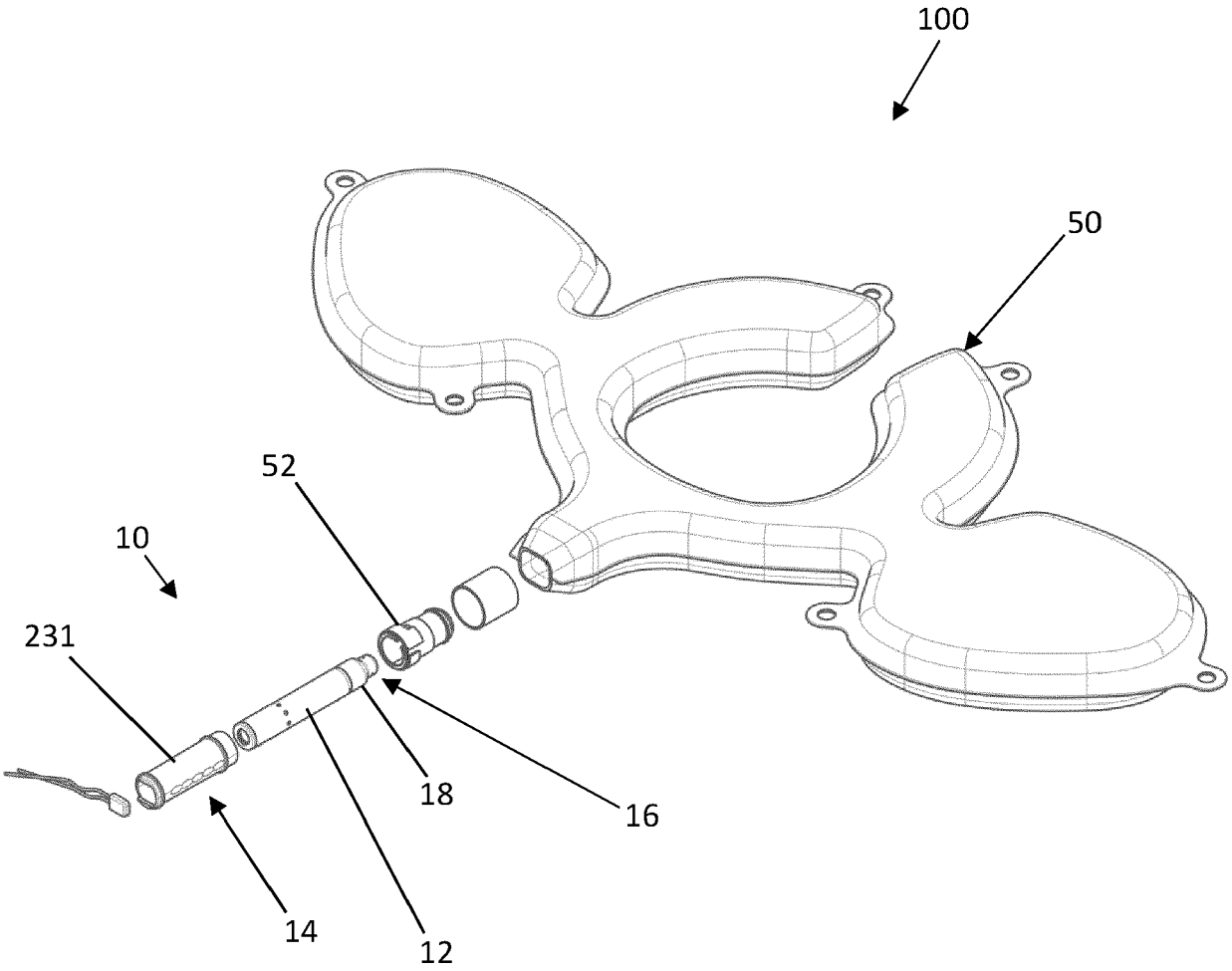

FIG. 6b

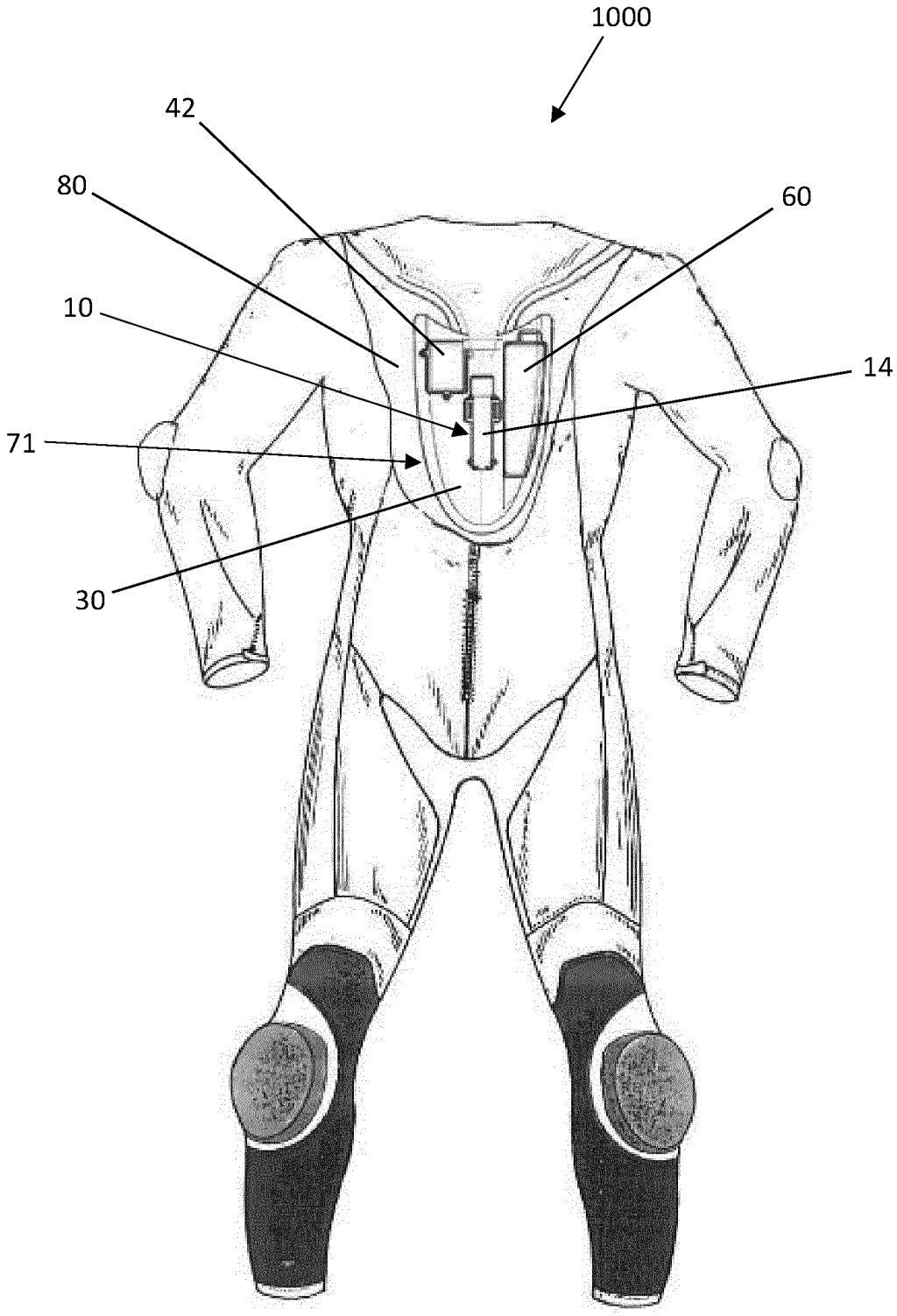

FIG. 7

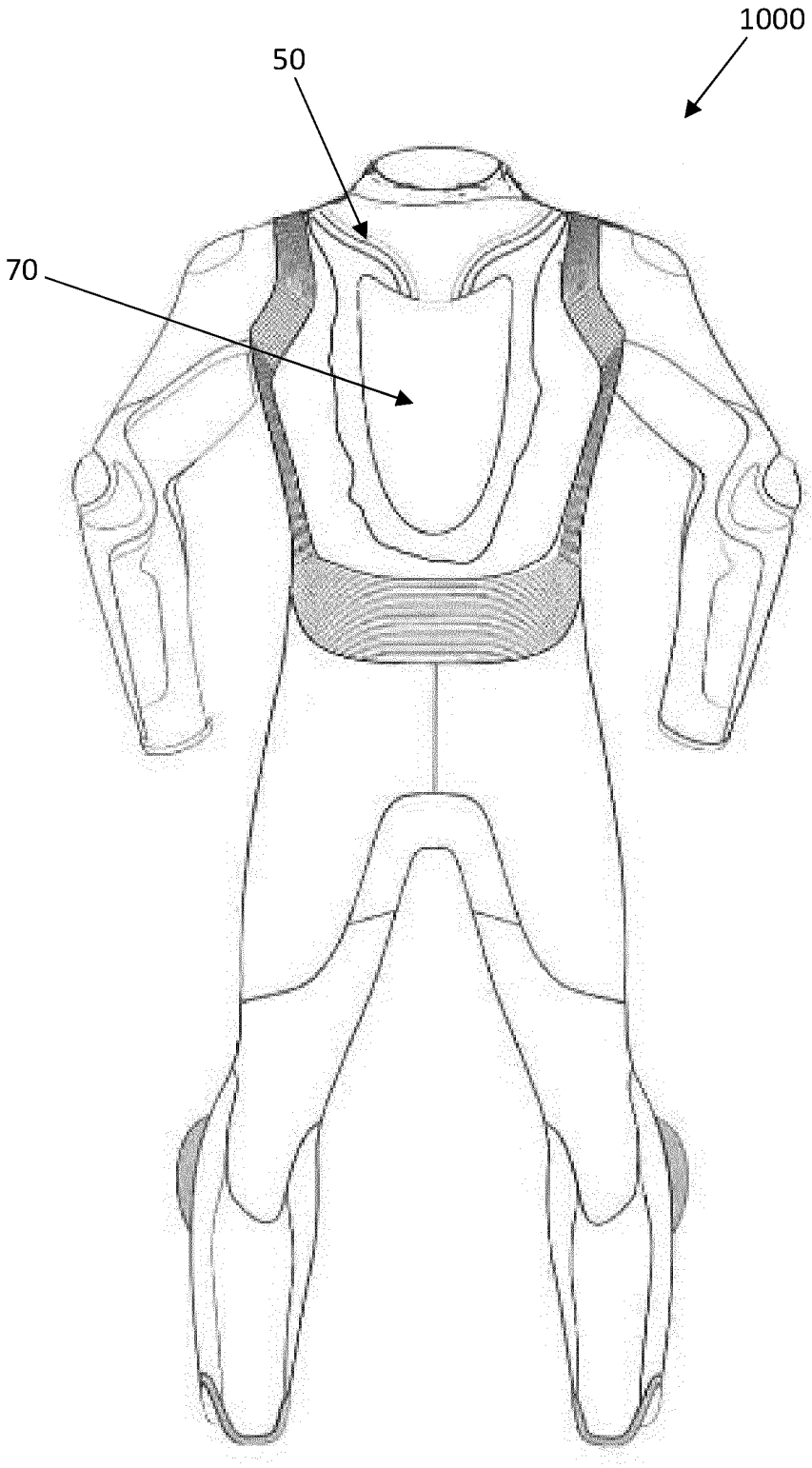

FIG. 8

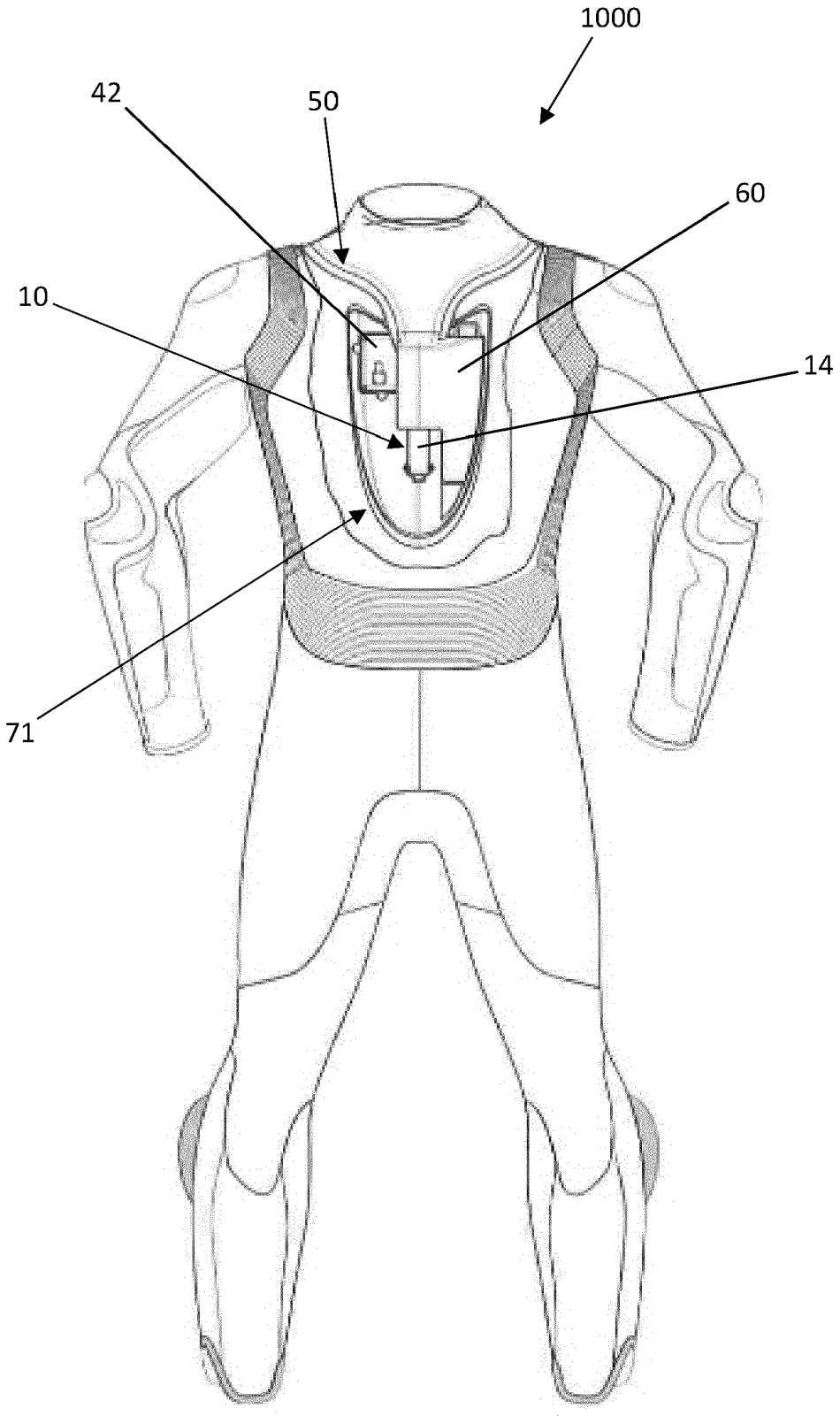

FIG. 9

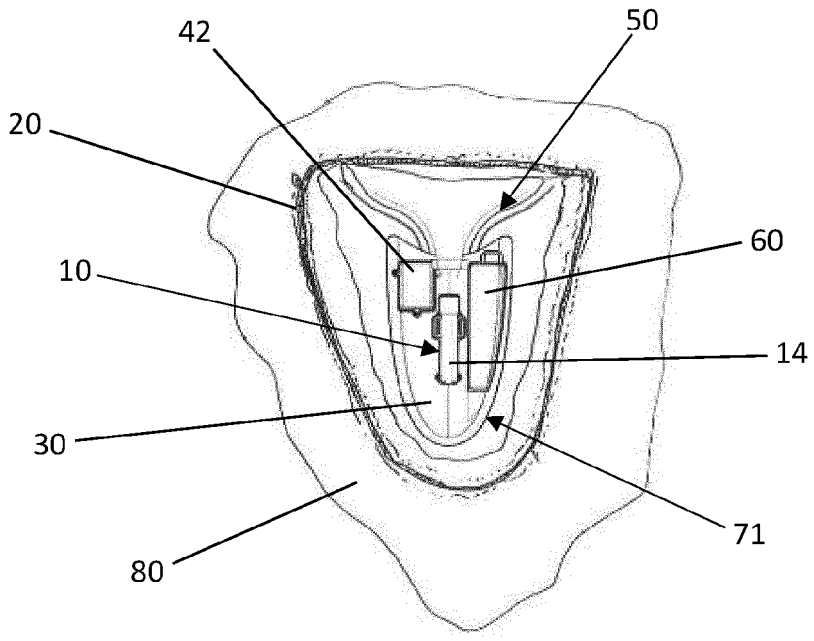

FIG. 10

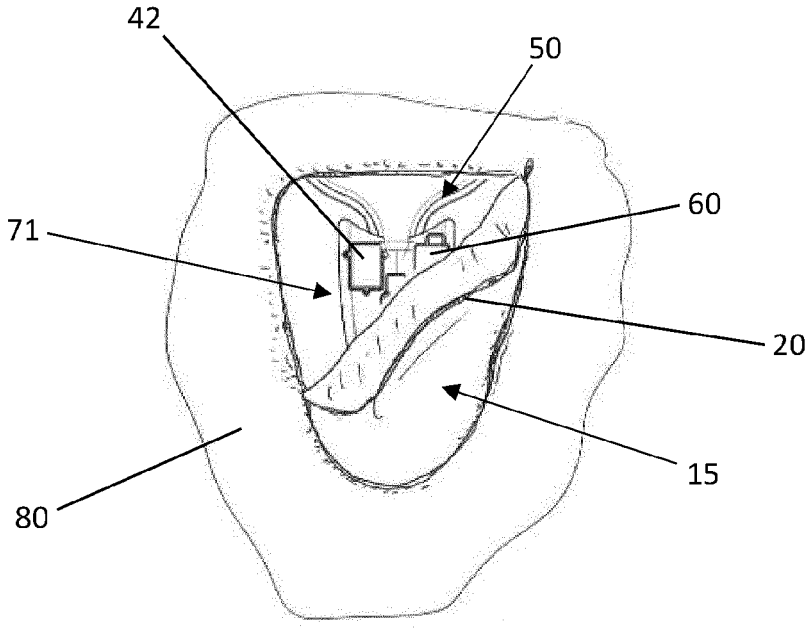

FIG. 11

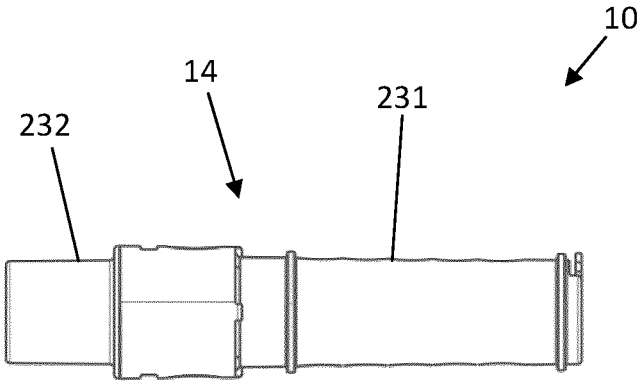

FIG. 12a

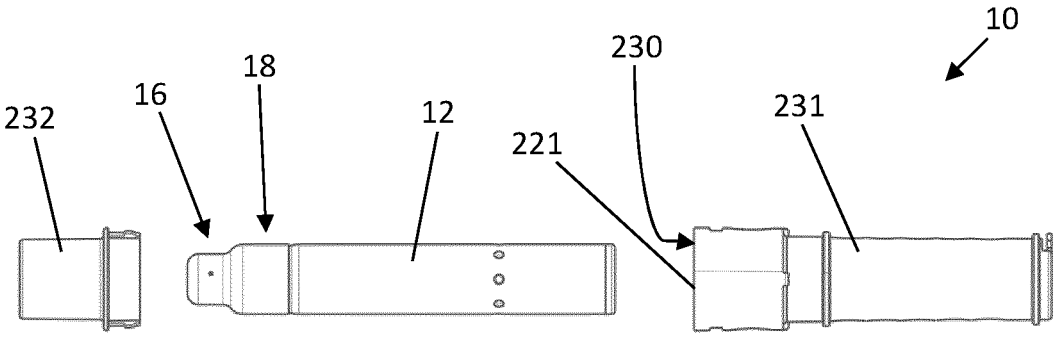

FIG. 12b

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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 September 2022	Arboreanu, Antoniu

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