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Life Jacket or Life Vest

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ABSTRACT

A life jacket or life vest including a full length zipper to releasably attach a first portion of the life jacket or life vest to a second portion of the life jacket or life vest to allow donning and doffing, a sleeve at a lower hem portion of the life jacket or life vest, and a belt extending through the sleeve, the belt having a pair of free ends associated with a closure mechanism to allow the free ends of the belt to be attached relative to one another.

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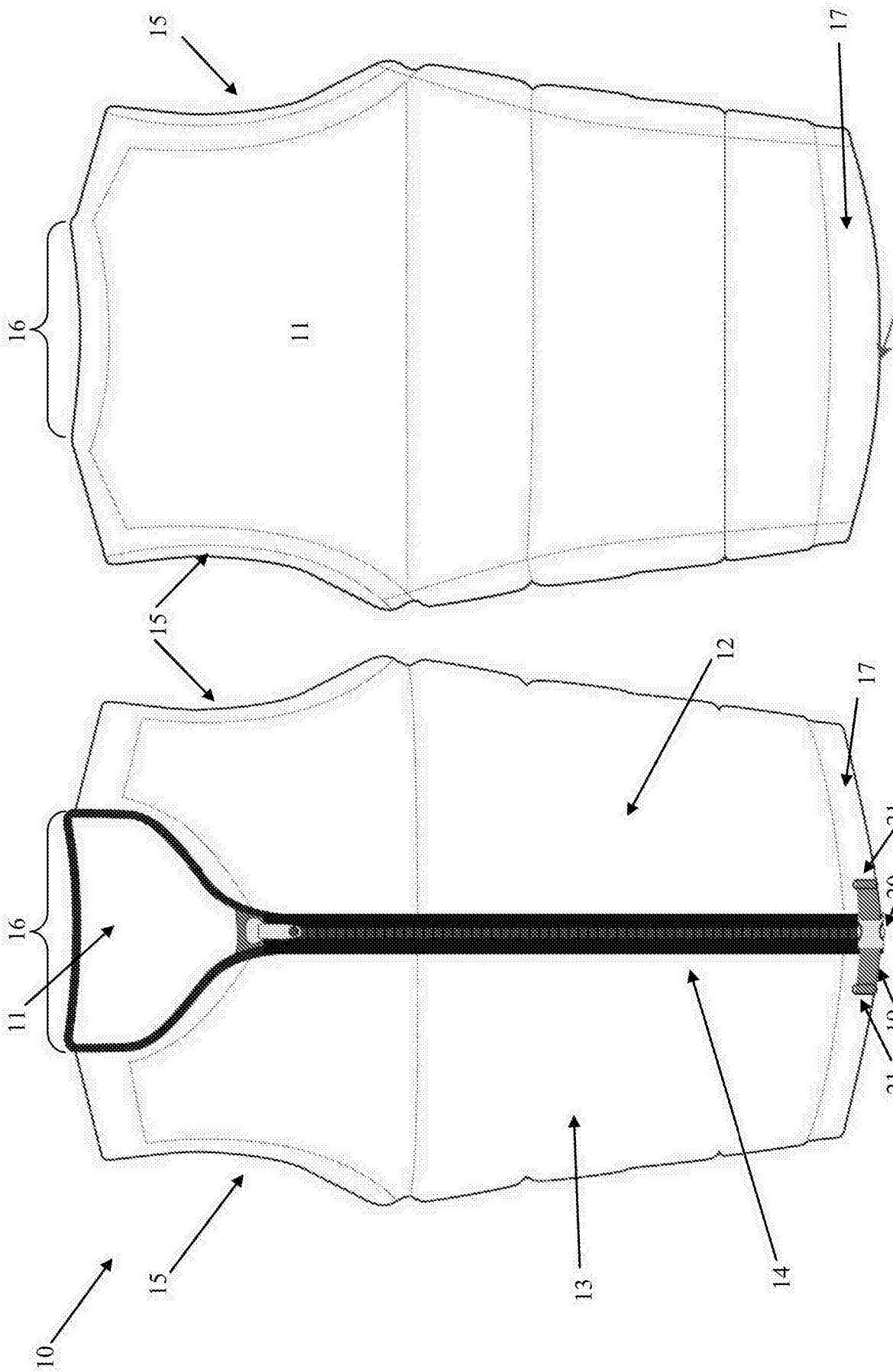

Figure 3

Figure 4

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LIFE JACKET OR LIFE VEST

TECHNICAL FIELD

[0001] The present invention relates generally to a life jacket or life vest and particularly to a life jacket or life vest that provides enhanced fit without sacrificing function or compliance with regulatory requirements.

BACKGROUND ART

[0002] In a conventional life jacket or life vest that has a front opening between a left and a right front portion, in order to comply with Australian safety requirements, a single waist belt can be provided if a full length zipper is provided between the left and right front portions. If a full length zipper is not provided, at least three belts with buckle or clip attachments must be provided to comply with relevant standards.

[0003] In this type of life jacket or life vest, an inner lining is provided with an outer layer, generally of a buoyant material such as neoprene or nylon or similar with one or more foam portions sandwiched between the inner lining and the outer layer.

[0004] Where provided with a single belt, the belt provided in conventional life jackets or life vests is normally provided in a waist area of the life jacket or life vest, extending inside the outer layer but above the foam layer. A pair of access ports or openings are provided, one on each front portion, to allow the belt to extend under the outer layer at the sides and rear of the life jacket or life vest but to be accessible to a user to open and close at the front. An example of a prior art, front closing, single belt life jacket or life vest is illustrated in Figures 1 and 2.

[0005] A variety of problems exist with this type of life jacket or life vest including that the waist position of the belt can make the buckle or clip attachments hard to close for rotund users with a large girth area and/or that the life vest or life jacket tends to ride up during use, diminishing effectiveness or making it more uncomfortable, the belt is positioned part way up the height of the life jacket or life vest which bisects the visible area of the front of the life vest and the location of the belt over the foam can affect the effectiveness of the attachment of the belt to the user.

[0006] It will be clearly understood that, if a prior art publication is referred to herein, this reference does not constitute an admission that the publication forms part of the common general knowledge in the art in Australia or in any other country.

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SUMMARY OF INVENTION

[0007] The present invention is directed to a life jacket or life vest, which may at least partially overcome at least one of the abovementioned disadvantages or provide the consumer with a useful or commercial choice.

[0008] With the foregoing in view, the present invention in one form, resides broadly in a life jacket or life vest including a full length zipper to releasably attach a first portion of the life jacket or life vest to a second portion of the life jacket or life vest to allow donning and doffing, a sleeve at a lower hem portion of the life jacket or life vest, and a belt extending through the sleeve, the belt having a pair of free ends associated with a closure mechanism to allow the free ends of the belt to be attached relative to one another.

[0009] The life jacket or life vest may be manufactured from any one or more materials typically used for a life jacket or life vest. A preferred material for the life jacket or life vest is neoprene or similar, but the life jacket or life vest of the present invention is not limited to this material. Importantly, different portions of the life jacket or life vest may be made from different materials, for example, the sleeve at the lower hem portion of the life jacket or life vest and the belt can be made of a material different to the main portions of the life jacket or life vest.

[0010] The life jacket or life vest typically has at least two portions to open and close using the zipper to allow a wearer to don and doff the life jacket or life vest.

[0011] The life jacket or life vest may have any configuration but typically, the life jacket or life vest will have a rear portion with a front left portion and front right portion which are releasably attachable relative to one another at the front with the full length zipper. In some configurations, the zipper may be provided at the side of the life jacket or life vest with a closed front portion and a closed rear portion and the zipper can be used to open and close the side of the life jacket or life vest.

[0012] Generally, a portion of the full length of the zipper will be provided on each of two portions of the lifejacket a life vest which can be separated from one another to don the life jacket or life vest and closed to secure the life jacket or life vest. Typically, a part of the chain of the zipper will be provided on each of the portions and the zipper slider will be used to mesh the respective chain portions together to close the lifejacket or life vest and separate the chain portions in order to open the lifejacket or life vest.

[0013] Preferably, the full length zipper will be a separable zipper, preferably allowing

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complete separation of the two portions from one another. Zippers of this type are known and typically have an insertion pin at a lower end of one of the chains and a retainer box on the lower end of the other of the portions such that the insertion pin is inserted into the retainer box and then the slide head moved in order to close the zipper, with the reverse movement used to open the zipper.

[0014] As mentioned above, the full length zipper may be provided at the side of the lifejacket or life vest, for example, under an arm opening of the lifejacket or life vest, or alternatively at the rear of the lifejacket or life vest (although this may be difficult to access for a wearer) but providing the full length zipper at the front between a front left portion and a front right portion is preferred.

[0015] Any type of zipper may be used but preferably, the material used to form the zipper chain and the other components such as the slide head and the pull tab will preferably be manufactured from a robust material which is suited to withstanding use in adverse conditions such as those that may be encountered when the life vest or jacket is used in saltwater for example. As a result, it is preferred that the zipper be manufactured from a plastic or composite material.

[0016] The life jacket or life vest includes a sleeve at a lower hem portion of the life jacket or life vest. Generally, the sleeve is a closed channel. The sleeve may be formed in any way. For example, the sleeve can be formed separately from the lifejacket or life vest and attached to the lifejacket or life vest or alternatively, the sleeve can be formed by turning a lower portion of the life vest back upon itself than attaching to the remainder of the life vest or jacket to define the sleeve.

[0017] It is preferred that the internal void of the sleeve is separated from the remainder of the life vest or lifejacket. It is particularly preferred that the sleeve be formed and configured to receive the belt only.

[0018] Normally, the remainder of the vest can be formed according to conventional techniques using padding or foam between an inner layer and an outer layer, but with the sleeve formed at the lower hem of the lifejacket of life vest such that the belt is retained separated from those portions of the lifejacket or life vest which are formed including padding or foam.

[0019] Preferably, the sleeve extends circumferentially about the lower hem of the life jacket or life vest. In a particularly preferred embodiment, a pair of spaced apart access ports or

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openings are provided in the sleeve to allow the respective free ends of the belt to extend to outside of the sleeve to be accessible by user to open and close the belt closure.

[0020] Where provided, it is preferred that the access ports or openings have reinforced surrounds. For example, the access ports or openings may have circumferential reinforcing formed by stitching the periphery of each of the access ports or openings or alternatively, a shaped surround member or assembly may be provided such as rigid ring, for example, manufactured from plastic to allow the belt to extend through the access port opening.

[0021] It is preferred that the sleeve extend substantially continuously about the lower hem of the lifejacket or life vest but a portion provided between the preferred access ports or openings (in or around the location of the belt closure) will normally not be accessible by the belt. Typically, the sleeve is provided at the lower periphery of the vest. Of course, the sleeve need not be continuous, for example a number of circumferentially extending belt loops can be provided, but a continuous sleeve extending rearwardly from one of the preferred access ports or openings about the rear of the life jacket or life vest to the other of the preferred access ports or openings, is preferred.

[0022] The sleeve may be formed from the same material as the lifejacket or life vest or a different material. As mentioned above, the sleeve may be formed separately from the vest and attached to the vest or formed as a part of the vest by turning a portion of the vest the lower hem back upon itself and attaching to the remainder of the vest to define the sleeve.

[0023] The sleeve will typically be dimensioned to receive the belt relatively closely therein in order to minimise the chance that the belt twists within the sleeve. In a preferred embodiment, the height of the sleeve is approximately equal to the width of the belt which it contains. One or more enlarged portions or portions of greater height may be provided over the length of the sleeve, particularly in a rear area, in order to help retain the belt in position relative to the sleeve and at the lower portion of the life jacket or life vest. A portion of greater height may also be capable of providing support for example to a user's back while the lifejacket or life vest is being worn.

[0024] The life jacket or life vest also includes a belt extending through the sleeve, the belt having a pair of free ends associated with a closure mechanism to allow the free ends of the belt to be attached relative to one another.

[0025] Preferably, the belt will be elongate and substantially continuous about the lifejacket

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a life vest with a closure mechanism provided to be operated by the user to open and close the belt. It is preferred that the belt not be attached into or to the sleeve or to the preferred access ports or openings provided in the sleeve.

[0026] It is preferred that the belt is length adjustable in order to be tightened and loosened as required by the wearer.

[0027] The belt may include an enlarged or greater height portion in order to correspond with an enlarged or greater height portion of the sleeve provided in order to minimise the rotation of the belt relative to the sleeve and/or loss of the belt from the sleeve.

[0028] Any material may be used to form the belt but normally, a woven material, preferably woven polyester or nylon material will be used for increase strength and abrasion resistance as well as resistance to degradation through exposure to the conditions in which a lifejacket a life vest will normally be used.

[0029] The belt will typically have a pair of free ends, with each of the free end is normally provided with a portion of a closure mechanism such that the free ends of the bell can be releasably attached relative to one another as required by user. Any closure mechanism could be used for example a buckle or clip for example and a plastic spring clip provided with a tongue and a pair of depressible arms on one portion and a corresponding, second receiving portion is particularly preferred.

[0030] The belt will typically be provided within the sleeve but the closure mechanism and free ends of the belt will normally be provided outside the sleeve and outside the zipper. Although the free ends of the belt with the closure mechanism can be provided at any position circumferentially around the lifejacket or vest, it is preferred that the free ends of the belt are provided toward the front of the closure relative to the preferred front opening full-length zipper.

[0031] The configuration of the lifejacket a life vest of the present invention provides a number of advantages. These advantages include

- providing the belt at the lower periphery of the lifejacket or life vest means that the belt sits more securely about the hips or hip bones of the wearer which means that it is less inclined to allow the bottom of the lifejacket to lift on the torso of the wearer during use;

- providing the belt in a sleeve which is separated from the remainder of the lifejacket a life vest means that the belt does not go through or over the foam so it sits more closely or

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securely on the body of the wearer;

- providing the belt at the lower periphery of the lifejacket moves the belt away from the mid-portion of the lifejacket or life vest which means that the belt does not affect or obscure any graphics which may be placed on the lifejacket or life vest.

[0032] Any of the features described herein can be combined in any combination with any one or more of the other features described herein within the scope of the invention.

[0033] The reference to any prior art in this specification is not, and should not be taken as an acknowledgement or any form of suggestion that the prior art forms part of the common general knowledge.

BRIEF DESCRIPTION OF DRAWINGS

[0034] Preferred features, embodiments and variations of the invention may be discerned from the following Detailed Description which provides sufficient information for those skilled in the art to perform the invention. The Detailed Description is not to be regarded as limiting the scope of the preceding Summary of the Invention in any way. The Detailed Description will make reference to a number of drawings as follows:

[0035] Figure 1 is a view from the front of a prior art life jacket or life vest.

[0036] Figure 2 is a view from the rear of the life jacket or life vest illustrated in Figure 1.

[0037] Figure 3 is a view from the front of a life jacket or life vest according to a preferred embodiment of the present invention.

[0038] Figure 4 is a view from the rear of the life jacket or life vest illustrated in Figure 3.

[0039] Figure 5 is a view from the front of the life jacket or life vest illustrated in Figure 3 with the outer portion of the sleeve removed to show the belt.

[0040] Figure 6 is a view from the rear of the life jacket or life vest illustrated in Figure 5.

DESCRIPTION OF EMBODIMENTS

[0041] According to a particularly preferred embodiment of the resent invention, a life jacket or life vest 10 is provided.

[0042] The life jacket or life vest 10 illustrated in Figures 3 to 6 includes a rear portion 11

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with a front left portion 12 and front right portion 13 which are releasably attachable relative to one another at the front with the full length zipper 14 to releasably attach the front left portion 12 to the front right portion 13 to allow donning and doffing. The vest also includes a pair of arm openings 15 and a neck opening 16 which is formed when the zipper is closed, as illustrated in Figure 3.

[0043] A sleeve 17 is provided at a lower hem portion of the life jacket or life vest which forms a part of the lower edge 18, with a belt 19 extending through the sleeve 17. The belt 19 has a closure mechanism 20 to allow the free ends of the belt 19 to be attached relative to one another.

[0044] The life jacket or life vest may be manufactured from any one or more materials typically used for a life jacket or life vest with neoprene or similar being preferred.

[0045] As illustrated, a portion of the chain of the full length zipper 14 is provided on each of the front left portion 12 and front right portion 13 of the lifejacket or life vest and the zipper slider is used to mesh the respective chain portions together to close the lifejacket or life vest and to separate the chain portions in order to open the lifejacket or life vest.

[0046] The full length of the zipper used in the illustrated embodiment is a separable zipper, allowing complete separation of the two portions 12, 13 from one another. Zippers of this type have an insertion pin at a lower end of one of the chains and a retainer box on the lower end of the other of the portions such that the insertion pin is inserted into the retainer box and then the slider head is moved in order to close the zipper 14 with the reverse movement used to open the zipper 14.

[0047] The material used to form the zipper chain and the other components such as the slide head and the pull tab is manufactured from a robust material which is suited to withstanding use in adverse conditions such as those that may be encountered when the life vest or jacket is used in saltwater for example. As a result, the zipper 14 of the preferred embodiment is manufactured from a plastic material.

[0048] As illustrated, the sleeve 17 is a closed channel formed by turning a lower portion of the life vest back upon itself then attaching to the remainder of the life vest or jacket. The internal void of the sleeve 17 is separated from the remainder of the life vest or lifejacket and the sleeve is formed and configured to receive the belt 19 only.

[0049] Normally, the remainder of the vest will be formed according to conventional

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techniques using padding or foam between an inner layer and an outer layer with the sleeve 17 formed at the lower hem of the lifejacket of life vest such that the belt 19 is retained separated from those portions of the lifejacket or life vest which are formed including padding or foam.

[0050] In the illustrated embodiment, the sleeve 17 extends circumferentially about the lower hem of the life jacket or life vest. A pair of spaced apart access ports or openings 21 are provided in the sleeve 17 to allow the respective free ends of the belt 19 to extend to outside of the sleeve 17 to be accessible by user to open and close the belt closure 20.

[0051] The access ports or openings usually have circumferential reinforcing formed by stitching the periphery of each of the access ports or openings or alternatively, a shaped surround member or assembly may be provided such as rigid ring for example manufactured from plastic to allow the belt 19 to extend through the access port opening 21.

[0052] The sleeve 17 extends substantially continuously about the lower hem of the lifejacket or life vest and the portion provided between the preferred access ports or openings (in or around the location of the belt closure) and the zipper 14 is normally not be accessible by the belt 19. Typically, the sleeve is provided at the lower periphery of the vest.

[0053] The sleeve 17 is dimensioned to receive the belt relatively closely therein in order to minimise the chance that the belt 19 can twist within the sleeve 17. In a preferred embodiment, the height of the sleeve 17 is approximately equal to the width of the belt 19 which it contains.

[0054] As illustrated in Figures 5 and 6 in particular, the belt 19 is elongate and substantially continuous about the lifejacket a life vest with the closure mechanism 20 provided to be operated by the user to open and close the belt 19. It is preferred that the belt not be attached into or to the sleeve or to the preferred access ports or openings provided in the sleeve.

[0055] The belt 19 is also length adjustable in order to be tightened and loosened as required by the wearer.

[0056] Any material may be used to form the belt but normally, a woven material, preferably woven polyester or nylon material will be used for increase strength and abrasion resistance as well as resistance to degradation through exposure to the conditions in which a lifejacket a life vest will normally be used.

[0057] Any closure mechanism 20 could be used for example a buckle or clip for example and a plastic spring clip provided with a tongue and a pair of depressible arms on one portion and

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a corresponding, second receiving portion is particularly preferred.

[0058] The belt 19 will typically be provided within the sleeve but the closure mechanism and free ends of the belt 19 will normally be provided outside the sleeve 17 and above the zipper 14 as shown in Figure 3. Although the free ends of the belt with the closure mechanism can be provided at any position circumferentially around the lifejacket or vest, it is preferred that the free ends of the belt be provided toward the front of the closure relative to the preferred front opening full-length zipper 14.

[0059] Providing the belt at the lower periphery of the lifejacket or life vest and in a sleeve which is separated from the remainder of the lifejacket or life vest means that the belt sits more securely about the hips or hip bones of the wearer which means that it is less inclined to allow the bottom of the lifejacket to lift on the torso of the wearer during use and allows the belt to sit more closely or securely on the body of the wearer.

[0060] In the present specification and claims (if any), the word 'comprising' and its derivatives including 'comprises' and 'comprise' include each of the stated integers but does not exclude the inclusion of one or more further integers.

[0061] Reference throughout this specification to 'one embodiment' or 'an embodiment' means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, the appearance of the phrases 'in one embodiment' or 'in an embodiment' in various places throughout this specification are not necessarily all referring to the same embodiment. Furthermore, the particular features, structures, or characteristics may be combined in any suitable manner in one or more combinations.

[0062] In compliance with the statute, the invention has been described in language more or less specific to structural or methodical features. It is to be understood that the invention is not limited to specific features shown or described since the means herein described comprises preferred forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims (if any) appropriately interpreted by those skilled in the art.

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CLAIMS

1. A life jacket or life vest including a full length zipper to releasably attach a first portion of the life jacket or life vest to a second portion of the life jacket or life vest to allow donning and doffing, a sleeve at a lower hem portion of the life jacket or life vest, and a belt extending through the sleeve, the belt having a pair of free ends associated with a closure mechanism to allow the free ends of the belt to be attached relative to one another.

2. A life jacket or life vest as claimed in claim 1 including a rear portion with a front left portion and front right portion which are releasably attachable relative to one another at the front with the full length zipper.

3. A life jacket or life vest as claimed in claim 1 or claim 2 wherein the full length zipper is a separable zipper, allowing complete separation of the front left portion and front right portion from one another.

4. A life jacket or life vest as claimed in any one of the preceding claims wherein an internal void of the sleeve is separated from the life vest or lifejacket, the sleeve formed and configured to receive the belt only.

5. A life jacket or life vest as claimed in any one of the preceding claims wherein the sleeve extends circumferentially about the lower hem of the life jacket or life vest.

6. A life jacket or life vest as claimed in any one of the preceding claims wherein a pair of spaced apart access ports or openings are provided in the sleeve to allow respective free ends of the belt to extend to outside of the sleeve to be accessible by user to open and close the closure mechanism.

7. A life jacket or life vest as claimed in claim 6 wherein the sleeve extends substantially continuously about the lower hem of the life jacket or life vest but a portion provided between the access ports or openings is accessible by the belt.

8. A life jacket or life vest as claimed in any one of the preceding claims wherein the sleeve is provided at a lower periphery of the life jacket or life vest.

9. A life jacket or life vest as claimed in any one of the preceding claims wherein the belt is be elongate and substantially continuous about the life jacket or life vest.

10. A life jacket or life vest as claimed in any one of the preceding claims wherein the belt is

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length adjustable in order to be tightened and loosened as required.

11. A life jacket or life vest as claimed in any one of the preceding claims wherein the belt is formed from a woven material.

12. A life jacket or life vest as claimed in any one of the preceding claims wherein the belt has a pair of free ends, with each of the free ends provided with a portion of the closure mechanism such that the free ends of the belt are releasably attachable relative to one another as required.

13. A life jacket or life vest as claimed in any one of the preceding claims wherein the closure mechanism includes a plastic spring clip provided with a tongue and a pair of depressible arms on one portion and a corresponding, second receiving portion.

14. A life jacket or life vest as claimed in any one of the preceding claims wherein the belt is provided within the sleeve but the closure mechanism and free ends of the belt are provided outside the sleeve.

15. A life jacket or life vest as claimed in any one of the preceding claims wherein the closure mechanism of the belt is provided outside the full length zipper.

16. A life jacket or life vest as claimed in claim 12 wherein the free ends of the belt are provided toward the front of the life jacket or life vest outside a front opening full-length zipper.

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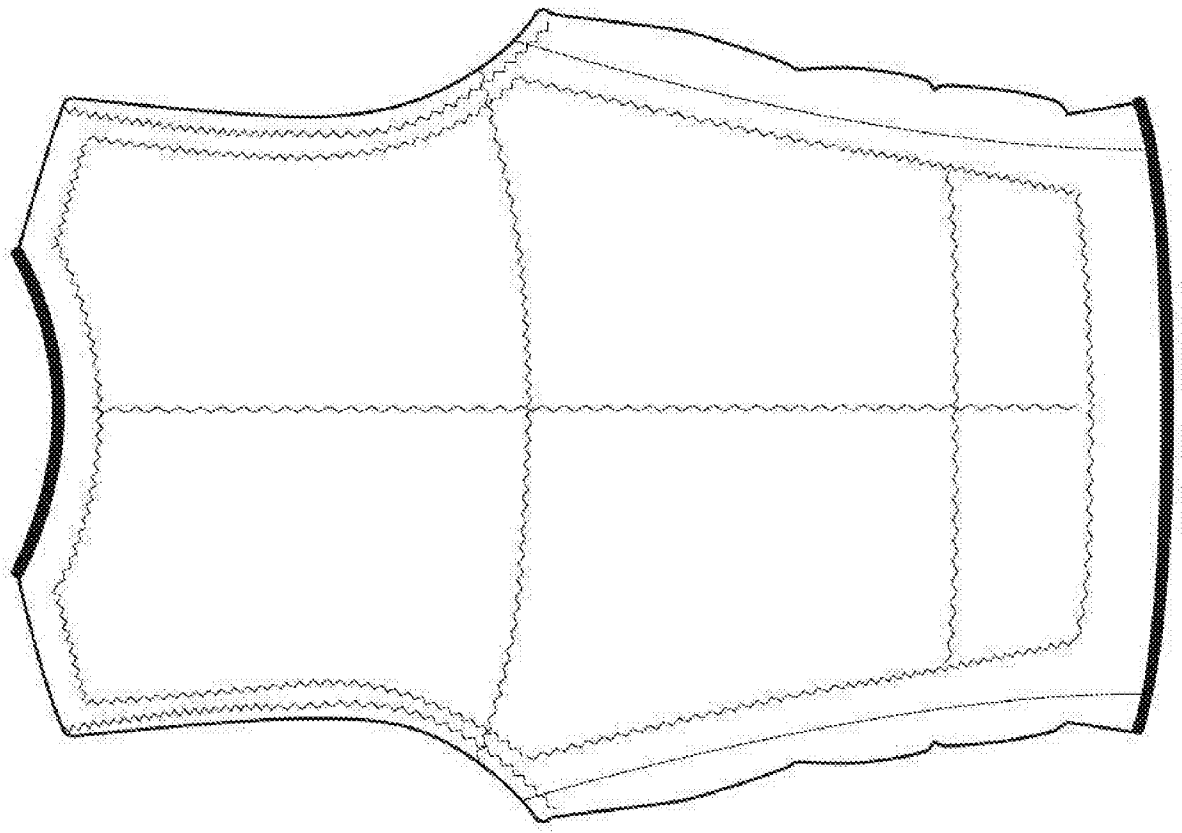

Figure 2 (Prior Art)

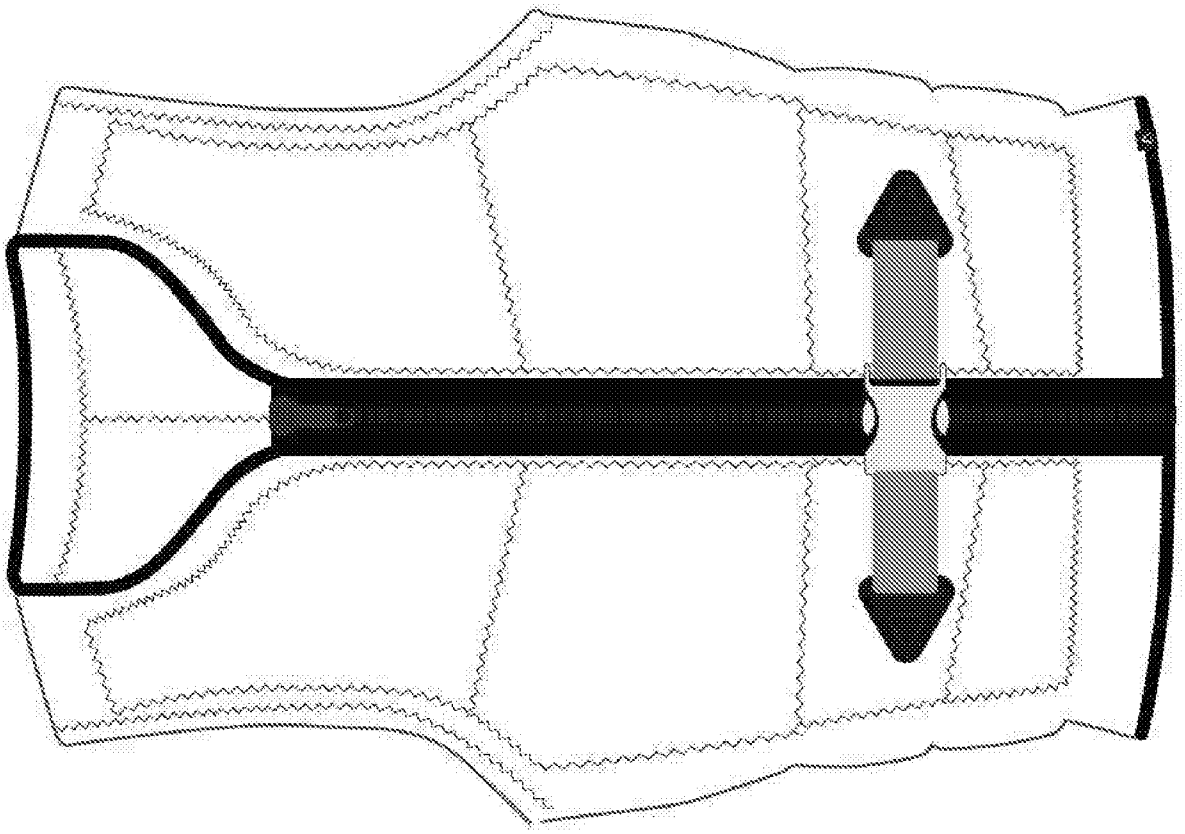

Figure 1 (Prior Art)

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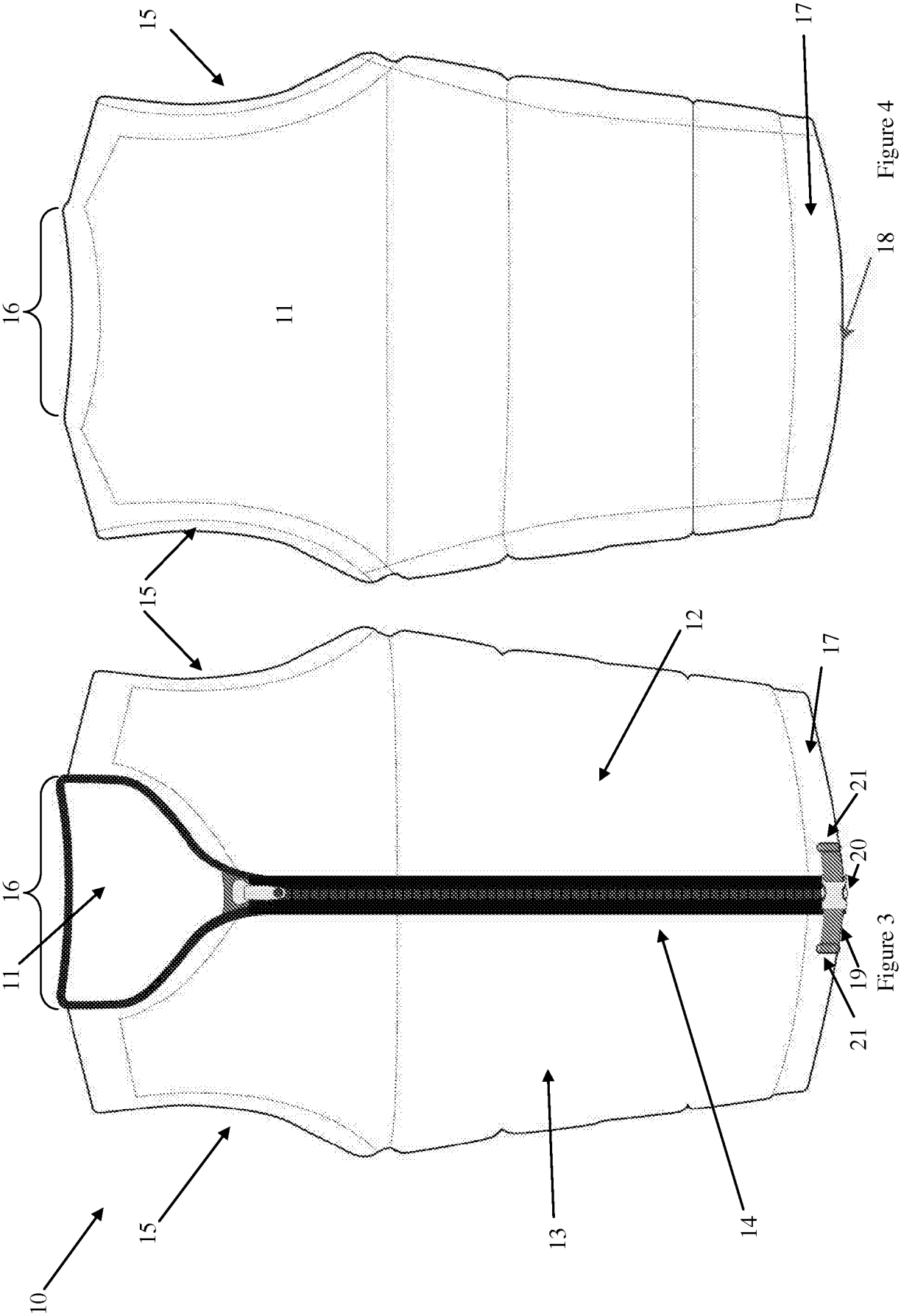

Figure 3

Figure 4

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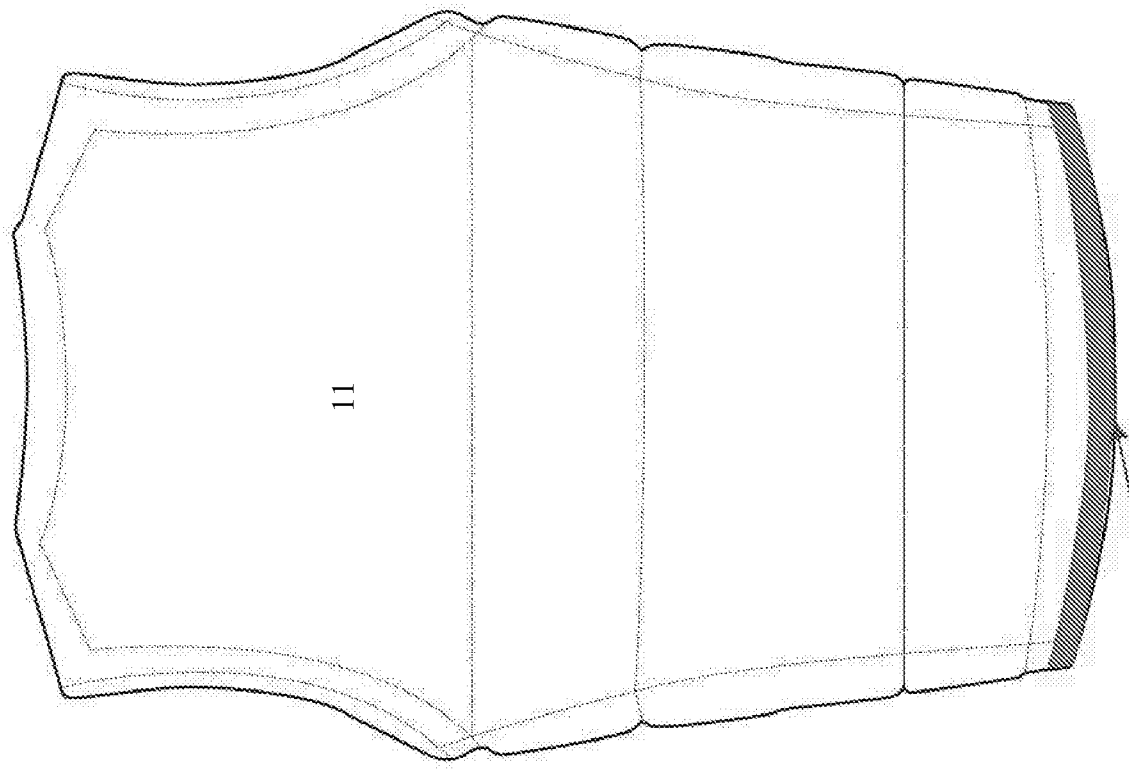

Figure 6

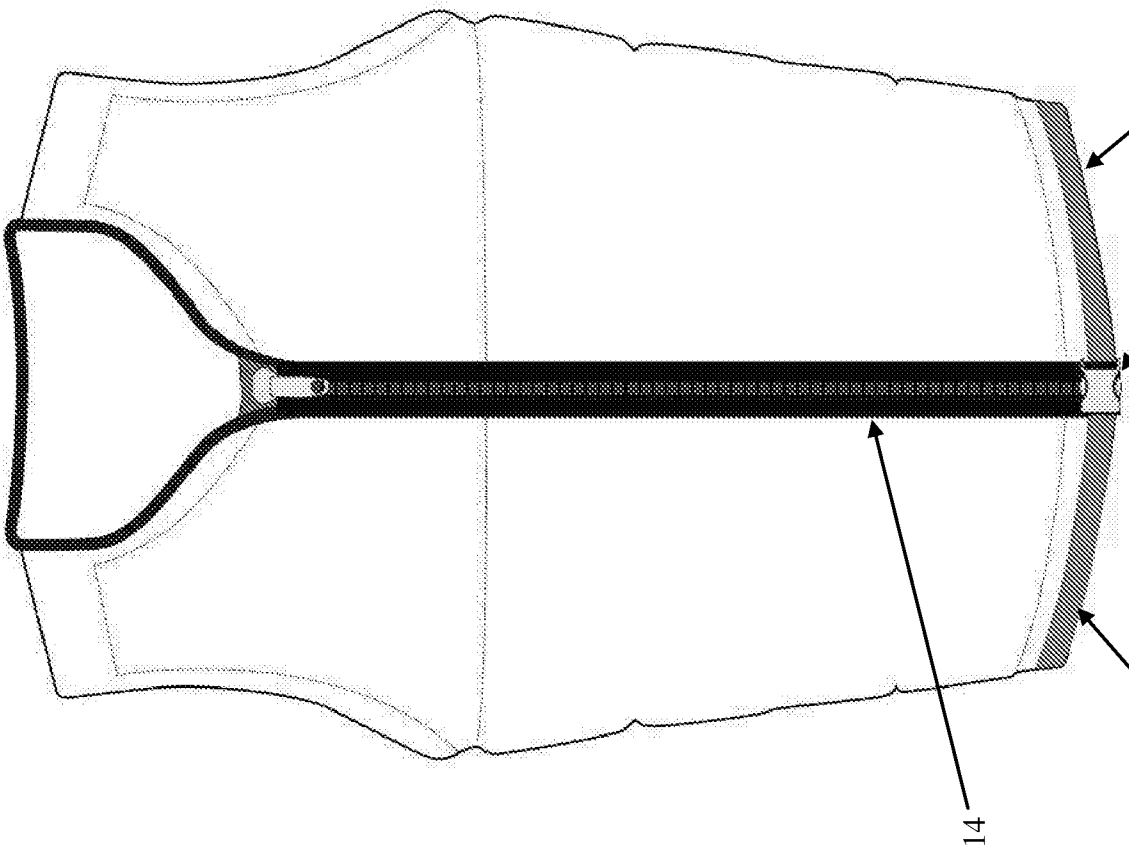

Figure 5