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(54) A wetsuit

(57) A zipperless wetsuit comprising: a main body part; an upper body part including a neck which is stretchable to provide the entry area into the suit for a wearer; a first bib attached to the main body part, which first bib has a main collar, the first bib being locatable, in use, over a wearer's head such that the main collar overlies and seals the entry area; and a second bib attached to the main body part substantially opposite the first bib, which second bib has a collar, the second bib being locatable, in use, over a wearer's head such that the collar of the second bib overlies the main collar of the first bib, thereby further sealing the entry area.

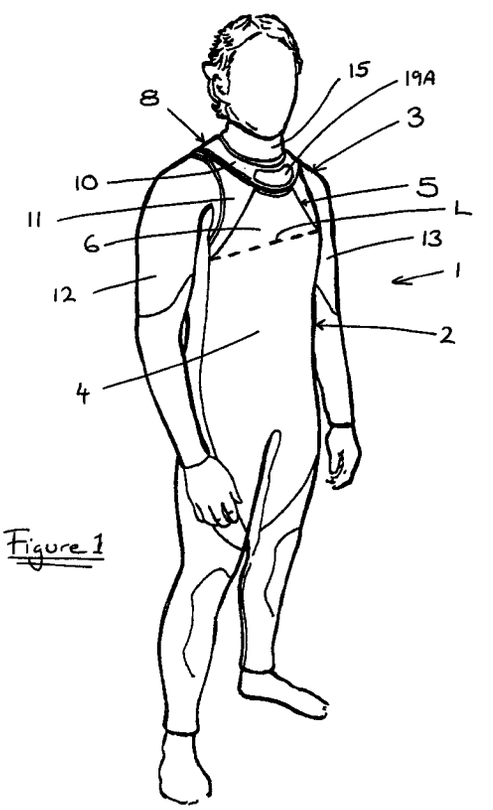

Figure 1

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Description

THIS INVENTION relates to a wetsuit and more particularly to a zipperless wetsuit.

There are a number of disadvantages associated with the inclusion of a zip-fastener in a wetsuit. For example: additional manufacturing time is involved in the incorporation of a zip-fastener into the design of a wetsuit; a zip-fastener needs to be stitched into the wetsuit on both sides of the suit to be held together by the zip-fastener which means that further time-consuming blind stitching and gluing steps are required in the manufacturing process and the likelihood of a leak or failure of the suit in that area is increased; water-tight or substantially water-tight zip-fasteners are themselves substantial items of expenditure in the raw material costs of the wetsuit; zip-fasteners can be difficult to open and close, especially with cold fingers; and the finger tab of the slider of a zip-fastener can be difficult to find and grasp, especially since zip-fasteners in wetsuits are generally located either running between a wearer's shoulder blades on the back of the suit or on the back of the suit running from the nape of the neck down the spine.

It is therefore advantageous to provide a wetsuit which does not require a zip-fastener.

Accordingly, one aspect of the claimed invention provides a zipperless wetsuit comprising: a main body part; an upper body part including a neck which is stretchable to provide the entry area into the suit for a wearer; a first bib attached to the main body part, which first bib has a main collar, the first bib being locatable, in use, over a wearer's head such that the main collar overlies and seals the entry area; and a second bib attached to the main body part substantially opposite the first bib, which second bib has a collar, the second bib being locatable, in use, over a wearer's head such that the collar of the second bib overlies the main collar of the first bib, thereby further sealing the entry area.

A further aspect of the claimed invention provides a method of manufacturing a wetsuit, comprising the steps of: providing a first bib having a main collar; providing a second bib having a collar; providing a main body part of the suit; attaching the first and second bibs opposite one another on the main body part; providing an upper body part including a neck which is stretchable to provide the entry area into the suit for a wearer; and sealingly joining the upper body part to the main body part.

In order that the present invention may be more readily understood, an embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a wetsuit embodying the present invention;

Figure 2 is a perspective view of a schematic representation of an upper part of a main body part of the wetsuit of Figure 1;

Figure 3 is a perspective view of a person putting on the wetsuit of Figure 1;

Figure 4 is a further perspective view of the person putting on the wetsuit of Figure 1.

Referring to the figures, a wetsuit 1 embodying the present invention consists of an external suit 2 comprising a main body part and an internal upper suit 3 comprising an upper body part. The external suit is substantially conventional from the chest and below. A front panel 4 of the external suit 2 terminates in the region of the pectoral muscles in a front bib 5 which comprises a flap 6 and a main collar 7. The front bib 5 is an integral part of the front panel 4 of the suit 1.

A back panel of the wetsuit 1 (not shown) terminates in a rear bib 8 which is similar to the front bib 5. The rear bib 8 comprises a flap 9 and a collar 10. The back panel of the wetsuit 1 terminates in the rear bib 8 in the region of the shoulder blades of the wearer. The rear bib 8 is an integral part of the back panel of the suit 1.

The internal upper suit 3 comprises a chest portion 11 and a back portion (not shown), two sleeves 12,13 and a neck 14. The neckline of the neck 14 (see Figure 3) is fairly low, the front of the neckline being substantially adjacent the clavicle of the wearer. The material from which the upper suit 3 is made is extremely stretchy. Preferably, this material is a knitted nylon which is equally stretchy in all directions.

The internal upper suit 3 is joined to the main body part of the external suit 2, preferably by resin gluing, along the front panel 4 by the pectoral muscles and along the back panel by the shoulder blades and around the entire wetsuit 1 under the armpit areas. The dashed line L in Figure 1 and the solid line L in Figure 3 show the join between the upper suit 3 and the front panel 4 of the main body part.

The collars 7,10 of the front and rear bibs 5,8 comprise wide annular portions which are adapted to lie over the shoulder area immediately surrounding the neck of the wearer. Specifically, when being worn, the collars 7,10 are adapted to overlie the neck 14 of the upper suit.

The main collar 7 on the front bib 5 also includes a mandarin collar 15 which extends from the main collar 7 by 6cm along the length of a wearer's neck.

An end 16 of the front bib 5, remote from the opposite end attached to the front panel 4 of the wetsuit 1, is provided with a hook part 17A of a press and close fastening 17.

A large pad 17B is provided on the back portion of the upper suit 3 and comprises the loop part 17B of the press and close fastening 17. The pad 17B is laminated on to the neoprene of the upper suit 3. The hook part

17A on the end 16 of the front bib 5 may be pressed on to the loop material in the large pad 17B in order to secure the front bib 5 into position.

Similarly, the end 18 of the rear bib 8, remote from the opposite end attached to the back panel, is provided with a hook part 19A of another press and close fastening 19. The main collar 7 of the front bib 5 is provided with a laminated layer of loop material 19B of the press and close fastening 19 in the area which would be underneath the chin of a wearer. The hook part 19A of the fastening 19 on the end 18 of the rear bib 8 can be pressed onto this loop material 19B to secure the rear bib 8 to the front bib 5.

To put on the wetsuit 1, the neck 14 of the upper suit 3 is stretched so that the wearer can insert their feet, legs and trunk into the suit. With the neck 14 of the upper suit 3 around the wearer's waist, the legs of the suit can then be properly fitted. The wearer can then insert the arms into the arms 12,13 of the upper suit 3 through the neck 14 until finally the neck 14 of the upper suit 3 is in the correct position around the wearer's neck. This condition is shown in Figure 3 of the drawings. The neck 14 comprises the sole entry area into the suit 1.

The wearer is then able to grasp the front bib 5 by the main collar 7 and pull the main collar 7 over their head, such that the flap 6 of the front bib 5 covers the area immediately above the pectoral muscles and towards the neck of the wearer. The mandarin collar 15 of the front bib 5 extends upwardly from the main collar 7 by about 6cm. This condition is shown in Figure 4.

The hook part 17A of the press and close fastening 17 attached to the end 16 of the front bib 5 is pressed onto and secured onto the loop part 17B of the press and close fastening 17 on the back portion of the upper suit 3. The main collar 7 overlies the neck 14. In this manner, the main collar 7 of front bib 5 provides a first seal around the neck 14 of the upper suit 3.

The next step is for the wearer to grasp the rear bib 8 by its collar 10 and pull that over the back of the head and down on to the front bib 5. The hook part 19A of the press and close fastening 19 on the end 18 of the rear bib 8 is pressed onto the loop part 19B of the press and close fastening 19 on the flap 6 of the front bib 5. This condition is shown in Figure 1 of the drawings. The collar 10 of the rear bib 8 lies over the main collar 7 of the front bib 5 so as to provide a further seal and pressure means around the neck 14 of the upper suit 3.

The provision of two bibs 5,8, one overlain on the other, greatly improves the seal around the neck of the wearer. The resultant seal is substantially a dry seal.

A winter suit embodying the present invention would be manufactured from 5mm neoprene with the legs and arms being 3mm neoprene and the front and back bibs 1.5mm. A summer suit would be manufactured entirely from 3mm neoprene except from the front and back bibs which would be manufactured from 1.5mm neoprene.

Other than the two press and close fastenings 17, 19 provided at the respective ends 16,18 of the front and rear bibs 5,8, no other fastening means are provided in order to secure and seal the wetsuit.

Claims

1. A zipperless wetsuit comprising: a main body part (2); an upper body part (3) including a neck (14) which is stretchable to provide the entry area into the suit for a wearer; a first bib (5) attached to the main body part (2), which first bib (5) has a main collar (7), the first bib being locatable (5), in use, over a wearer's head such that the main collar (7) overlies and seals the entry area; and a second bib (8) attached to the main body part (2) substantially opposite the first bib (5), which second bib (8) has a collar (10), the second bib (8) being locatable, in use, over a wearer's head such that the collar (10) of the second bib overlies the main collar (7) of the first bib, thereby further sealing the entry area.

2. A wetsuit according to Claim 1, wherein the first bib is a front bib secured to a front panel (4) of the main body part and the second bib is a rear bib secured to a back panel of the main body part.

3. A wetsuit according to Claim 1 or 2, wherein the main collar of the first bib is provided with a mandarin collar (15) which, in use, extends from the main collar, the mandarin collar not being overlain by the collar of the second bib.

4. A wetsuit according to any preceding claim, wherein the upper body part is a separate part of the suit from the main body part, the two parts being sealingly joined together.

5. A wetsuit according to Claim 4, wherein the upper body part is resin glued to the main body part.

6. A wetsuit according to Claim 4 or 5, wherein the upper body part is sealingly joined to the main body part at least, in use, the region of the pectoral muscles of the wearer and the region between the shoulder blades of the wearer.

7. A wetsuit according to any preceding claim, wherein the upper body part is manufactured from a material which is equally stretchy in all directions.

8. A wetsuit according to any preceding claim, wherein the first and second bibs are integral parts of the main body part.

9. A wetsuit according to any preceding claim, wherein a first part (17B) of a press and close fastening (17) is located on the upper body part (3) and a second part (17A) of the press and close fas-

tening (17) is located on the end of the main collar (7) of the first bib such that the two parts of the press and close fastening (17) are engagable with one another to secure the first bib to the upper body part when the first bib overlies and seals the entry area.

10. A wetsuit according to any preceding claim, wherein a first part (19B) of a press and close fastening (19) is located on the first bib (5) and a second part (19A) of the press and close fastening (19) is located on the end (18) of the collar of the second bib (8), such that the two parts of the press and close fastening (19) are engagable with one another to secure the second bib to the first bib when the second bib overlies the main collar of the first bib.

11. A wetsuit according to any preceding claim, wherein the main body part of the wetsuit is manufactured from neoprene.

12. A wetsuit according to any preceding claim, wherein the upper body part includes arms.

13. A wetsuit according to any preceding claim, wherein the loop material of the press and close fastening is provided as a laminate.

14. A method of manufacturing a wetsuit comprising the steps of: providing a first bib (5) having a main collar (10); providing a second bib (8) having a collar (10); providing a main body part (2) of the suit; attaching the first and second bibs (5,8) opposite one another on the main body part; providing an upper body part (3) including a neck (14) which is stretchable to provide the entry area into the suit for a wearer; and sealingly joining the upper body part (3) to the main body part (2).

15. A method according to Claim 14, wherein the first and/or second bibs are manufactured as an integral part of the main body part.

16. A method according to Claim 14 or 15, wherein the upper body part is attached to the main body part in the region of the pectoral muscles of a wearer and in the region of the shoulder blades of the wearer.

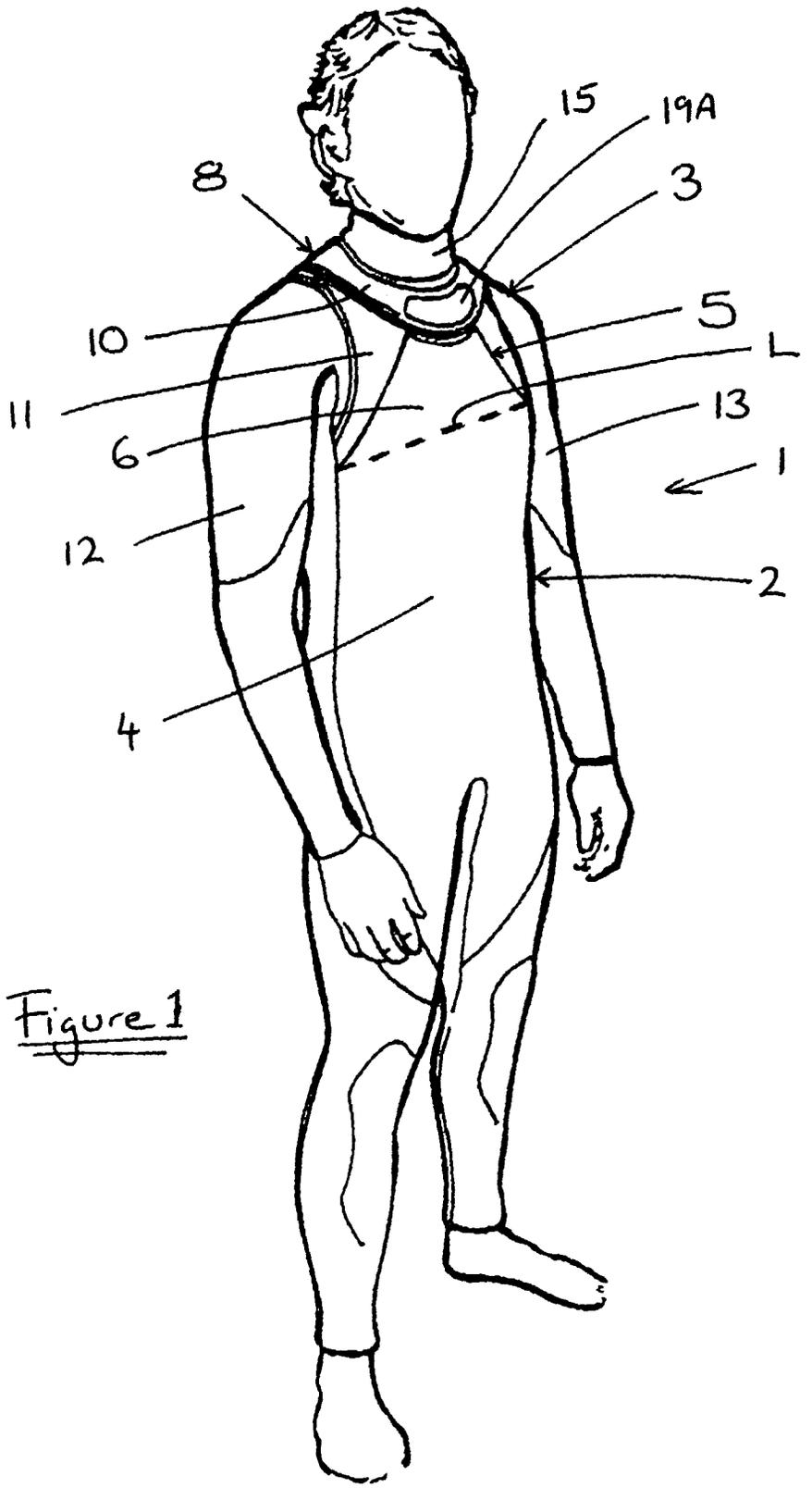

Figure 1

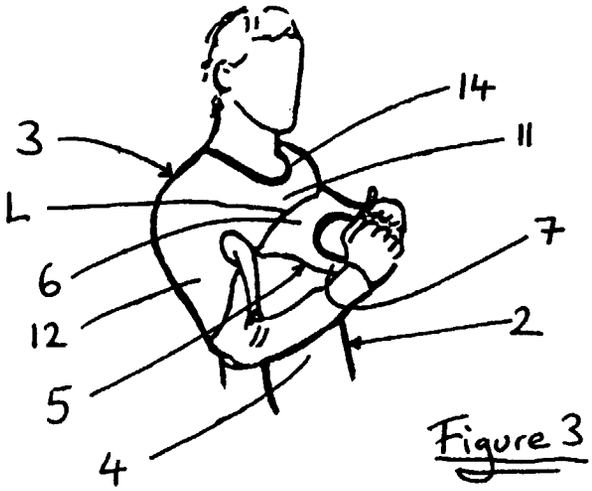

Figure 3

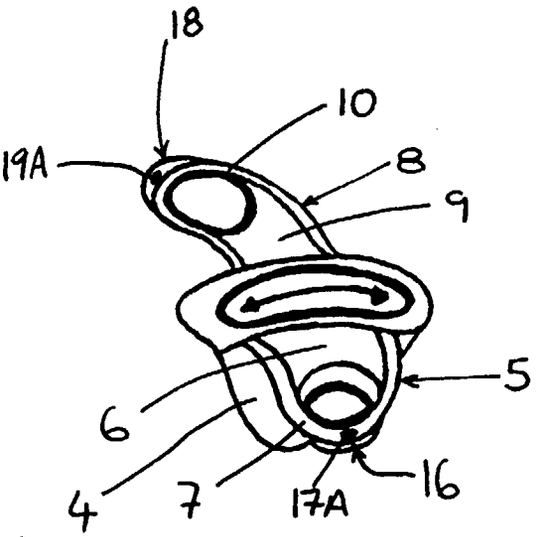

Figure 2

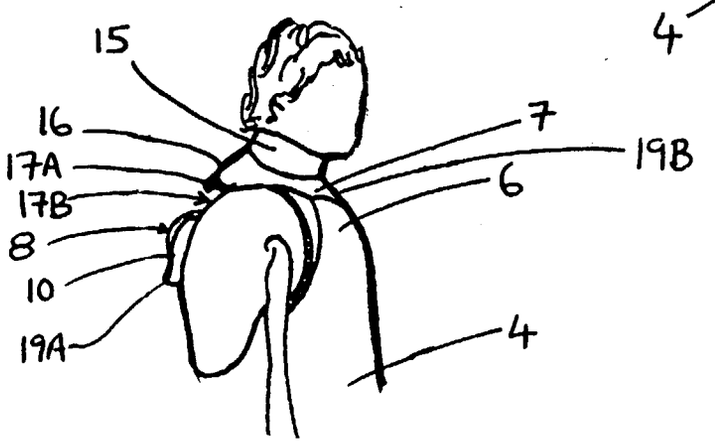

Figure 4