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[54] ADJUSTABLE BUOYANT JACKET

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[52] **U.S. Cl.** **9/342**

[51] **Int. Cl.** **B63c 9/10**

[58] **Field of Search** 9/342, 341, 340, 9/336, 337, 338, 311, 339, 329

[56] **References Cited**

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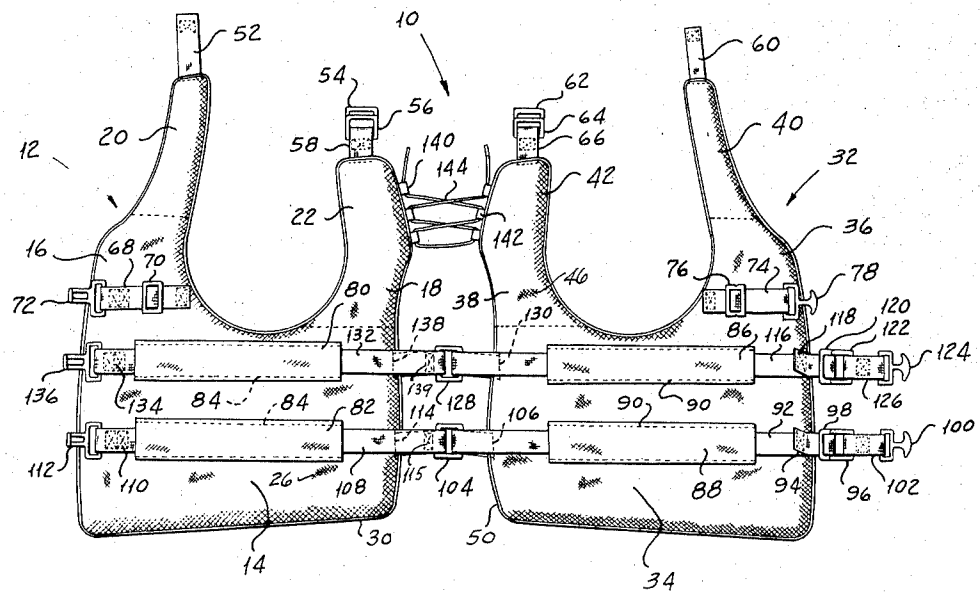
[57] **ABSTRACT**

An adjustable buoyant jacket made up of right-hand and left-hand buoyant bodies each of which has a front edge and a back edge, the jacket being provided with manually operable adjusting means accessible at the front of the jacket for concomitantly adjusting the distance between the front edges and the distance between the rear edges in the waist region without disturbing the positions of the buoyant bodies on the person of the wearer, together with adjustable means for connecting the back edges in the shoulder region thereof.

14 Claims, 4 Drawing Figures



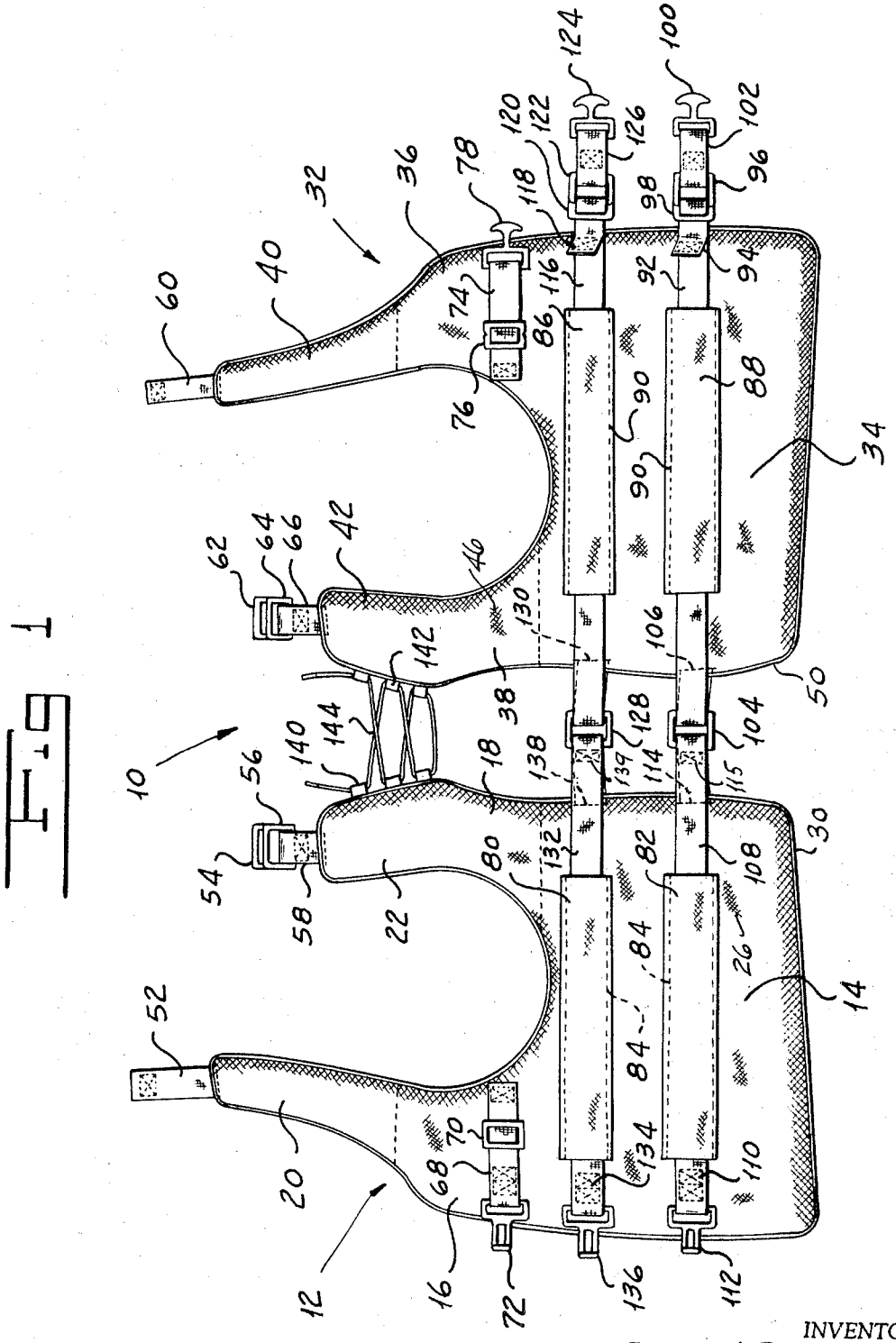


FIG 1

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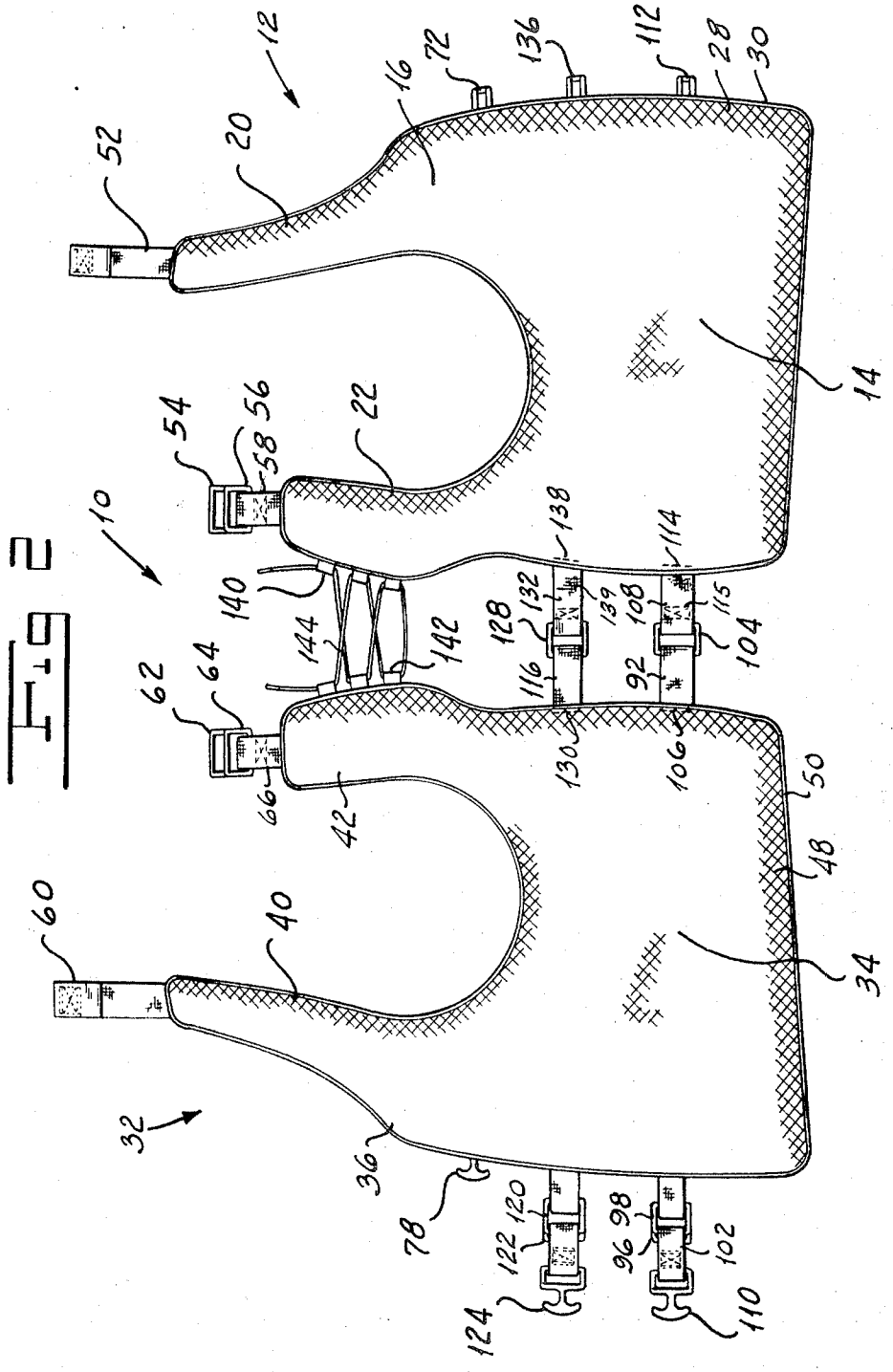

FIG 2

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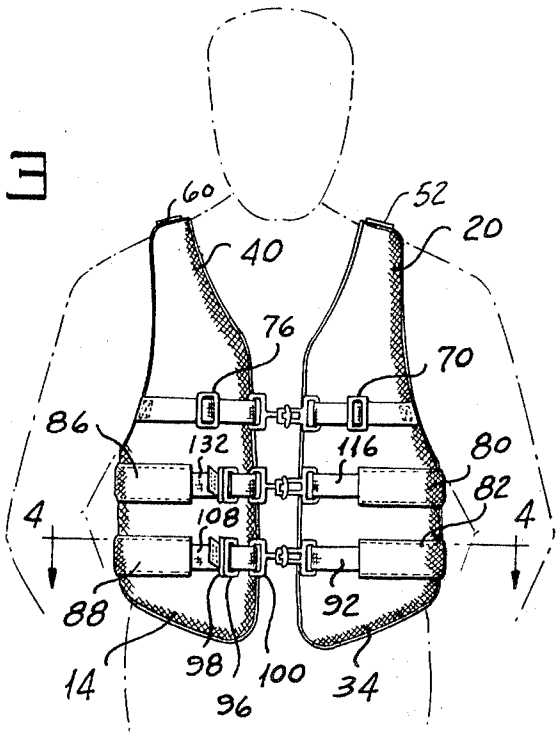
Fig 3



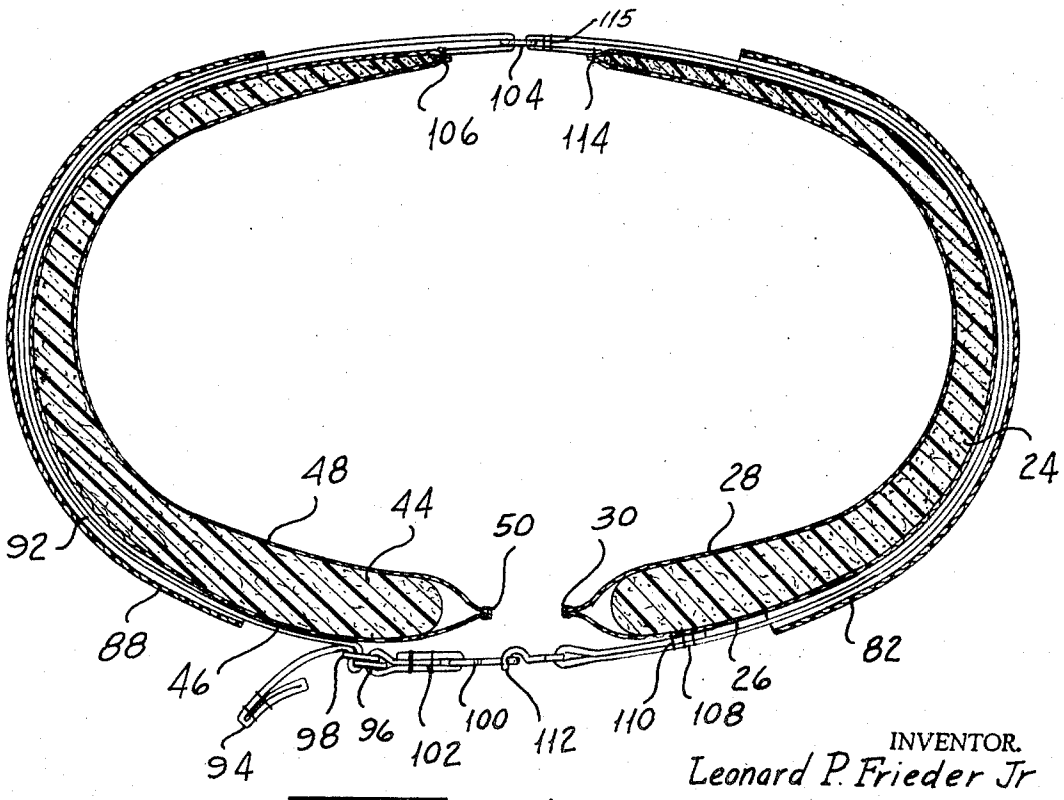


Fig 4

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ADJUSTABLE BUOYANT JACKET

BACKGROUND OF THE INVENTION

Many and various forms of buoyant jackets or vests are known in the prior art. Many of these jackets comprise a plurality of bodies of buoyant material which are connected together and which are releasably held in position on the wearer's person. Some of the jackets are provided with means for drawing adjacent front edges of buoyant bodies together to pull the jacket more closely around the wearer. The rest of the jacket structure comprises means for securing other respective edges of the jacket to each other. These other securing means include at least one permanent non-adjustable connection and other connections which may comprise adjustable elements. Such elements, however, if provided, are accessible only at the locations at which they are installed.

In use of jackets of the prior art of the type described, the user, before donning the jacket, may make some side or back rough adjustment if such adjustment is provided. Then, after having donned the jacket he may actuate the front adjusting elements to draw the jacket closely around his person. In so doing, however, while the front edges are drawn together the distance between the other edge or edges at which the buoyant bodies are connected does not change so that in effect the positions of these bodies on the wearer's person shift. While the jacket might still function fairly satisfactorily in such a circumstance, it is not as comfortable as is desired. Owing in part to the fact that a permanent connection is provided in at least one area, if a relatively wide range of adjustment is provided the problem is aggravated and the jacket may not function as effectively as intended.

I have invented a buoyant jacket which overcomes the problem of buoyant jackets described hereinabove. My jacket may be drawn closely about the wearer's body without shifting the positions of the buoyant bodies with relation to the wearer's person. My adjustable buoyant jacket is comfortable. It affords a wide range of adjustment while being comfortable and effective in all adjusted positions.

SUMMARY OF THE INVENTION

One object of my invention is to provide an adjustable buoyant jacket which overcomes the defects of adjustable buoyant jackets of the prior art.

Another object of my invention is to provide an adjustable buoyant jacket which is comfortable in all adjusted positions thereof.

A further object of my invention is to provide an adjustable buoyant jacket which affords a wide range of adjustment while not interfering with the effectiveness of the jacket.

Still another object of my invention is to provide an adjustable buoyant jacket which can be drawn closely about the wearer's person without shifting the buoyant masses making up the jacket.

In general my invention contemplates the provision of an adjustable buoyant jacket comprising right-hand and left-hand buoyant masses having adjacent front edges and adjacent back edges with manually readily actuatable means at the front of the jacket for concomitantly adjusting the distance between the front edges and the distance between the back edges of the buoyant masses in the waist region and adjustable means connecting the back edges in the shoulder region.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

FIG. 1 is a plan view of the outside of my adjustable buoyant jacket with the parts thereof laid out flat.

FIG. 2 is a plan view of the inside of my adjustable buoyant jacket with the parts thereof laid out flat.

FIG. 3 is a front elevation of my adjustable buoyant jacket in position on the person of a wearer.

FIG. 4 is a sectional view of my adjustable buoyant jacket taken along the line 4–4 of FIG. 3 and drawn on an enlarged scale.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings my improved adjustable buoyant jacket indicated generally by the reference character **10** includes a left-hand unit, indicated generally by the reference character **12** comprising a waist portion **14**, a chest portion **16**, a back **18**, a front shoulder portion **20** and a rear shoulder portion **22**. The unit **12** may be made up of a mass **24** of any suitable buoyant material such for example as a unicellular foamed plastic. I enclose the mass **24** in an envelope including an outer fabric **26** and an inner mesh fabric **28** which fabrics are joined around the edge of the unit by beading **30**. Preferably the outer fabric **26** is a very closely woven fabric which is water repellent. The inner fabric **26** is an openwork fabric such as a mesh or a relatively loosely woven fabric which permits water and air to pass freely therethrough both to prevent water from being trapped inside the envelope as well as for ventilation.

My jacket **10** also includes a right-hand unit indicated generally by the reference character **32** which includes a waist portion **34**, a chest portion **36**, a back portion **38**, a front shoulder portion **40** and a rear shoulder portion **42**. The unit **32** is made up of a mass **44** of unicellular foamed plastic or other buoyant material enclosed in an envelope made up of an outer panel **46** of closely woven fabric and an inner panel **48** of openwork fabric which panels are joined at the edges by beading **50** to complete the envelope.

First, I provide adjustable means for connecting the front shoulder portion **20** to the rear shoulder portion **22** and adjustable means for connecting the front shoulder portion **40** to the rear shoulder portion **42** to form the armholes of the jacket. Specifically, I stitch a length **52** of nylon webbing or the like to the upper end of shoulder portion **20**. A length **58** of webbing stitched or otherwise secured to the upper end of shoulder portion **22** forms a loop for receiving a pair of rings **54** and **56** through which the webbing **52** passes to permit adjustment of its effective length. This is achieved in a manner known to the art by first passing the webbing through both rings and then back over the periphery of one of the rings and through the other ring releasably to clamp the webbing along its length. Similarly, I stitch a length **60** of webbing to the upper end of shoulder portion **40** and secure a length **66** of webbing having a loop carrying rings **62** and **64** to the upper end of shoulder portion **42**. The webbing **60** is received by the rings

62 and 64 adjustably to connect shoulder portions 40 and 42.

For adjustment of the jacket in the chest region which it will be appreciated need not be of very wide range, I secure one end of a length 68 of webbing to the inner edge of the chest portion 16. This length first passes through a length adjusting buckle 70 and through the ring of a slotted hook connector, around the center post of the buckle 70 and is there secured to itself to form a loop. Similarly, a length 74 of webbing has a loop at one end thereof which receives the center post of a buckle 76. Webbing 74 passes through the ring of a T-head connector 78 back through the buckle 76 and is then secured to the inner edge of chest portion 36. As is known in the art, the effective length of either of the webbings 68 or 74 can be changed by varying the position of the buckle 70 or 76 carrying the loop end of the respective webbing.

I form respective tunnels 80 and 82 at vertically spaced locations in the waist portion 14 of the unit 12 by securing lengths of fabric to the unit by any suitable means such as by stitching 84. Respective tunnels 86 and 88 extend laterally of the waist portion 34 of unit 32 at vertically spaced locations thereon. Stitching 90 secures tunnel-forming lengths of fabric to the unit 32. A lower right-hand length of webbing 92 has a free end 94. From the free end 94 webbing 92 passes through a first ring 98, then around a leg of a second ring 96 and back through both rings 96 and 98. From that point, webbing 92 passes through tunnel 88 through ring 104 disposed between the back edges of the two units 12 and 32 to a position adjacent the back edge of unit 32 at which it is secured to the unit 32 by stitching 106. A webbing length 102 has a loop at one end thereof which receives both rings 96 and 98 and a loop at the other end which carries the T-head connector 100.

A lower left-hand length of webbing 108 has a loop at one end which receives a slotted hook connector. The loop is secured to the unit 12 adjacent the front edge thereof by stitching 110 merely to locate the connector 112 for easy access. From stitching 110 webbing 108 extends through tunnel 82 and through the D-ring 104 back to a location on unit 12 at which it is secured to the unit by means such as stitching 114.

The upper right-hand waist adjusting webbing 116 extends from a free end 118 through a ring 120 around a leg of ring 122 back through both rings 120 and 122 through tunnel 86 around a leg of a ring 128 and back to a location on unit 32 at which it is secured in place by means such as stitching 130.

The upper left-hand waist adjusting webbing 132 has a loop at the front end thereof which receives a slotted hook connector 136 and which is secured to unit 12 adjacent the front edge thereof by stitching 134. From the connector 136 webbing 132 extends through tunnel 80 and around the other leg of ring 128 back to a location adjacent the back edge of unit 12 at which location it is secured to the unit by stitching 138. I may employ respective areas of stitching 115 and 139 for securing the ends of lengths 108 and 132 to the lengths themselves adjacent stitching 114 and 138 to prevent twisting of the webbing.

Respective groups of spaced loops 140 and 142 secured to the back edges of rear shoulder portion 22 and 42 receive a lacing 144 for adjustably connecting the rear shoulder portions at the back of the jacket.

From the structure described it will be apparent that the bodies 12 and 32 are not joined at any location by a permanent and non-adjustable connection. An initial adjustment is provided by lacing 144 and final adjustments can be made by the waist area strap means without shifting the positions of the bodies on the wearer's person.

In use of my improved adjustable jacket, the lacing 144 is pulled to draw loops 140 and 142 together to approximate size of the wearer and the ends are tied. Next, the respective webbings 52 and 60 are engaged with the pairs of rings 54 and 56 and 62 and 64. The jacket is now ready for donning.

After donning the jacket the user connects the respective T-heads 78, 124 and 100 with slotted hooks 72, 136 and 112. Minor adjustments in the chest region can be made by sliding buckles 70 and 76 along the webbing lengths 68 and 70. It will readily be appreciated that for a given size the range of adjustment in the chest region need not be as great as that which is provided in the waist region.

Having made the chest adjustment, the wearer next adjusts the jacket in the waist region by drawing on the free ends 94 and 118. Considering, for example, the lower waist adjustment with the T-head 100 in engagement with the slotted hook 112 as one pulls on the end 94 the front edges of the respective units 12 and 32 are drawn together. Owing to the fact that strap 92 passes freely through tunnel 88 and through the ring 104, the rear edges of the two units 12 and 32 are drawn together at the same time. The action of the upper waist adjustment achieved by pulling on end 118 operates in a similar manner. Thus, the jacket is drawn tightly into contact with the wearer's person without shifting the positions of the units 12 and 32 on the wearer's body. For the same reason, a relatively wide range of adjustment is possible without discomforting the wearer and without interfering with effective functioning of either the jacket or the wearer.

It will be seen that I have accomplished the objects of my invention. I have provided an adjustable buoyant jacket which overcomes the defects of adjustable buoyant jackets of the prior art. My jacket may be drawn closely about the wearer's person without shifting the positions of buoyant bodies. It is relatively comfortable in all adjusted positions. It affords a relatively wide range of adjustment while being comfortable and effective in all adjusted positions.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of my claims. It is further obvious that various changes may be made in details within the scope of my claims without departing from the spirit of my invention. It is, therefore, to be understood that my invention is not to be limited to the specific details shown and described.

Having thus described my invention, what I claim is:

1. In a buoyant jacket an assembly including a right hand buoyant body, a left hand buoyant body, each of said bodies having a front edge and a back edge, a ring disposed between said back edges, and strap means having a first end and a second end, means for securing said first end to a first location adjacent to the back edge of one of said bodies, said strap means extending from said location through said ring and back over said first body and over said second body and through said

ring to position said second end at a second location adjacent to the back edge of said second body, means for securing said second end at said second location and means located at the front of the jacket for adjusting the effective length of said strap means.

2. An assembly as in claim 1 including respective fabric tunnels on said bodies for receiving said strap means.

3. An assembly as in claim 1 in which said strap means comprises respective strap lengths and means for readily detachably connecting said lengths.

4. A buoyant jacket including a combination, a left hand buoyant body comprising a chest portion and a waist portion and front and back shoulder portions and means connecting said front and back shoulder portions, a right hand buoyant body comprising a chest portion and a waist portion and front and back shoulder portions and means connecting said shoulder portions, each of said bodies having a back edge and a front edge at its waist portion, and means for connecting said bodies and for releasably holding said jacket on the person of a wearer, said connecting means comprising a ring located between said back edges, strap means having an end secured to a location adjacent the back edge of said first body, said strap means extending through said ring and freely around said first body to a location adjacent said front edge thereof, means connecting said ring to said second body and means including strap length adjusting means for connecting said strap means to said other body.

5. A jacket as in claim 4 in which said back shoulder portions have inner edges and adjustable means connecting said inner edges.

6. In a buoyant jacket, an assembly including in combination, a right hand buoyant body, a left hand buoyant body, each of said bodies having a front edge and a back edge, a ring disposed between said back edges, a first strap length, means for securing one end of said first strap length to a first location adjacent to the back edge of one of said bodies, said first strap length extending from said first location through said ring and back over said one body to position the other end thereof adjacent to the front edge of said one body, a second strap length, means for securing one end of said second strap length to a second location adjacent to the back edge of the other body, said second strap length extending from said second location through said ring and back over said other body to position the other end thereof adjacent to the front edge of said other body and means for adjustably connecting the other ends of said strap lengths.

7. An assembly as in claim 6 including means for securing said one end of said first strap length to said first strap length adjacent to said first location.

8. An assembly as in claim 7 including means for securing said one end of said second strap length to said second strap length adjacent to said second location.

9. In a buoyant jacket an assembly including a first buoyant body having a first edge and a second edge, a second buoyant body having a third edge, means interconnecting said first and second bodies with said third edge adjacent to said second edge, said interconnecting means comprising a strap having an end secured to said first body at a location adjacent to said second edge, means disposed between said second and third edges for slidably receiving said strap, said strap extending from said end through said receiving means and in proximity to said first body to a location adjacent to said first edge, and manually operable means located adjacent to said first edge for adjusting the effective length of said strap to draw said second and third edges together.

10. An assembly as in claim 9 in which said strap receiving means is a ring.

11. An assembly as in claim 9 including means forming a tunnel on said first body for guiding said strap.

12. In a buoyant jacket an assembly including a first buoyant mass having a first edge and a second edge, a second buoyant mass having a first edge and a second edge, means connecting said first and second buoyant masses to each other with said first edges adjacent to each other and with said second edges adjacent to each other, said connecting means comprising a strap having a free end adjacent said first edge of said first mass, said strap extending along said first mass and in proximity thereto toward said second edge of the first mass, means disposed between said second edges for slidably receiving said strap, said strap extending through said receiving means and back to a location on said first mass adjacent to said second edge, means for securing said strap at said location, means connecting said receiving means to said other mass, and manually operable means adjacent said first edges for adjusting the effective length of said strap concomitantly to adjust the distance between said first edges and the distance between said second edges.

13. An assembly as in claim 12 in which said receiving means is a ring.

14. An assembly as in claim 12 including a tunnel on said first mass for receiving said strap.

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