Aug. 7, 1951 M. LEVINE 2,563,122

LIFE PRESERVER

Filed Oct. 21, 1948 2 Sheets-Sheet 1

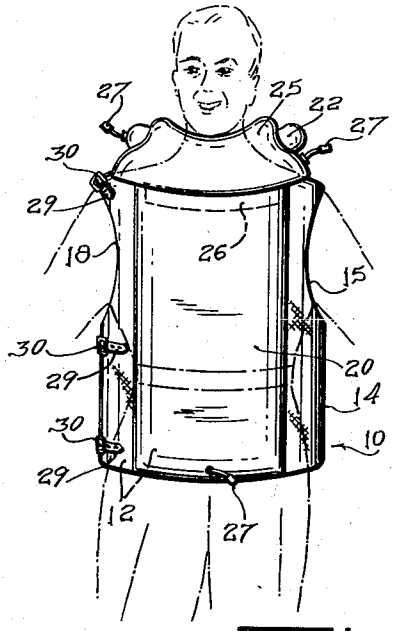


FIG. 1.

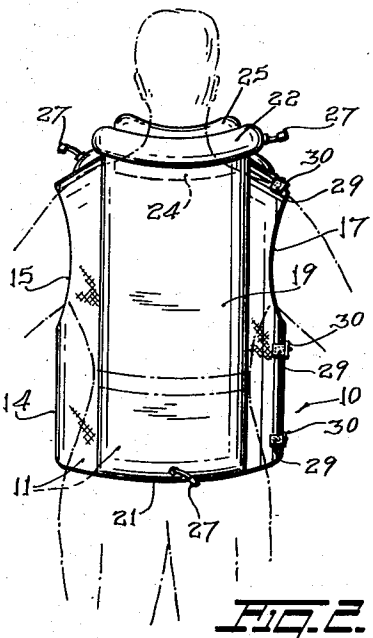


FIG. 2.

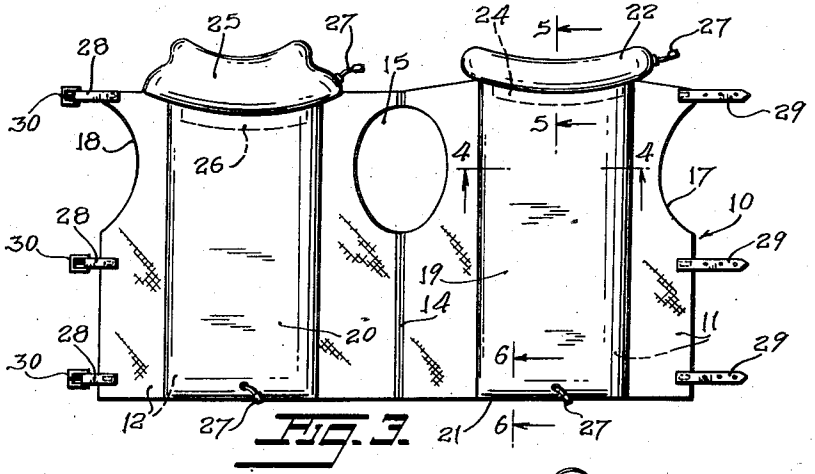


FIG. 3.

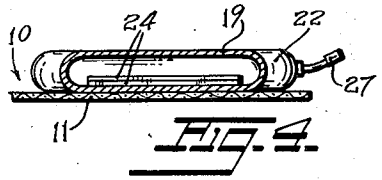


FIG. 4.

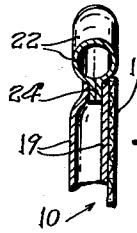


FIG. 5.

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Aug. 7, 1951 M. LEVINE 2,563,122

LIFE PRESERVER

Filed Oct. 21, 1948 2 Sheets-Sheet 2

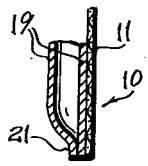


FIG. 6.

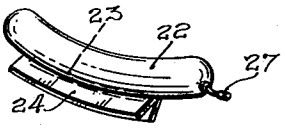


FIG. 7.

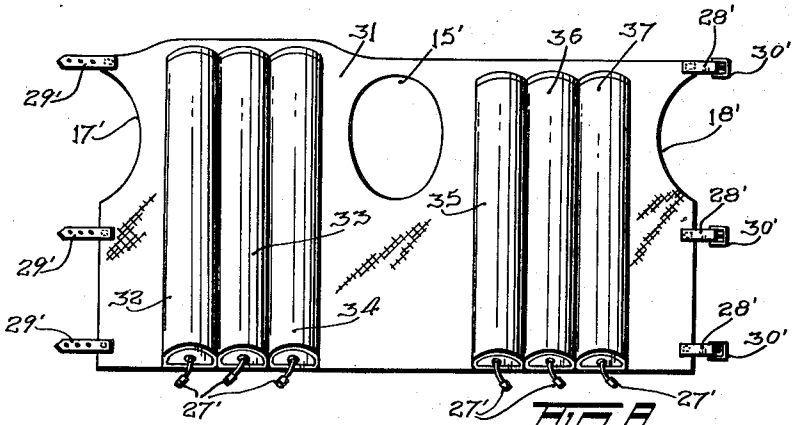


FIG. 8.

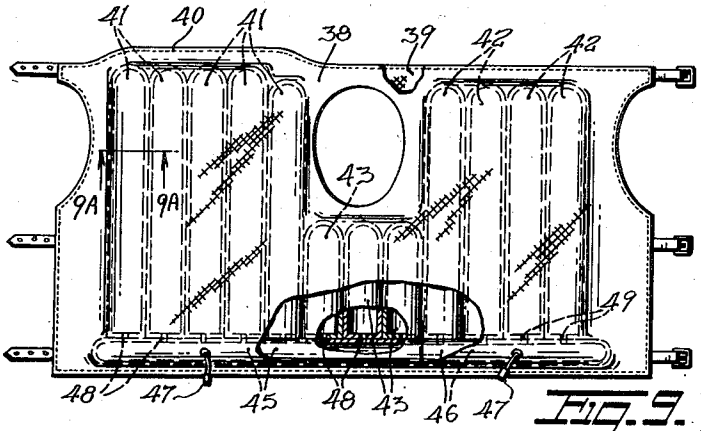


FIG. 9.

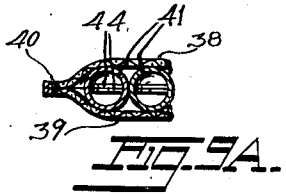


FIG. 9A.

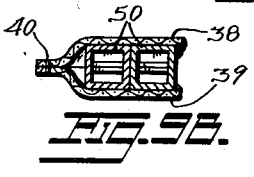


FIG. 9B.

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Patented Aug. 7, 1951 2,563,122

UNITED STATES PATENT OFFICE

2,563,122

LIFE PRESERVER

Morris Levine, Brooklyn, N. Y.

Application October 21, 1948, Serial No. 55,820

1 Claim. (Cl. 9—17.5)

1

This invention relates to new and useful improvements in life-saving appliances, and, more particularly, the aim is to provide a novel and valuable life-preserver of the jacket type.

According to the invention, a body-girthing garment is provided having air-inflatable compartments or chambers of improved kind and arrangement, and in practicable placement even though an important feature of the invention is that the jacket structure present is secured about the body of the wearer at a side of the body. Such jacket structure has at least one arm-hole of unbroken continuity all around, and this coacts with a strap means or the like in holding the jacket at the proper position on the body.

As the invention is preferably carried out, said compartments or chambers are provided by rubber elements, as lengths of rubber tubing, and said elements are carried by a canvas or other suitable textile main structure, with the latter preferably at the outside of the jacket as it is worn.

Also, according to another feature of the invention, there are included special hollow air-inflatable additions, one of which is shaped and placed to provide a forward-of-the-throat support for affording a comfortable chin cradle adapted to uphold the face of the jacket wearer, and another of which is shaped and placed to provide a back-head support against which the nape of the neck may rest.

Another preferably incorporated feature of the invention is an arrangement of the air-containing and/or other buoyant elements such that the center of buoyancy of the jacket may be so located that the body of a person wearing the jacket and water-supporter thereby will tend naturally to move toward a reclining position in the water for diminution of fatigue and the prevention of feelings of fright or panic.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a frontal perspective view, showing a now favored embodiment of the jacket of the invention, as adjusted on a wearer's body; the latter being indicated in dot and dash lines.

Fig. 2 is a similar view, but looking at the rear of said jacket.

2

Fig. 3 shows the jacket opened up and spread flat, with the outer side thereof uppermost.

Fig. 4 is an enlarged fragmentary detail section, taken on the line 4—4 of Fig. 3.

Fig. 5 is a similar section, this taken on the line 5—5 of Fig. 3.

Fig. 6 is a similar section, this taken on the line 6—6 of Fig. 3.

Fig. 7 is a perspective view showing a now preferred shape and structure for the already mentioned back-rest.

Fig. 8 is a view like Fig. 3, but showing another now favored embodiment of the invention, and showing the same as in Fig. 8, while looking toward the inner side of the jacket.

Fig. 9 is a view like Fig. 3, but partially broken away, for showing still another now favored embodiment; this jacket being shown as in Fig. 8, that is, while looking toward the inner side of the jacket.

Fig. 9A is an enlarged fragmentary detail section, taken on the line 9A—9A of Fig. 9.

Fig. 9B is a corresponding section through a modification.

Referring to the drawings in detail, and first to Figs. 1–7, the life-preserver jacket here shown is as a whole marked 10. The same comprises a main sheet structure, of canvas or the like, which may be of one-piece nature, but which is here shown as made up of a pair of sections 11 and 12, seamed together as at 14. The jacket includes arm-hole means; and as herein illustrated, but merely by way of example, only one of the two arm-holes present is permanently constituted as such. This arm-hole is indicated at 15. The other arm-hole, then, is adapted to be established by joining a cut-out 17 at the upper portion of the free side edge of the section 11 with a preferably somewhat deeper cut-out 18 at the upper portion of the free side edge of the section 12.

A front air-storage chamber is provided at the interior of a length of rubber tubing 19, and a back air-storage chamber is provided at the interior of a length of rubber tubing 20. The tube lengths 19 and 20 longitudinally thereof are suitably secured, respectively, and as by cementing or otherwise, to the sections 11 and 12, so that each is laterally cross-sectionally shaped substantially as best indicated in Fig. 4.

Said tube length 19 is closed at its bottom, as by cementing or otherwise, as best indicated at 21 in Fig. 6. The above-mentioned back-rest is provided by an inflatable hollow rubber member 22, so formed that when air-inflated it will assume

the longitudinaly arched somewhat sausage shape illustrated. This member 22 may be secured in place in any suitable way, but for ease of manufacture the same may have extended along its convex bottom face an elongate or slot-like opening, as indicated at 23 in Fig. 7, attended along opposite sides by a pair of flaps 24. Thus, when said flaps are laid together as shown in Fig. 5 (note also Figs. 2 and 3), and then inserted into the upper end of the tube length 19, a single cementing operation or the like may serve to arrange the parts as illustrated in Fig. 5, thereby to seal the slot 23 and at the same time seal the upper end of said tube length and also securely attach the back-rest member 22 to the jacket.

The aforesaid forward-of-the-throat support is provided by an inflatable hollow rubber member 25 so formed that when air-inflated the same will assume the special shape illustrated, to provide a chin cradle for upholding the head. Desirably, as indicated, the air-holding capacity of the member 25 somewhat exceeds that of the member 22, and the air-holding capacity of the tube length 20 exceeds that of the tube length 19; thereby to have these buoyant elements coact in a way to give a natural tilt of the body of the wearer of the jacket toward a reclining angle and so keep the nose and eyes out of the water. As indicated at 26, in Figs. 1 and 2, the method of making the member 25 is as above explained in connection with the member 22, and the manner of attaching the member 25 to the tube length 20 and hence to the jacket and thereby incidentally sealing the upper end of said tube length is also as explained in connection with the tube length 19 and the member 22. The lower end of the tube length 20 is sealed in the same way as already described for the tube length 19.

For separately inflating the air-chambers afforded by the two tube lengths and the two members 22 and 25, an air-valve containing addition as indicated at 27 is provided for each such chamber. This valve may be the familiar automobile-tire inflation valve, often called the Shrader valve, readily functionable either for admitting and holding the inflation air, or, when desired, as to render the jacket compactly collapsible between uses thereof, for discharging the inflation air.

The life preserver is attached to the body, after insertion of an arm through the arm-hole 15, and after arranging the parts as in Figs. 1 and 2, by then detachably connecting the free ends of the sections 11 and 12, as by the use of a suitable number of straps 28 and 29. As herein shown, each of the straps 28 carries a buckle 30, and there are three strap pairs 28 and 29; with the uppermost of such pairs arranged to run over a shoulder of the wearer of the jacket, and which pair, together with the pair next therebelow, coacts with the cut-outs 17 and 18 in providing the arm-hole complementary to the arm-hole 15.

It will have been noted that the tube lengths 19 and 20 are shown as at the other side of the main structure of canvas or the like which carries said tube lengths and the members 22 and 25. However, it is now thought desirable, for protecting the tube lengths against accidental puncture, to place them on the inner side of said main canvas structure.

Such an arrangement is shown in Fig. 8, wherein, it will also be observed, said main structure is shown as comprised of a single piece 31 of canvas or the like. Although not here shown, the members 22 and 25 or equivalents are preferably included, in addition to the rubber tube lengths illustrated. These last are illustrated, for example, as six in number, respectively designated 32, 33, 34, 35, 36 and 37; and they are arranged in two sets of three each, one set at the front of the jacket and the other set at the rear thereof. Assuming the set 32—34 to be those at the front, they desirably would have a combined air-storage capacity of greater buoyant effect than the combined air-storage capacity of the set 35—37, for the reason already mentioned. If these tube lengths are all alike, as shown, then the said buoyant effect may be obtained by incorporating a member corresponding to the member 22 alone, or by incorporating members respectively corresponding to the members 22 and 25 and constructing the former to have a larger air-capacity than the latter.

As indicated in Fig. 8, the rubber tube lengths 32—37 may be secured to the main structure 31, and individually sealed at their tops and bottoms, as explained in connection with the bottom of the tube length 19. In Fig. 8, the parts to which are applied reference numerals with primes added correspond, respectively, to the parts to which are applied reference numerals without primes.

Referring to Figs. 9, 9A and 9B, here an embodiment of the invention is illustrated which, shown as equipped with detachable strap means as in Figs. 1–3, includes a main structure incorporating both an inner and an outer sheet element of canvas or the like, each of these, respectively designated 38 and 39, being illustrated as of one-piece construction. Said sheet elements 38 and 39 are desirably marginally joined as by a stitching 40 running all around the jacket.

Also, a large number of lengths of rubber tubing are indicated as nested between and suitably secured to the sheet elements 38 and 39. Said tube lengths are illustrated as arranged in three groups; one group of five thereof, these, marked 41, say for placement at the front of the jacket, another group of four thereof, these, marked 42, say for placement at the back of the jacket, and a third group of three thereof, these, marked 43, say for placement at the right side of the jacket for easing strain on the heart of the wearer. All these tube lengths may be sealed at their tops in the manner already explained for sealing the bottoms of the tube lengths 19 and 20; that is, as indicated at 44 in Fig. 9A.

A further feature illustrated in the embodiment now being described is the use of a manifold or manifolds, two thereof being shown at 45 and 46, with each served by a valve 47 like the valve 27. The manifold 45 is illustrated as serving all the tubes 41 and 43, and the manifold 46 is illustrated as serving all the tubes 42. All the tubes 41 and 43 are suitably sealed at their lower ends, except for an air passage port 48 at the lower end of each of these tubes whereby the interior of each thereof is in open communication with the interior of the manifold 45. All the tubes 42 are suitably sealed at their lower ends, except for an air passage port 49 at the lower end of each of these tubes whereby the interior of each thereof is in open communication with the interior of the manifold 46.

The tubes 41—43 may be of circular cross-section, as shown in Fig. 9A, or of any other desired cross-section, for instance square, as indicated at 50 in Fig. 9B.

Also included in the invention is an arrangement whereby some or all of the rubber tubes and/or one or both of the members 22 and 25

will be dispensed with, and there will be substituted therefor one or more buoyant instrumentalities of the non-inflatable type, such an instrumentality, for instance, may be one containing cork, balsa, kapok or the like.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

A life-preserver of the jacket type, comprising a main body of flat pliable material, said main body having intermediate of its ends and adjacent one edge an armhole opening dividing said main body into a front section and a back section so that said main body can be put on by passing one arm through said opening and then projecting said sections across the front and back of the body of the wearer, means for securing the ends of said main body together above and below the other arm of the wearer, and a plurality of buoyant members on said front and back sections of said main body, said buoyant

members including a chin-cradling buoyant member mounted on the top edge of the front section of said main body, and a back-of-the-head buoyant member mounted on the top edge of the back section of said main body.

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