

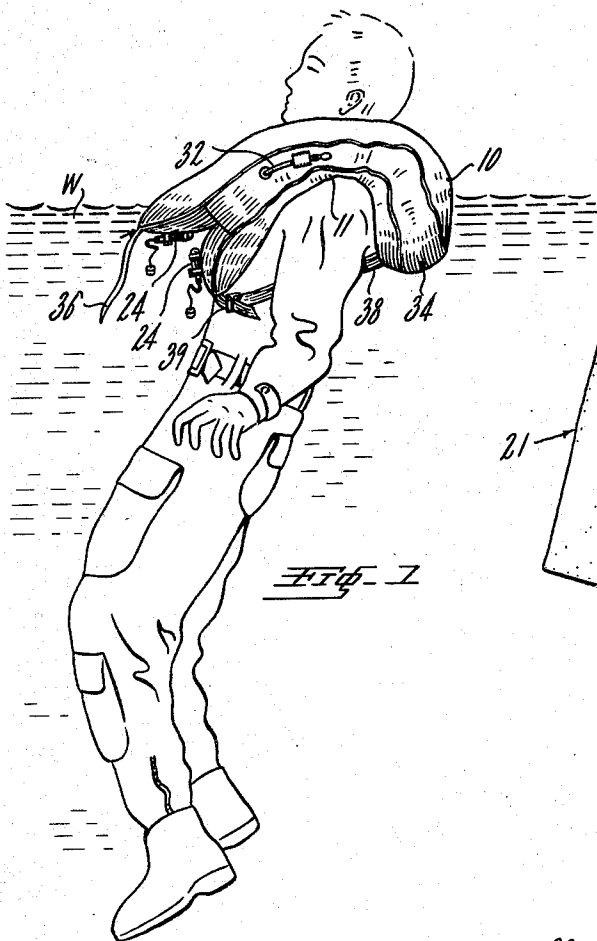
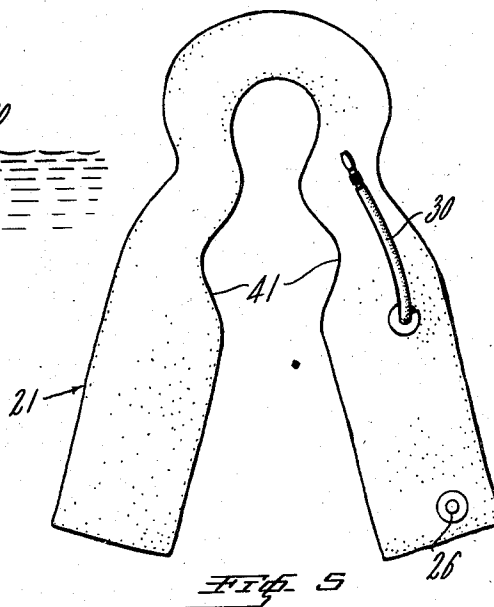
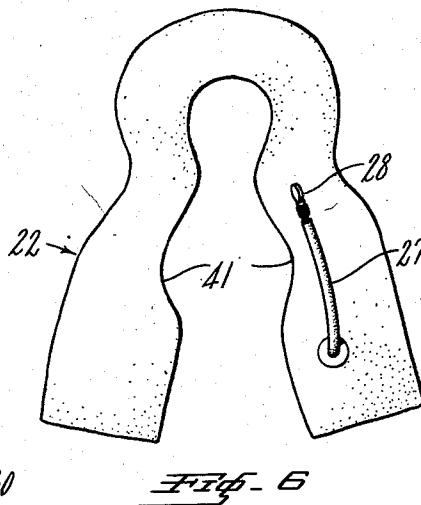
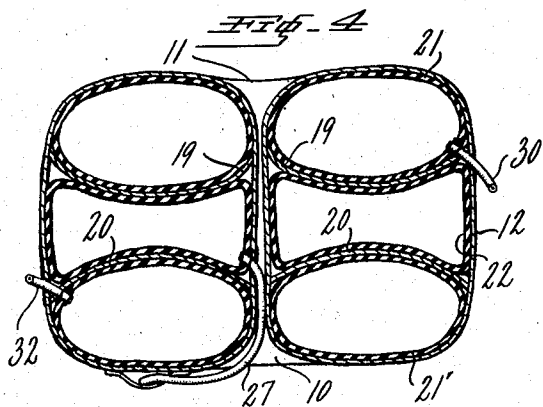
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V. H. HURT ET AL
LIFE PRESERVER

2,550,562

Filed Feb. 5, 1948

2 Sheets-Sheet 1



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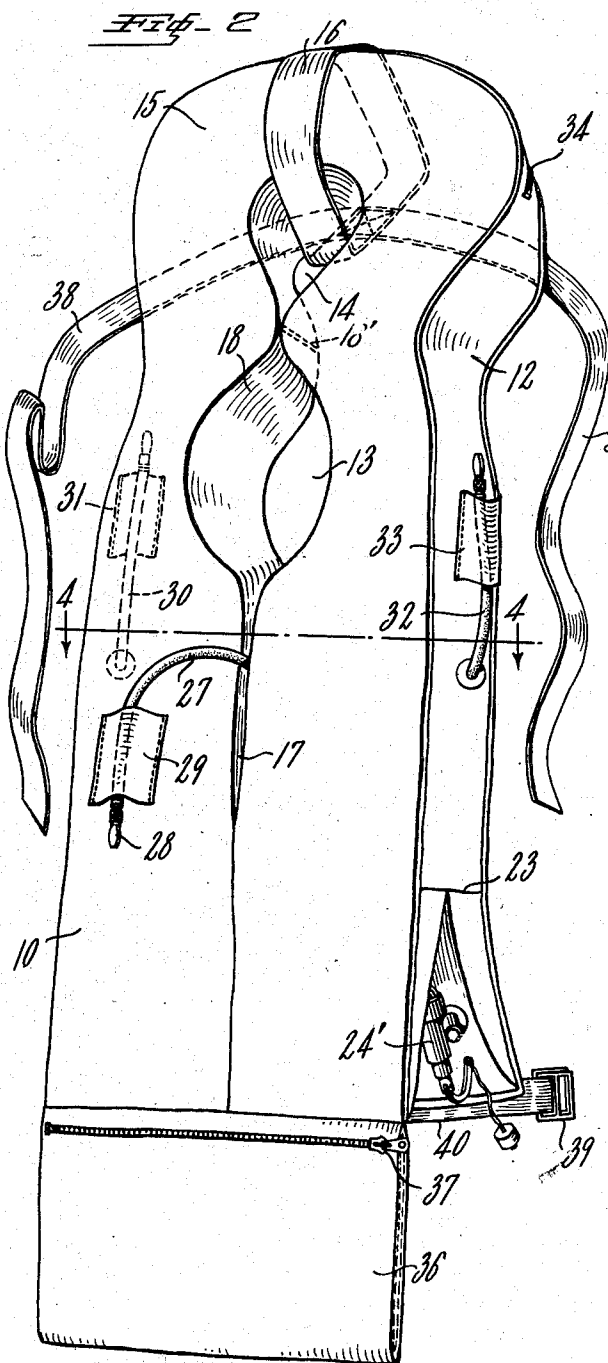
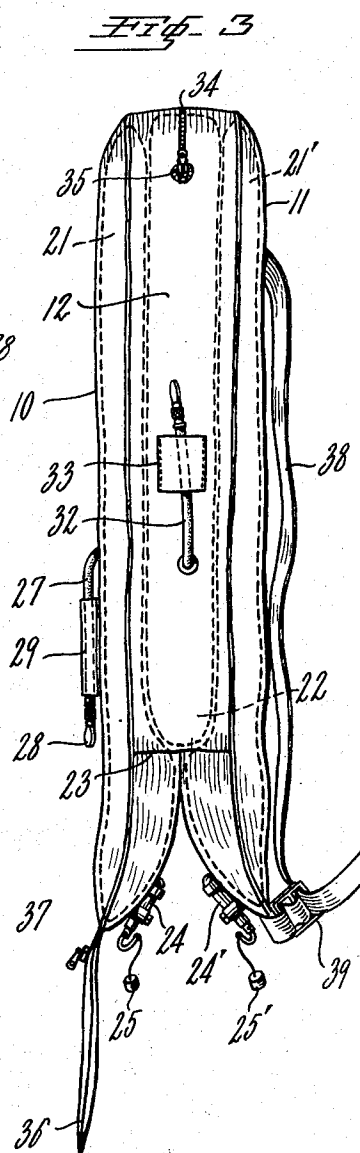
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LIFE PRESERVER

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2,550,562

LIFE PRESERVER

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3 Claims. (Cl. 9—17.5)

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This invention relates to a life preserver for supporting a person in the water, and which is so constructed that it will keep the person's head and the top of his shoulders out of the water.

The present invention seeks to provide a life preserver that is superior to those employed heretofore and which possesses the following desirable features; self righting characteristics, comfort when worn deflated or when worn inflated, ease of donning, lightweight, and capable of supporting the wearer in a nearly vertical position in the water with the head and top of the shoulders out of the water, and having a plurality of separate inflating bladders any one of which is capable of keeping the wearer of the life preserver afloat should the other bladders fail.

A preferred embodiment of the life preserver contemplated by the present invention comprises an elongated fabric casing formed with three bladder receiving compartments disposed one above the other. In each of these compartments is confined a U-shape bladder. This casing has a central longitudinal opening through which the head can be inserted, and the legs of the U-shape bladders straddle this opening so that all six legs lie close to the neck of the person wearing the preserver. The arrangement is such that if only one of the three bladders should be inflated, the single inflated bladder will still embrace the neck of the wearer of the life preserver and support him in a nearly vertical position with his head out of the water.

An important feature of the life preserver of the present invention resides in its self righting action whereby the face of the person wearing the life preserver will be held out of the water even if he should be exhausted or unconscious. This is accomplished by so shaping the life preserver that it will afford a large amount of buoyancy in front of and at the rear of his shoulders so as to keep his head well out of the water and give the body a stable support. Another important feature resides in the shape and construction of the neck receiving opening whereby the preserver fits the neck with increasing snugness as the inflating pressure increases. The side walls of this opening are curved to form an approximately elliptical shaped neck receiving space with a long slit at the front of the neck, and at the back of the neck is provided a second rounded opening nearly as large as the neck opening. The purpose of this second opening is to provide a large inflated loop spaced rearwardly from the neck by the second opening. This causes a large buoyant portion of the life preserver to lie well

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back of the neck and shoulders to support the person in an upright position.

Another important feature of the present invention resides in the shape given the bladders that fit in the different compartments of the casing. Each bladder is approximately U-shaped and has an arc portion connected to two leg portions and each leg has spaced from such arc portion a curved neck embracing portion. The arrangement is such that when the bladders are inflated they cause the life preserver to snugly but comfortably embrace the neck of the person wearing the same, while the long slot in front of the neck relieves the throat of the wearer of the life preserver from uncomfortable pressure, and affords a large enough opening to clear the wearer's head when the life preserver is not inflated.

The above and other features of the present invention will be further understood from the following description when read in connection with the accompanying drawings; wherein

Fig. 1 is a side view illustrating how the life preserver of the present invention supports the person wearing the same in a nearly vertical position in the water.

Fig. 2 is a front perspective view of the life preserver of the present invention shown fully inflated.

Fig. 3 is an edge view of the life preserver shown in Fig. 2.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a face view of an inflated bladder used at the front or rear of the life preserver; and

Fig. 6 is a face view of a shorter inflated bladder which when in use lies between the two longer bladders of Fig. 5.

In the embodiment of the invention shown in the drawings the life preserver is provided with three separate and independently inflated bladders, but it will be understood that two or even one bladder could be employed as the inflating means for the life preserver casing. Also if desired the casing itself can be made impervious to air and air tight in which case no inflating bladder is required, it can then be inflated by simply forcing air into the air tight life preserver.

The life preserver illustrated in the drawings comprises an elongated fabric casing formed of strong durable fabric such for example as closely woven nylon cloth which is preferably pervious to air and water, since this makes a lighter casing, and its function is to house the inflating bladders to be described, and not to confine the

air. This fabric casing has the front face 10, rear face 11, and connecting edge strip 12 which is one or more inches wide. The casing is approximately rectangular in shape and is provided with a relatively long central slot extending throughout the major portion of the casing. This slot is shaped to form the rounded neck-receiving opening 13 and a second rounded opening 14 disposed in back of the neck opening. The purpose of this second opening 14 is to space the buoyant rounded rear end portion 15 of the life preserver well back of the neck of the wearer, and it also permits an anchoring strap 16 to be passed through this opening 14 and around the buoyant rear portion 15. This longitudinal central slot extends a substantial distance in front of the neck opening 13 to provide the slit 17. The walls of this central longitudinal slot are formed by a fabric strip 18 which is sewed to the front fabric 10 and to the rear fabric 11 of the casing. The walls formed by this strip 18 are sewed together at 18' between the openings 13 and 14 to cause the opening 13 to fit snugly around the back of the neck. The slot 17 is so formed that the front portion of the opening 13 will fit snugly about the neck under the chin when the life preserver is inflated. The elongated fabric casing preferably is provided with the internal fabric partitions 19 and 20 adapted to form within the casing three bladder-receiving compartments as best shown in Fig. 4.

The front compartment of the casing is adapted to receive an inflatable rubber bladder 21 such as shown in Fig. 5. The rear compartment is adapted to receive a similar bladder 21'. The intermediate compartment lying between the partitions 19 and 20 is adapted to receive the shorter inflated rubber bladder 22. This shorter bladder 22 as will be apparent from Figs. 3 and 4 is sandwiched between the two longer bladders 21 and 21'. The bladder 22 is made shorter than the other bladders because the central compartment is shorter than the outer compartments. This will be apparent from Figs. 1, 2 and 3 in which the central compartment terminates at the line 23 where the side strip 12 ends, whereas the outer compartments extend some inches below this terminating line 23. As a result of this construction the two outer compartments extend some distance beyond the central compartment in front of the wearer, and when all three bladders are inflated the protruding ends of the outer compartments will spread outwardly away from each other as shown in Fig. 1.

In the construction shown the front bladder 21 may be quickly inflated by a high pressure gas inflating device 24 of well known construction and which is commonly referred to as a CO₂ holder. This holder has the usual trip cord 25. The rear bladder 21' may be similarly inflated by the CO₂ holder 24' having the trip cord 25'. These gas inflating devices 24 and 24' are conveniently located in the space formed between the protruding ends of the front and rear compartments, and CO₂ holder 24 may be directly attached to the bladder 21 at the point indicated by 26.

When the life preserver of the present invention is not inflated it can be donned by the person using the same who will insert his head through the opening 13, so that the rear end portion of the life preserver 15 will lie collapsed at the back of his neck and the front portion of the life preserver will lie flat against his chest. When the buoyant action of the life preserver is

needed the front bladder 21 and rear bladder 21' can be quickly inflated by pulling the trip cords 25 25'.

In addition to the high pressure gas inflating means 24 and 24' for inflating the front and rear bladders, oral means is provided whereby each of the three bladders may be independently inflated. To this end the central bladder 22 has the oral inflating tube 27 and mouth piece 28 with an air valve disposed near the mouth piece, and this tube when not in use to inflate its bladder is inserted in the keeper flap 29. The front bladder 21 has the oral inflating tube 30 inserted in the keeper 31. The rear bladder 21' has the inflating tube 32 and keeper 33.

In the construction shown the three bladders are inserted in the fabric casing through a slot like opening 34 formed at the rear end of the casing and this opening is closed by the slide fastener 35. The life preserver is also shown as having a bag or pocket 36 extending downwardly from its lower front wall and the opening of this pocket is closed by the slide fastener 37. This pocket may be employed to carry a flashlight, food or other desired articles.

An important feature of this invention resides in the construction and arrangement of the anchoring straps or harness for the life preserver. Such harness consists of the tie straps 38 that are firmly attached to the anchoring strap 16 above mentioned, the free ends of these straps 39 are adapted to be attached to the buckles 39 which are firmly attached to the lower end of the rear inflated compartment by the strap 40. The arrangement is such that the tie straps 38 are adapted to extend one under each arm of the wearer of the life preserver and fastened to a buckle 39 as will be apparent from Fig. 1, and when these straps are drawn tight they will pull the rear portion 15 of the life preserver and the lower front portion of the life preserver downwardly so that they fold about and lie in snug engagement with the shoulders of the wearer as shown in Fig. 1. The effect of this is to force a large portion of the life preserver downwardly below the top of the shoulders of the wearer so that the buoyancy of the life preserver will hold his head and top of his shoulders out of the water with his body in a nearly vertical position, as clearly shown in Fig. 1 of the drawing.

It will be noted that each bladder is approximately U-shape and that each leg of the bladder has the rounded recessed portion 41 adapted to embrace the neck snugly. When the life preserver is not inflated the opening 13 due to the connected long slit 17 will be plenty large enough to clear the head of the wearer of the life preserver. As the bladders are inflated the elongated fabric casing will assume the shape and appearance best shown in Fig. 2, and the size of the neck opening 13 will decrease as the pressure within the three bladders is increased until the neck opening is closed for all practical purposes under the wearer's chin. This will cause the life preserver to embrace the neck snugly but comfortably and to fit between the wearer's head and shoulders, so that when the inflated life preserver is in use it will be held in place partly by the underarm straps 38 and partly by the engagement of the life preserver with the neck, head and shoulders.

It will be seen from the foregoing that the present life preserver supports the wearer in a nearly vertical position with the head and top of the shoulders out of the water, and even if the

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wearer becomes exhausted or unconscious his head and face will be kept out of the water.

Having thus described our invention, what we claim and desire to protect by Letters Patent is:

1. In a life preserver for supporting a person in water with his head and neck out of the water, an inflated elongated casing comprising two leg portions connected by a loop portion at one end thereof and forming a neck opening and a second opening nearly as large as the neck opening disposed back of said neck opening, the inflated loop portion being positioned well to the rear of the neck opening to provide a buoyant portion spaced rearwardly away from the neck opening, and a strap securing means connected to said loop portion and adapted to hold the loop portion pulled downwardly back of the shoulders of the person being supported in water by the life preserver.

2. In a life preserver for supporting a person in water with his head and neck out of the water, an inflated elongated casing comprising two leg portions connected by a loop portion at one end thereof and forming a neck opening and a second opening nearly as large as the neck opening disposed back of said neck opening, the inflated loop portion being positioned well to the rear of the neck opening to provide a buoyant portion spaced rearwardly away from the neck opening, means for holding the forward portions of said legs in close parallel relation to each other, and a strap securing means connected to said loop portion and adapted to hold the loop portion pulled downwardly back of the shoulders of the person being supported in water by the life preserver.

3. In a life preserver for supporting a person

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with his head and neck out of the water, an inflated elongated casing comprising two leg portions connected by a loop portion at one end thereof and formed with a neck opening and a second opening disposed back of the neck opening, the inflated loop portion being positioned well to the rear of the neck opening to provide a buoyant portion spaced rearwardly away from the neck opening, a strap connected to said loop portion and adapted to hold the loop portion pulled downwardly back of the shoulders of the person wearing the life preserver, and the other end of the life preserver being provided with diverging buoyant end portions disposed one above the other to give the device added stability in water.

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