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BUOYANT RECEPTACLE FOR A DIVING DEVICE

Filed Nov. 23, 1956

2 Sheets-Sheet 1

FIG. 1

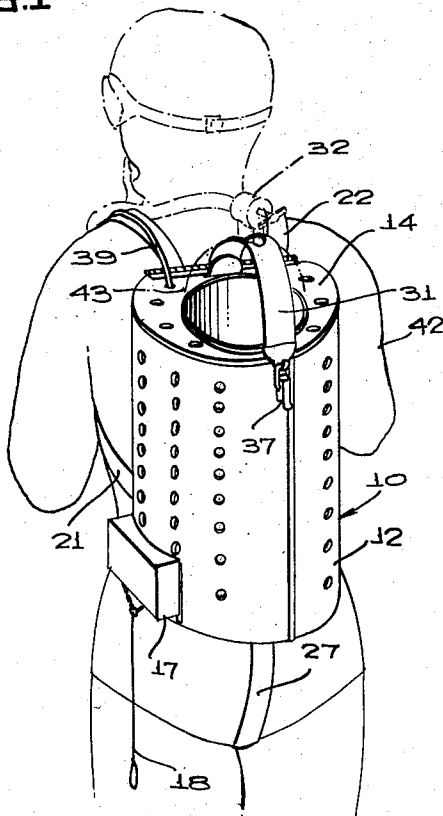


FIG. 3

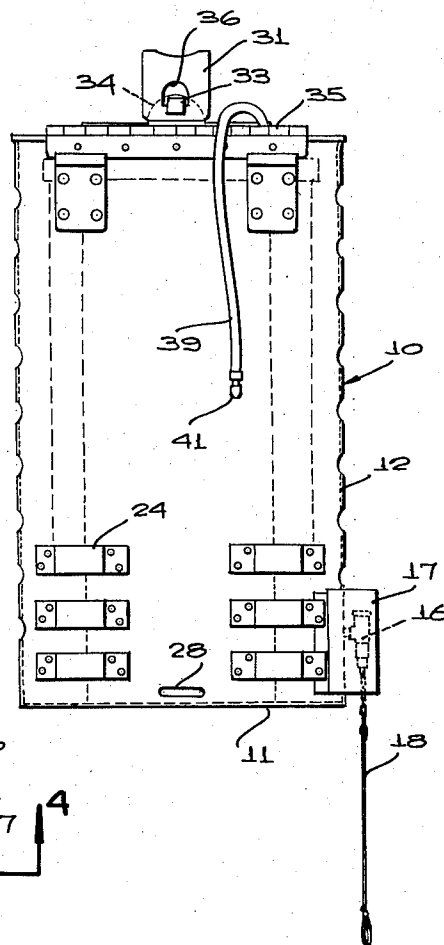
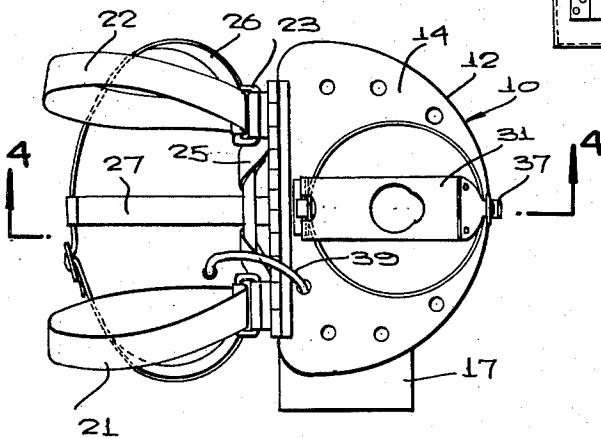


FIG. 2



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FIG. 4

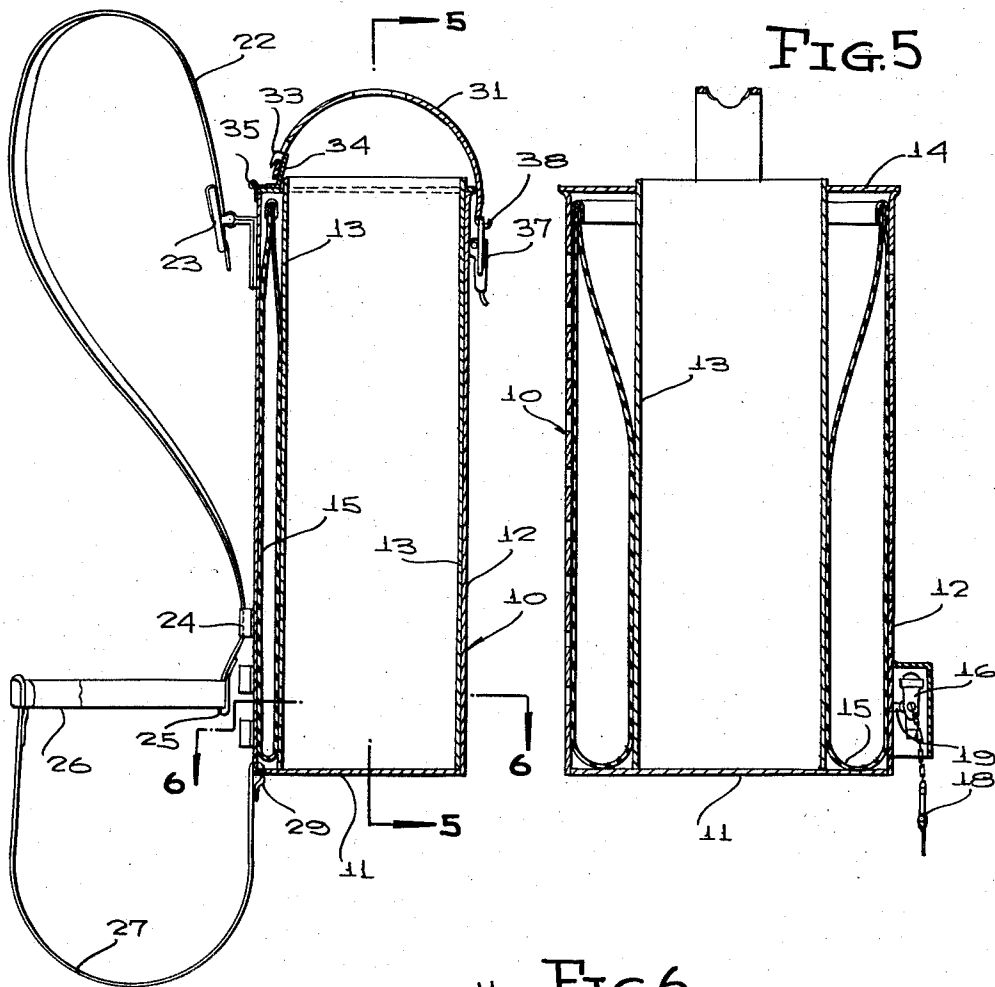
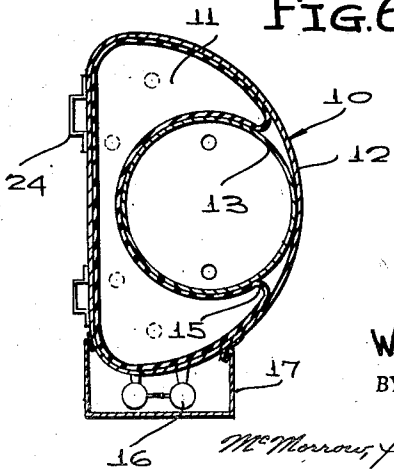


FIG. 5

FIG. 6



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BUOYANT RECEPTACLE FOR A DIVING DEVICE

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2 Claims. (Cl. 9—17)

The present invention relates to a diving device for use by free divers.

An object of the present invention is to provide a diving device for a free diver which provides support for the air supply tank used with an aqua-lung and one which provides means for increasing the buoyancy of the diver when desired.

Another object of the present invention is to provide a support for the aqua-lung tank used by a free diver and one which supports the tank in a usable position upon the diver's back and, in combination with the tank, provides an inflatable bag held in such a position as to provide buoyancy to the diver, one which is compact in shape and may be positioned out of the way of the diver's normal movements, one which occupies little more space than the aqua-lung tank itself, one which is sturdy in construction and simple in structure, and one which is economical to manufacture and assemble.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in connection with the annexed drawings, in which:

Figure 1 is a perspective view of the diving device of the present invention, showing it in the position of use attached to the back of a user;

Figure 2 is a plan view of the assembly of Figure 1, showing it removed from the back of the user;

Figure 3 is an elevational view of the diving device of the present invention;

Figure 4 is a sectional view taken on the line 4—4 of Figure 2;

Figure 5 is a sectional view taken on the line 5—5 of Figure 4; and

Figure 6 is a sectional view taken on the line 6—6 of Figure 4.

Referring in greater detail to the drawings, in which like numerals indicate like parts throughout the several views, a diving device according to the present invention comprises a receptacle 10 having a flat bottom 11 and an upstanding perforated wall 12 rising from the perimeter of the bottom 11.

An upstanding sleeve 13 is positioned within the receptacle 10 and spaced from the upstanding wall 12 and has its lower end fixedly secured, by welding or other means, to the flat bottom 11. The upper end of the sleeve 13 is adjacent to and extends slightly above the upper end of the receptacle 10.

A cover 14 closes the space between the sleeve 13 and the receptacle wall 12 and with the wall 12, the bottom 11, and the sleeve 13, forms a compartment in which is positioned a flexible inflatable bag 15.

The bag 15 is positioned fully within the space between the sleeve 13 and the wall 12 and when inflated completely fills the space. In Figure 5, the bag 15 is shown in a partially inflated condition.

Means is provided operatively connected to the bag 15 for inflating the bag 15 with gas under pressure and

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embodies a pair of cartridges 16 containing compressed carbon dioxide and supported upon the exterior of the receptacle 10 beneath an open bottom shell 17. A lanyard 18 is connected to the valves on the cartridges 16 and is operable to open the valves permitting the gas to flow from the cartridges 16 into the inflatable bag 15 by means of a conduit 19 extending through the receptacle wall 12.

Means is provided operatively connected to the receptacle 10 for detachably securing the receptacle 10 to the upper torso of a wearer and embodies a pair of upright straps 21 and 22 having their upper ends received in buckles 23 which project from the receptacle wall 12 on one side thereof and having their lower ends extending through any one of three sets of loops 24 positioned in spaced relation on the receptacle wall 12 below the buckles 23. The ends of the straps 21 and 22 are provided with eye formations 25 through which extends a belt member 26 which is adapted to be supported upon the waist of the user. Another strap 27 has one end secured to the belt 26 and has the other end secured to the wall 12 of the receptacle 10 at a point intermediate the sets of the loops 24. The wall 12 of the receptacle 10 is slotted as at 28 and the adjacent portion of the bottom 11 is slotted to permit the attachment thereto of the eye formation 29 on the end of the strap 27, as shown in Figure 4.

The sleeve 13 is of a size to accommodate an air supply tank as commonly in use with aqua-lungs and means is provided on the upper end of the diving device of the present invention for releasably locking such a tank within the sleeve 13. This means embodies a strap 31 formed of rigid metal and arcuately curved and having a hole in its medial portion for receiving the neck and valve assembly, shown in dotted lines in Figure 1, as indicated by the reference numeral 32 of the air supply tank. The strap 31 is secured to the receptacle 10 at one end by an outwardly extending hook 33 carried on one face of an upwardly extending lug 34 which is secured to the cover 14 adjacent a hinge 35 which connects the cover 14 to the receptacle wall 12. The hook 33 extends through an aperture 36 provided in the adjacent end portion of the strap 31 and engages the portion of the strap 31 on the side of the aperture 36. The other end of the strap 31 is connected to a latch element 37 fixedly secured to the outer wall of the receptacle 10 inwardly of the upper end thereof and engageable with a hook formation 38 provided on the end of the strap 31.

Means is provided for inflating the bag 15, should the cartridges 16 fail to supply gas to the bag 15 and embodies a flexible hose 39 having one end connected in communication with the interior of the bag 15 and having at its other end a valve mouthpiece 41 into which the user may breathe in order to inflate the bag 15.

In use, the receptacle 10 may be strapped to the torso of a wearer, as shown in Figure 1, the wearer being indicated by the reference numeral 42. The straps 21 and 22 may be used to receive the arms of the wearer 42 with the strap 27 extending between the legs to hold the receptacle snugly against the back of the wearer. The aqua-lung tank 43, shown in dotted lines in Figure 1, may be carried within the sleeve 13 with the neck and valve assembly 32 projecting through the aperture in the strap 31. In an emergency the wearer may pull on the lanyard 18 to inflate the bag 15 thereby adding to the wearer's buoyancy and enabling him to reach the surface of the body of water in which he is diving. If the gas cartridges 16 fail to inflate the bag 15 to the degree wanted, the user of the diving device of the present invention may inflate the bag 15 from the supply carried in the tank 43 by means of the hose 39.

What is claimed is:

1. A diving device for use by a deep sea diver comprising a receptacle having a flat bottom and an upstanding perforated wall rising from the perimeter of said bottom, an upstanding sleeve positioned within said receptacle and spaced from the upstanding wall of the latter and having its lower end fixedly secured to said bottom and having its upper end adjacent the upper end of said receptacle, said sleeve being adapted to receive an air supply tank, a cover closing the space between said sleeve and said receptacle and forming with said sleeve, said wall, and said bottom a compartment, a flexible inflatable bag positioned within said compartment, means operatively connected to said bag for inflating said bag with a gas under pressure, and means operatively connected to said receptacle for detachably securing said receptacle to the torso of a user.

2. A diving device for use by a deep sea diver comprising a receptacle having a flat bottom and an upstanding perforated wall rising from the perimeter of said bottom, an upstanding sleeve positioned within said re-

ceptacle and spaced from the upstanding wall of the latter and having its lower end fixedly secured to said bottom and having its upper end adjacent the upper end of said receptacle, said sleeve being adapted to receive an air supply tank, a cover closing the space between said sleeve and said receptacle and forming with said sleeve, said bottom, and said wall a compartment, a flexible inflatable bag positioned within said compartment, means operatively connected to said bag for inflating said bag with a gas under pressure, means operatively connected to said receptacle for detachably securing said receptacle to the torso of a wearer, and means operatively connected to said receptacle for releasably securing an air supply tank in said sleeve.

References Cited in the file of this patent

UNITED STATES PATENTS

1,448,460	Reiter	Mar. 13, 1923
1,948,119	Davis	Dec. 11, 1934
2,456,130	Lambertsen	Dec. 14, 1948
2,483,116	Yarbrough	Sept. 27, 1949