March 7, 1939. C. V. McGUIRE 2,149,616

LIFE PRESERVER

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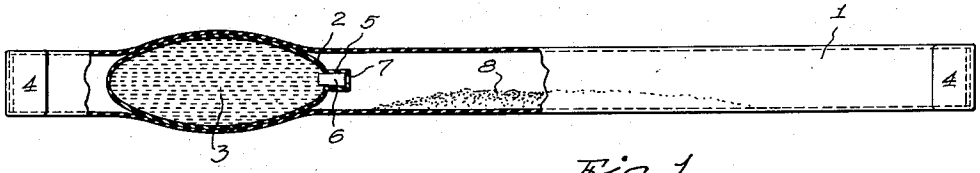

Fig. 1.

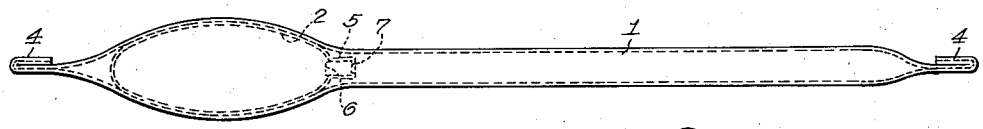

Fig. 2.

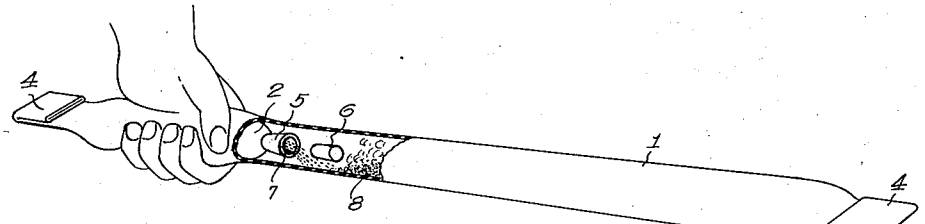

Fig. 3.

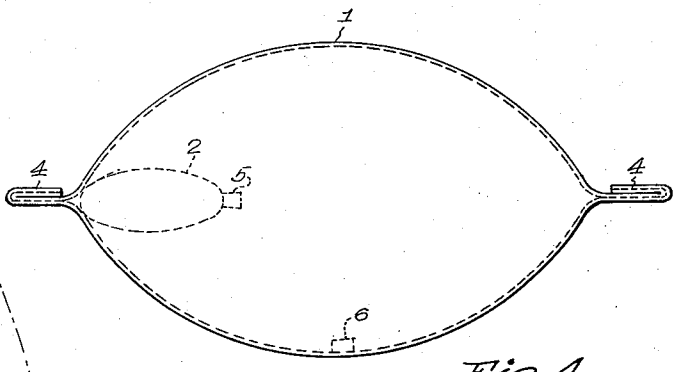

Fig. 4.

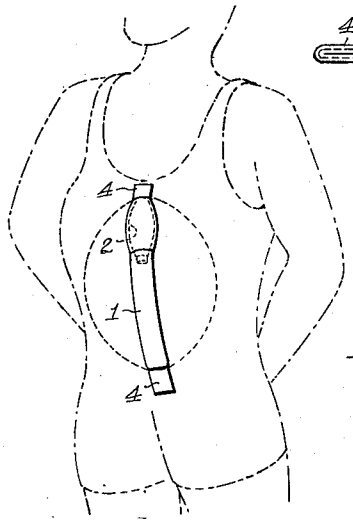

Fig. 5.

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LIFE PRESERVER

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Application October 9, 1937, Serial No. 168,137

4 Claims. (Cl. 9—19)

This invention relates to a life buoy or similar device for sustaining the weight of a person in water, such as swimmers and the like.

An object of the present invention is to provide a simple and efficient device for the purpose which may be manufactured at low cost and which may be quickly attached in any desired position to the bathing suit worn by a bather or to his body in the form of a belt.

A further object is to provide a device for the purpose in which a buoyant gas may be produced with great rapidity and wholly within the device itself. A further object is to provide a device so arranged that the swimmer may quickly cause the formation of gas within the device, simply by grasping the device in his hand, thereby releasing a liquid contained within a separate compartment within the device to come in contact with a chemical within another part of the device and, by the consequent formation of gas, inflate the outer container to support the weight of the swimmer and keep him afloat.

It is also an object to provide an arrangement whereby accidental inflation of the device is obviated and intentional inflation may be quickly secured without delay, the construction being such that the swimmer may quickly find the proper place to position his hand upon the device and, by pressure, release the liquid within the device to cause the formation of the gas.

Further objects of and advantages in the particular construction and arrangement of parts will become apparent from the following description, reference being had to the accompanying drawing in which

Figure 1 is a front elevation of a device illustrative of an embodiment of the present invention and showing a part thereof broken away and in section to more clearly disclose the construction;

Fig. 2 is an edge elevation of Fig. 1;

Fig. 3 is a perspective of the device with a portion thereof broken away and in section to illustrate its construction and operation in use;

Fig. 4 is an elevation of the device inflated, and

Fig. 5 is a view illustrative of one manner in which the device may be attached to a bathing suit and worn by the user.

As shown in the drawing 1 indicates an outside tube of rubber or other suitable expansible material, forming an outside casing of the device. 2 indicates an inside tubular member also formed of rubber to yield under pressure and this inside member forms a retainer for a liquid 3. The outside member or casing 1 is closed at its ends as by folding the ends over as at 4 and cementing them together. The ends of the casing are thus tightly closed against the escape of any gas from the interior of the device and these ends 4 may be formed as loops, (not shown) to receive and hold buckles (not shown) or other means for attaching the ends of a belt to the ends of the casing so that the user may fasten the device about his waist.

To prevent the escape of liquid from the container 2, this container is formed at one end with a neck portion 5 to receive a cork 6 and this neck portion 5 is also formed of rubber so that the end of the neck will engage, by contraction, over the outer end of the cork 6, as shown at 7, and securely hold the cork engaged within the neck.

Within the outer casing 1 is placed a quantity of powdered chemical as indicated at 8 so that when the cork 6 is released from the container 2 the liquid 3 will pass into the outer casing and come in contact with the powdered chemical 8 to produce a quantity of gas which is quickly formed and immediately, by its volume, expands the outer casing as shown in Fig. 4. The ready release of the cork 6 from the bottle or container 2 is effected as illustrated in Fig. 3 by the person compressing with his hand the bulb or container 2 from the exterior of the outer casing, such pressure applied to the bulb creating an internal pressure in the bulb which will be sufficient to force the cork out of the neck of the bottle or container and thus release the liquid to immediately form a gas within the outer casing and inflate the same. With this arrangement no member or other means is necessary for extracting the cork from the bottle, and the swimmer, no matter what the emergency may be, may quickly place his hand upon the bulge in the outer casing formed by the liquid containing bulb or bottle and, by a simple grasping of this protuberance, release the liquid contained in the bottle to come in contact with the chemical contained in the casing and immediately form a quantity of gas sufficient to sustain the weight of his body within the water. The operation of releasing the liquid is a natural one and there is no fumbling around or delay in trying to find the means for releasing the liquid, the means being always at hand and in a natural position, as the device may be placed in any desired position for the best convenience of the swimmer in grasping the bulged portion of the outer casing which extends over the inner container or rubber bottle.

As shown in Fig. 5 the device may be attached directly to the bathing suit of the swimmer in

any suitable position by securing in any suitable manner the ends 4 of the outer casing to the bathing suit.

Obviously any form of stopper other than the cork 6 may be provided which has a form such that it may be readily released from or forced out of the neck of the bottle by pressure applied to the bottle, and obviously other changes in the particular form, construction and arrangement of parts may be made without departing from the spirit of the invention and I do not therefore wish to limit myself to the particular construction shown.

Having thus fully described my invention what I claim is:

1. A device for the purpose described comprising an outer expansible casing, a closed compressible container within said casing having an outlet and adapted to contain a liquid, said outer casing being adapted to contain a chemical supported on its inner wall and adapted to form a gas upon release of said liquid into contact therewith, and means for closing the outlet of the liquid container, said means being releasable from the container upon compression thereof caused by pressure applied externally of the casing.

2. A device for the purpose described including an elongated outer tube formed of rubber and adapted to expand, the ends of said tube being closed, a rubber receptacle within said tube adapted to contain a liquid and of greater diameter when filled with liquid than the normal contracted diameter of the tube, said container being formed with a neck portion forming an outlet for the container, said tube being adapted to support on its inner wall a quantity of chemical to form a gas upon release of the liquid from the container, and means within the neck of the container for closing the same and adapted to be released from said neck by pressure applied to the container externally of the tube.

3. A device for the purpose described comprising a tubular expansible member forming an outer casing of the device, the ends of said tubular member being tightly closed, a container within said tubular casing for holding a quantity of liquid, said container being formed of rubber with an expansible and contractible neck portion at one end forming an outlet for said container, said tubular casing being adapted to support on its inner wall a quantity of powdered chemical adapted to form a gas when contacted by the liquid contained in said container and expand the outer casing, a cork adapted to be inserted in the neck portion of said container and detachably held therein by the contraction of a portion of said neck over the outer end of said cork, said cork being adapted to be released from said neck to permit the escape of liquid from said container into said tubular casing, by pressure applied to the casing opposite said container and thereby apply pressure by means of the liquid in the container to force the cork from the neck portion of the container.

4. A life preserver comprising a hermetically sealed outer inflatable and deflatable casing, a compressible closed bulb disposed within and in fitting engagement with said casing, a gas forming chemical on the inner wall of said casing at a side of said bulb, an opening in said bulb on the side adjacent said chemical, a fluid in said bulb active with said chemical for forming a gas, and means for closing said opening, said means being releasable from said opening upon combined compression of said casing and said bulb for permitting said fluid to pass from said bulb into association with said chemical.

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