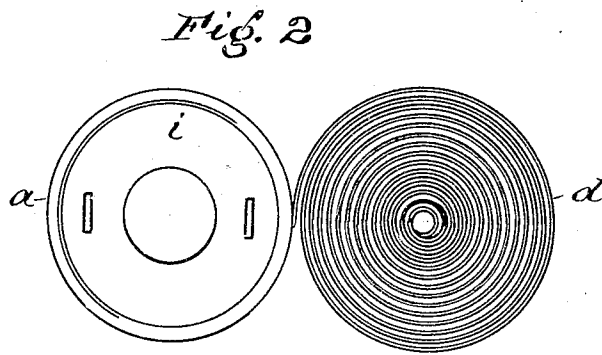
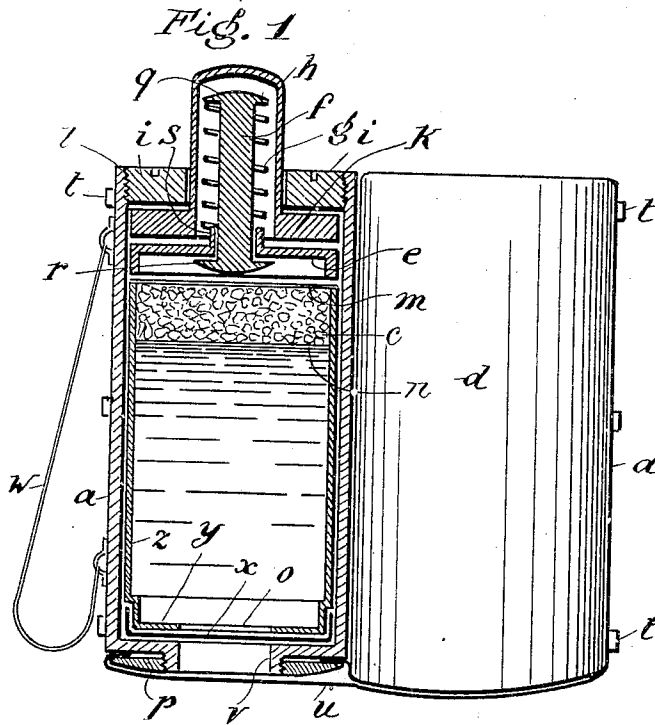


1,240,686.

Patented Sept. 18, 1917.



Inventor
Pirro De Luca

By

[Signature]
attorney

UNITED STATES PATENT OFFICE.

PIRRO DE LUCA, OF ROME, ITALY.

POCKET LIFE-BUOY.

1,240,686.

Specification of Letters Patent.

Patented Sept. 18, 1917.

Application filed January 31, 1917. Serial No. 145,792.

To all whom it may concern:

Be it known that I, PIRRO DE LUCA, a subject of the King of Italy, and residing at the Scuola Allievi Ufficiali Reali Carabinieri, Rome, Italy, have invented certain new and useful Improvements in Pocket Life-Buoys, of which the following is a specification.

This invention relates to life-buoys of the kind comprising a water-proof envelop adapted to be inflated by a gas produced by the chemical reaction of two materials contained in receptacles separated by a wall adapted to be broken by a rod controlled from outside.

In accordance with this invention the vessel having the receptacles containing the materials for producing the gas is located within an outer tube having at one end thereof means for engagement with a washer which clamps the inlet of the envelop to said tube and at the other end is provided with means for receiving a disk which holds a waterproof cap surrounding the rod adapted to rupture the membrane separating the two gas-producing materials securely in place.

The life-buoy may be of any convenient shape such for example as a belt, jacket, pillow or the like.

The device will work in all cases no matter how the person enters the water, and furthermore it works immediately which is of the utmost importance in a device of this kind.

Besides offering an immediate and absolutely secure inflation, the invention also reduces to a minimum the size of the receptacle which contains the substances intended to act one on the other, the quantity of these substances being reduced to a minimum.

This is obtained, according to this invention, by using as inflating gas hydrogen obtained by causing water to act on calcium hydrid.

The invention is illustrated in the accompanying drawing wherein—

Figure 1 is a side elevation thereof, the vessel or receptacle being shown in section, and

Fig. 2 is a plan view.

The apparatus comprises a metal tube —a— capable of receiving a metal basin containing the water and the hydrid. This basin consists of a tubular member —z— having one of its ends closed by a box

—c— which contains the hydrid and whose cover and bottom parts —m—, —n—, are made of very thin sheet metal. The opposite end of the tube —z— has a large hole —o— for completely filling the tube with water and arranged to be closed after the admission of the water by means of a cap *x* made of tin-foil or some other water-proof material.

When the basin has thus been arranged, it may be placed into the tube —a—. The bottom of the tube —a— has a large hole with a threaded neck —v—, on which, for example, by means of a washer —p—, is fastened the inlet —u— of the envelop —d— intended to contain the gas. In the example shown in the drawing, it is supposed that this envelop has the shape of a belt which consists of four layers of fabric and is rolled up. Thin rubber rings —t— or other ligatures adapted to be easily broken, connect the envelop —d— with the tube —a—.

After the basin —z— has been placed into the tube —a—, there is arranged on it a cap *e* having at the bottom a neck —s—, through which passes a rod —f— with an upper and a lower head —r—, —q—, this rod being held in a raised position by means of a spring —g—. Over the shaft —f— is placed a flexible waterproof cap *h* provided at the bottom with a circular lug —k— supported by the cap *e* and being pressed against it by a perforated disk —i— in engagement with the threaded mouth —l— of the tube —a—. When the upper head —q— of the rod —f— is pressed upon from the outside, the head —r— of the rod breaks the box —c— causing the hydrid contained therein to mix with the water in the basin —z—. The pressure transmitted to the water through the wall —n— of the box —c— breaks at the same time the cap *x* so that the gas which is developed, may enter the envelop —d—. The envelop is now caused by the tension of the gas to break the ligatures —t— and is thus immediately inflated.

Where the inflation takes place under water and the life-buoy with the tube —a— is fastened by means of a string —w— or the like to the person using the life-buoy, the device will take up a position where the envelop is above and the tube —a— below, whereby the reaction is facilitated as the water remains in the basin.

What I claim is:

1. In a life-buoy of the type described, a basin containing the gas-producing materials, a membrane for separating the materials, a tube inclosing the basin, an envelop
5 receiving the inflating gas, means for clamping the inlet of the envelop to the tube, and a spring-controlled rod to rupture the membrane.
- 10 2. In a life-buoy of the type described, a basin containing the gas-producing materials, a membrane for separating the materials, a tube inclosing the basin, an envelop

receiving the inflating gas, means for clamping the inlet of the envelop to the tube, and a spring-controlled rod to rupture the membrane, the gas-producing materials being calcium hydrid and water whose reaction produces the inflating hydrogen.

In testimony whereof I have signed my name in the presence of two subscribing witnesses the tenth day of January 1917.

PIRRO DE LUCA.

Witnesses:

EDWIN CERIO,
A. PIZZOCOLO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."