No. 686,412. Patented Nov. 12, 1901.

E. S. MAGNIN.

LIFE PRESERVER.

(Application filed Feb. 16, 1901.)

(No Model.)

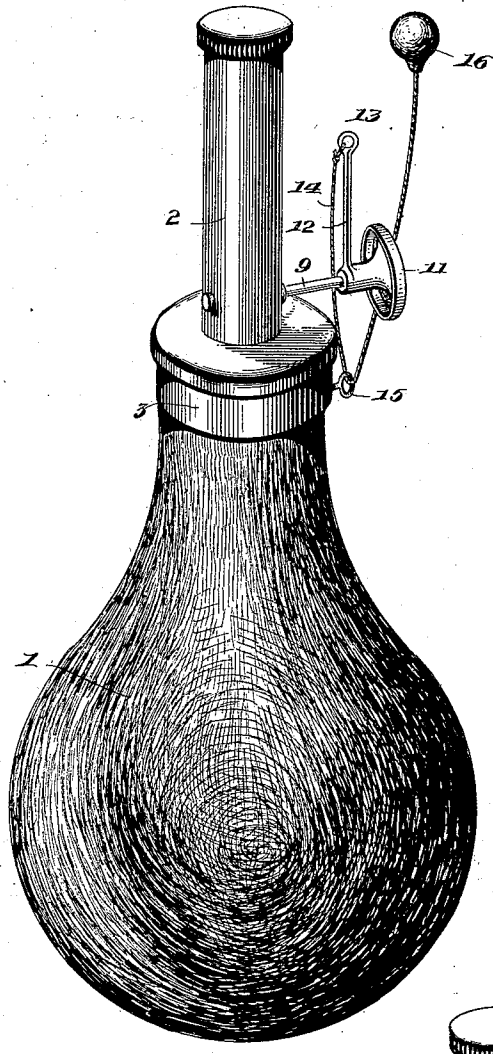


Fig. 1.

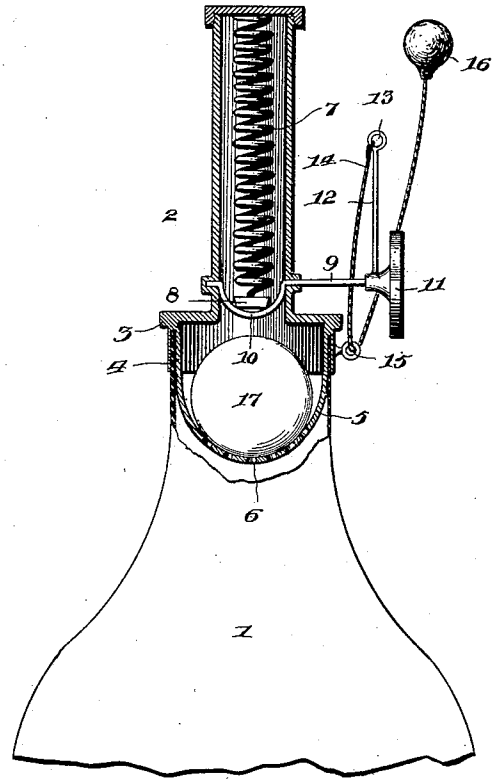


Fig. 2.

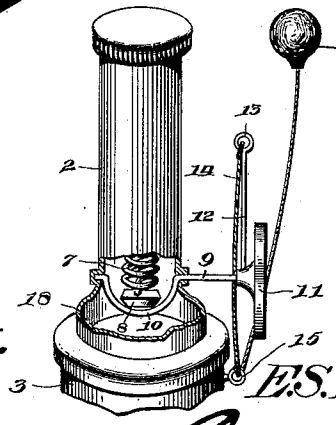


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

ERNEST SALVATOR MAGNIN, OF CHICAGO, ILLINOIS.

LIFE-PRESERVER.

SPECIFICATION forming part of Letters Patent No. 686,412, dated November 12, 1901.

Application filed February 16, 1901. Serial No. 47,620. (No model.)

To all whom it may concern:

Be it known that I, ERNEST SALVATOR MAGNIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Life-Preserver, of which the following is a specification.

This invention relates to life-preserving devices adapted for application to belts, vests, and the like and capable of being worn on the body either under or outside of clothing; and the object of the same is to obtain the automatic and instantaneous inflation of hollow, collapsible, and inflatable vessels or floats as soon as they are placed in the water for use and embodying means for automatically commingling suitable proportions of an acid and a carbonate or alkaline substance in a water-saturated condition to instantaneously produce carbonic-acid gas, which is considerably less in weight than water.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of an automatically-operating inflatable device adapted for attachment to any suitable article of apparel or inclusive in the same features in other structures and embodying the invention. Fig. 2 is a sectional elevation of a portion of the improved device. Fig. 3 is a sectional perspective of the upper portion of the device embodying a modification.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates an inflatable envelop or inclosure, preferably of an elastic or slightly elastic nature, and though it is shown in bulb-like form it will be understood that it may be in belt shape or an article of wearing-apparel with expansible or inflatable pockets or sections, the form of the inflatable member being immaterial in view of the fact that the mechanism which will be hereinafter described can be applied to any article with a similar operation. To this inflatable envelop or inclosure 1 a light metallic member 2 is connected or secured to provide a tight joint to prevent the escape of gas or inflating medium, the said member 2 being preferably formed of aluminium. This member 2 comprises a tubular seat 3, with an upper closed end, and at its lower extremity opening into and continuous with a cap 4, to which the inclosure is attached, as shown, the inner portion of the cap continuing downwardly into the envelop in the form of a hemispherical receiver or support 5, formed with a plurality of openings 6. A coiled spring 7 is held in the member 2, and the lower free extremity thereof has a crushing or breaking head 8, secured thereto. The spring is held in compressed condition within the seat by a key-rod 9, having a semicircular member 10, which is adapted to be turned under the head 8, as shown by Figs. 2 and 3, and thereby means for setting the spring 7. The said key-rod is rotatable and has bearing in diametrically opposite portions of the lower extremity of the member 2, so that the member 10 will be fully inclosed by the said member 2, and suitable packed bearings will be employed for the said key-rod in the seat in order to prevent escape of the gas at said points, but at the same time permit the key-rod to have sufficient sensitive action for automatic operation. The key-rod projects outwardly from the seat and is provided with a head or turning-disk 11, which may be employed for releasing the spring 7 by hand when the wearer has ample time and consciousness to do so; but to render the operation of this key-rod automatic the disk has an arm 12 projecting therefrom, with an eye 13 at the outer end, and thereto is attached one end of a cord 14, which is passed through an eye 15 on an adjacent portion of the cap, a buoyant float 16 being attached to the opposite terminal of the said cord. The cord will be long enough to give the float ample play, and if the wearer of the improved preserver be cast into the water in an unconscious condition, as in sleep, the said float 16 will be pulled through the water, and thereby exert sufficient tension on the key-rod to release the head 8 and the spring 7.

The perforated receiver or support 5 has a hollow ball 17 of thin wax coated with gum-like varnish and filled with water with two per cent. of salicylic acid, so as to preserve it. This ball can be formd of very thin rubber, thin glass, gelatine, or any other suitable sub-

stance. Within the envelop or inclosure 1 a suitable quantity of bicarbonate of soda and tartaric acid is placed in proper proportions, and it will be seen that as soon as the head 8 is released the spring 7 forcefully throws the latter downwardly against the ball 17 and breaks the latter, and the water falls through the openings in the receiver or support 5 onto the bicarbonate of soda and tartaric acid in the envelop below and forms carbonic-acid gas, which inflates the said envelop and renders it buoyant for practical life-preserving service. The modification shown by Fig. 3 embodies an enlargement 18 at the base of the tubular seat 3, so as to give the semicircular member 10 of the key-rod 9 more freedom of action and sensitiveness to automatic operation by the float 16.

The construction as a unit as thus far described can be used without any other particular arrangement; but it is preferred that the envelop or inclosure 1 be inserted in a belt, the inflatable pocket of a vest, or other like structure and is formed of thin sheet-rubber and invisibly perforated, and when the gas is formed in the envelop it is permitted to flow into the inclosing means for the said envelop and inflate said means. By this means a garment can be worn at all times having inflatable pockets or like devices in which the envelop 1 is inclosed, and thereby insure preservation of the wearer from drowning, no matter what position may be assumed or unconsciously taken by the wearer when falling into the water.

At times the envelop 1 may be dispensed with and two balls or containing devices be placed in the receiver, the one containing water and the other the salt, and such change is intended to be adopted in the form of the device shown by Fig. 3 and wherein the enlargement 18 will permit the introduction of two balls or the like and the gas be allowed to pass directly into the inflatable pocket of the garment or belt. Sectional capsules could also be used for containing the water and salt, and under all such obvious changes the spring 7 and head 8 thereof will act to break the balls or capsules and permit the water and salt to commingle to produce the gas sought in an automatic manner.

Though the preferred forms of the improved device have been shown and described, it is obviously apparent that changes in the form, size, proportions, and minor details may be resorted to without departing from the principle of the invention.

Having thus described the invention, what is claimed as new is—

1. In a life-preserver of the character set forth, the combination of an inflatable inclosure, a rigid member in connection with the said inclosure and having a resilient crushing device therein, an automatically-operated cross-rod having a portion exteriorly exposed and operating to hold the said crushing device in set condition and adapted to be automatically operated, and a receiver or support having a liquid-containing device therein which is broken by the crushing device to cause the liquid to commingle with a suitable salt to form an inflating-gas in the said inclosure.

2. In a life-preserver of the character set forth, the combination of an inflatable inclosure having a salt deposited therein, a rigid member in connection with the said inclosure and having a resilient crushing device therein, means for holding said crushing device in set condition and adapted to be automatically operated to release said device, a perforated support or receiver in intimate relation to the said seat and inclosure, and a breakable containing device held in said receiver and filled with water.

3. In a life-preserver of the character set forth, the combination of an inflatable inclosure, a metallic member secured to the said inclosure and comprising a tubular seat, a spring connected at one terminal to said member and having a head on the opposite free terminal, a key-rod having a curved member to engage the said head and hold the spring in set condition, means for automatically moving the said key-rod, a perforated support or receiver forming a part of said member, and a breakable containing device held by said support or receiver and filled with water, the inclosure having a salt therein and the spring having the crushing-head operating to break the said containing device.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ERNEST SALVATOR MAGNIN.

Witnesses:

CHARLES R. PALMER,

ARTHUR F. LOBB.