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A. C. CROFFORD.

SIGNAL ATTACHMENT FOR LIFE PRESERVERS.

APPLICATION FILED MAY 20, 1906. RENEWED MAY 16, 1906.

Fig. 1.

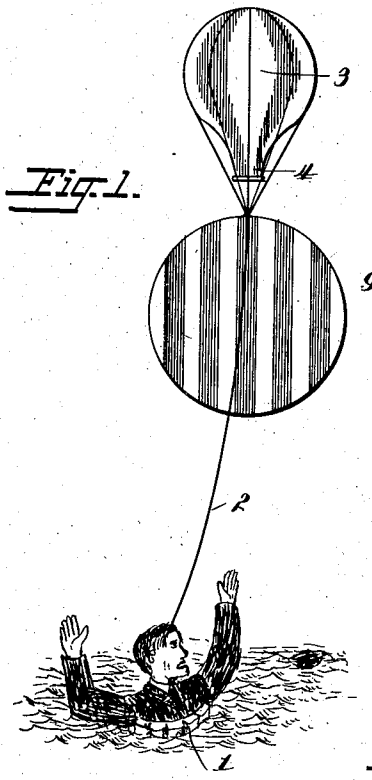


Fig. 2.

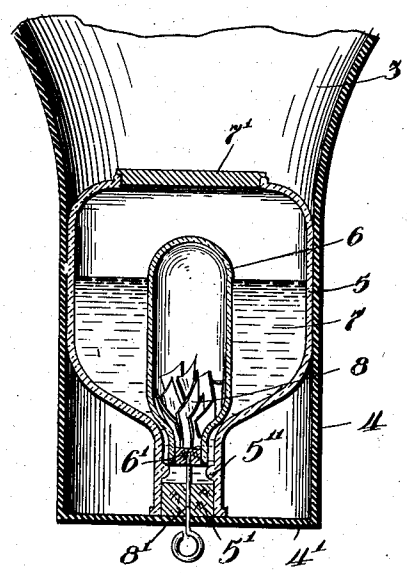


Fig. 3.

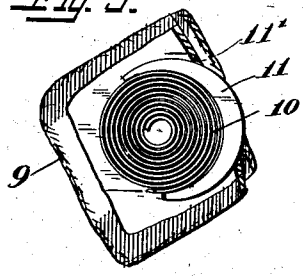
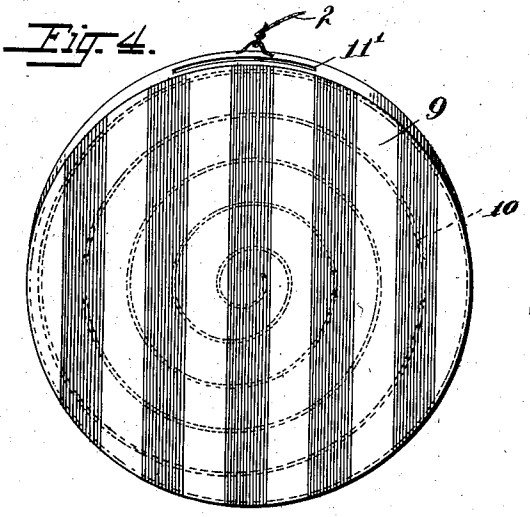


Fig. 4.



Witnesses

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SIGNAL ATTACHMENT FOR LIFE-PRESERVERS.

No. 827,350. Specification of Letters Patent. Patented July 31, 1906.

Application filed May 20, 1905. Renewed May 16, 1906. Serial No. 317,165.

To all whom it may concern:

Be it known that I, ADA C. CROFFORD, a citizen of the United States, residing at Newcastle, county of Weston, and State of Wyoming, have invented certain new and useful Improvements in Signal Attachments for Life-Preservers, of which the following is a specification.

My invention relates to signals for life-preservers.

The object of the present invention is the provision of an improved signal for life-preservers adapted to be confined into compact and convenient form in connection with a life-preserver, but which can be rapidly arranged for use as a signal-balloon when the life-preserver is put in use, thereby providing means whereby passing boats or vessels or other possible rescuers, even when at a distance of two or more miles, will be apprised of the fact that a person is in the water and should be rescued.

To carry out my invention, I provide a balloon of suitable size sealed up and provided with chemicals in suitable form inside the balloon, so that by a simple operation on the part of the person who is going to use the life-preserver such chemicals will be liberated and allowed to combine to generate a gas to float the balloon, and also a signal attached to the balloon and comprising a distendable bag ordinarily folded into compact form and disposed along with the life-preserver and balloon, but provided with a confined spring which will be released by the operator or user of the life-preserver to thereby distend the bag, said bag or signal to be treated with a phosphorescent or luminous paint and colored in brilliant stripes, so that it will be visible at night and in all weathers. It will be understood that the signal attachment to the balloon might be dispensed with and the balloon itself serve alone as a signal and for that purpose be properly colored and painted with phosphorescent or luminous paint, and therefore I do not limit the use of the invention to the employment of the signal-attachment distendable bag.

The invention is fully set forth hereinafter, and the novel features are recited in the appended claims.

In the accompanying drawings, Figure 1 is a view illustrating the complete device in use; Fig. 2, a detail of the balloon, showing the gas-generating apparatus before it has been used; Fig. 3, a detail of the signal when folded and before it has been used, and Fig. 4 a detail of the signal after it has been distended.

A life-preserver of any preferred form is shown at 1, to which is attached by the lightest and yet strongest possible cord 2 of suitable length a balloon 3, which may be of any preferred construction, size, and form, except for the improved gas-generating apparatus and adjacent part of the balloon. The neck of the balloon is indurated at 4 and contains frangible glass capsules 5 and 6, in which will be sealed suitable chemicals whose combination will produce some suitable gas of sufficiently lighter specific gravity than air to properly lift the ballon to the desired height, and I do not restrict myself to the use of any particular chemicals in this connection. The chemical substances in the respective capsules are indicated by 7 and 8. The substance 7 may be hydrochloric acid and that shown at 8 may be scrap-zinc. In Fig. 2 I have shown one form which this part of the invention may assume where the chemicals used would be liable to injure the material of the balloon if released before being combined. The mouth of capsule 5 is tightly closed or sealed by a stopper 5′, while the neck has an internal shoulder 5″. The inverted base of the capsule is closed by a cap or plug 7′, which will blow out when the gas is generated and permitted to pass into the gas-bag of the balloon.

The capsule 6 is of such size that it can be passed through the base of the capsule 5, and its mouth rests on shoulder 5″ and is sealed by a removable stopper or plug 6′, of a material not affected by acid and to which a slender wire 8′ is connected, said wire passing through stopper 5′ beyond the sealed end 4′ of the balloon-neck. To cause commingling of the chemicals 7 and 8, the user pulls on the wire 8′, and thus draws stopper 6′ out of capsule 6, whereupon the gas is generated and blows out stopper 7′ and fills the gas-bag.

It will be understood that the balloon is sealed and that while the indurated portion 4 is sufficiently firm to prevent accidental breaking of the capsules and that the cap-

sules are of sufficient strength to keep them intact except when a blow is delivered thereon, yet the indurated portion and the capsules are adapted to be pinched, struck, or bitten by the person who is to use the life-preserver and to display the signal, and the breaking of the capsule causes a union of the materials 7 and 8 and the generation of gas of sufficient volume to inflate the balloon and lift it to the desired height, so that if the user cannot pull the stopper 6′ for any reason the gas can be generated nevertheless.

The signal consists of a flexible bag 9, which when distended assumes the form of a circular plinth—that is, it will be of disk-like form—and it is connected to the cord 2 or the network of the balloon, so as to be suspended therefrom. This bag is coated with a phosphorescent or luminous paint, so that it will be visible by night, and it is also colored with brilliant stripes in order that it may be visible by day. The bag may be of any size found most desirable in practice. A spiral spring 10 is contained within the signal-bag 9 and ordinarily confined by a steel band 11, thus permitting the signal-bag to be folded about the spring in the smallest possible compass, so as to occupy but little space when not in use.

When the occasion arises to use the life-preserver, the person first affixes the life-preserver to himself and then withdraws the confining-band 11 through an opening 11′ in the bag 9, whereupon the spring 10 expands and distends the signal-bag 9. Just before entering the water the person pulls on the wire 8′, and thus withdraws the stopper 6′, or pinches, knocks, or bites the indurated portion of the balloon, thus smashing the glass capsules 5 and 6 and causing a union of the chemicals 7 and 8, which thereupon generate the gas and inflate the balloon, which now rises and carries the signal with it.

It will be understood that it might at times be preferred in practice to dispense with the signal-bag and to make the balloon itself the signal by treating same with a phosphorescent or luminous paint and properly striping or coloring it, so that it would serve instead of the signal-bag, or said balloon may be coated and striped even when the signal-bag is used, as shown in the drawings.

Sometimes I may prefer to use but a single capsule of a material adapted to withstand a heavy pressure and containing highly-compressed gas, together with means for liberating the gas when desired to cause inflation and floating of the balloon.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a signal attachment for life-preservers, the combination with a life-preserver, of a balloon attached to the life-preserver and adapted to be disposed thereabove, and means carried by the balloon for inflating it comprising inverted receptacles one of which is contained within the other, a displaceable closure for the outer receptacle to permit the gas to pass into the balloon-bag, and a closure normally sealing communication between said receptacles, and means for opening said last-named closure, said receptacles containing elements which generate gas when united.

2. In a signal attachment for life-preservers, the combination with a life-preserver, of a balloon attached to the life-preserver and adapted to be disposed thereabove, means carried by the balloon for inflating it comprising separate frangible receptacles sealed within the balloon and normally out of communication with each other and containing substances or materials, which, when united, generate gas.

3. In a balloon, means carried by the balloon for inflating it comprising separate frangible receptacles sealed within the balloon and normally out of communication with each other and containing substances or materials which, when united, generate gas.

4. In a signal attachment for life-preservers, the combination with a life-preserver, of a balloon attached to the life-preserver and adapted to be disposed thereabove, and an independent signal having illuminating means and which is adapted to be supported or sustained by the balloon.

5. In a signal attachment for life-preservers, the combination with a life-preserver, of a balloon attached to the life-preserver and adapted to be disposed thereabove, and a signal attachment adapted to be supported or sustained by the balloon which comprises a distendable bag and a distending-spring within said bag.

6. In a signal attachment for life-preservers, the combination with a life-preserver, of a balloon attached to the life-preserver and adapted to be disposed thereabove, and a signal attachment adapted to be supported or sustained by the balloon which comprises a disk-like distendable bag, and a flat spiral distending-spring within said bag.

7. The combination with a balloon, of a signal attachment therefor comprising a distendable bag, a spring for distending the bag, and releasable means for confining the spring.

8. In a signal balloon attachment for life-preservers, self-contained means carried by said balloon for nflating it, and means carried by the balloon on the outside thereof which is operable from the exterior of the

balloon while the inflating means is contained therein for controlling the operation of the inflating means.

9. A signal balloon attachment for life-preservers comprising a balloon which is colored to be visible by day and coated with luminous paint so as to be visible at night, self-contained means carried by said balloon for inflating it, and means carried by the balloon on the outside thereof which is operable from the exterior while the inflating means is contained therein for controlling the operation of the inflating means.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

ADA C. CROFFORD.

Witnesses:
W. J. McKINLEY,
C. J. MANAHAN