C. H. E. G. MUTH.

LIFE PRESERVER.

APPLICATION FILED AUG. 3, 1910.

1,008,356. Patented Nov. 14, 1911.

Fig. 1.

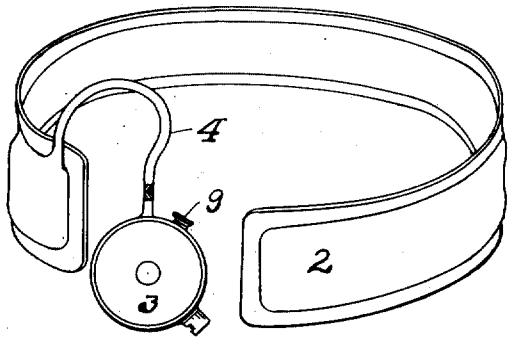



Fig. 3.

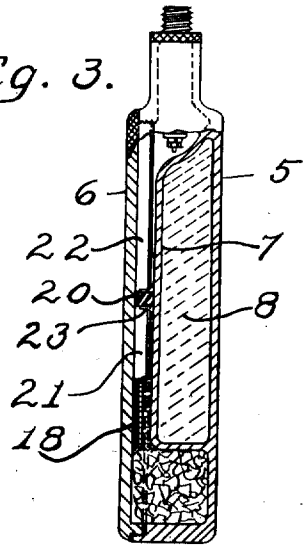
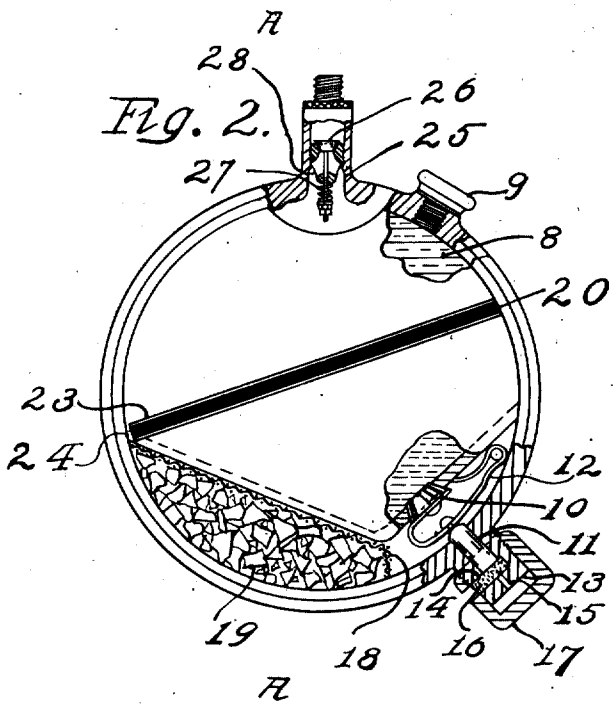



Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## LIFE-PRESERVER.

1,008,356. Specification of Letters Patent. Patented Nov. 14, 1911

Application filed August 3, 1910. Serial No. 575,281.

*To all whom it may concern:*

Be it known that I, CARL HERMAN EMIL GOTTHELF MUTH, a subject of the Emperor of Germany, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Life-Preservers, of which the following is a specification.

My invention relates to improvements in life preservers and has for its primary object the design of a life preserver that can be normally worn in a deflated condition and which is automatically inflated upon coming in contact with water.

In apparatus of this kind it is necessary to have a gas producer in which the elements are held out of contact until released by the action of water and my device is designed to keep the elements completely isolated normally and to produce quick sure action when they are once released, at the same time preventing the projection of the half formed charge of gas into the inflatable belt together with the unmixed elements.

In the accompanying drawings with which I illustrate my device and which form part of my specification, Figure 1 is a perspective of a belt to which is attached my gas producer; Fig. 2 is a sectional plan of the gas producer, and Fig. 3 is a sectional view of the device as shown in Fig. 2.

In the above drawings I have shown an inflatable belt 2 which is adapted to be attached to a vest or other garment by sewing or other suitable means. The belt is normally deflated and can be worn without inconvenience. A gas producer 3 is attached to the belt 2 by means of a flexible tube 4 and designed to be worn in a pocket of the garment to which the belt is attached. The gas producer shown, is designed for the use of water and carbid as gas producing elements but may be used with any other suitable substances. The belt and tube are made of rubber or other gas proof material.

The gas producer 3 is formed of a circular metal casing 5 closing with a screw top 6, which is liquid tight. Within the casing a partition 7 forms a water compartment 8 which has an inlet plug 9 and an outlet valve 10. The valve 10 is held in position by the plug 11 pressing down the spring 12 which tends to open the valve and allow the escape of water contained in the compartment 8. The plug 11 lies in a recess in the wall of the casing and extends into an external boss 13 having a slot 14 in its side and a small aperture 15 in its end. The plug 11 is held in its normal position against the pressure of the spring 12 by means of a disk 16 of material soluble in water, which is placed in the slot in the side of the boss and prevents the plug 11 from rising in its recess until the disk has been dissolved by coming into contact with water. The aperture 15 aids in the rapid dissolving of the disk. A perforated screw cap 17 fits over the boss 13 and serves to protect the openings in the boss, at the same time allowing the entrance of water.

A partition 18 of wire mesh serves to confine the carbid 19 and prevent its escape in a dry or partly dissolved condition into the water outlet mechanism where it might interfere with the proper action of the valve 10.

A partition 20 traverses the space between the partition 7 and the screw top 6 of the casing and divides this space into two parts 21 and 22. The partition is formed by a strip of packing material confined in a groove 23 on the surface of the partition 7 and connects at one end with the meshed partition 18, thus forming a small gas passageway 24, and connecting the two spaces 21 and 22 through the carbid chamber. The space 21 is thus adjacent to the water outlet and to the partition 18 confining the carbid, while the space 22 is adjacent to the gas outlet 25 which connects to the flexible tube 4. In this outlet is shown an outlet valve 26 held normally closed by a spring 27, and fitted to pass gas from the gas producer to the tube 4 and to the inflatable belt 2. This valve is shown mounted upon a valve seat 28 which screws into the outlet 25, but may be placed in any other position between the gas producer 3 and the inflatable belt 2.

In charging my gas producer, the valve 10 is adjusted and a disk 16 inserted above the plug 11, holding the valve firmly closed. The water compartment 8 is then filled through the inlet plug 9. The compartment for carbid being thoroughly dry, is filled with carbid and the screw top 6 is adjusted on the casing which is attached to the tube 4. The device is then in condition to be worn. When immersed in water, as by the capsizing of a person wearing the belt into

the water, the disk 16 is at once dissolved by water entering through the perforated cap 17 and the plug 11 is released opening the water outlet valve 10. The contents of the water compartment 8 will flow out, in practically any position of the casing, into the space 21 and thus gains access to all parts of the carbid confined by the meshed partition 18. The water cannot pass to the gas outlet without first traversing the carbid chamber where it coacts with the carbid. The partition 18 also prevents particles of carbid from being blown into the gas outlet by the sudden formation of gas. The gas as formed passes out through the gas passageway 24 and the outlet valve, inflating the life preserver belt and buoying up the body in the water. The charge of carbid is adapted to exactly fill the inflatable belt and the entire operation of filling the belt occupies but a few seconds.

In accordance with the patent statutes I have described the principles of operation of my invention together with the apparatus which I now consider to represent the best embodiment thereof but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth within the scope of the following claims.

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

1. A gas producer adapted for use in connection with inflatable life preserver belts, consisting of a casing, a water-tight compartment within said casing, an automatically operated outlet valve for said compartment, a carbid compartment within said casing and inclosed by a meshed fabric, an air compartment having a gas outlet adapted to transfer gas into said belt, a partition dividing said air compartment into two portions, one adjacent to said carbid compartment and water outlet and one adjacent to said gas outlet, said portions being connected by a small gas passageway through said partition, and a valve in said gas outlet, whereby upon the operation of the water outlet valve, water may freely flow into the air compartment adjacent to the carbid and have complete access to all portions of the carbid compartment and the gas produced may flow freely through the gas passageway and outlet valve into the life preserver belt without any admixture of water or carbid particles.

2. An automatic gas producer for a life preserver belt, comprising in combination, an outer casing, a water compartment therein having an automatically operative outlet into said casing, a carbid compartment in said casing having perforated walls adjacent to said water outlet, a partition in said casing adapted to confine water and carbid from their respective compartments when in combination and having an aperture to pass gas formed therefrom, and a valve in said casing adapted to pass gas from said aperture to a life preserver belt and to prevent moisture from said belt entering said casing.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CARL HERMAN EMIL GOTTHELF MUTH.

Witnesses:

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