No. 840,318.

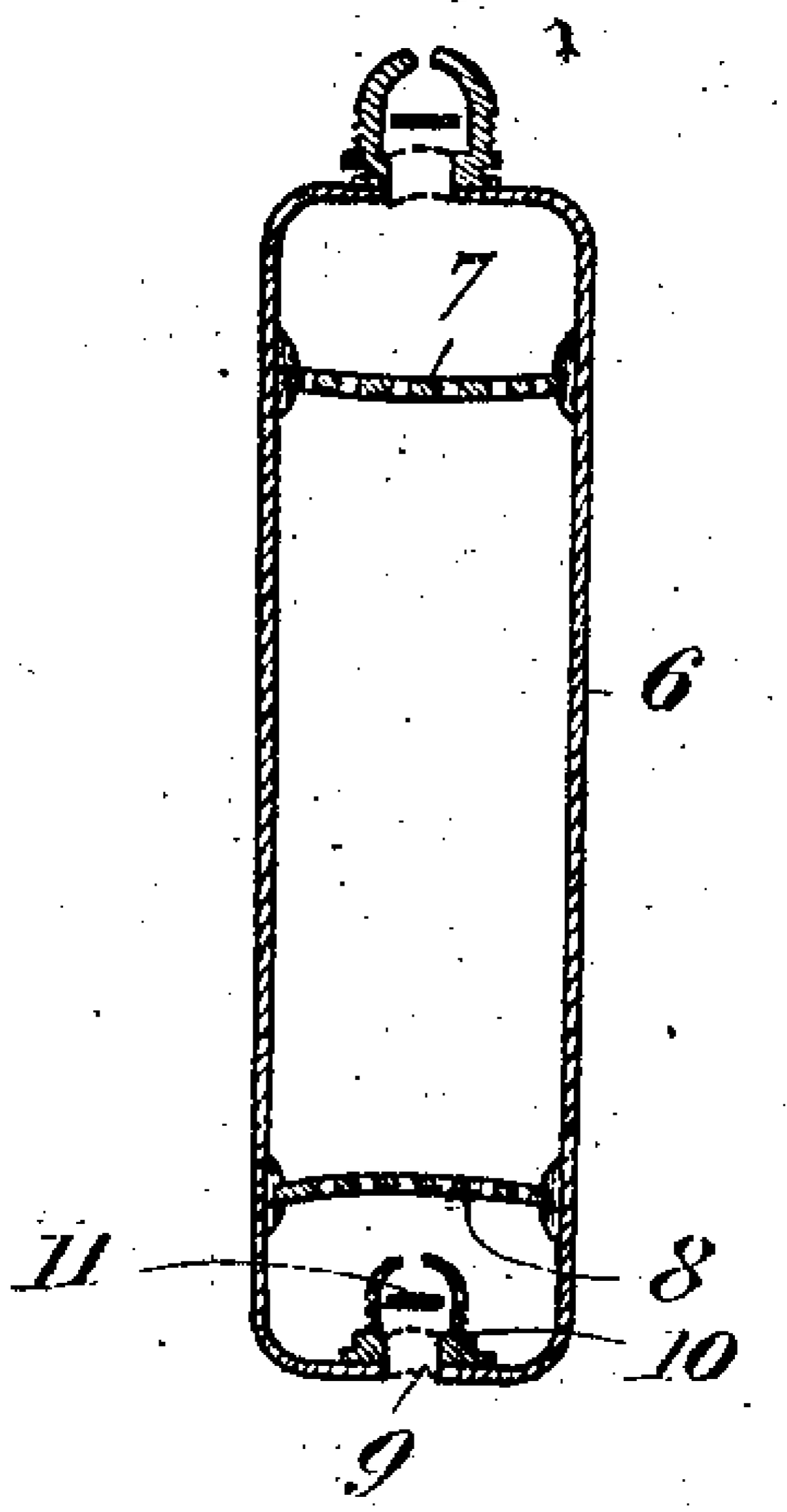
PATENTED JAN. 1, 1907.

A. GROS.

LIFE BELT.

APPLICATION FILED MAY 15, 1905.

Fig. 4



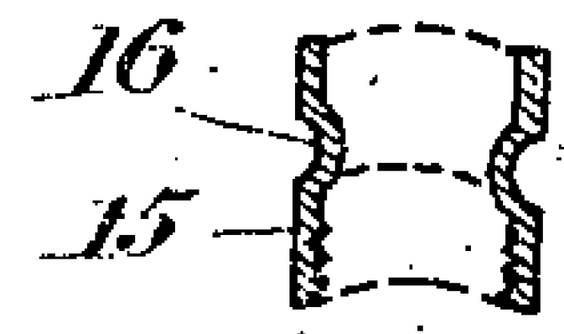


Fig. 5.

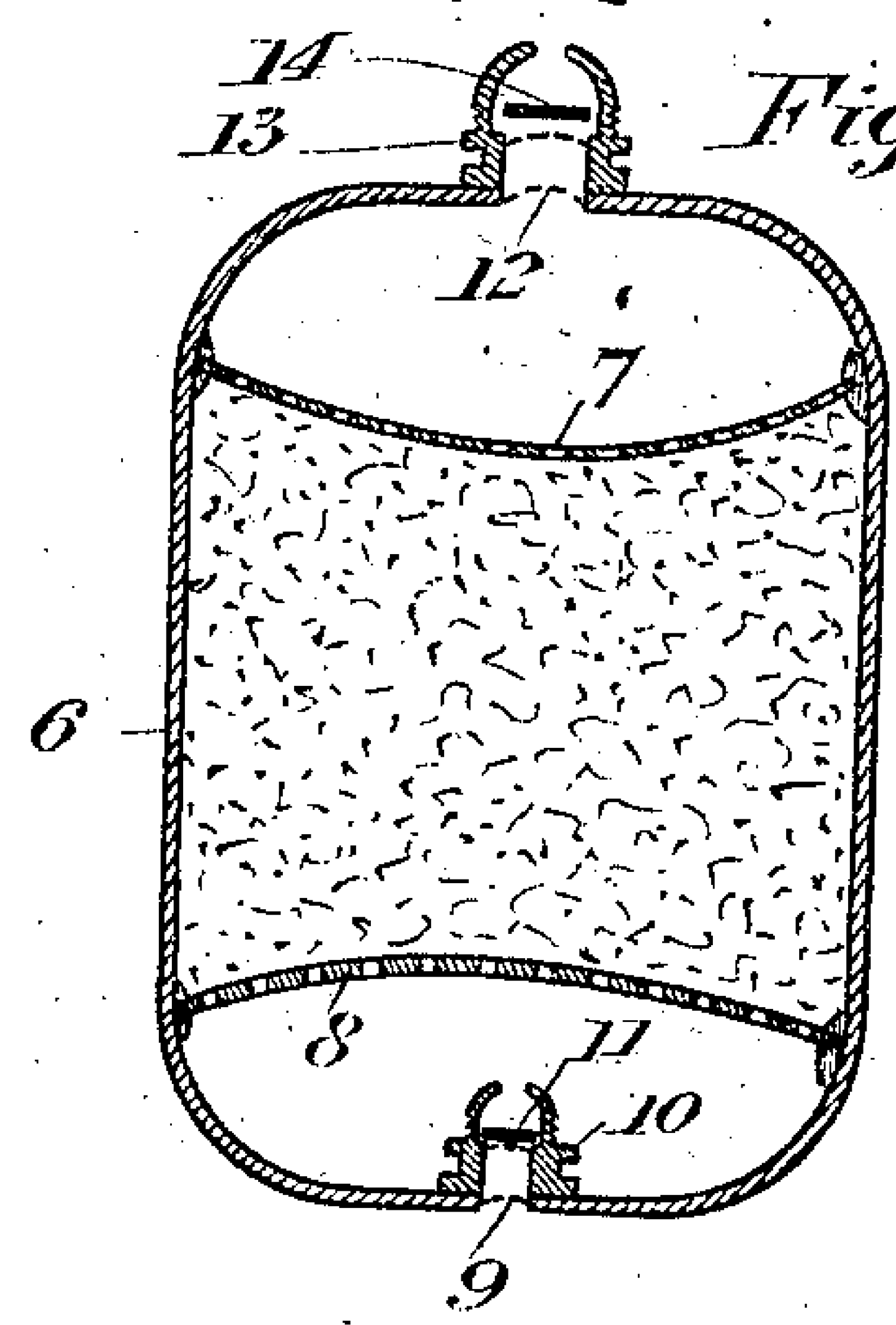


Fig. 3.

Fig. 2.

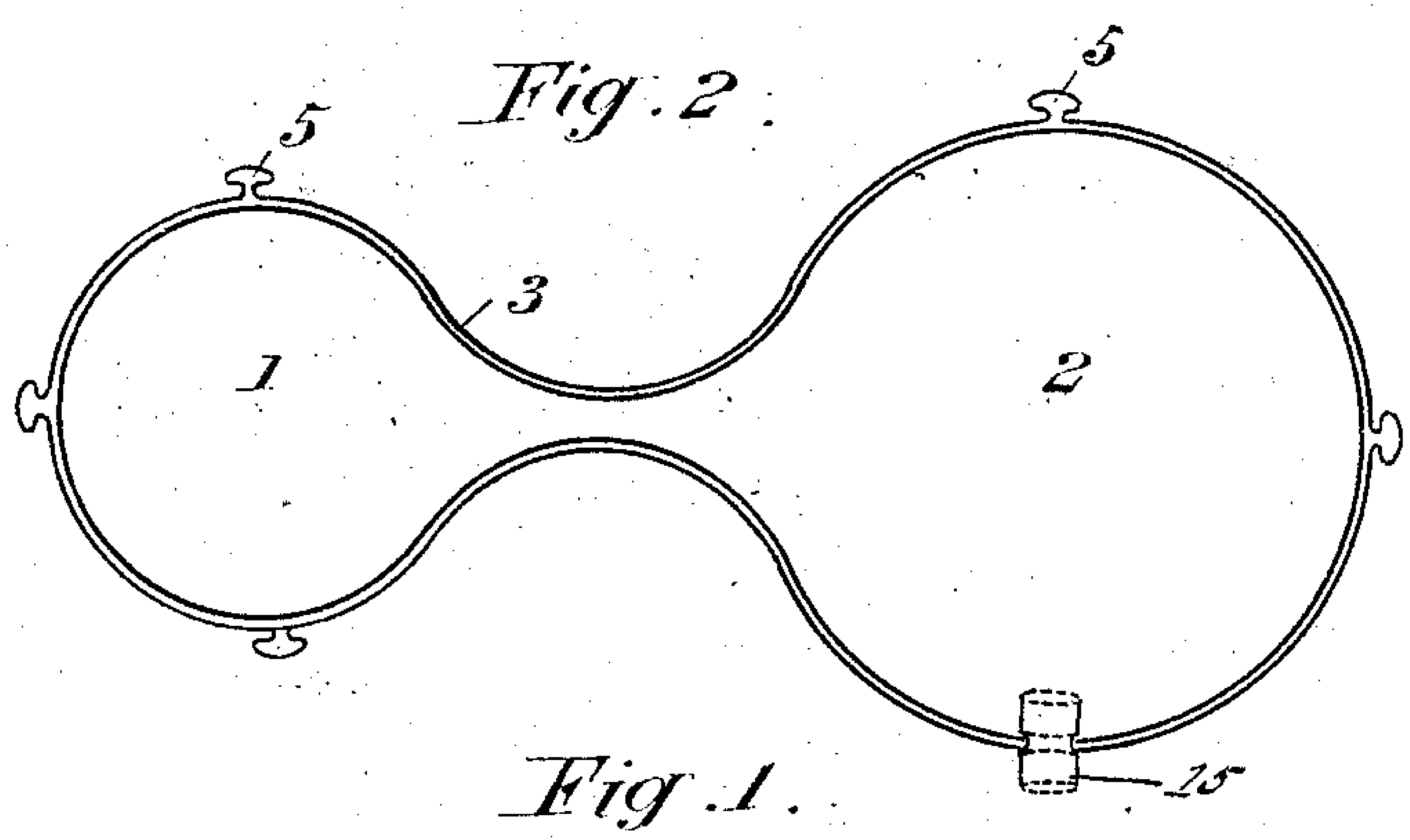
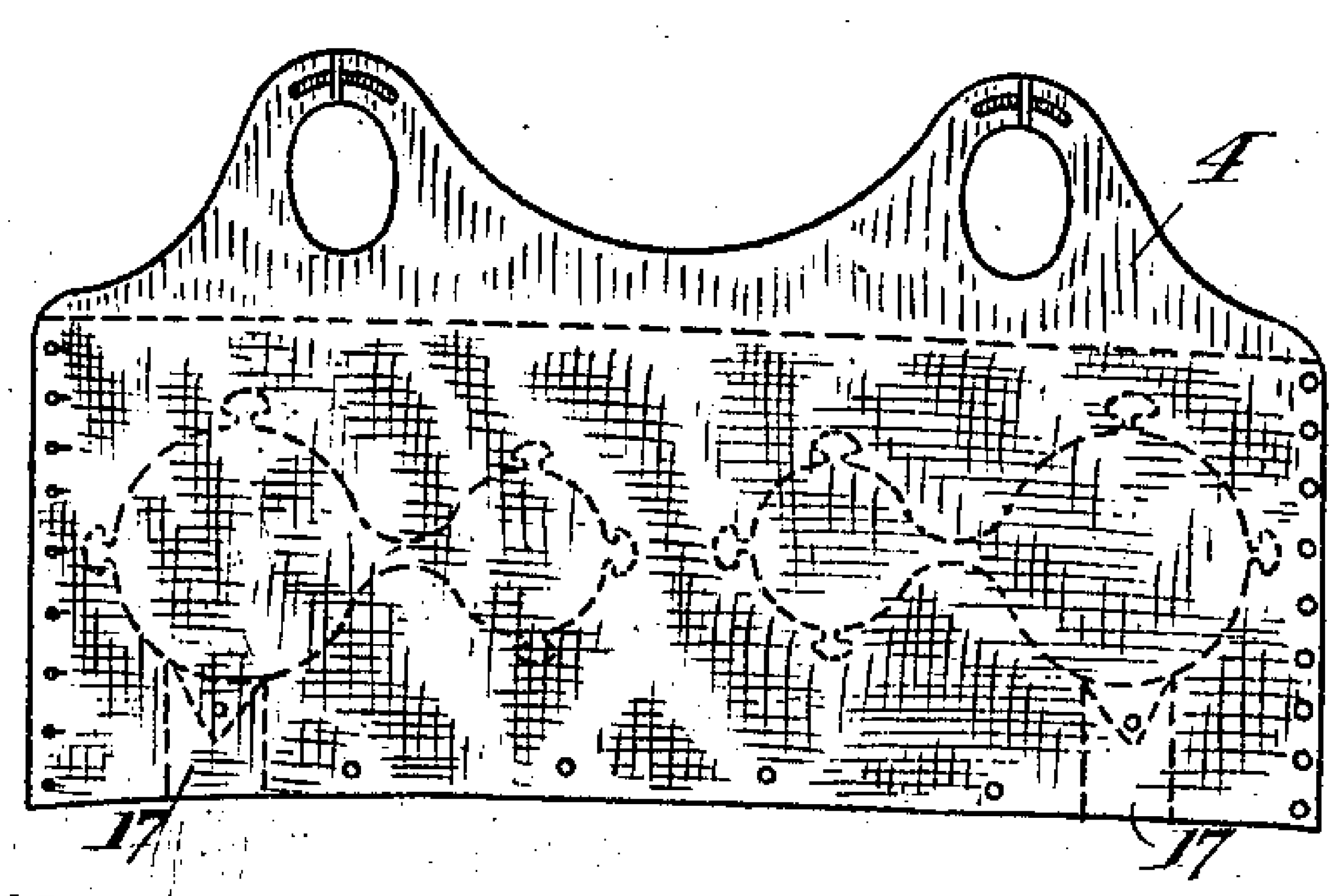


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

ABEL GROS, OF SAINTES, FRANCE, ASSIGNOR OF ONE-HALF TO GEORGE H. JACKSON AND ONE-FOURTH TO OCTAVE RONDIER, OF LA ROCHELLE, AND ONE-FOURTH TO JUDITH GROS, OF SAINTES, FRANCE.

LIFE-BELT.

No. 840,318. Specification of Letters Patent. Patented Jan. 1, 1907.

Application filed May 15, 1905. Serial No. 260,431.

To all whom it may concern:

Be it known that I, ABEL GROS, a citizen of the French Republic, and a resident of Saintes, Charente-Inférieure, France, have invented certain new and useful Improved Life-Belts, of which the following is a specification.

This invention has reference to an improved life-belt which can be worn on the person all the time that one is on board ship without inconvenience, which can be worn under one's clothes and be invisible, which is always ready to act automatically, and which is capable of supporting a person in the water for a long time.

The invention consists in the novel construction, arrangement, and combination of parts, as hereinafter fully described, and pointed out in the appended claim.

In the annexed drawings, given by way of example, Figure 1 shows my invention in the form of a corselet. Fig. 2 shows diagrammatically and in section two floats adapted to be fitted to a corselet. Fig. 3 is a vertical diagrammatic section of receptacle for calcium carbid for the production of acetylene gas. Fig. 4 is a similar section at right angles thereto. Fig. 5 is a detail.

The life-belt shown in Fig. 1 comprises four floats 1 2 of circular or other form and connected in pairs by a tube 3, the floats 1 being smaller than the floats 2. The smaller floats are intended to be arranged at the back and the two others on the front of the body. These floats may be made of rubber or any other suitable material impermeable to air and water, and their capacity may vary according to the size of the wearer, and consequently according to the size of the belts. The tubes 3, which connect them, are made of like material.

The floats are inclosed in a corselet 4, made of two pieces of suitable woven material, sewed together only at the top from below the arms all around the body, the outer piece of material being left very full, so as not to hinder the inflation of the floats which are placed between the two pieces and are attached thereto by means of ears 5, which are engaged in corresponding buttonholes formed in one of the pieces.

To inflate the floats, acetylene may be generated from calcium carbid contained in a receptacle or box, such as illustrated in Figs. 3 to 5. This box 6 is made of a light metal, aluminium, aluminium bronze, or nickeled copper. Its form is preferably that of a flat parallelepipedon with rounded corners, and its dimensions may vary according to the size of the belt with which it is to be used—that is to say, according to the size of the person who is to use it. The largest size would be about seven centimeters high by five centimeters in width and two centimeters in depth. The interior of this box is divided into three compartments by two metal partitions 7 and 8, which are removable and perforated. The middle compartment, which is larger than the two others, is intended to hold the calcium carbid.

In the bottom of the box a small aperture 9 is formed, and over this a valve-box 10, containing a rubber clack-valve 11, is fixed. The necessary drops of water for the formation of acetylene gas from the calcium carbid are introduced into the box through this valve. The upper end of this box has an aperture 12, larger than the aperture 9, over which on the outside of the box a valve-box 13, containing a rubber clack-valve 14, is mounted, and through which the acetylene generated in the box passes. The valve-box 13 is formed with a thread, by means of which it can be screwed into a tapped tubulure or neck 15, Fig. 5, which has a throat 16, adapted to make a tight joint and at the same time fix it permanently in the lower part of one of the large floats. The acetylene passes from the box 6 into the float through this neck or tubulure.

The apparatus is made ready for use and acts as follows: Having placed from ten to fifteen grams (according to the size of the box) of crushed calcium carbid of good quality in the central compartment of a box 6, the cover is hermetically closed and the valve-box is screwed into the neck 15 of one of the large floats. Another box 6 is charged and fitted in like manner to the second large float. Then raising the outer flap of the corselet 4 the four floats are placed in position and secured by inserting the ears 5 into buttonholes formed in the corselet, the two boxes 6 being supported in pockets 17, fixed on the lower flap of the corselet. If the material of which the corselet is made be of a close texture, it is necessary to form holes in the bottoms of the pockets 17 to permit of the water

getting at the lower aperture of the boxes containing the calcium carbid. The corselet thus provided with the floats is put on and buttoned up the front like an ordinary corselet. When a person wearing such a corselet is immersed in water some drops of water find their way through the aperture 9 into the lower compartment of the carbid-box, and passing through the perforated partition 8 impregnate the calcium carbid in the middle compartment, whereupon acetylene gas is instantly generated. This gas passes through the perforated partition 7, and, raising the clack-valve 14, escapes by the tubulure 15 into the relative large float, and thence by the tube 3 into the small float, inflating both floats fully in a few seconds. When the floats are inflated, the pressure within the box 6 closes the valve 11, thus preventing any more water entering the box and arresting the production of acetylene. The floats thus inflated are capable of supporting a person for an indefinite time with head and shoulders above water.

Having now fully described my said invention, what I claim, and desire to secure by Letters Patent, is—

In a life-belt, the combination with a corselet and gas and water tight floats, of a receptacle for calcium carbid divided by perforated partitions into three compartments in the middle one of which the calcium carbid is placed while the lower compartment is provided with a valve for the admission of water when the corselet is immersed therein and the upper compartment is provided with a valve for the escape of the acetylene gas produced in the receptacle into the floats, said receptacle and the upper valve-box being screw-threaded, and a tapped tubulure fixed to each of the large floats for connecting said valve-box thereto, all substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

ABEL GROS.

Witnesses:
E. CHEVREAUD,
MASSE.