

L. JACOBS.  
LIFE PRESERVER.

Fig. 1.

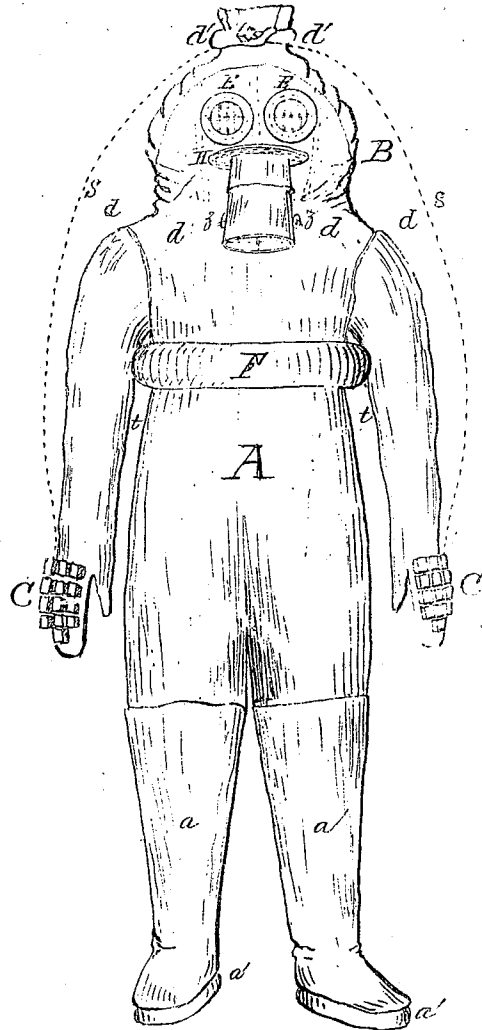


Fig. 2.

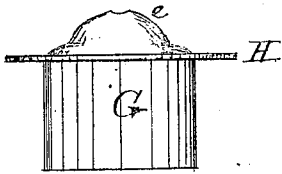


Fig. 3.

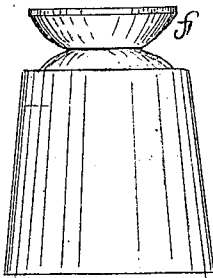
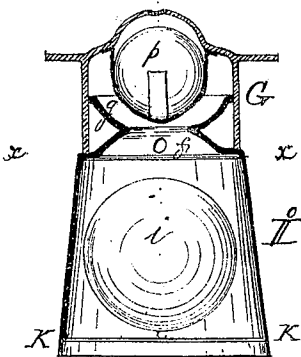


Fig. 4.



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# United States Patent Office.

LYMAN JACOBS, OF ALBION, MICHIGAN.

Letters Patent No. 102,823, dated May 10, 1870.

## IMPROVEMENT IN LIFE-PRESERVERS.

The Schedule referred to in these Letters Patent and making part of the same

I, LYMAN JACOBS, of Albion, Calhoun county, in the State of Michigan, have invented certain Improvements in Life-Preservers, of which the following is a specification.

### *Nature and Objects of the Invention.*

The nature of my invention consists in so adapting suitable mechanism to a water-proof casing for the body as to admit a full supply of atmospheric air to the individual so encased, while preventing the admission of water therein.

It also consists in the employment of floats attached to the hands, as well as to the body, as ordinarily obtains in the construction of life-preservers, and in the employment of two ball-valves located in a cylinder, the one above the other, and connecting with the interior of the casing, by means of which the impure atmosphere may be ejected and the pure admitted, at the same time that the water is prevented from entering therein.

### *Description of the Accompanying Drawings.*

Figure 1. is a plan view of my life-preserver.

Figure 2 is a plan view of the cylindrical valve receptacle G.

Figure 3 is a plan view of the cylindrical valve-receptacle I.

Figure 4 is a vertical section of the combined valvular device.

### *General Description.*

A is the casing for the body, which is shaped from the arms down to the feet, inclusive, to correspond with the form of a man, but made large, to permit its being easily put on the body, and the armlets made from the hand to reach above the head, of a width and shape corresponding with the dotted lines *s s* and the lines of the arms *t t*; and said casing or covering for the body can be made of any other well-known water-proof material.

*a a* are the legs or boots of the casing, the lower portion of which are provided with weights rigidly secured thereto at *a'*.

The infolding of said casing may be prevented to a greater extent than as shown at B, by the steel pieces *d*.

B is that part of the casing or covering which envelops the head and throat, and which may be so closed as to prevent the ingress of water by a rubber band or metallic clasp attached thereto, or by any other well-known method of rendering life-preservers water-tight.

In the interior of the casing at this point are inserted steel strips, which are first covered with cloth or other fabric, and, together therewith, formed into a cylindrical-shaped casing a few lines smaller than the

outer casing; the whole is then inserted as aforesaid, and the outer and inner casing securely fastened together. Said strips project vertically from the upper part of the chest *d*, above the head to the point *d'*.

C C are floats, which may be made of cork, and secured to the casing so as to cover the back of the hand, and are comprised of a number of small pieces, so united together as to admit of the opening and closing of the hand.

E E represents two glasses or goggles provided in the casing for the purpose of vision, which are first inserted in metallic plates, the latter being riveted to the casing, or otherwise constructed in any of the forms which ordinarily obtain in diving armor, and others may surround the head.

F is a float or life-preserver, securely attached to the casing, on the exterior thereof, and located immediately underneath the arms at the arm-pits. It may also be made elastic, or otherwise caused to fit the body very closely, in order the better to prevent the possible escape of air from the upper part to that part of the body of the device below the float aforesaid.

However, said tightening of the float F, to prevent the passage of air to that part of the casing which is located beneath or lower down than the same, is only requisite in the possible contingency of the position of the body being inverted in the water by the force of a heavy wave.

G is a cylindrical receptacle of a ball-valve, having the pipe *e* leading therefrom into the interior of the casing aforesaid, to a point in close proximity to the mouth of the individual encased.

*g* is a concave ball receptacle, located in the cylinder G, the ball *p* remaining in the concavity thereof when at rest.

The interior or central portion of said ball *p* is composed of lead or other heavy metal, which is covered with India rubber, in order the better to present an elastic surface for closing the orifice *e* of the cylinder or pipe leading inside of the casing to the mouth of the person incased in the life-preserver; but said pipe can only be closed momentarily, and when thus closed will inclose inside the casing an ample supply of atmospheric air to supply the wants of the individual incased.

The cylinder G is provided with the flange H, which is riveted to the rubber casing.

The cylinder G is rigidly attached to the cylindrical receptacle I, as shown in fig. 4.

I is a continuation of the cylinder of the valvular device, and is provided with a ball, *i*, located in the interior thereof, and resting upon the bars K K, which are crossed or intersect each other.

Cylindrical receptacle I has projecting from the upper part thereof a funnel, *f*, corresponding in width

with that of the frame G, in which it is located, and the aperture of said funnel corresponds with the diameter of the pipe *e*.

The upper part of the interior of the frame I is concave, and so adapted to the convexity of the India-rubber ball *i*, as that when the latter impinges against the same, the orifice *o* of the funnel is closed tightly and prevents the ingress of water. Said cylindrical or valvular device may be made either metallic or of gutta-percha, and riveted, as shown at *z*, to the rubber casing, or it may be permitted to swing loosely, attached to the casing at H, as aforesaid.

It will be observed, from the above-described construction of the valvular device, that this life-preserver is adapted not only to meet the requirements of such an article in calm waters, but more especially for those the most boisterous, and that the elastic hollow ball nearest the water is yet elevated to such a height above it that it will only be raised from the cross-bars K K, on which it rests, when acted upon by high waves, and that, as the waves in their action are intermittent, the intervals will afford ample time for the inhalation of pure atmosphere and the exhalation of that which has been breathed into the lungs.

It is proposed that the weights *a'*, in the feet of the device, shall be sufficient to always hold the body in an erect position; but the valvular arrangement aforesaid contemplates the possible contingency of the momentary inversion of the body, which could only arise in the most turbulent or stormy sea, in which event the upper or weighted ball *p*, being heavier than the water, would close the upper valve, and thereby shut it off from ingress into the rubber casing, while inclosing a sufficient quantity of atmospheric air for breathing purposes.

*Claim.*

The combination and arrangement of the cylindrical receptacles G and I, flange H, pipe *e*, balls *i* and *p*, funnel *f*, orifice *o*, bars K K, concave ball-receptacle *g*, and casing A, substantially in the manner and for the purpose shown and described.

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Witnesses:

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