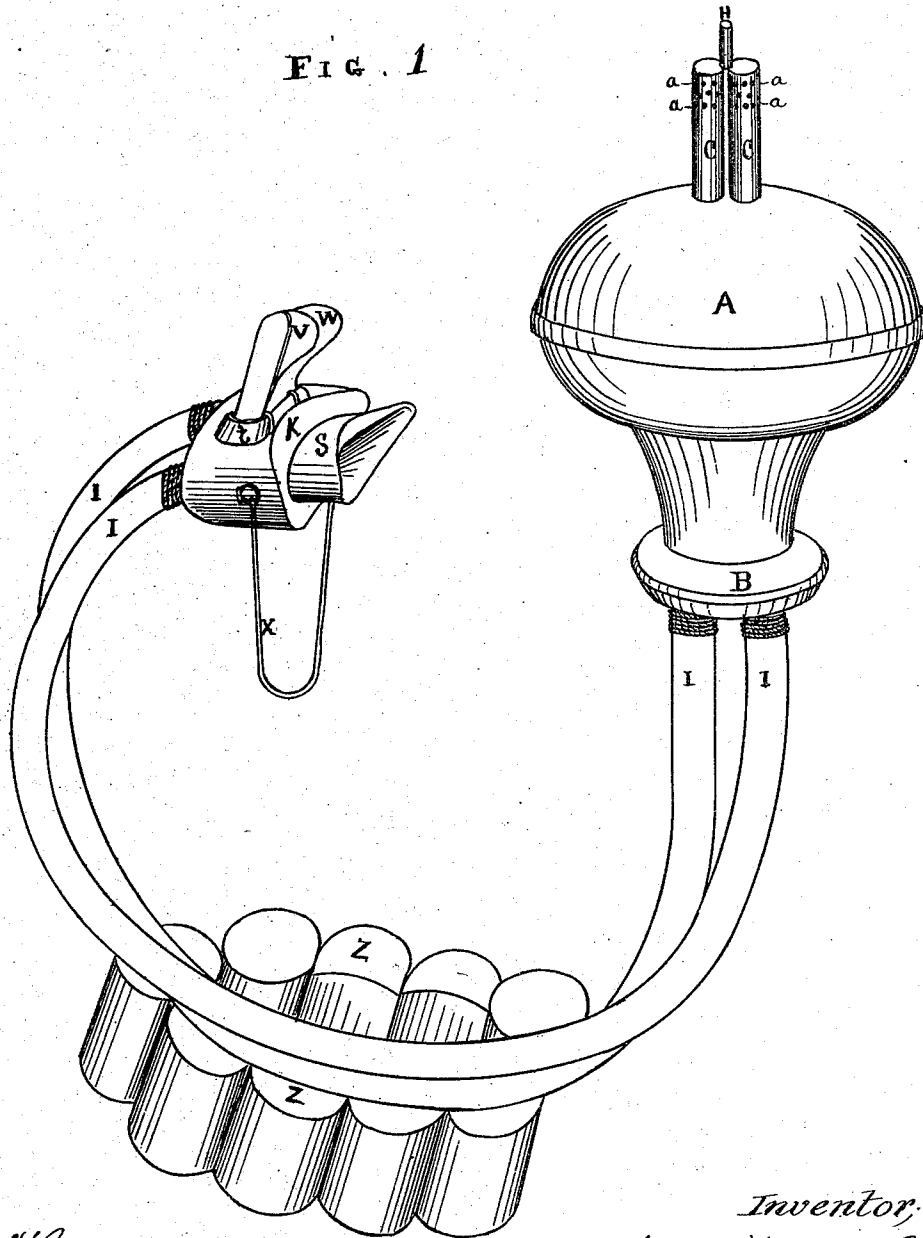


J. P. SCHMITZ.
Diving-Apparatus.

No. 156,599.

Patented Nov. 3, 1874.

FIG. 1



Witnesses;
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Inventor,
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FIG. 2.

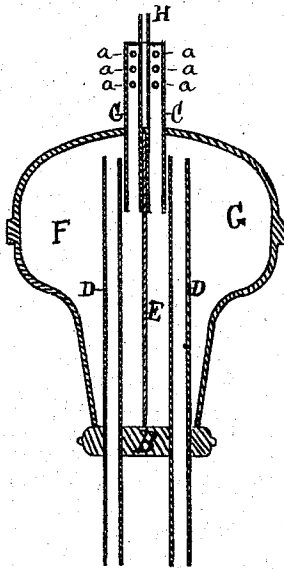


FIG. 3

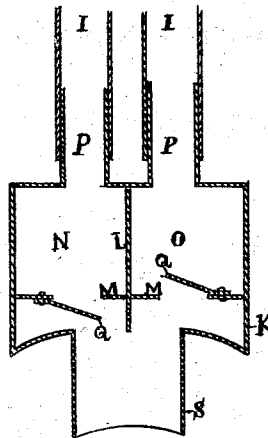


FIG. 4

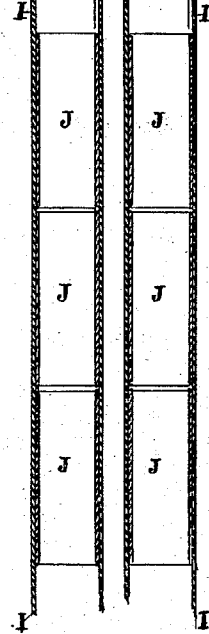


FIG. 5

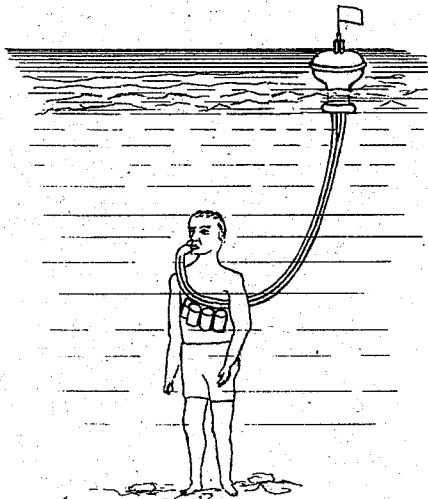
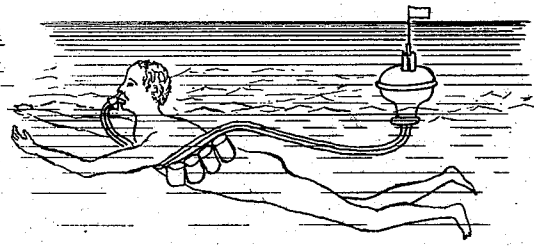


FIG. 6



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UNITED STATES PATENT OFFICE

JOHN PETER SCHMITZ, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN DIVING APPARATUS.

Specification forming part of Letters Patent No. **156,599**, dated November 3, 1874; application filed August 3, 1874.

To all whom it may concern:

Be it known that I, JOHN PETER SCHMITZ, of the city and county of San Francisco and State of California, have invented a new and Improved Life-Preserver and Diving Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a section of the floating globe. Fig. 3 is a section of the mouth-piece. Fig. 4 is a section of the elastic hose, showing inside lining of short metal tubes. Figs. 5 and 6 illustrate different modes of using the apparatus.

The object of my invention is an improvement in life-preservers, which not only saves a person using it from drowning, but can also be used as a diving apparatus, wherewith a person is able to remain under water for a considerable length of time.

The improvement relates to features of construction and arrangement hereinafter described and claimed.

The floating globe A, which is represented as having an oblong, spherical, or balloon-like form, may be of any other desired or suitable shape. It is divided into two air-tight compartments, F and G, by a perpendicular partition, E, in the center, and has at the lower end a weighted bottom, B, to cause it to keep a vertical position when in the water. In each compartment, at the upper portion of the globe, is inserted a short tube or pipe, C, having one end projecting outside, and the other end inside, to about one-third downward in the floating globe. The upper ends of these tubes or pipes are closed air-tight, and a number of small holes, *a a a*, are pierced around near the tops, for admitting the passage of air. Two other tubes or pipes, D D, one in each compartment, are placed in the floating globe, extending inside to near the top of the globe and above where the tubes C terminate, and passing down through the weighted bottom B, so as to project outside a short distance; and said projections have at the ends small rims or inlets, whereon the elastic hose I I is fastened. These tubes or pipes D D are open

at both ends. One set of tubes or pipes, C D, are placed, one end within and the other end projecting out of compartment F, and the other set in like manner in compartment G. On the tops of the tubes C C is formed a small tube, H, for holding a signal-flag. A pair of elastic hose, I I, is fastened to the outside projecting ends of the tubes D D, and the said hose is also connected with and fastened to the projecting tubes P P on the mouth-piece K. The pair of elastic hose I I tie together with a string or band, so that they cannot separate. If the elastic hose should not be of sufficient strength to resist the pressure of the water, I place a lining of short metal tubes, J J J, in the whole length inside the elastic hose. The metal tubes so placed in the elastic hose are of uniform size, and are placed a small distance apart, thereby allowing the hose to bend freely and yet resist the pressure of the water, and allowing a free passage of air through it. The mouth-piece K is cylindrical in form, or may be of any other desired or suitable shape. It is divided transversely on the inside by a partition, L, and longitudinally by a partition, M, forming the chambers N and O. Two tubes or pipes, P P, are used by me, one of which is connected with the chamber N, and the other with the chamber O, and projecting outward from said chambers, these pipes P P have small rims or inlets, whereon the elastic hose I I is connected. Two valves, Q, in the partition M will, when open, admit air to pass through chambers N and O. The mouth-piece K has a small oval cylindrical piece, S, projecting from its front and connecting with chambers N and O. This piece S, when in practical use, is held in the mouth by the lips or teeth. On the top or upper end of the mouth-piece K is a so-called nose-clincher, V W, having an elastic band, *t*, to spring the parts together, for holding the nose of the person using it tight closed when in water. An elastic band or string, X, fastened to the mouth-piece K, is used to pass around the person's head to support the hold to the mouth-piece.

The already-described floating globe A, in connection with the elastic and metal-lined hose I I and the mouth-piece K, can be attached to or connected with any common life-

preserver heretofore in use, whereby the same is improved in safety, and is rendered capable of use as a diving apparatus.

If a person is not already in possession of a life-preserver, then the following-described air-tight floating cylinders Z can be attached to the elastic hose I. The air-tight floating cylinders Z consist of many cylinders or air-tight tubes, which are fastened to the elastic hose at such a place that the floating cylinders can be secured to a person's body just below the armpits.

The mode of the practical use of my invention is as follows: I fasten the life-preserver or floating cylinders Z around my waist; then take a firm hold with my lips or teeth onto the mouth-piece S, placing my nose between the clinch V and W. I then tie the string X around my head, and take hold of the floating globe A with one hand. I am then ready to jump into the water. Before coming in contact with the water, I let go my hold of the floating globe A, so that the same may float on the surface. A person can remain for a considerable length of time under water, and breathe fresh air almost as freely as when above the water, because air enters the small holes *a a a* in the tube C, connected with compartment F, and then enters and passes down the tube or pipe D to the elastic hose I into the chamber N. From thence it is inhaled by the person, and when breathed out will pass through chamber O, through one of the elastic hose-pipes I, connected with said chamber, and up through the tube or pipe D in compartment G, escaping through tube or pipe C, attached to that compartment. Finally, to explain the

process in short, fresh air will come in and pass through one pipe continually to the person inhaling the same, and bad or vitiated air will pass out through the other pipe. The valves in chambers N and O act like the valves in a pump, one admitting air, and the other expelling the same.

Should some water accidentally enter through the holes *a a a* or tubes C, the same could not communicate to the person, because the communication between the tubes C and D in the floating globe A is cut off. Such water would remain on the bottom of the floating globe A.

This my newly-invented and described floating globe A, mouth-piece K, and elastic hose I can be connected to and used with any ordinary life-preserver, thereby making also a diving apparatus, as before stated.

What I claim is—

1. The floating air-receiver A, consisting essentially of a weighted bottom, B, the two compartments F and G, separated by a partition, E, and having the upper air-tubes C C, provided with lateral perforations *a a*, and the connecting-tubes D D, in combination with the elastic hose lined with sectional metallic tubes, all constructed and arranged substantially as described.

2. The elastic hose, provided inside with short metal tubes, in combination with the floating globe and mouth-piece, as and for the purpose described.

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Witnesses:

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