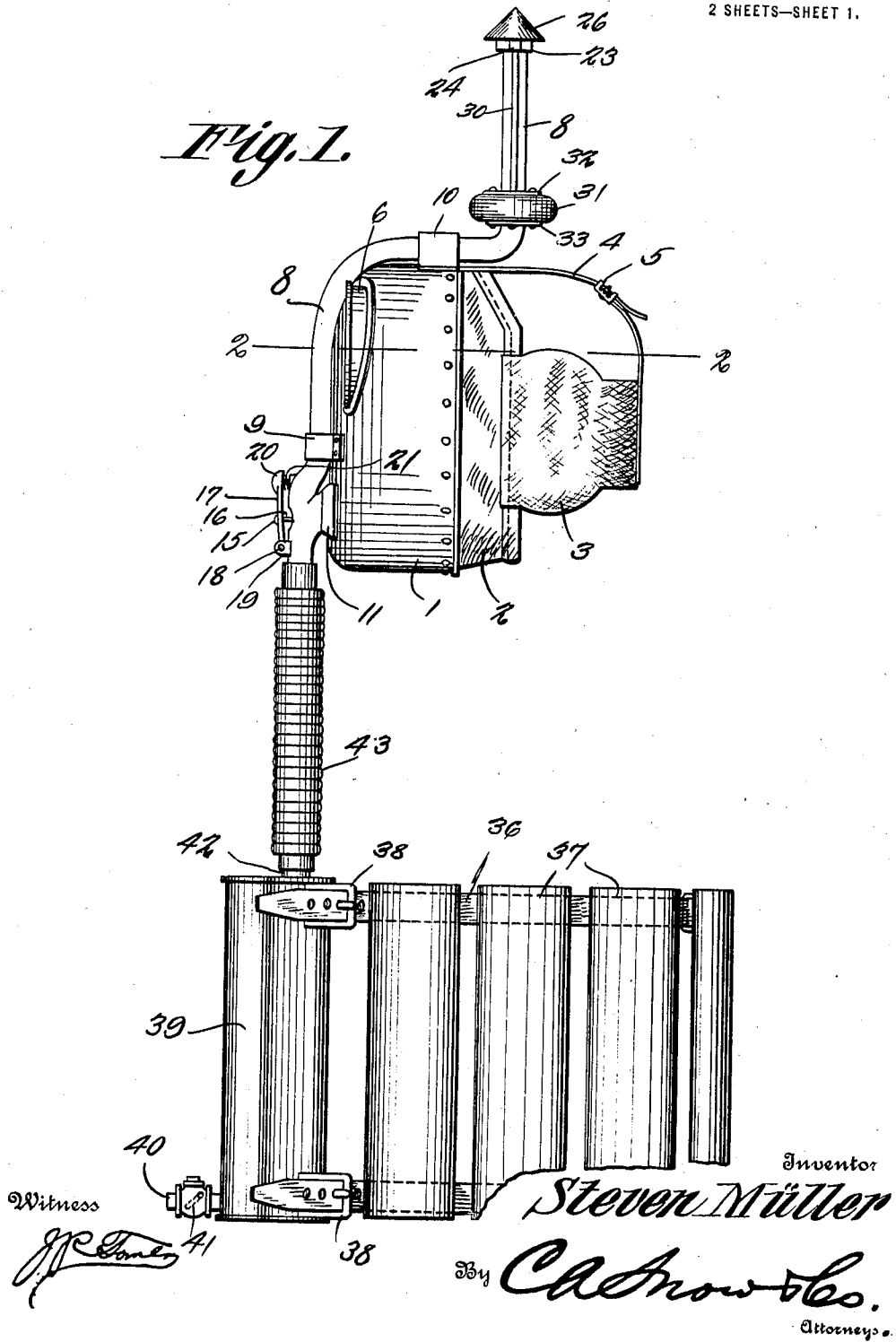


S. MÜLLER.
LIFE PRESERVER.
APPLICATION FILED MAR. 24, 1919.

1,324,514.

Patented Dec. 9, 1919.
2 SHEETS—SHEET 1.

Fig. 1.



1,324,514.

Patented Dec. 9, 1919.
2 SHEETS—SHEET 2.

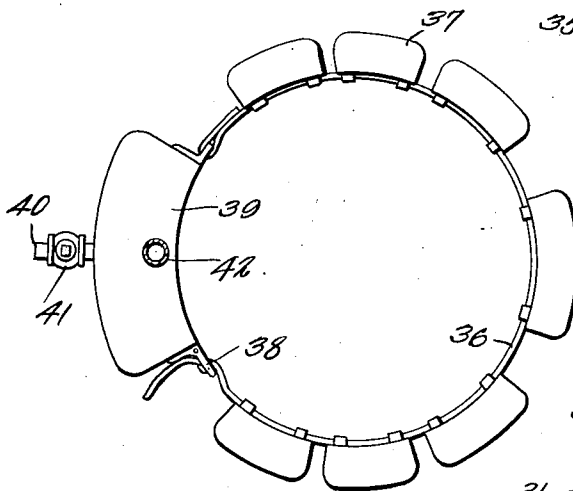
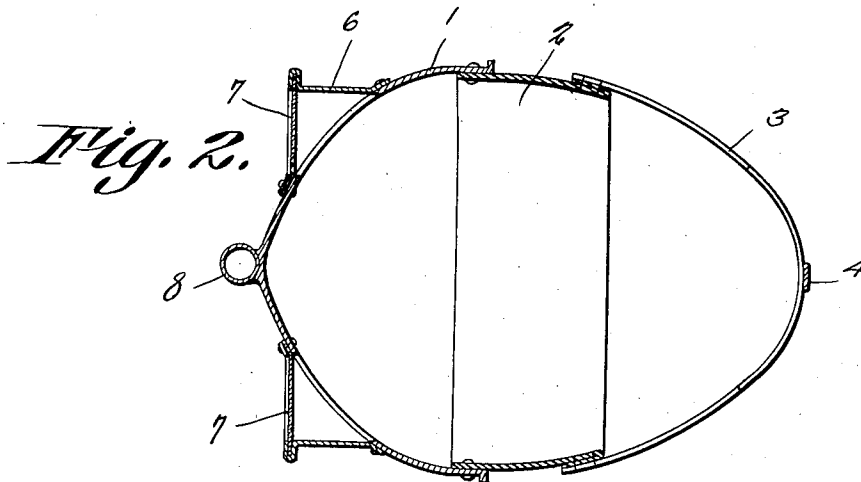


Fig. 3.

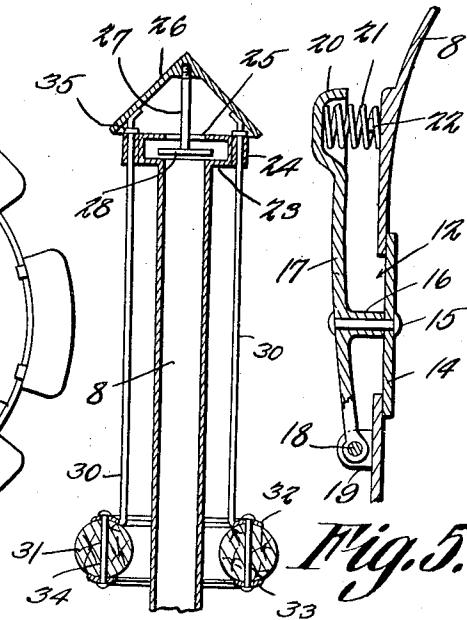


Fig. 4.

Fig. 5.

Witness

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LIFE-PRESERVER.

1,324,514.

Specification of Letters Patent.

Patented Dec. 9, 1919.

Application filed March 24, 1919. Serial No. 284,748.

To all whom it may concern:

Be it known that I, STEVEN MÜLLER, a citizen of the United States, residing at Mason City, in the county of Cerro Gordo and State of Iowa, have invented a new and useful Life-Preserver, of which the following is a specification.

The device forming the subject matter of this application is a life preserver, and the invention aims to provide novel means whereby the wearer of the life preserver will be prevented from being drowned by combing breakers when there is a sea running. Another object of the invention is to provide novel means whereby the wearer of the life preserver will have a supply of air at all times.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in side elevation, a device constructed in accordance with the invention; Fig. 2 is a cross section taken through the helmet; Fig. 3 is a top plan of the life belt; Fig. 4 is a longitudinal section showing the upper end of the air conduit; and Fig. 5 is a fragmental vertical section showing a valve which is located in the helmet.

The device forming the subject matter of this application includes a helmet, comprising a shell 1, which may be made of aluminum, if desired. The shell is made so as to fit about the face of the wearer, and is provided along its rear edge with a continuous rim 2 made of flexible water proof material. The ends of a rearwardly extended head band 3 are connected to the rim 1, the head band being made of elastic material. The invention comprises a top strap 4, one end of which is attached to the top of the shell 1, the other end of which is attached to the rear portion of the head band 3, there being a buckle 5 interposed in the top strap 3.

When the helmet is in place on the head of the wearer, the head of the wearer is inclosed by the water proof rim 2 which, fitting closely about the face of the wearer prevents water from entering the helmet. The band 3 extends across the back of the wearer's head, and the strap 4 extends along the top of the wearer's head, the helmet, in this way, being secured in place. The shell 1 of the helmet is provided with tubular projections 6 closed by transparent panes 7 which may be made of mica, the purpose of the panes 7 being to permit observation.

The numeral 8 marks a pipe which extends downwardly along the front of the shell, and backwardly along the top of the shell. The pipe 8 is held on the shell by retainers 9 and 10, the retainer 10 constituting, if desired a means for securing the forward end of the top strap 4 on the shell. The pipe 8 includes a rearwardly extended branch 11 secured to the shell 1 and opening into the shell, the branch being located at a point in horizontal alinement with the mouth of the wearer. In the outer portion of the pipe 8, opposite to the branch 11, there is an opening 12, clearly shown in Fig. 5. The opening 12 is controlled by an inwardly movable valve 14 secured by a rivet 15 to a stud 16 on a lever 17 disposed outside of the pipe 8 and pivoted at 18, at its lower end to ears 19 on the pipe. The upper end of the lever 17 is supplied with a cup-shaped socket 20 receiving one end of a compression spring 21, the other end of which abuts against the pipe 8 about a pin 22 which projects forwardly from the pipe.

The upper end of the pipe 8 terminates in an enlarged head 23 supplied with oppositely disposed guides 24. In the top of the head 23 there is an opening 25. A hood 26 preferably of conical form, is located above the head 23 and carries a stem 27 provided with a valve 28 controlling the opening 25, when the hood 26 moves upwardly. Connections 30, preferably in the form of rods, are provided, the rods being adapted to reciprocate vertically in the guides 24, the rods being supplied with stops 35, which, coacting with the upper ends of the guides 24, prevent the hood 26 from moving downwardly to such an extent as to cut off the passage of air into the hood. The lower ends of the rods 30 are secured to an annular float 31, disposed about the upper end of the pipe 8. If desired, the lower ends

of the rods 30 may be connected with a foot washer 32 resting on top of the float 31, there being a bottom washer 33 coacting with the float, the washers 32 and 33 being united by securing elements 34 passing through the float 31.

The invention comprises a life belt, which may be of any desired construction, and I do not bind myself to the specific form of life belt hereinafter described. The life belt may comprise bands 36 connected by upright floats 37, the ends of the bands being united by buckles 38 or in any other desired way. The belts are connected, further, by a tank 39 provided adjacent its lower end with an outlet 40 bearing a check valve 41 which opens outwardly and closes inwardly. The top of the tank 39 is supplied with a nipple 42, and a flexible tube 43 connects the nipple with the lower end of the pipe 8, the pipe 8 and the tube 43 constituting an air conduit, as will be understood when the operation of the structure is explained.

In practical operation, the bands 36 and parts carried thereby are placed on the body of the wearer, and the helmet, including the shell 1 and parts carried thereby, is placed on the head of the wearer. Under ordinary conditions, the valve 28 does not close the opening 25, and, consequently, air can pass beneath the hood 26, into the pipe 8, and be breathed through the branch 11 of the pipe 8. If there is a sea running, the float 31 will be raised, elevating the rods 30 and the hood 26, the valve 28 moving upwardly along with the stem 27, and the opening 25 being closed. Therefore, water cannot run downwardly into the tube 8 and drown the wearer of the device. During the time that the valve 28 closes the opening 25, the wearer may exhale and inhale air from the tank 39, by way of the tube 43 and the lower end of the pipe 8. If the air in the tank 39 should become foul, the wearer may blow through the branch 11 and the tube 43 thus expelling the foul air in the tank through the outlet 40, the check valve 41 opening outwardly, but closing inwardly to prevent water from entering the tank. By the operation above described, water may be ejected from the tank 39, if, from any cause, water should have collected therein. If the wearer desires to converse with those about

him, the lever 17 may be swung inwardly by hand, the spring 21 being compressed, and the valve being backed away from the opening 12, whereupon the voice of the wearer can be heard through the branch 11 of the pipe 8 and the said opening. The spring 21, obviously, coöperates with the lever 17, and forms a means whereby the valve 14 is held normally in closed relation with respect to the opening 12.

Having thus described the invention, what is claimed is:—

1. A life preserver comprising a helmet; an air tube communicating with the helmet and provided with an opening disposed adjacent to the mouth of the wearer; a valve controlling the opening; a valve controlling the upper end of the tube; and a float operatively connected with the last specified valve.

2. A life preserver comprising a helmet; an air tube communicating intermediate its ends with the helmet and provided with an opening located adjacent the place of communication between the tube and the helmet; a valve controlling the opening; a valve controlling the upper end of the tube; a float operatively connected with the last specified valve; a tank wherewith the lower end of the tube communicates; and an outwardly opening check valve operatively connected with the tank.

3. A life preserver comprising a helmet; an air tube opening into the helmet and provided at its upper end with a head having an opening; a valve controlling the opening; a hood shielding the opening; means for connecting the valve with the hood; a float; and means for connecting the float with the hood.

4. In a device of the class described, a helmet; an air tube communicating with the helmet and having an opening adjacent its upper end; a hood shielding the opening; a valve controlling the opening and connected with the hood; a float; a connection between the float and the hood; and means carried by the tube for receiving the connection slidably.

In testimony that I claim the foregoing as my own I have hereto affixed my signature.

STEVEN MÜLLER.