Jan. 26 , 1926. 1,570,636

A. MEILLAND

LIFE PRESERVING SUIT

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Fig. 1.

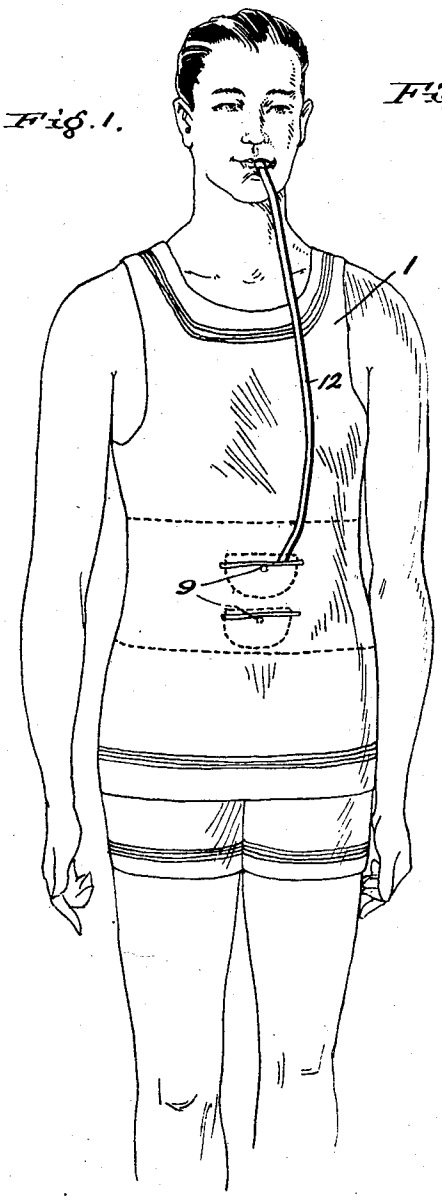


Fig. 2.

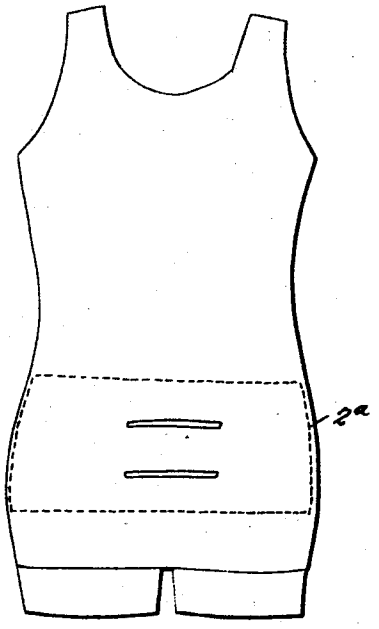
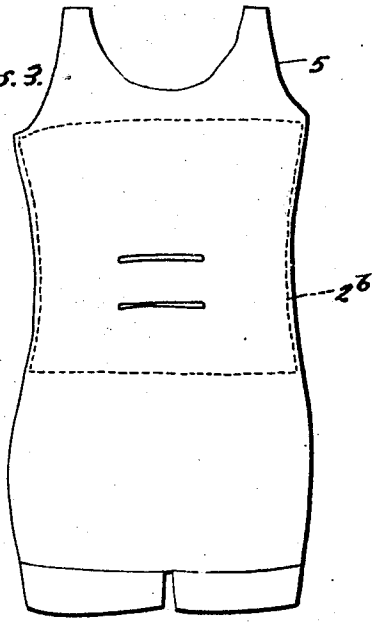


Fig. 3.



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LIFE PRESERVING SUIT

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Fig. 4.

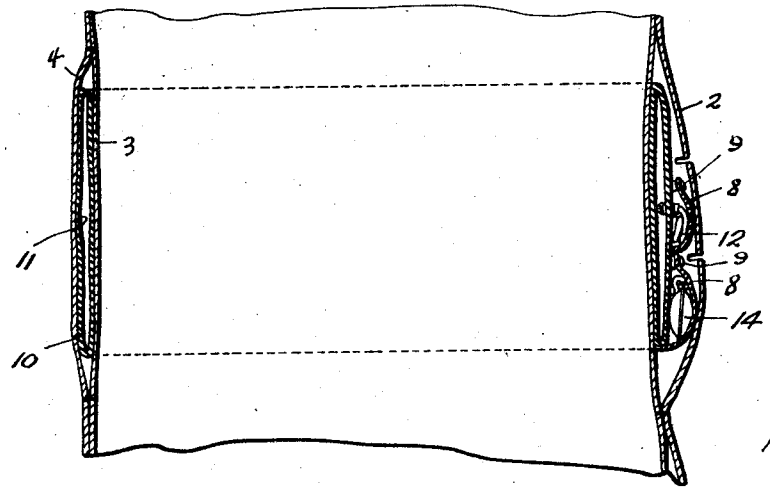
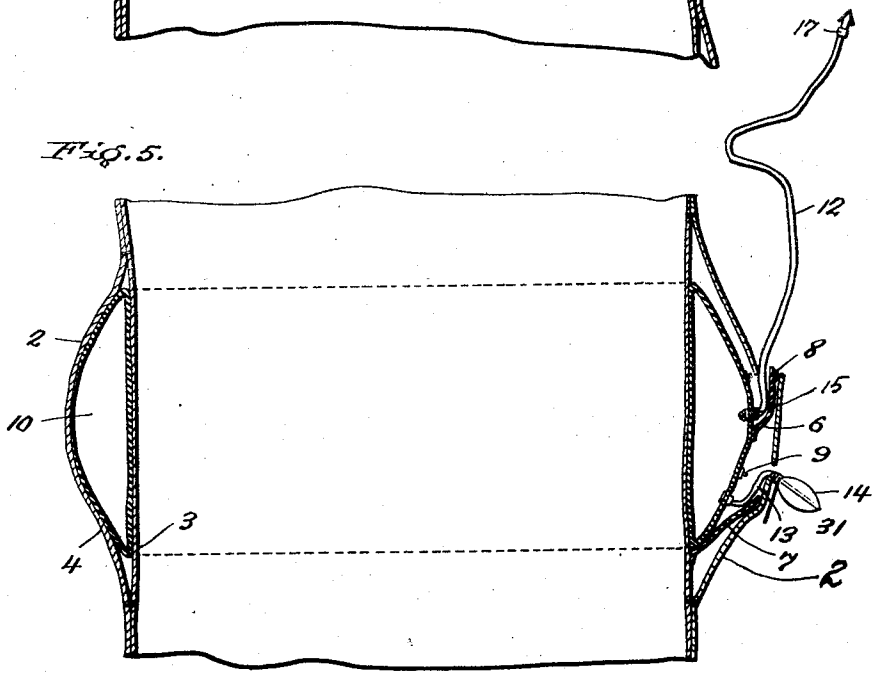


Fig. 5.



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LIFE PRESERVING SUIT

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Fig. 8.

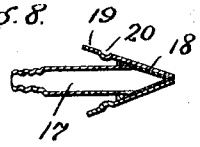


Fig. 9.

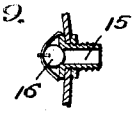


Fig. 6.

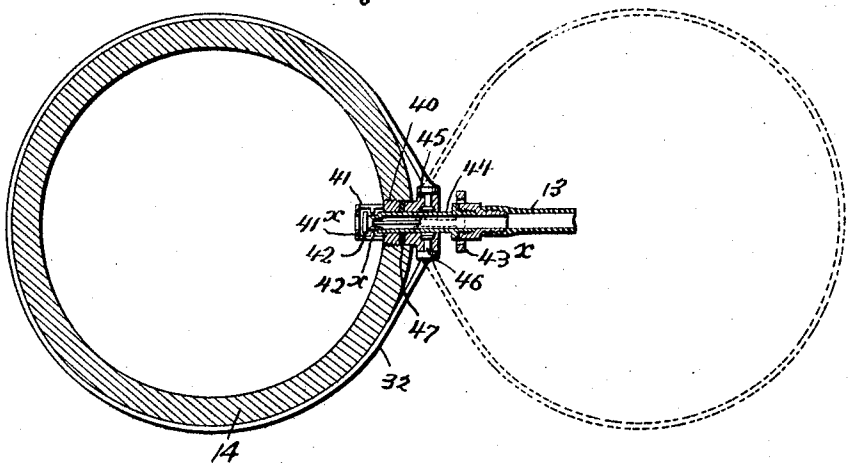
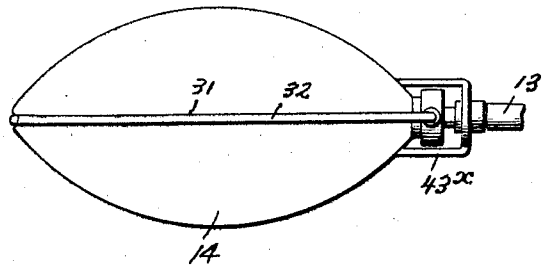


Fig. 7.



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A. MEILLAND

LIFE PRESERVING SUIT

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Fig. 10.

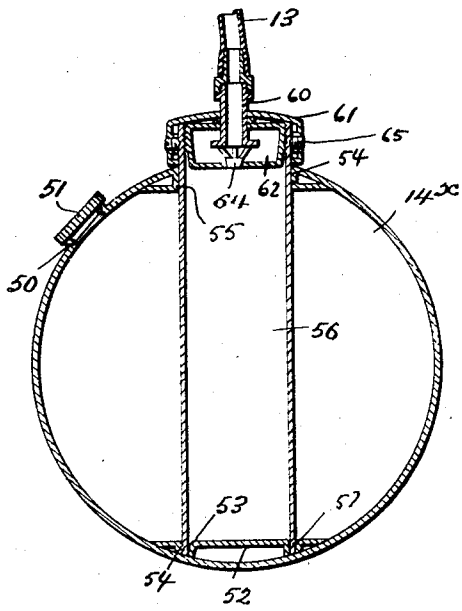
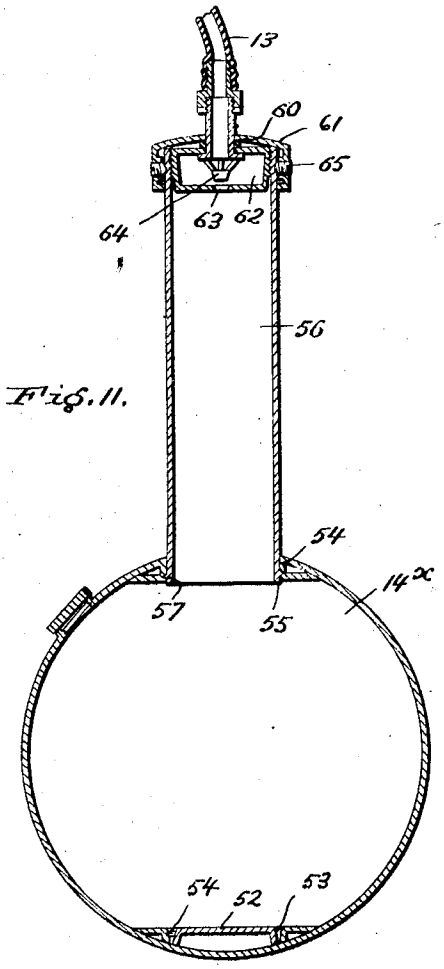


Fig. 11.



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WITNESS: Gerald Hemmer

Patented Jan. 26, 1926. 1,570,636

UNITED STATES PATENT OFFICE.

ANDREW MEILLAND, OF BUFFALO, NEW YORK.

LIFE-PRESERVING SUIT.

Application filed October 13, 1924. Serial No. 743,408.

To all whom it may concern:

Be it known that I, ANDREW MEILLAND, a citizen of the Republic of Switzerland, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Life-Preserving Suits, of which the following is a specification.

The general object of my invention is the provision of a bathing suit which under normal conditions presents the usual appearance of a bathing suit, but which in the event of an emergency may be inflated so as to adequately support the wearer of the suit in the water.

Another object of the invention is the provision of important means for effecting inflation of the bathing suit when it is desired to impart a buoyant quality thereto.

Other objects and practical advantages of the invention will be fully understood from the following description and claims when the same are read in connection with the drawings forming part of this application, in which:

Figure 1 is a view showing my embodiment in use and also showing the manner in which the wearer of the suit inflates the same.

Figures 2 and 3 are views showing different positions in which the expansible fluid pressure container may be arranged in the bathing suit.

Figure 4 is an enlarged vertical section showing the fluid pressure container deflated.

Figure 5 is a similar view showing said container inflated.

Figure 6 is an enlarged detail section showing the reservoir tank for the fluid under pressure and the valved conduit means in connection therewith.

Figure 7 is an edge elevation of said reservoir tank taken at right angles to Figure 6.

Figures 8 and 9 are enlarged detail sections illustrative of the valves hereinafter referred to.

Figures 10 and 11 are views showing modified means for inflating the expansible container.

Referring by numerals to Figures 1, 4 and 5, 1 designates a bathing suit which may be and preferably is of the well known construction save in the respects hereinafter noted, therefore of the same general appearance as an ordinary bathing suit.

In the embodiment shown in Figures 1, 4 and 5, the bathing suit is provided about the waist with a pocket 2 formed by inner and outer layers 3 and 4 of the same material as the remainder of the bathing suit. In the embodiment shown in Figure 2, the pocket 2^a similar to the pocket 2 is shown as located above the hip portion of the bathing suit, while in Figure 3, a pocket 2^b similar to the pocket 2 is arranged about the torso portion of the bathing suit, i. e. from about the height of the arm holes 5 to a point above the hips.

Irrespective of the location of the said body encircling pocket of the bathing suit, the pocket encloses two subcompartments 6 and 7 equipped with closure flaps 8 designed to be detachably secured in closed position by male and female fasteners 9 or other appropriate means.

In the body encircling pocket of the suit is arranged an inflatable container 10 of rubber or other appropriate material, the said container 10 being provided at 11, Figure 4, with a comparatively thin wall portion to facilitate its inflation. When deflated, the container 10 appears as shown in Figure 4 and consequently it will not in any material degree change the appearance of the bathing suit. When however, the container 10 is supplied with fluid under pressure and the said fluid pressure is retained in the container 10, the container 10 will be maintained in the distended state shown in Figure 5 and hence will form an efficient life belt possessed of sufficient buoyancy to support the body of a person in the water.

My invention contemplates the wearing of the bathing suit under normal conditions in or out of the water when the container 10 is in the state shown in Figure 4, and it will be appreciated that when the bathing suit is so worn it may be used in lieu of underwear.

When it is desired to impart a life saving quality to the bathing suit, the same is accomplished by supplying fluid under pressure to the container 10 and inflating the said container to the extent desired or necessary. The expansion of the container 10 may be effected through the medium of a tube 12 or through the medium of a tube 13 in connection with a reservoir tank 14. The

tube 12 is connected at one end to a nipple 15 in connection with the interior of the container 10 and provided with an outwardly seated non-return valve 16. Said tube 12 is also provided with a mouth piece 17 on which are hinged valve members 18 having arms 19 with indentures 20 designed to receive the teeth of the wearer of the suit. The purpose of the construction just described will be understood when it is stated that when the wearer of the suit desires to inflate the container 10, it is simply necessary for the wearer to open the subcompartment 6 and remove the tube 12 therefrom and place the mouth piece 17 in his mouth with the teeth operating against the valve members 18 to open the said valve members. Then by blowing through the tube 12 the wearer is enabled to expand the container 10 until it is possessed of sufficient buoyancy to support the body of the wearer in the water. With this done, the mouth piece 17 is removed from the mouth when the members 18 will automatically close, the outer end of the tube 12 so as to exclude water from the interior thereof. The tube 12 is then replaced in its sub-compartment 6 and the said compartment is closed and fastened.

Removably arranged in the sub-compartment 7 of the suit is a reservoir 14 which is preferably of steel and is preferably shaped as shown in Figures 6 and 7, and is designed to contain any appropriate fluid under high pressure. The said tank 14 is connected by a flexible tube 13 with the interior of the container 10. It will also be noted that the tank 14 is provided with an exterior groove 31. This groove 31 is designed when the tank 14 is not in use to receive a bail 32 which is designed and adapted to be snapped into and out of engagement with the groove. The tank 14 also is equipped with a peculiar and advantageous valve which is clearly illustrated in Figure 6. By referring to said figure the valve construction will be understood as comprising an annulus 40 appropriately fixed in the inner portion of the wall of the tank 30. On said annulus 40 is a cage 41 having an annular end 41^x for cooperating with a headed valve 42 having a stem 43. The said valve also comprises a rectilinearly movable portion having a tube 44 for connection with the tube 13 and also having an enlarged outer portion 45 in which the ends of the bail 32 are journaled as designated by 46. When the bail 32 is in the position shown by full lines in Figure 6, the head of the valve 42 will be held by the pressure in the tank 30 against the inner end of the tube 44, and hence fluid under pressure will be effectively prevented from escaping from the tank 14, and it will be understood in this connection that a gasket 47 is employed between the annulus 40 and the enlarged portion 45 of the rectilinearly movable element. When, however, the bail 32 is snapped off the tank 14 it will be understood that the rectilinearly movable portion of the valve is free to move outwardly, and will so move. When this takes place, the tube 44 moving with the said element will enable the head of the valve 42 to bring up against inward projections 42^x on the cage 41, and hence the valve 42 will be opened and fluid under pressure will be permitted to pass from the interior of the tank 14 through the tube 44 and 13 to the container 10 for the inflation of the latter. After the inflation of the container 10 by pressure from the tank 14, the bail 32 is restored to the position shown in Figure 7, when the tank 14 is replaced in the sub-compartment 7 of the suit.

In order to preclude blowing off of the valve from the tank 30 the valve is preferably connected to the tank 14 by an anchor 43^x as shown in Figure 7.

Manifestly when it is necessary to quickly inflate the container 10 it is preferable to use for the purpose the pressure contained in the reservoir tank designed by 14 in Figure 5 and by 14 in Figures 6 and 7.

In Figures 10 and 11, I illustrate a modified tank 14^x which may be employed when expanded in lieu of the tank 14 . The said tank 14^x is provided with a filling opening 50 normally closed by a plug 51 and it is also provided with an interior closure portion 52 surrounded by an annular recess 53 the outer wall of which is interiorly threaded as designated by 54. Opposite the said closure portion 52 the tank 14^x is provided with a reenforced opening 54 threaded at 55. Movable through the opening 54 from the position shown in Figure 10 to that shown in Figure 11 and vice versa is a tube 56 that is open at its inner end and is provided adjacent to said end with an exterior thread 57. When said thread 57 engages the thread 54 the inner end of the tube will manifestly be hermetically sealed by the closure portion 52 of the tank, and when the tube 56 is moved away from the said closure portion 52 substance in the tube 56 is permitted to commingle with a solution or other substance in the tank 14^x so as to give rise to the generation of inflating gas. The outer end of the tube 56 may within the purview of my invention be connected to the tube 13 in any approved manner so as to lead the inflating gas into the expansible container 10. I prefer, however, to connect the tube 13 to a nipple 60 that is slidably arranged in a cap 61 and a plug 62, the said plug 62 being hollow and provided with an aperture 63 for the passage of inflating gas, and the nipple 60 being provided at its inner end with a valve 64 which in the position shown in Figure 10 will effectively prevent escape of gas from the tube 56 to the nipple 60. When,

however, the nipple 60 is moved rectilinearly to the position shown in Figure 11 the aperture 63 will be uncovered and gas may then pass from the interior of the tank 14ˣ through the tube 56, the aperture 63, the nipple 60 and the tube 13 to the expansible container 10. The hollow plug 62 is preferably connected in detachable manner by an appropriate thread to the tube 56. It will also be noted that the cap 61 is detachably connected by set screws 65 to the tube 56 so that after the cap 61 is removed from the tube 56 and the plug 62 is displaced, the tube 56 may be charged with the substance that it is desired to employ. It will be readily understood that a slight outward pull on the nipple 60 is all that is necessary to unseat the valve 64 and uncover the aperture 63 for the purpose indicated. I would also have it understood that when the tube 56 is moved to the position shown in Figure 11 it may be detachably secured in said position by turning the thread 57 into engagement with the thread 55. The substance placed in the tube 56 is preferably in the form of sticks and is isolated from the solution in the tank 14ˣ so long as the tube 56 occupies the position shown in Figure 10.

To refill the tank 56 is first restored to the position shown in Figure 10 after which the tank 14ˣ is charged through the opening 50, and the tube 56 is charged through the open outer end thereof after which the plug 62 and the cap 61 are replaced and secured in position.

It will be understood that in addition to the practical advantages ascribed to my improvement, all embodiments of my invention are simple and inexpensive in construction and are free of delicate parts such as are likely to get out of order after a short period of use.

Like the tank 14, the tank 14ˣ when not in use is designed to be carried within the pocket 7 or sub-compartment 7 of the suit.

I have specifically described the preferred embodiments of my invention, in order to impart an exact understanding of said embodiments. I do not desire, however, to be understood as confining myself to the specific disclosure herein, my invention being defined by my appended claims within the scope of which changes may be made without affecting my invention.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In life preserving means, an inflatable container, a tank, a tube detachably secured in the tank with its interior normally isolated from the interior of the tank, and movable relative to the tank to establish communication between the interiors of tank and tube, a closure at the outer end of the tube including a rectilinearly-movable nipple and a valve carried by the nipple and adapted to control the escape of gas from the tube, and a tube connecting said nipple and the interior of the inflatable container.

2. In life preserving means, an inflatable container, a tank, a tube detachably secured in the tank with its interior normally isolated from the interior of the tank, and movable relative to the tank to establish communication between the interiors of tank and tube, a closure at the outer end of the tube including a rectilinearly-movable nipple and a valve carried by the nipple and adapted to control the escape of gas from the tube, and a tube connecting said nipple and the interior of the inflatable container; the said closure also including a plug and a cap detachably connected to the outer end of the tube.

In testimony whereof I affix my signature.

ANDREW MEILLAND.