

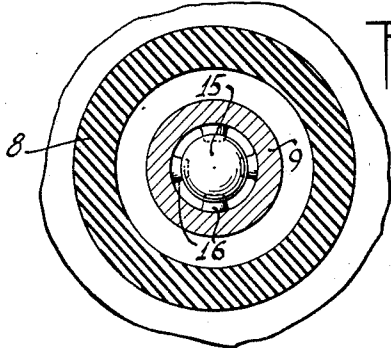
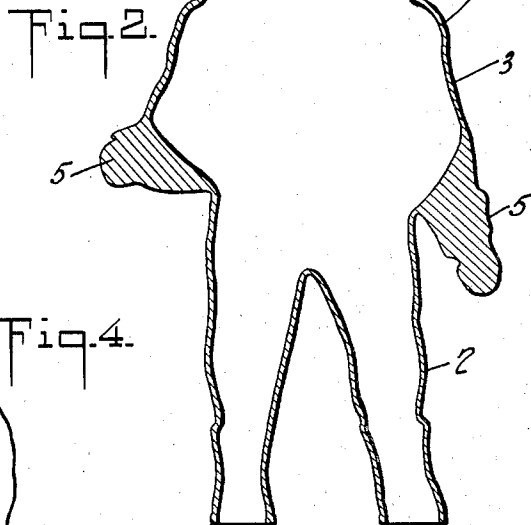
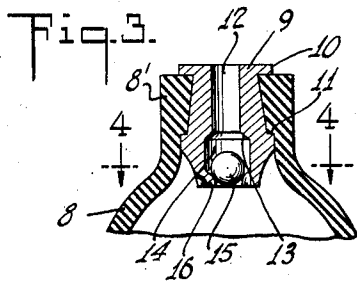
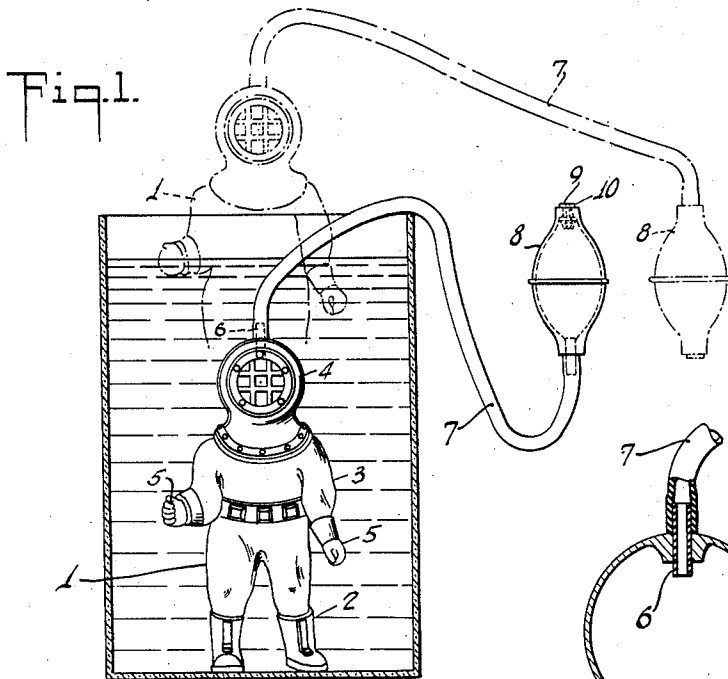
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DIVER TOY

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DIVER TOY

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5 Claims. (Cl. 46—92)

This invention relates to toys and particularly a toy for use in water.

More particularly, the invention relates to a novel and improved diver toy, and an object of the invention is a toy of simple structure and mechanism capable of manipulation and operation by children of tender age.

A further object of the invention is a toy characterized by the realistic manner in which the toy figure may be caused to be lowered in an upright position and likewise elevated to the surface of the water in an upright position to simulate the movements of a human diver, and further characterized by the simplicity of the control and operating means for effecting these operations.

Further objects of the invention will hereinafter appear.

For a better understanding of the invention, reference may be had to the accompanying drawing showing one embodiment thereof, wherein—

Fig. 1 is a view in elevation of a toy embodying the invention and indicating positions both at the bottom of the tank and at the surface of the water;

Fig. 2 is a section through the figure of the toy;

Fig. 3 is a section through a part of the control element of the toy; and

Fig. 4 is a sectional view along the line 4—4 of Fig. 3.

The invention is illustrated as embodying a figure 1, in the particular embodiment shown simulating a human diver equipped for operations on the bottom of the sea. This figure has hollow legs 2, a hollow body 3 and a hollow head 4. The hands 5 may be hollow or solid as may be desired. The head 4 of the figure is provided with an opening at the top containing a tubular nipple 6 with which is connected an air tube 7, the latter being flexible so as to readily accommodate itself to the movements of the figure 1 and to the movements of a control and manipulating element 8. The latter in the particular embodiment shown comprises a conventional rubber bulb, which is connected at one end with the free end of the flexible tube 7. The bulb 8 is provided at its end opposite to the end which is connected to the tube 7 with a valve element comprising a plug 9 having a flange 10 at the top and a shoulder 11 around the body thereof between which the inner wall of the neck 8' of the rubber bulb 8 fits to form an airtight seal about the plug. The plug is provided with a central bore 12 leading to a valve seat 13

and is provided with a chamber 14 in which is disposed a ball valve 15. The latter is retained in the chamber 14 by means of fingers or lugs 16 formed integrally with the plug 9 and peened inwardly to retain the ball valve element 15 in position when the rubber bulb 8 is turned in the position shown in full lines in Figs. 1 and 3.

The operation is as follows: When the rubber bulb 8 is reversed in position as shown in the dot and dash lines in Fig. 1, the ball valve 15 rests by gravity upon the seat 13, and in this position air may be alternately drawn into the bulb past the ball valve 15 and forced down into the tube 7, hollow head, body and legs of the figure to generate a pressure slightly above atmospheric pressure therein so as to elevate the figure 1 from the bottom of the tank of water to the position shown in dot and dash lines. This is effected by the simple operation of alternately squeezing or pressing and releasing the bulb 8. This operation requires very little effort and if the bulb 8 is made of sufficiently small dimensions a child of tender years, say two or three years, may alternately squeeze it so as to build up pressure inside the toy above the water level in the tube and hollow body of the toy so as to cause the elevation of it to the surface of the water as indicated in Fig. 1, in a manner simulating the movements of a human diver. To lower the diver to the bottom of the tank it is only necessary to change the position of the rubber bulb 8 from the vertical, shown in dot and dash lines, to a sufficient extent to cause the ball valve 15 to leave the valve seat 13, and when this happens the air pressure inside the hollow figure becomes atmospheric and thereupon the figure descends by gravity to the bottom of the tank as indicated in full lines in Fig. 1.

It is understood, of course, that while the pressure on the inside of the hollow figure for elevating it is slightly greater than atmospheric this pressure is not sufficient to hold the ball valve 15 against the seat 13 when the bulb is turned over from the position indicated in the dot and dash lines in Fig. 1 as, for example, to assume the position shown in full lines in that figure.

The figure may be made of any suitable material. It may be formed of the same material throughout the body or, as indicated in Fig. 1, the head may be of aluminum while the body part 3 may be of some different material. Preferably the figure is so weighted that it tends to occupy a vertical position with head up in the

tank at all times whether it is being lowered to the bottom of the tank or elevated to the water level. This is effected by arranging to have the center of gravity of the figure at a point below the center of buoyancy, and this may be effected in any suitable manner as, for example, by suitably proportioning the weight of the figure in the different parts thereof as, for example, by having the lower part of the figure of a heavier construction than the upper part, and correspondingly designing for the center of buoyancy.

I claim:

1. A diver toy of the character set forth comprising a hollow figure open at one end, a rubber bulb having one end in air communication through a flexible tube with the closed end of said figure, and the other end of said bulb having an atmospheric outlet controlled by a ball valve, said ball resting by gravity upon the valve seat in one position of the rubber bulb but adapted to be removed from said seat in another position of said rubber bulb.

2. A diver toy of the character set forth comprising a hollow figure open to the water at one end, a flexible tube for establishing communication between the other end of said figure and the air, and a pumping device connected with the free end of said flexible tube, said pumping device in one position being capable by the manipulation thereof of pumping air into the hollow figure above the water level therein to elevate the figure in the water and in another position to establish free communication between the air and the inside of the figure.

3. A diver toy of the character set forth comprising a hollow figure open at one end, a rubber bulb having one end in air communication through a flexible tube with the closed end of

said figure, and the other end of said bulb having an atmospheric outlet controlled by a ball valve, said ball resting by gravity upon the valve seat in one position of the rubber bulb but adapted to be removed from said seat in another position of said rubber bulb, in one position of the rubber bulb, the ball valve resting upon the valve seat by gravity and upon reversal of the position of the rubber bulb, said ball valve dropping by gravity from said seat.

4. In an upright diver toy of the character set forth, a figure having a hollow chamber therein open at the bottom to the water in which the figure is immersed for free and unhindered communication with the water and having an air opening at its top leading to said chamber, a flexible tube attached to said opening and establishing communication between the atmosphere and said hollow chamber and a hand-manipulatable air pump connected with said tube for forcing air through said tube into the hollow chamber and for establishing free communication between the air and said hollow chamber.

5. A diver toy of the character set forth comprising a hollow figure open to the water at one point, a flexible tube for establishing communication between said figure and the air, and a pumping device connected with the free end of said flexible tube, said pumping device in one position being capable by the manipulation thereof of pumping air into the hollow figure above the water level therein to elevate the figure in the water and in another position to establish free communication between the air and the inside of the figure.

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