May 23, 1950 R. H. SEAMAN 2,509,112

DIVING TOY

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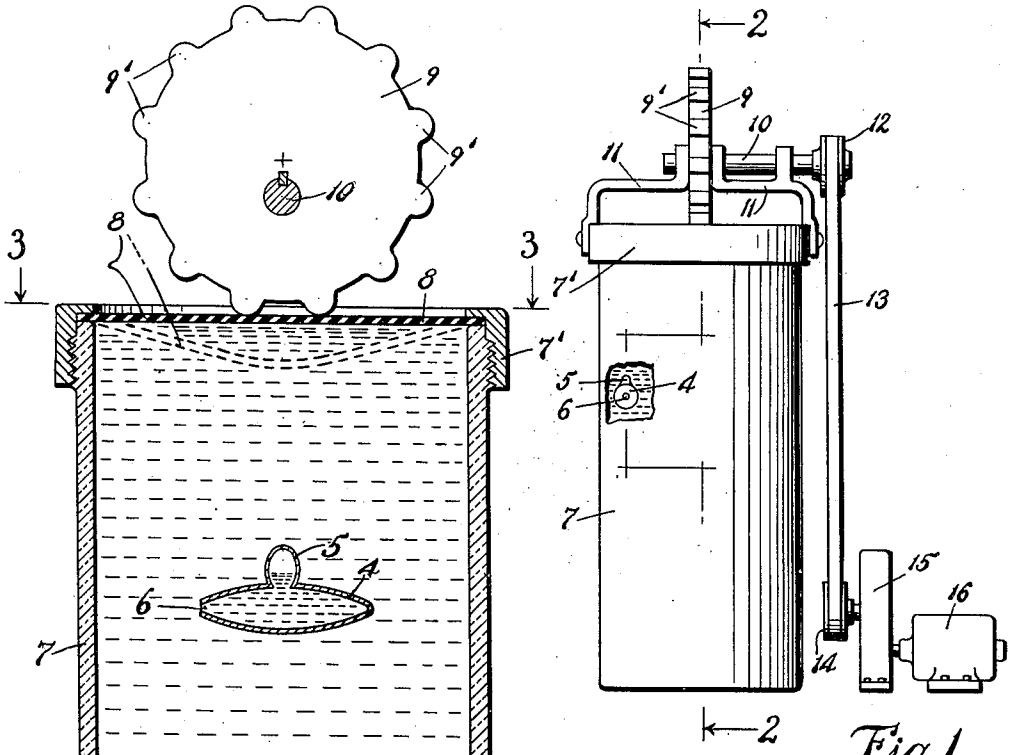


Fig. 1

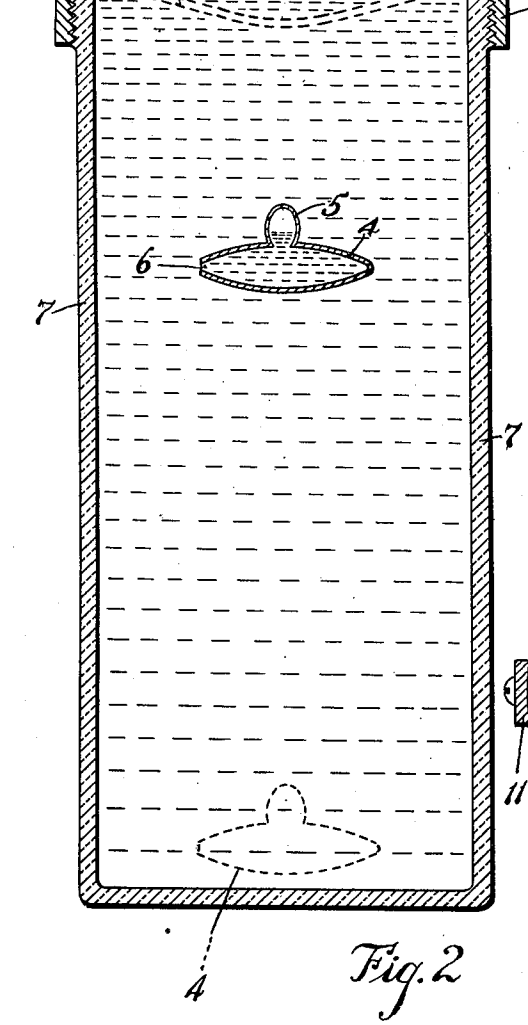


Fig. 2

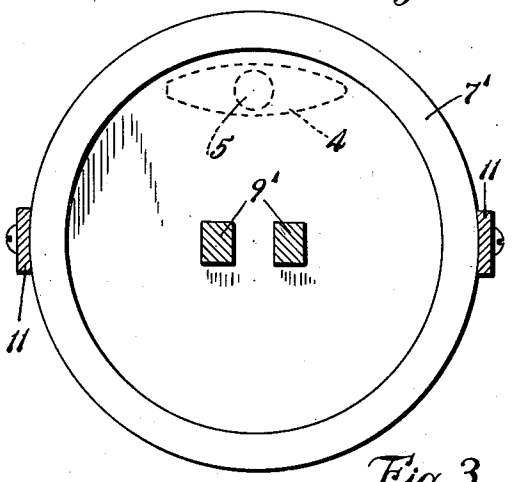


Fig. 3

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DIVING TOY

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2 Claims. (Cl. 272—8)

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My invention relates to that type of diving toys wherein an article in a container filled with liquid may be caused to rise and sink in said liquid by certain manipulations.

In all of these toys, so far as I am aware, the only movement which is possible is that movement of sinking and rising to the top or surface of the liquid as the container or some part of the container is intermittently compressed.

I have conceived the idea of a diving toy article or member which can be caused to move horizontally, as well as up and down.

I am, therefore, enabled to make my toy in the form of a submarine boat, fish, swimmer or other toy, the desired movement of which is horizontally, as well as up and down, and in which the movement can be accelerated by a method of manipulation.

In order to explain my invention, I have illustrated one practical embodiment thereof on the accompanying sheet of drawings, in which:

Figure 1 is a side elevation of a toy apparatus embodying my invention, and also showing mechanical means for manipulating the portion thereof which causes the desired movements of the diving member;

Figure 2 is an enlarged vertical sectional view, taken on the line 2—2 of Fig. 1; and

Figure 3 is a cross sectional view taken on the line 3—3 of Fig. 2.

My invention, as here illustrated, is in the form of a submarine boat, designated 4, with a dome portion 5, closed and which forms a trap for a certain amount of air, said boat having an opening 6 in its end, whereby water or other fluid can enter and fill it, with the trapped air held in the dome portion, as shown, and as is well known.

I have shown the diving boat suspended in a container 7, of transparent material, with a flexible top 8, which can be compressed, as indicated by the light broken lines. This flexible top 8 can be flexed inwardly by the pressure of the hand and slowly or rapidly as desired for causing the movement up and down, and around and around, of the submarine.

As one means for mechanically manipulating the toy, as for window display, I have shown an eccentrically mounted disc 9, on a shaft 10, having bearings in a yoke structure 11, secured to the cover rim 7', with a pulley 12, driven by a belt 13, from a motor driven pulley 14, driven by a train of gears in the housing 15, and driven by a motor 16. Any driving means can be used, as may be desired.

The disc or member 9 is provided around its periphery with a series of knobs or lug portions, designated 9', designed, when said disc is driven, to intermittently tap the flexible top 8, as will be understood. This tapping action causes the horizontal movement.

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Inasmuch as said disc is eccentrically mounted on said shaft 10, it will, with each revolution, dip downwardly and depress the flexible top 8 to the position indicated by the light broken lines.

The cam disc 9 being eccentrically mounted intermittently engages and depresses the flexible top 8, as indicated in light broken lines, thus causing the boat to sink during the depression, and then to rise as the top 8 rises. The knobs on said disc 9 cause a more rapid tapping on said top 8, sufficient to cause a puffing discharge of water through the rear opening 6, giving propulsion forwardly to the boat.

The operation of the toy may be briefly stated as follows:

As the top 8 is depressed, the water in the container is forced into the submarine, through the end opening 6, which in turn compresses the air trapped in the dome portion of the submarine. This additional water therein causes said submarine to sink. As the pressure is released, the expansion of the air in the dome of the submarine forces the water out of the submarine through the end opening 6, against the water or fluid in the container, and this causes the submarine to move by a sort of jet propulsion from the rear thereof.

The toy can be a submarine boat, fish or any other thing which is to move horizontally, in the manner just described. The inlet for the water is in a horizontal direction, as at the end, and the discharge is the same. I do not, therefore, limit the invention to a submarine, as the particular toy, but intend that any horizontally movable toy member or thing can be used.

I claim:

1. In a diving toy, the combination of a closed container and liquid therein, said container having a portion to be compressed to increase pressure on the liquid in said container, a disc rotatably mounted to turn on an eccentric axis to intermittently put pressure on said portion by the eccentric movement of said disc, said disc having spaced enlargement portions on its periphery to successively engage and slightly compress said portion, a diving element of selected buoyancy submerged in the liquid in said container and having an air pocket in its upper portion and an opening in its lateral end for inflow and outflow of liquid into and out of said element as said con-

tainer is compressed and expanded, whereby to cause down and up movement of said diving element and to cause horizontal movement thereof as liquid is forced therefrom through said opening.

2. In combination with a container with liquid therein, said container having a flexible part to be pressed inwardly to increase pressure on the contents thereof, a toy boat of horizontally elongated form with a small dome on top thereof to form an air trap, and having an inlet and outlet opening in its end for inflow and outflow of liquid as pressure is applied to said container flexible portion, an eccentrically mounted member in engagement with the flexible part of said container with means for revolving it to intermittently put pressure on said flexible part, as said member is revolved, whereby to intermittently cause inflow and outflow of liquid into and out of said boat to cause it to fall and rise in said container, said eccentrically mounted member having protuberances around its edge to cause a tapping action on the flexible part of said container as said eccentrically mounted member is revolved to cause more rapid intervals of pressure on the flexible part of said container for the purpose described.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,454,426	Clements	May 8, 1923
1,595,828	Fuller	Aug. 10, 1926
1,675,522	Weidinger et al.	July 3, 1928

FOREIGN PATENTS

Number	Country	Date
10,317	Great Britain	A. D. 1896