(No Model.)

E. P. ROBERTS.

FLOATING FIGURE.

No. 479,530. Patented July 26, 1892.

Fig. 1

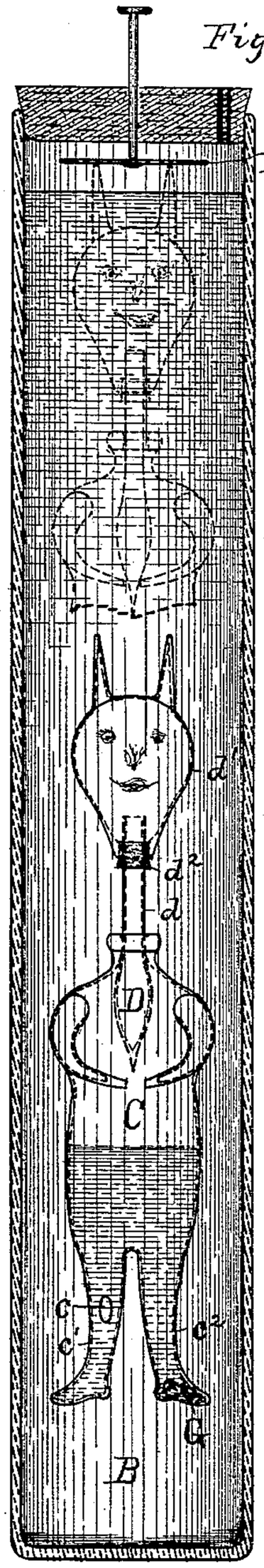


Fig. 2

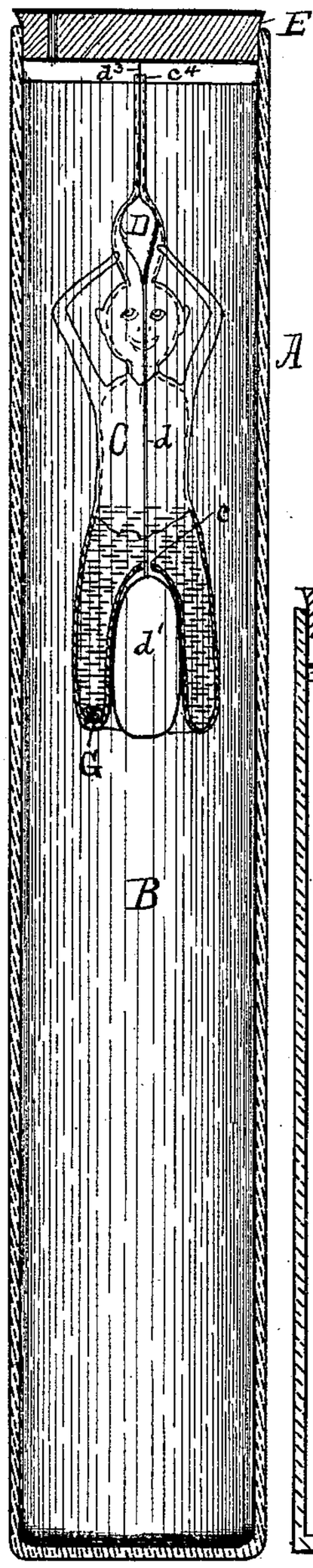
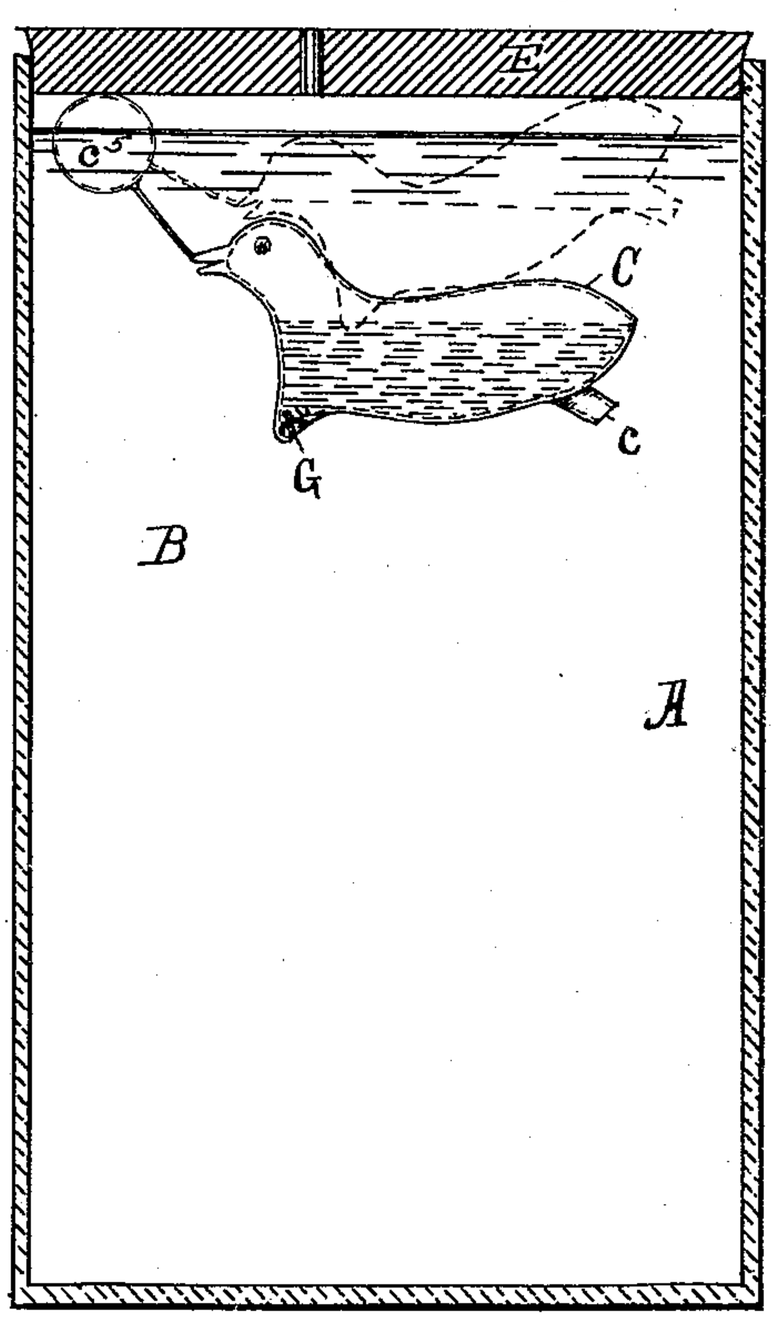


Fig. 3



WITNESSES.

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FLOATING FIGURE.

SPECIFICATION forming part of Letters Patent No. 479,530, dated July 26, 1892.

Application filed October 5, 1891. Serial No. 407,719. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. ROBERTS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatically-Movable Floating Figures, of which the following is a specification, reference being had to the accompanying drawings.

The particular object of the invention hereinafter described is to provide a device which will attract attention and amuse and entertain those who see it.

In the drawings, Figure 1 is an elevation of the device in its best form, the containing-vessel being shown in vertical section. Fig. 2 is a similar view of a modified form of the device, and Fig. 3 is a similar view of another modified form thereof.

I will first describe in detail the construction shown in Fig. 1 and will then point out certain possible modifications thereof, referring to the other figures.

Referring to the parts by letters, A represents a receptacle, (preferably made of glass,) and B a fluid (which may be dilute sulphuric acid) contained therein.

C represents a hollow buoyant body, which will if partially empty float in the fluid B. This body C is best suited to the purpose in my opinion when made of glass to represent, grotesquely, a man's body. In one hollow leg c' an orifice c is formed, through which the fluid in the receptacle may flow into or from the body, according to circumstances which will be hereinafter described. In the other leg c^2 is placed a substance G—as, for example, zinc—which will chemically combine with the fluid B and form a gas. When the body C is first placed in the fluid, it is partially filled with the fluid, so that it will sink to the bottom of the receptacle. As the gas is generated it forces the fluid out gradually through the orifice c until the specific gravity of the body becomes such that the body automatically rises to the top of the fluid. To cause this figure to descend, means are provided whereby the gas is caused to escape when the body is at or near the top of the fluid. The means provided consist of an opening in the upper end of the figure and a valve for closing the same and means for opening the valve when the body is near the top of the fluid. The valve D is made of glass and is placed inside the body C. It is circular in cross-section and increases gradually in diameter from the top downward, and the opening in the upper end of the figure is also circular and of such size that as the valve is drawn outward it is seated against the lower edge of said opening, thus closing it. The stem d extends through the orifice and is attached to a glass float d', which forms the head of the image, the stem serving as the neck. The stem is adjustably connected with the float by means of a stopper d^2, through which the stem passes. When the figure rises to the top of the receptacle, the float strikes the stop E, which is adjustably secured to the stopper a of the receptacle. This opens the valve, the gas escapes, and the fluid in the receptacle rushes in through the orifice c and causes the body to sink.

The adjustment of the position of the stop and of the length of the neck are not essential to the correct operation of the device; but they afford ready means for correcting any faults in making the valve and float. The stop may be omitted altogether, and the valve will be opened when the float is carried above the liquid. The mere weight of the float will then open the valve.

It may be considered desirable by some people to disguise, as far as possible, the cause of the movement of the figure. This may be accomplished in part by making the lower part of the figure non-transparent, and thus the rise of the gas-bubbles through the liquid in the body C will be concealed.

The form of the device shown in Fig. 2 is especially designed to carry this concealment still further by arranging the opening through which the gas escapes from the figure at a point where said gas will escape above the surface of the fluid B. The upper part of the figure may be carried up in the form of a small tube c^4. The valve D is placed inside the figure, where it can close the lower end of said tube. A stem d^3 extends a short distance out of the tube. A second stem d extends downward through the body and is connected with a float d'. The hole in the bottom of the body through which the stem d passes serves for the passage of the fluid to

and from the body C. The stop E in this case is placed so far above the surface of the fluid that it will not be struck by the stem d^3 until the end of the tube c^4 is above the surface. The gas will therefore escape without being seen.

In Fig. 3 is shown a body of different shape and construction. It has only one opening at *c*. It is, however, provided with an upwardly-projecting arm c^5, which when the figure rises first touchs the stop E. The point of contact then serves as a center about which the figure turns until the orifice reaches a position where the gas can escape.

In each example of the device, as shown, the substance which combines with the fluid to liberate the gas is placed in such a position that as the gas rises it cannot escape through the orifice *c*. In Fig. 1 this substance is placed in one leg of the figure, while the orifice is in the other. In the other figure it will also appear that the gas as it rises has no opportunity to escape through said orifice *c*.

It is not pretended that the modifications hereinabove explained are the only possible modifications of the broad invention as claimed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a receptacle, a fluid contained therein, a hollow body submerged in said fluid having an orifice through which the fluid may flow into and out of said body, a substance contained in said body which is adapted to chemically combine with said fluid and generate a gas whereby the fluid is expelled from said body, and automatically-acting means for periodically permitting the escape of the gas and consequent readmission of the fluid, whereby said body automatically rises and falls in said fluid, substantially as set forth.

2. The combination of a receptacle and a fluid contained therein with a hollow buoyant body having two orifices, one in its lower end and one in its upper end, an automatically-closing valve adapted to close the upper orifice, and a substance contained in said body adapted to chemically combine with said fluid and produce a gas, and means for opening said valve, substantially as and for the purpose specified.

3. The combination of a receptacle and a fluid contained therein with a hollow buoyant body having two orifices, one in the lower part and one in the upper part, a valve adapted to close the upper orifice, a float attached to said valve, and a substance contained in said body adapted to chemically combine with said fluid and produce a gas, substantially as and for the purpose specified.

4. The combination of a receptacle and a fluid contained therein with a hollow glass figure having a bifurcated lower end, thereby forming two legs, said figure having one orifice in its upper end and another in one leg, a float-valve adapted to close the upper orifice, and a substance contained in the imperforate leg which is adapted to chemically combine with the said fluid and produce a gas, substantially as and for the purpose specified.

5. The combination of a receptacle and a fluid contained therein with a hollow glass figure having its lower part non-transparent, said figure having two openings, one in the lower and one in the upper part, a float-valve adapted to close the upper opening, and a substance contained in the said figure adapted to chemically combine with said fluid and produce a gas, substantially as and for the purpose specified.

6. The combination of a receptacle and a fluid contained therein with a hollow buoyant body having two orifices, one in the upper part and one in the lower part, a valve adapted to close said upper orifice, a stem to said valve extending out through said orifice, an adjustable stop adapted to be engaged by the outward extension of said valve, whereby the valve is opened, and a substance contained in said body adapted to chemically combine with said fluid and produce a gas, substantially as and for the purpose specified.

7. The combination of a receptacle and a fluid contained therein with a hollow buoyant body having two orifices, one in its upper and one in its lower end, a valve adapted to close said upper orifice, having a stem extending out through said orifice, a stop arranged to be engaged by the outward extension of said valve when the final outlet of the upper orifice is above the level of said fluid, and a substance contained in said body adapted to chemically combine with said fluid and produce a gas, substantially as and for the purpose specified.

8. A hollow buoyant body having two orifices, one in the upper part and one in the lower part, and a substance contained in said body and adapted to chemically combine with a fluid in which the body may be placed and generate a gas, combined with a float-valve adapted to close the upper orifice, substantially as and for the purpose specified.

EDWARD P. ROBERTS.

Witnesses:
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