March 25, 1952 M. SOSS 2,590,279

BUBBLING LIQUID TOY

Filed June 4, 1951 2 SHEETS—SHEET 1

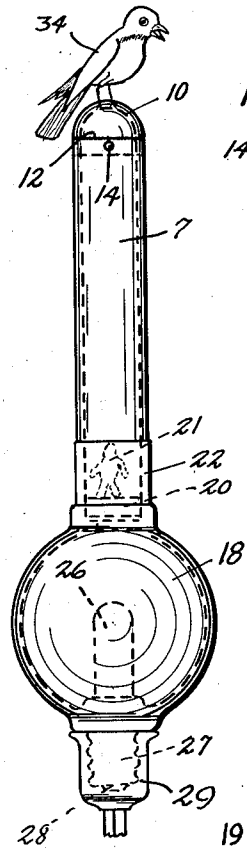


FIG-1

FIG-2

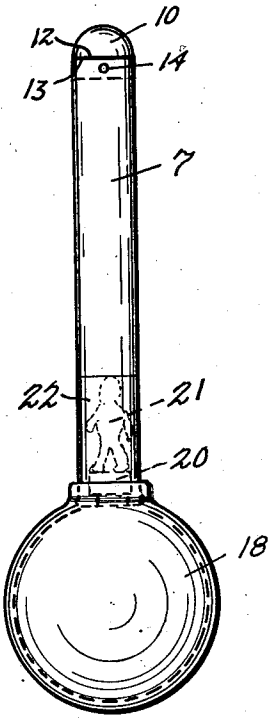


FIG-3

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BUBBLING LIQUID TOY

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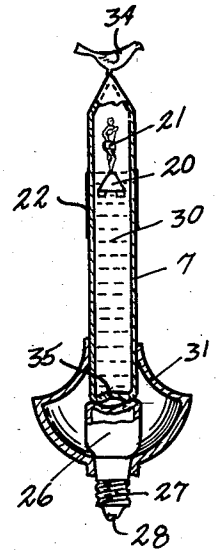


Fig. 4

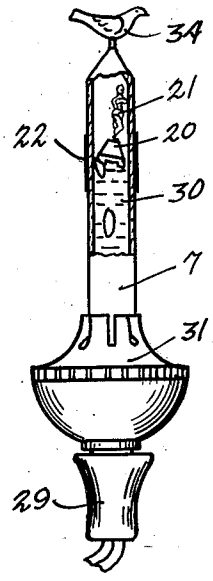


Fig. 5

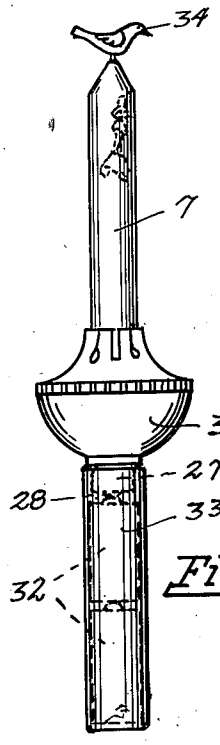


Fig. 6

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BUBBLING LIQUID TOY

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Application June 4, 1951, Serial No. 229,733

3 Claims. (Cl. 272—8)

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The present invention relates to toys of the type which are both amusing and thought provoking or educational.

One object of the invention lies in the provision of a toy having a tubular transparent body which encloses an image carried by a loosely fitting float and a flexible bulb having a liquid therein communicating with the lower open end of the tube to force liquid into the tube and cause the image to float upon the liquid.

Another object of the invention is to provide a toy of this type with heating means which will cause the liquid to bubble and thus cause the image floating thereon to bob and appear to be dancing.

Another object of the invention lies in the provision of a rotatable cap having a vent which may be aligned with a vent in the tube and permit air to pass into or out of the tube when the liquid is raised or lowered in the tube. The cap when sealed will maintain the liquid at a level in the tube by precluding the admittance of air above the liquid.

Another object of the invention is to provide a toy which is attractive to children and which is constructed and operable so as to provoke thought and help improve the scientific mind of a child.

These and other objects will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of my improved toy,

Figure 2 is a vertical cross section taken through the toy and upon an enlarged scale,

Figure 3 is a side elevation of a modified form of the toy having the heating element removed,

Figure 4 is a view of a further modified toy partially in vertical cross section and partially in side elevation,

Figure 5 is a side elevation with parts broken away to show bubbles causing the float to bob, and,

Figure 6 is a side elevation of the toy of Figures 4 and 5 showing a battery container for power to operate the heater.

Referring now more particularly to the drawings, I have provided a toy having a transparent tubular body or tube 7 which may be formed of glass or other suitable material, and the tube 7 is provided at its open upper end 8 with internal threads 9. A dome shaped cap 10 has a depending annular flange 11 which is of a smaller diameter than the outer periphery of the cap 10 and thus forms a shoulder 12 adapted to limit downward movement of the cap 10 into tube 7. The flange 11 is threaded externally at 9', and these threads cooperate with the threads 9 to secure the cap upon the tube in sealing relation thereto. One half turn before the shoulder 12 seats itself on the upper end face 13 of tube 7, a hole is drilled through the juxtaposed flange and side wall of the upper end of the tube 7 to form aligned vent holes 14 and 15 communicating to the center of the tube and positioned in the tube and cap respectively. When the cap is rotated the final one half turn, the holes are moved out of alignment and the tube is then sealed.

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Adjacent the lower end of tube 7, I have provided a peripheral bead 16 for seating in a recess 17 of a flexible bulb 18 and seal the tube and bulb against leakage. An inwardly disposed annular flange is formed at the lower end of the tube, and this forms a stop or rest 19 for a float 20 which is formed of cork or other suitable material. An image 21 such as a doll or animal, is mounted upon the float and carried thereby.

A shield 22 of paint or opaque tubing is positioned about the tube above the lower end thereof to shield or hide the contained image when the float is at rest upon the stop 19.

The lower end of bulb 18 is provided with an annular collar 23 which is positioned with a portion thereof extending into the bulb and a portion extending outwardly therefrom. Substantially midway the length of said collar, I have provided an internal peripheral groove 24 which cooperates with an annular bead 25 formed in a heating element or heater 26 which is here shown to be a light bulb with the usual pair of contact points 27 and 28 extending outwardly from the bulb 18 where they may be connected to a source of electrical energy, as indicated in Figure 1 at 29.

A volatile liquid 30 is placed in the bulb to the level of the float stop 19 by aligning the vents 14 and 15 and drawing the liquid therein by means of the flexible bulb 18, much like filling the common syringe. The cap 10 may then be rotated to seal the top end of the tube.

When it is desired to elevate the image in the tube, the cap is rotated to align the vents 14 and 15 and pressure applied to the bulb 18 will cause the liquid to rise in the tube and float 20 will rise with the liquid level. Rapid oscillating pressure upon the bulb will then cause the floating image to bob and appear to be dancing. This appearance of dancing may be caused by heating the

liquid 30 with the heater 26 which causes the volatile liquid to bubble, and the bubbles passing upwardly from the liquid agitate the liquid and cause the float to bob.

The cap 10 must be turned to seal the upper end of the tube before the heater is turned on to prevent escape of the volatile liquid in its gaseous form and confine it within the tube where it will condense and return to a liquid state.

In Figure 3 I have shown a modified form which omits the heating element, all other elements being the same and like parts are so numbered.

In Figures 4, 5 and 6 I have shown a further modification which eliminates the bulb 18 and instead has a closed bottom 35 which maintains a volatile liquid therein at a constant level. An image 21 is mounted upon a float 20, and a heater 26 is held in contact with the bottom 35 of tube 7 by means of an ornamental bulb 31. Shield 22 is spaced upwardly from the lower end of the tube in such a position as to hide the float, but permit observance of the image. It will be noted that the cap is omitted in this form, and the tube is sealed both top and bottom after the liquid and image are placed therein.

Electrical energy is brought to the heater by the usual wires and socket as 29, or as shown in Figure 6, by means of batteries 32. The batteries are enclosed in a case 33 which is threaded to the contact 27 of the light or heater and forms one connector to the batteries. As the case is threaded upwardly onto the contact 27, the center point of the batteries comes in contact with the center contact 28 making connection and energizing the heater. Any adequate switch may be used to make and break contact to the heater instead of rotating the case if one so chooses.

A distinct advantage is had by providing a light bulb as the heater 26 in that it illuminates the toy and thus improves its appearance. The liquid may be of various colors to further this

end, and a second image 34 may be positioned upon the cap or top of the tube 7.

Having thus described my invention, I claim:

1. A toy comprising a transparent tube, a volatile liquid, means for maintaining said liquid at a level in the tube, an image within the tube and adapted to float upon said liquid, a heater for causing the liquid to bubble, whereby said image is caused to bob, and means for heating said heater.

2. A toy comprising a transparent tube, a volatile liquid, means for maintaining said liquid at a level in the tube, a float in the tube floating upon said liquid, an image carried by said float, a heater secured externally of the tube for heating the liquid and causing it to bubble in the tube, whereby said image is caused to bob, and means for electrically heating said heater.

3. A toy comprising a transparent tube, a volatile liquid, means for maintaining said liquid at a level in the tube, an image within the tube and adapted to float on said liquid, a bulb carried by said tube, a heater supported by said bulb in a position for heating said liquid and causing it to bubble in the tube, whereby said image is caused to bob, and means for electrically heating said heater.

MARK SOSS.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
714,141	Cady	Nov. 25, 1902
750,593	Cady	Jan. 26, 1904
793,177	Cady	June 27, 1905
2,481,358	Smith	Sept. 6, 1949
2,524,059	Kennedy	Oct. 3, 1950