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ILLUMINATED TOY PIPE

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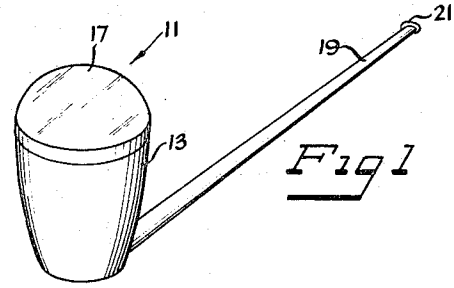


Fig 1

Fig 2

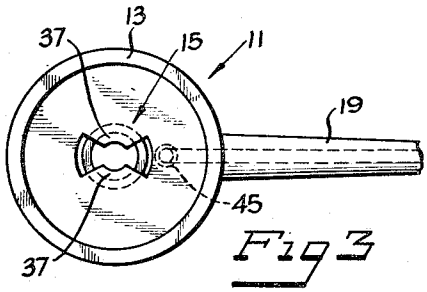


Fig 3

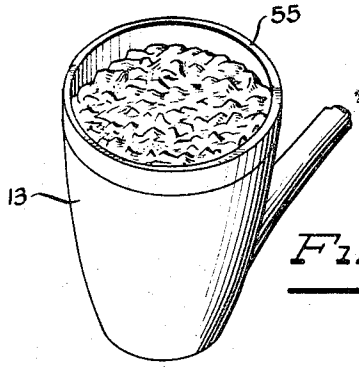


Fig 4

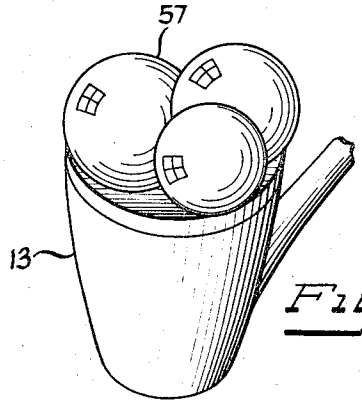


Fig 5

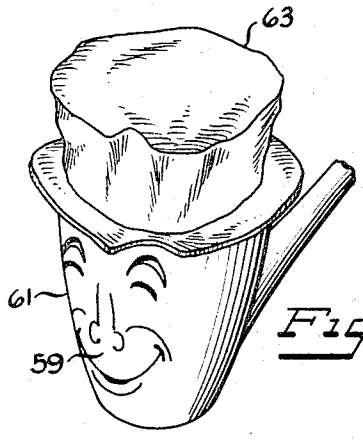


Fig 6

Inventor
Richard A. Lathrop
By Anderson, Luedeka, Fitch, Even & Tabin
Atty's

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ILLUMINATED TOY PIPE

Richard A. Lathrop, 5444 S. East View Park, Chicago, Ill. 60615

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ABSTRACT OF THE DISCLOSURE

A toy pipe having a hollow stem and containing a dry cell battery electrically connected with a low power light bulb through an air operated switch which is closed by the flow of air through the pipe stem.

This invention relates to children's toys and, more particularly, to toys which may be held in the mouth and which may be at least partially illuminated when so held to provide a fascinating and entertaining effect.

Children frequently exhibit the desire to imitate by patterning their actions after parents or other adult acquaintances. This psychologically based activity is frequently exhibited in the area of smoking. Thus, children have long been fascinated by candy cigarettes, bubble pipes, imitation cigars, and similar devices.

Further, it is well known that children are attracted by devices which produce a fascinating effect which they can control. This situation becomes apparent when children are viewed playing with noise-making toys, toys which become illuminated, and toys which include some action features.

The present invention is intended to provide a toy which will tend to satisfy a child's imitative desires and which will also amuse the child by inclusion, in the embodiment hereinafter described, of an illuminating as well as a sound effect, both of which are controlled by the child. By satisfying several desires, the toy will thereby produce the greatest enjoyment and amusement.

The main objects of the present invention are to provide a novel and fascinating toy. Another object of the invention is to provide a toy which appeals to the imagination of a child. A further object of the invention is to provide a toy which can be caused to emit a pleasing sound when actuated in a particular manner. A still further object of the invention is to provide a toy which becomes illuminated when actuated. An additional object of the invention is to provide a toy which may be inexpensively and easily manufactured. Still further objects and advantages will become apparent from the following description.

In the drawings:

FIGURE 1 is a perspective view of a toy showing various of the features of the invention;

FIGURE 2 is an enlarged longitudinal center sectional view of the toy of FIGURE 1;

FIGURE 3 is a fragmentary top view of the toy as shown in FIGURE 1 but with a portion of the elements removed; and

FIGURES 4 through 6, inclusive, are perspective views showing alternate embodiments of the invention.

While the present invention may take a variety of forms, a preferred embodiment thereof, as shown in FIGURE 1, is in the form of a pipe **11** including a bowl **13** which supports therein a lighting device **15**. The pipe **11** further includes a cover **17** and a hollow stem **19** having a mouthpiece **21**.

More particularly, the pipe **11** is intended to closely resemble, in outward appearance, a conventional smoking pipe. Thus, the bowl **13** is of cup-shaped construction, having a circular cross sectional configuration, is open at its upper end and connected to the stem **19** adjacent

its lower end. The bowl **13** is threaded internally adjacent its upper edge **23** to receive the cover **17**, as hereinafter described. The termination of the threads in the inner wall of the bowl define a shoulder **25**.

Disposed centrally within the bowl with its axis generally coincident with the axis of the bowl is an upwardly open hollow cylinder **27** which is secured to the bottom of the bowl and extends upwardly to approximately the mid-point of the bowl. The cylinder **27** defines a chamber dimensioned so as to enable it to receive a small dry cell battery **29** positioned therein with its positive contact uppermost. A coil spring **31** of treated steel or other suitable material is positioned in the bottom of the cylindrical chamber beneath the storage battery **29** and urges the battery upwardly into electrical contact with a stationarily mounted incandescent bulb **33**, as hereinafter described.

More specifically, the bulb **33** is supported within the bowl by a diaphragm **35** which is positioned adjacent the upper end of the bowl **13** so as to rest upon the shoulder **25** thereof, where it is held in place by the cover **17**, as hereinafter described. The diaphragm is generally circular in shape and is provided with a light-reflecting upper surface and is preferably constructed of a resilient, thin, electrically conductive material such as tin plated steel. The central portion of the diaphragm **35** is cut away to provide a butterfly-shaped opening defining two opposing arc shaped tabs **37** which are spaced to receive the threaded electrode **39** of the candelabra or flashlight type incandescent light bulb **33**. The light bulb is screwed between opposing tabs **37** thereby providing support for the bulb and creating an electrical connection between the diaphragm and the bulb. The bulb **33** is positioned in the diaphragm and the diaphragm is positioned in the bowl relative to the cylinder **27** and battery **29** so that the central electrode of the bulb and the positive pole **41** of the battery are in contacting alignment.

To complete an electrical circuit between the bulb **33** and the negative pole or casing of the battery **31**, an air switch **43** is contained within the bowl and includes an open upright tube **45** located parallel to the hollow cylinder **27** and terminating slightly below the top of the bowl. The lowermost end of the tube **45** is secured to the lower right side of the bowl and is positioned to communicate with a passageway **46** of the hollow pipe stem **19**. A cap **47** in the form of an inverted cup and constructed of electrically conductive material such as copper is positioned on the uppermost end of the tube **45** for sliding vertical movement thereon. In its lowermost position on the tube **45**, the closed top wall of the cap **47** rests upon the upper end of the tube and is spaced slightly below the lower surface of the diaphragm **35**. When air is caused to flow through the passageway **46** of the stem **19** and into the tube **45**, the cap slides up the tube a short distance into electrical contact with the lower surface of the diaphragm **35**. The top wall of the cap **47** is provided with a plurality of projections **49** to enhance the electrical contact between the cap and the diaphragm.

Electrical connection between the cap **47** and the casing of the battery **31** is afforded by a flexible electrical conductor **51** which is secured at one end to the coil spring **31** on which the battery **29** is supported, and at its opposite end to the cap **47**. The conductor is preferably constructed of copper braid of a length slightly greater than the maximum distance between the spring **31** and the cap **47** and is highly flexible so as not to inhibit slidable movement of the cap on the tube. The cap **47** is gravity biased for return movement away from the diaphragm to break the electrical contact; however, if desired, the cap may be so biased by a suitable spring (not shown).

In the embodiment of FIGURES 1 through 5, the cover **17**, of various forms, is supported on the upper end of the

bowl 13 and is adapted to glow or provide other amusing and entertaining effects when air is blown into the stem of the pipe and the electrical circuit of the battery 29 is completed. In the embodiment of FIGURES 1–3, the cover 17 is of generally hemispherical shape and is inset and threaded along its outer circumference 52. The cover 17 is detachably secured to the bowl 13 by interengagement of the threads of the bowl with those of the cover 17. When in place, the lower edge of the cover engages the peripheral portion of the upper surface of the diaphragm 35 and clamps the diaphragm in place against the shoulder 25, thus providing a stationary mounting for the bulb 33. The cover 17 is preferably constructed so that one may grip it easily in order to screw it on or off. Also, it is formed of a translucent material of suitable coloring such as red plastic, or it may be formed of a material which would cause the cover of the embodiment of FIGURES 1–3 to resemble in appearance a soap bubble emerging from a bubble pipe.

The hollow pipe stem 19 through which air passes to actuate the lighting device 15 is provided at approximately its mid-point with a sound producing device 53, thus enabling the toy to produce an audible as well as a visual effect. The device 53 includes a small opening in the bottom wall of the stem with the sides of the opening forming an oblique angle with the wall of the stem and a sharp edge 54 facing in the direction of the outer end of the stem provided with the mouthpiece 21. When air is blown into the stem, the initial portion thereof passes the opening 53 and enters the tube 45 and causes the cap 47 to be raised. Once the cap has contacted the diaphragm 35, however, very little air, if any, can enter the tube 45 and the air therein forms, in effect, an air column under closed pipe conditions. Further air entering the stem 19 thus exits through the opening 53 and, in so doing, passes the sharp edge 54 causing a vibration which sets up a vibration in the standing air column in the tube 45 and inner end of the stem. This vibration causes a sound to be produced essentially simultaneously with the production of light from the device 15.

The unique location of the chamber 27 and the upright tube 45 within the pipe bowl produce an advantageous constructional result. It is anticipated that these elements, together with the pipe stem 19 and a mouthpiece 21, will be cast as an integral unit from plastic or other suitable electrically insulative material. The plastic casting is preferably constructed of opaque material attractively colored. The construction of the cover and its cooperation with the bowl is advantageous in that it is quite convenient to replace the bulb or battery should either become inoperative through use.

In the alternate embodiment of FIGURE 4, the bowl 13 housing an illumination device (not shown but similar to the device 15) has detachably secured thereto a cover 55 having a central portion displaying a generally flat rough surface, formed to resemble coals of glowing embers similar to the coals of an ignited smoking pipe. The central portion is preferably fabricated out of a translucent material which is dull in color under normal circumstances but which glows a bright red when illuminated from behind. Thus, when air is exhausted into the mouthpiece (not shown) lighting the bulb therein, the pipe cover glows so as to resemble the lit tobacco of a conventional lit smoking pipe.

In the embodiment of FIGURE 5, the bowl 13 housing an illumination device (not shown) is provided with a cover 57 preferably constructed of translucent plastic and fashioned to represent a cluster of three bubbles emerging from the bowl of a bubble pipe. The cover of the pipe is held in place by screw threads or the like. When air is exhausted into the mouthpiece, the light bulb is lit thereby causing the bubble cluster or selected portions thereof to glow. The cover may also be fashioned in the shape of the head of a figure such as the well-known cartoon character "Popeye." In the commercial exploitation

of this invention, a pipe including a bowl and stem may be marketed along with several interchangeable covers as a single package. In this way, a child can easily select the pipe configuration most pleasing to him.

In the embodiment illustrated in FIGURE 6, a bowl 59 is provided which houses an illuminating device (not shown) and which is decorated on its outer surface with a face 61 fashioned after a man, a clown or other figure. A cover 63 mounted on the bowl by threads or the like is fashioned in the shape of a hat. The hat may be constructed of translucent plastic with the bowl constructed of opaque material or the bowl may be constructed of translucent plastic and the hat of a reflective opaque material. When the mouthpiece is blown into by a child the translucent portion of the toy will glow, producing an amusing effect.

The various embodiments of the invention have been given by way of example and it should be understood that possible designs are unlimited and may take a variety of forms and shapes. For example, it may be desired to rotatably mount the cover on the top of the bowl and secure a motor housing within the bowl; thus, the cover is caused to rotate when the air switch is actuated.

Various of the features of the invention believed to be novel are set forth in the following claims.

What is claimed is:

1. A top comprising a substantially hollow body of pleasing shape, a hollow mouthpiece mounted on said body in communication with the interior thereof, an electrical battery secured within said body, a light bulb having one electrode in electrical contact with one pole of said battery, and an air switch within said bowl, said air switch including an electrically conductive support means adapted to support said light bulb and electrically connected to the other electrode thereof, a tube positioned within said body to cooperate with said mouthpiece and an electrically conductive cap slidably positioned upon said tube and electrically connected to the remaining pole of said battery, whereby when air is blown into said mouthpiece said cap is caused to slide upon said tube until movement is limited by said support means thereby causing said light bulb to operate.

2. In a toy pipe with a body of approximately the size and shape of a conventional smoking pipe having a bowl and hollow stem, an action feature comprising an electrical battery secured within said bowl, a light bulb having one electrode in electrical contact with one pole of said battery, an electrically conductive diaphragm adapted to securely receive said light bulb and position the bulb within said bowl, said diaphragm being in electrical contact with the other electrode of said bulb, an air switch within said bowl, said air switch including a member positioned within said body and movable in response to a flow of air through said hollow stem to effect an electrical connection between said diaphragm and the other pole of said battery, and a cover detachably secured to said bowl positioning the diaphragm within the bowl, a portion of either said bowl or said cover being constructed of a translucent material whereby when air is blown into said stem, said movable member is positioned to actuate said air switch energizing said light bulb causing the translucent portion of the pipe to glow.

3. In a top pipe with a body of approximately the size and shape of a conventional smoking pipe having a bowl and a hollow stem, an action feature comprising means for receiving and supporting a battery in a predetermined position, a coil spring located in the lowermost portion of said receiving means, a dry cell battery located within said means and supported upon said coil spring, a light bulb positioned to provide electrical contact between the center electrode of the bulb and the positive pole of said battery, an air switch interconnecting the negative pole of said battery and the remaining electrode of said bulb which includes an upright tube supported within said bowl, substantially parallel to said sleeve forming a continuous con-

duit with said stem, a cap slidably associated with said tube, a flexible conductor electrically connecting said coil spring with the cap, a diaphragm adapted to securely position said light bulb within the bowl, and a translucent cover detachably secured to said bowl securely positioning the diaphragm within the bowl, thus when air is blown into the stem said cap is caused to rise until the upward motion is stopped by said diaphragm thereby completing the electrical circuit causing the light to illuminate and the cover to glow.

4. In a toy pipe with a body of approximately the size and shape of a conventional smoking pipe having a bowl and a hollow stem, an action feature comprising an upright cylindrical sleeve defining a chamber secured to the bottom of the bowl of said pipe, a coil spring located in the lowermost portion of said chamber, a dry cell battery located within said chamber and supported by said coil spring, a tube secured within said bowl substantially parallel to said sleeve forming a continuous passage with said hollow stem, a cap slidably associated with said tube, a flexible conductor electrically connecting said coil spring with the cap, a light bulb positioned with the center electrode in contact with the positive pole of said battery, a diaphragm adapted to securely receive said light bulb, a translucent cover detachably secured to said bowl positioning said diaphragm within the bowl, and an air powered sound means associated with said stem whereby

when air is blown into the stem sound is emitted from the pipe and the cap is caused to rise striking the diaphragm thereby completing the electrical circuit and causing the light to illuminate.

5. A toy comprising a substantially hollow body, an elongated mouthpiece connected to said body adjacent one end of the mouthpiece, said mouthpiece defining an air passageway extending therethrough and terminating adjacent the other of its ends in an opening, an electric light bulb carried within said hollow body, means for supplying an electric current to said bulb, and a normally open switch for controlling the flow of current between said light bulb and said battery, said switch, said current supplying means, and said light bulb being connected in series, said switch including an element in communication with the passageway of said mouthpiece and movable in response to a flow of air through said passageway to close said switch.

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F. BARRY SHAY, *Primary Examiner.*

RICHARD C. PINKHAM, *Examiner.*

R. F. CUTTING, *Assistant Examiner.*