Nov. 4, 1958 D. K. LAWRENCE 2,858,639

BUBBLE BLOWING DEVICE

Filed Dec. 10, 1956

Fig. 1.

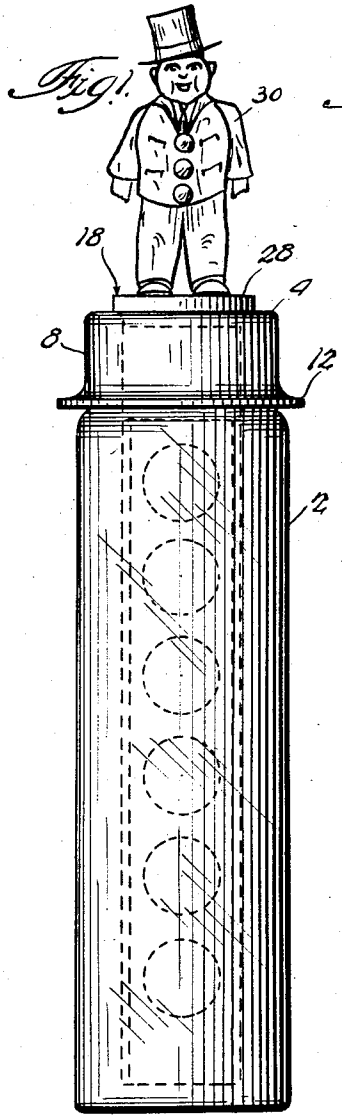


Fig. 2.

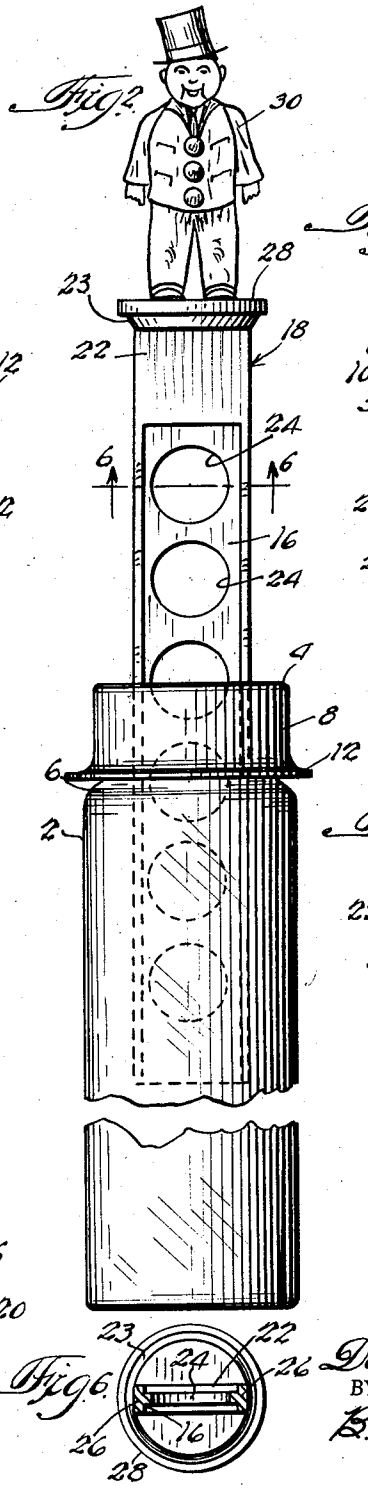


Fig. 3.

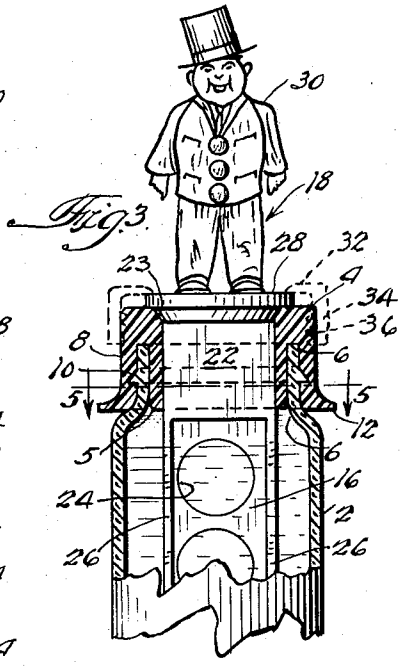


Fig. 4.

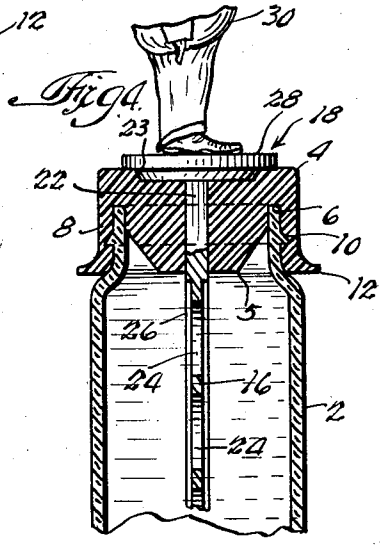


Fig. 5.

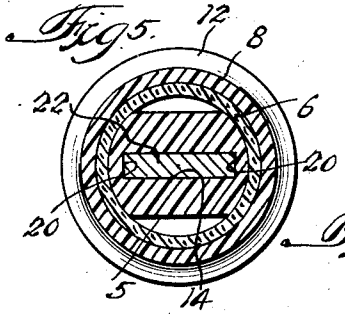


Fig. 6.

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United States Patent Office 2,858,639 Patented Nov. 4, 1958

2,858,639

BUBBLE BLOWING DEVICE

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Application December 10, 1956, Serial No. 627,348

2 Claims. (Cl. 46—7)

This invention relates to the blowing of soap bubbles and, more particularly, to a child's toy for blowing such bubbles without the use of a conventional bubble pipe.

In recent years a number of devices have been marketed to replace the conventional bubble pipes commonly used by children for blowing bubbles.

Some of these prior art devices embody dipsticks which may be immersed in a container of liquid soap to carry films of the soap therefrom so that the user may form bubbles by blowing the films or by waving the dipstick. A primary disadvantage of such devices is the tendency to lose the dipstick and the frequent tipping of the container by careless handling of the dipstick.

Other prior art devices comprise rotatably mounted, perforated paddles which are generally mounted on a paddle wheel and are rotated rapidly through a container of liquid soap, as for example by a crank connected to the paddle wheel. The speed at which the paddles are rotated causes bubbles to continuously form as the paddle wheel is rotated. A primary disadvantage of such prior art devices has been the small capacity of the container through which the paddles are rotated, as well as the tendency for rapid deterioration of the bearings on which the paddle wheel rotates. Another disadvantage of such rotatable devices is the tendency to spill the liquid soap in the container by jerking on the crank handle of the paddle wheel.

Accordingly, a primary object of the present invention is to provide a simple, economical, and efficient device for blowing soap bubbles without the use of a bubble pipe.

Another object of the invention is to devise a self-contained unit wherein the soap container and the bubble blowing device may be handled and shipped as a unit, without disassembly except to refill the container from time to time.

A further object of the invention is to minimize accidental spilling of the liquid soap in its container by requiring for successful operation of the bubble blower that the user grasp the container in one hand.

A more specific object of the invention is to snugly confine a stem within guides carried by the container, to limit movement of the stem to reciprocal movement into and out of the container and to require the user to grasp the container in one hand and a stem actuator in the other hand.

Another object of the invention is to devise a novel sleeve which may be quickly assembled and disassembled with respect to the container and which contains guide tracks for ribs on opposite edges of the stem.

Yet another object of the invention is to form the ribs on the stem as continuations from a stopper portion at the outer end of the stem, the stopper portion being receivable within a slot of the sleeve to prevent accidental spilling of liquid soap in the container.

Still another object of the invention is to provide a seat at the outer end of the stopper engageable with a complementary seat of the sleeve at the outer end of the slot which receives the stopper, to positively prevent flow of liquid soap from the container during handling or shipment thereof.

A further object of the invention is to positively lock the conical seat of the stem in closed position against the complementary seat of the sleeve.

The foregoing and other objects and advantages of the invention will become apparent from a consideration of the following specification and the accompanying drawings, wherein:

Figure 1 is a side elevational view of a container and bubble blower assembly embodying a preferred form of the invention;

Figure 2 is a view similar to Figure 1 with the bubble blower assembly in open position;

Figure 3 is a sectional view through the container taken in a plane bisecting the container along its longitudinal axis, with the stem shown in elevational view at closed position;

Figure 4 is a sectional view through the container taken in another plane bisecting the container and stem along the longitudinal axis of the container at right angles to the sectional plane of Figure 3, with the stem partly shown in elevation at closed position; and

Figures 5 and 6 are sectional views taken, respectively, on lines 5—5 of Figure 3 and 6—6 of Figure 2.

Describing the invention in detail and referring first to Figure 1, it will be seen that the novel device comprises a bottle or container 2 which may be formed of any desired material such as glass or plastic. The upper or open end of the bottle is provided with a collar or sleeve 4 which, as best seen in Figure 3, comprises a plug 5 inside the neck 6 of the bottle.

The sleeve 4 also comprises a flange or web 8 sleeved over the outer perimeter of the bottle neck 6 in engagement with an upwardly tapered annulus or flange 10 of the bottle neck. The sleeve 4 is preferably formed of a flexible material such as rubber or flexible plastic and is provided at its lower end with a skirt or lip 12 to facilitate assembly of the sleeve 4 and bottle 2 by pulling the sleeve 4 over the bottle neck 6 to the position shown in the drawings, whereat the large diameter of the tapered annulus 10 is embedded in the sleeve web 8 to yieldingly lock the sleeve on the bottle neck.

The plug 5 comprises an opening or slot 14 within which a stem or plate 16 of a bubble blower assembly 18 is received. The opening 14 is defined at opposite ends thereof by guide tracks or grooves 20 which, in the illustrated embodiment, are interconnected by the opening 14 so as to define a continuous rectangular slot through the plug 5 extending from top to bottom thereof as will be understood by a comparison of Figures 3 and 5. It will be understood, however, that if desired the grooves 20 need not be part of a continuous opening such as that shown at 14 but may be formed as grooves or tracks 20 in separate members attached to the web 8 adhesively secured to the inside of the bottle neck independently of the web 8. The tracks 20 may, if desired, extend to the bottom of the bottle 2 or to any desired distance from the top thereof.

In closed position of the stopper 22 shown in Figures 1 and 3–5, the opening 14 is entirely closed by the stopper 22, to prevent accidental leakage of soap water from the bottle. The top of the stopper 22 is connected to a platform in the form of a flat annular web or base 28 having a conical seat 23 engageable with a complementary seat of the sleeve 4 at the upper or outer end of the opening 14 to afford a positive seal against leakage of soap water when the stopper 22 is in closed position.

In open position of the stopper 22, shown in Figure 2, the stem 16 exposes a plurality of openings or holes 24 therethrough covered by a thin film of soap water, which

forms bubbles when the user blows through the holes **24**.

It may be noted that the stem **16** as best seen in Figure 4 is thinner than the stopper **22** and is formed at opposite edges with guide portions or ribs **26** of approximately the same thickness as that of the stopper **22** and formed as continuations thereof.

Thus when the stopper **22** is urged to open position exposing the holes **24**, the guide ribs **26** and their engagement with guide slots **20** maintain the stem **16** in spaced relationship to the plug **5**, to prevent the latter from wiping the soap water from the openings **24** as the stem **16** is pulled to open position.

As heretofore noted, the stopper seat **23** is formed on an annular web or platform **28** upon which a convenient actuator **30** may be attached or integrally formed, for pushing the stem **16** into the soap water and for pulling the stem therefrom so that the user may blow soap bubbles from the holes **24**. In the illustrated embodiment of the invention, the actuator **30** is in the form of a figurine which not only affords a convenient handle for operating the stem **16** but also is ornamental and attractive to children.

The platform **28** may also, if desired, afford a convenient seat for a flange **32** of a locking collar **34** which may be threaded at **36** on the sleeve web **8** to lock the stopper **22** in closed position with its seat **23** tightly engaged against the complementary seat of the sleeve **4** at the top of its opening, **14**. The collar **34** is shown in phantom lines in Figure 3 and is primarily intended for use when the bottle **2** and stopper assembly **18** are shipped; however, if desired, the collar may be retained by the user to lock the stopper in closed position when the device is not in use.

Thus it will be understood that the invention comprehends a novel bubble blower wherein a perforated stem is guideably mounted for reciprocal movement within a container for soap water or other suitable liquid for blowing bubbles. A primary feature of the invention

resides in the manner in which the stem is guided, and another feature is the manner in which the stem seals the open end of the container when the stem is in closed position. The invention also comprehends a novel sleeve for the open end of the container comprising guide means for the stem.

While the present invention has been explained and described with reference to specific embodiments of structure, it will be understood, nevertheless, that numerous modifications and variations are susceptible of being incorporated without departure from the essential spirit or scope thereof. Accordingly, it is not intended for an understanding of this invention to be limited by the foregoing description nor by the illustrations in the annexed drawings, except as indicated in the hereinafter appended claims.

What is claimed as new and desired to be secured by Letters Patent of the United States is as follows:

1. A device for blowing soap bubbles comprising a container for liquid soap, a closure for said container, a slot through said closure, said slot forming mutually facing guide means for an associated stem, a flat elongated stem extending through said slot having its opposite edges in snug but slideable engagement with said guide means to permit the movement of said stem to any desired stationary position into and out of said container, said stem having a plurality of openings between its opposite edges and means on the upper end of said stem for actuation thereof.

2. A device in accordance with claim 1 wherein said stem is provided with guide ribs on its opposite edges, said ribs being thicker than said stem.

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