

S. B. BLISS.
Soap-Bubble Pipe.

No. 208,063.

Patented Sept. 17, 1878

Fig. 1.

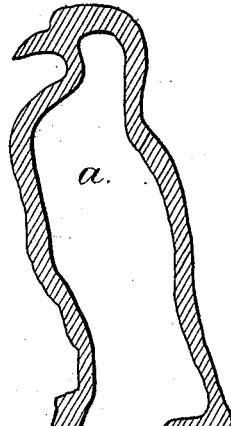


Fig. 2.

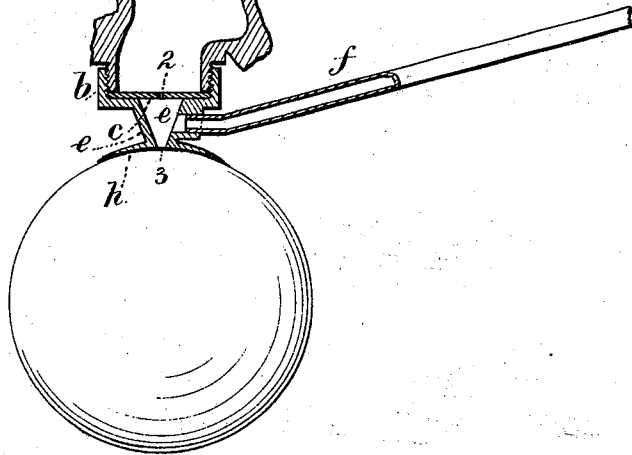
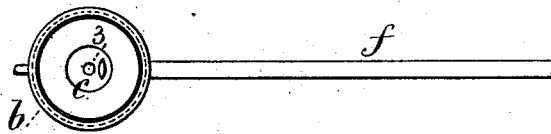


Fig. 3.



Witnesses

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IMPROVEMENT IN SOAP-BUBBLE PIPES.

Specification forming part of Letters Patent No. **208,063**, dated September 17, 1878; application filed July 10, 1878.

To all whom it may concern:

Be it known that I, SAMUEL B. BLISS, of the city and State of New York, have invented an Improvement in Soap-Bubble Toys, of which the following is a specification:

Soap-bubble toys have been made with a reservoir for the soap and water, and a movable plug or cap to such reservoir, and a valve for regulating the passage of such soapy water. Toys of this general character may be seen in my Patent No. 143,432.

My present invention is for simplifying the toy and for rendering the discharge of the soap and water automatic, or sufficiently so to be influenced by the act of blowing.

In the drawing, Figure 1 is a vertical section of the toy. Fig. 2 is a plan of the perforated diaphragm, and Fig. 3 is a plan of the soap-suds cup and bubble-tube.

I make use of an inverted fountain, *a*, for the soap-suds, the same being filled when in an inverted position; and hence, when the plug or stopper is applied to the opening, none of the liquid will pass out except as air passes in to take its place. I employ this feature in rendering my toy automatic, and in so doing I avoid the risk of leakage, and also the expense of valves, screw-plugs, or similar devices especially provided for allowing the soap and water to be introduced, and of valves, teats, or other contrivances applied to regulate the passage of the soap-suds to the bubble tube or pipe.

The inverted fountain is closed by a suitable cap. I have shown the screw-cap *b* and disk or washer *c* that serve the purpose of retaining the contents of the fountain after it has been filled and inverted.

There is to be a small hole at or near the bottom of the soap-suds fountain *a*, through which air passes into the fountain, and through which the soapy water runs to the bubble-pipe. This hole may be located in whatever place is convenient; but I prefer a hole through the elastic or flexible diaphragm or washer *c*, as at 2; and in the cap *b* there is a cup, *e*, terminating at the bottom in a hole, 3, at the center of the concave disk *h*.

A hole at the side, opening below the washer or diaphragm *c* and above the hole 3, receives the tube *f*, by which air is blown into the toy.

The soap-suds, oozing through the hole 2, run into the cup *e*, and when air is blown into the cap *b* the soap-bubble is extended downwardly, and at the same time air passes up through the hole 2 into the fountain *a*, and by displacement allows the soapy water to descend. This is especially the case after the blowing ceases, as the air in the fountain expands sufficiently to cause a drop of soap-suds to ooze through the hole 2 and pass down into the cup *e*, to be used in forming a bubble when the blowing is renewed.

The heat of the hand upon the fountain will be often sufficient to cause a gradual discharge of soap-suds into the cup.

The fountain containing the soap-suds may be of any desired shape, and the cap at the bottom and the hole 2 and cup *e* are available with a fountain that is filled from the top and provided with a cap or stopper.

I am aware that a soap-bubble toy has been made with a cup to hold soap-suds, and a cone below the same, with a surrounding chamber. These all being made together are not easily filled or cleaned. My fountain is separated from the cup or cone for filling, and the inequality of pressure in blowing serves to supply the soap-suds directly to the bubble through the cup *e*.

I claim as my invention—

1. The combination, in a soap-bubble toy, of an inverted fountain, *a*, having a hole, 2, at the bottom, the cup *e* beneath the same, into which the soap-suds pass, the concave disk *h*, with the central hole 3 entering the bottom of the cup *e*, and the tube *f*, substantially as set forth.

2. The washer or diaphragm *c*, perforated at 2, in combination with the cup *e*, disk *h*, and hole 3, below said washer, and the removable fountain *a*, above the washer, and the air-pipe *f*, substantially as specified.

3. The screw-cap *b*, diaphragm *c*, air-tube *f*, cup *e*, and disk *h*, in combination with the removable inverted fountain *a* for soap-suds, substantially as set forth.

Signed by me this 5th day of July, A. D. 1878.
SAMUEL B. BLISS.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.