

UNITED STATES PATENT OFFICE.

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PIPE FOR BLOWING AND PROPELLING BUBBLES.

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To all whom it may concern:

Be it known that I, FRANK L. HIGGINS, a citizen of the United States, and a resident of Toronto, in the county of York, in the Province of Ontario and Dominion of Canada, have invented a certain new and useful Pipe for Blowing and Propelling Bubbles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to furnish a pipe for blowing or forming soap and other bubbles and also for propelling or driving the bubbles through the air.

My invention consists of the different features and devices, all as hereinafter fully described.

In the accompanying drawings, Figure 1 is a side elevation of a bubble-pipe, illustrating the preferred embodiment of my invention. Fig. 2 is a longitudinal section of the same enlarged and partly broken away. Figs. 3, 4, and 5 are transverse sections through the lines 3 3, 4 4, and 5 5, respectively, of Fig. 2 and looking in the direction of the arrows. Figs. 6, 7, and 8 are details, enlarged, in longitudinal sections of slight modifications.

Similar letters represent like parts in all the figures.

A is the tubular stem of an ordinary pipe, like a tobacco-pipe, and B is its bowl or flaring mouth branching off from the tube A.

C is a tube resting longitudinally against the tube A and having a branch D diverging in an opposite direction from the bowl B. The bore or passage *c* in the tube C should be much larger than the passage in the tube A, preferably three or four times as large, and the mouth *d* of the branch D is preferably contracted or narrower than the rest of the passage *c*. The under surface of the tube C is depressed longitudinally or concaved, as at *c*, so as to form a groove, in which the upper surface of the tube A rests, and so that said two tubes may retain their proper relative positions.

F is a flexible tubular extension, one end

tightly surrounding the small end of the tube A.

G is a flexible tube tightly surrounding the straight ends of both tubes A and C and also surrounding the flexible tube F, so as to leave a space *h* between the two tubes F and G. To the outer end of the tube G is tightly attached a tubular rigid mouthpiece I, and similarly attached to the outer end of the tube F and extending shortly beyond the mouthpiece I is another tubular rigid mouthpiece K. Bands *l l*, of india-rubber or other appropriate material, surround the tubes A and C and serve to hold them together.

In order to prevent leakage of air from the inside of the large tube G to the recesses on each side of the junction of the two tubes A and C, these recesses inside of the tube G may be filled with clay, cement, or other soft material, which will afterward harden, as shown at *m m*, Fig. 4.

The combined pipe is used in the following manner: The bowl or flaring mouth is dipped into the soapsuds, then lifted from the same, and the bubble is blown or inflated, with the lips being closed over the outer end of the mouthpiece K and the breath blown through said mouthpiece and the tubes F and A. As soon as the bubble has become detached the lips are to be closed over the large mouthpiece I and the outlet *d* of the pipe C placed under or to one side of the blown bubble, when upon blowing sharply the rapidly-expelled breath through said mouthpiece, tubes G and C, and outlet *d* will drive or propel the bubble either upward or sidewise. If it be desired to expel the breath only through the outlet *d* to propel the bubble, the tongue may be placed over the end of the mouthpiece K to prevent the breath from entering the tube A, or the hand may be placed over the bowl B to prevent the air from escaping through the tube A. The flexible connections F G permit the outlet branch *d* to be moved around, as convenient, from point to point without removing the mouth piece or pieces from the person's mouth. If it be desired to blow or inflate one bubble while driving or propelling another, the lips should be closed around the large mouthpiece I and without closing the mouthpiece K with the tongue, when the expelled breath will pass through both tubes

A and C and outlets B and *d*, so as to inflate a bubble at B and propel a second bubble from *d*.

The two tubes A and C and their flexible connections constitute the stem of the double pipe.

The tubes A and the bowl B can consist of an ordinary clay or other tobacco pipe in which the bore or passage *a* through its stem is quite small. The bore *c* of the driving-pipe C, however, should be much larger in order to quickly carry the breath to the outlet *d*, and this outlet should preferably be smaller than the bore *c* in order that the outflowing breath may be concentrated and so have more force.

The tube C may be an ordinary tin blow-pipe and in such case should be provided with the groove *e* to furnish the longitudinal indentation in said tube.

If desired, two flexible tubes, like F, may be within the outer tube G and side by side, one connecting to pipe C similar to the connection of F to pipe A.

In Fig. 6 I have shown the outer end of the tube C cut away at *n* at its line of juncture with the tube A to prevent the tube C from binding and pressing against the flexible tube F. The two pipes A B and C *d* may be made of the same material or of different materials and in either one or two pieces. If they be both made of one piece, they may be very readily molded and formed of clay or hard rubber or glass. The flexible connections F and G may also, if desired, in some cases be dispensed with.

Fig. 7 shows the outer end of the stem when no flexible connections are used. In this case the tube A projects beyond the driving-tube C' for the mouthpiece for tube A, and the upper wall of said tube constitutes the lower wall of tube C'. These tubes may be secured together by a band, such as shown at *l* in Figs. 1, 2, and 3, or by any suitable known means.

Fig. 8 shows the two pipes made, as shown, in one piece, but to be used with flexible connections. In this case the driving-pipe C is cut away at its outer end, as at *o*, so as to leave its passage *c* clear and also leaving a portion *p* of its upper wall to sustain the end of the flexible tube G. When the two pipes are made in two pieces, they may be held together by glue, cement, or any binding material that will not be affected by soapsuds or moisture, and in such case the bands *l l* may be dispensed with.

My improved pipe constitutes a very entertaining toy, for by it bubbles can be kept floating in the air for quite a considerable time, and if a little glycerin be added to the

suds the bubbles will be made to last for even a longer time.

I claim—

1. The combination with a pipe for inflating soap-bubbles, of another pipe adapted for driving into the air the released bubbles, the exit ends of the respective pipes being bent or curved in different directions, each pipe having a mouthpiece one within the other; and one projecting beyond the other.

2. In combination of two pipes, one for inflating and the other for propelling bubbles, each having a mouthpiece, and independent flexible tubes severally connecting each pipe with its respective mouthpiece.

3. The combination of an inflating with a propelling pipe, each having a mouthpiece, intermediate flexible tubes disposed one within the other, said mouthpieces being also one within the other, whereby either mouthpiece at option may be used, or both may be used and operated at the same time.

4. In combination with the inflating-pipe having a small bore and a flaring mouthpiece, of the driving-pipe having a bore larger than that in the inflating-pipe and terminating with a narrowed exit, the exit ends of the respective pipes being bent or curved in substantially different directions.

5. In combination with a bubble-inflating pipe having a small bore and a flaring bowl or mouth, of a driver-pipe not communicating with the inflating-pipe and having a bore larger than that in the inflator-pipe and terminating with a narrowed exit, and inlet-tubes located one within the other and severally serving each for its respective pipe.

6. In combination with inflating and driving pipes disposed side by side of each other, and with their respective flexible tubes parallel with each other, of the two mouthpieces one within the other and severally serving each to connect its own respective pipe and tube, and these pieces projecting one beyond the other.

7. In combination, inflating and driving pipes side by side, each having an independent inlet and outlet, and two flexible tubes one within the other, and connecting independently with its respective pipe, all substantially as set forth.

8. In combination, the pipe A *a* B, pipe C D *d*, the flexible tubes F G, and the mouthpieces I K, all substantially as and for the purposes set forth.

FRANK L. HIGGINS.

Witnesses:

ARTHUR BEALES,
WILLIAM H. SMITH.