

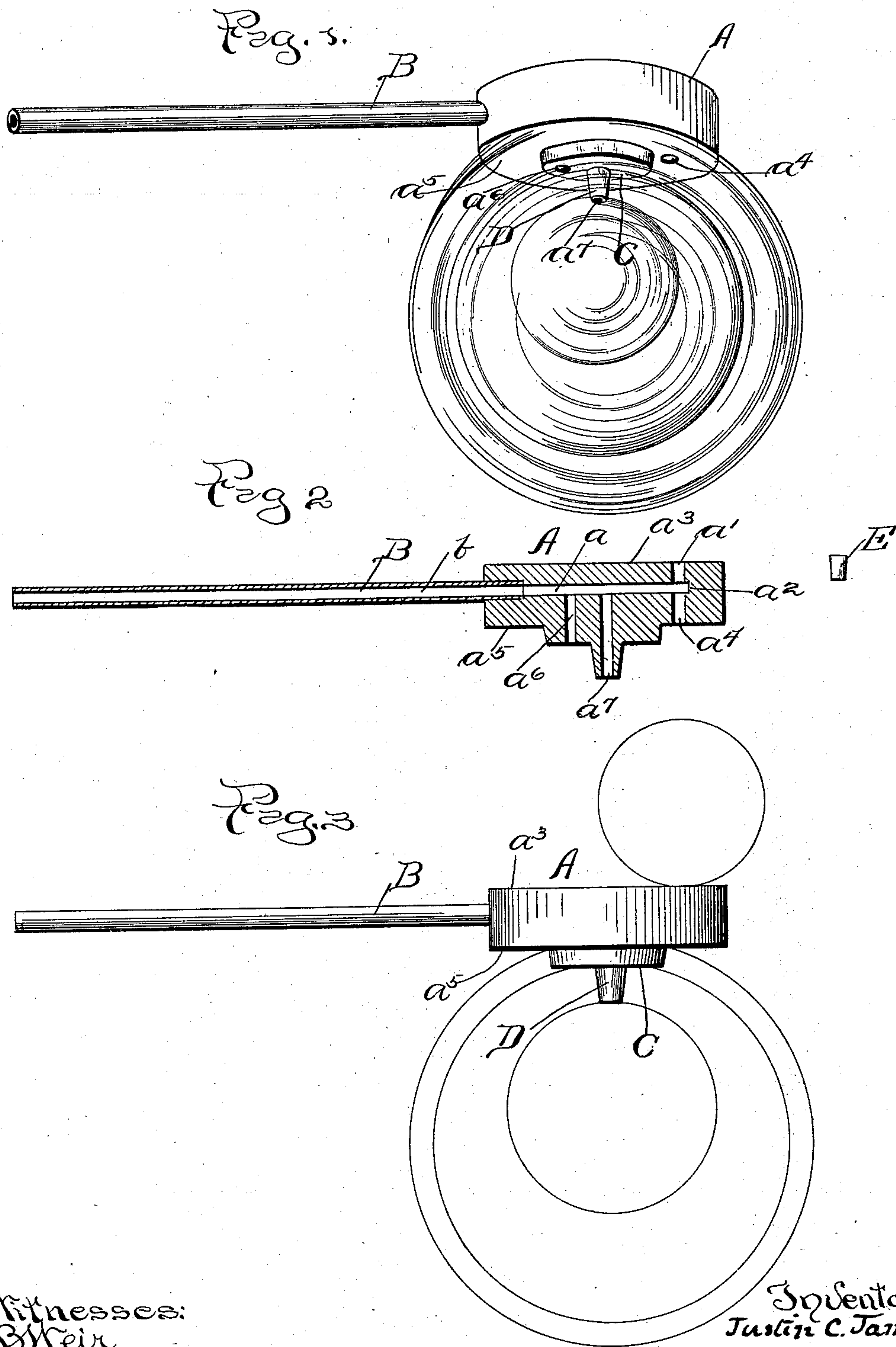
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Patented July 31, 1900.

J. C. JAMES.  
SOAP BUBBLE PIPE.

(Application filed July 31, 1899.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JUSTIN C. JAMES, OF CHICAGO, ILLINOIS.

## SOAP-BUBBLE PIPE.

SPECIFICATION forming part of Letters Patent No. 654,642, dated July 31, 1900.

Application filed July 31, 1899. Serial No. 725,633. (No model.)

*To all whom it may concern:*

Be it known that I, JUSTIN C. JAMES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Soap-Bubble Pipes, of which the following is a specification.

The object of my invention is to provide a soap-bubble pipe for blowing a plurality of bubbles one within another and to provide a simple and economical construction of pipe for the foregoing purpose.

In a soap-bubble pipe characterized by my invention I provide the stem-passage with a suitable extension or prolongation having a plurality of lateral apertures of varying lengths from which after dipping the pipe in soap-suds bubbles can be successively started and blown, the first starting from the mouth of the aperture of shortest length. I also provide for blowing a supplemental independent bubble when so desired, and also provide certain details of construction which insure the successful formation of the bubbles.

In the accompanying drawings, Figure 1 shows the pipe in perspective. Fig. 2 is a section taken transversely through the same. Fig. 3 is an edge view showing several blown bubbles in outline.

The pipe comprises a body A and a stem B. The stem and body may be made in one piece and of any suitable material, such as clay or metal; but as a matter of economy and further improvement the body A may simply consist of a block of wood or other cheap material suitably bored to receive one end of the stem. The body A is bored transversely for a portion of its width to provide a passage  $a$ , which is in alinement with and arranged to form a continuation of the stem-passage  $b$ . The passage  $a$  is provided with several laterally and separately arranged outlet-apertures of varying lengths—that is to say, apertures or bubble-openings which are separately arranged as distinguished from those of the prior art, which are in certain instances arranged concentrically or one within the other. Of these said apertures the first,  $a'$ , which is the shortest, extends from the passage  $a$  at a point back of the closed end  $a^2$  of the latter and opens through the side  $a^3$  of the pipe. The next longer aperture  $a^4$

opens through the opposite side  $a^5$  of the body of the pipe and is conveniently arranged opposite the aperture  $a'$ . The next longer aperture  $a^6$  opens through  $a^5$  of the body of the pipe and is in point of position relatively nearer the stem than the foregoing-described aperture  $a^4$ . The longest aperture  $a^7$  opens centrally through the side  $a^5$  of the pipe and is arranged between the apertures  $a^4$  and  $a^6$ . In order to increase the length of the apertures  $a^6$  and  $a^7$ , the former extends through a raised portion C upon the side  $a^5$  of the body of the pipe, while the aperture  $a^7$  extends through a further raised portion or nipple D, which projects laterally and centrally from the circular raised portion C upon the pipe-body. Thus constructed my improved bubble-blower is provided with a couple of faces, the one being provided with a single duct or aperture and the other with a plurality of ducts or apertures, which are so relatively formed that a plurality of bubbles may be successively started and blown from their outer terminals, and the manner in which the bubbles are thus formed consists as follows:

The aperture  $a'$  is employed for blowing a supplemental independent bubble, and when such aperture is not to be used it can be closed by a small plug E. If, however, the aperture  $a'$  is open and the body of the pipe is dipped in soap-suds, the act of blowing into the stem will cause the first bubble to form at the mouth of the shortest aperture  $a'$ , such aperture offering the least resistance to such operation. Continuing the operation of blowing soap-bubbles, the next bubble will form at the mouth of the next longer aperture  $a^4$ , and by tilting and slightly manipulating the pipe with a tilting movement in different directions the larger bubble will speedily work around the boss or projection C on the body of the pipe, the side  $a^5$  of which affords a broad and suitable surface to which such bubble will adhere. Continuing the operation, the next bubble will be formed at the mouth of the next longer aperture  $a^6$  and will not only be formed within the bubble last described, but will also speedily work around the nipple D, so as to inclose the same. Further continuing the operation, the next bubble will be formed at the mouth of the aperture  $a^7$ , and this last bubble will be inclosed



within the bubble last described. As the bubbles are blown they will increase in size in an attractive way, the outer bubble becoming quite large, while the inner smallest bubble before attaining the size of either of the outer surrounding bubbles will readily drop from the nipple, but at the same time will preserve its symmetrical form after it has dropped into the next inclosing bubble.

When desired, the aperture  $a^6$  may be closed by a plug, in which case the bubble blown from the aperture  $a^7$  will be directly inclosed within the bubble blown from the aperture  $a^4$ . The bubbles at the side  $a^5$  of the pipe can be blown, as hereinbefore described, regardless of the fact that the aperture  $a^7$  may be opened or closed. As hereinbefore stated, the side  $a^5$  provides a suitable forming and attaching surface for the bubble primarily blown from the aperture  $a^4$ , while the similar or smaller flat circular surface of the boss or projection C forms a corresponding surface for the next smaller bubble, it being seen that the formation of the nipple D permits the inner bubble to be readily shaken off. The first bubble, which is formed at the mouth of the opening  $a^4$ , will shift or spread laterally across the adhering surface  $a^5$  until it completely covers or incloses the openings  $a^6$  and  $a^7$ . A second bubble can, as stated, then be blown from the mouth of the opening  $a^6$ , such second bubble being of course inclosed within the first, and after this second bubble has shifted or spread across the face of the boss C a third bubble can then be blown from the mouth of the opening  $a^7$ . In this way, therefore, my invention may be said to contemplate the provision not only of separate bubble-openings, but also of suitable adhering surface whereon a bubble blown from the mouth of one opening can shift or spread laterally until it covers or incloses the mouth of another opening, substantially as shown and described.

From the foregoing it will be obvious that the pipe or bubble-blower is provided with a plurality of bubble openings or apertures, from which bubbles are successively blown, and that it has a plurality of such openings with suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening, from which a second bubble can be blown within the first, and that so far as the present illustration of a form of device in which the principle of my invention is embodied the side  $a^5$ , hereinbefore stated to provide a suitable forming and attaching surface for the bubble first blown from opening or aperture  $a^4$ , is, in a broad sense, continued by any further surface at such side of the pipe, whether the adhering surface for the opening  $a^4$  be continued and subdivided into portions for a multiplicity of other openings, the whole coming under the generic term "adhering surface."

What I claim as my invention is—

1. A bubble-blower provided with a plurality of separate bubble-openings from which bubbles are successively blown and having also suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.
2. A bubble-blower provided with a plurality of separate bubble-openings of different lengths from which bubbles are successively blown and having also suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.
3. A bubble-blower comprising a body provided with a plurality of separate bubble-passages which extend laterally and open through one side of the said body, and the side of the body thus provided with said openings being also provided with suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening from which a second bubble is then blown within the first.
4. A bubble-blower comprising a body having a bore formed in continuation of the stem-passage and having also a plurality of separate bubble-blowing passages or ducts which extend laterally from said bore and open through one side of said body, the side of the body thus provided with said bubble-openings being also provided with suitable adhering surface whereon a bubble blown from one opening can shift or spread laterally from the mouth of such opening until it covers or incloses the mouth of another opening, substantially as and for the purpose set forth.
5. A soap-bubble pipe comprising a body portion having a transversely-arranged bore or passage connected with the stem-passage and provided with a plurality of bubble-blowing apertures relatively of different lengths, the longer of said apertures being formed with its outlet through a nipple at one side of the pipe-body, the next shorter aperture being formed through a boss or projecting portion around the base of the nipple, substantially as set forth.
6. A soap-bubble pipe comprising a body having a passage connected with the stem-passage and provided with a couple of bubble-blowing apertures of different relative lengths, said pipe-body being formed with a centrally-arranged nipple through which the longest of said apertures opens and having a boss or projection formed at the base of said nipple and at one side of the shortest one of the said two apertures, substantially as described.



7. A soap-bubble pipe comprising a body provided with a suitable stem and having opposite flat surfaces, said body being bored transversely to provide a passage closed at one end and connected with the stem-passage, said body being also provided with apertures extending from said transversely-arranged passage to and through its opposite flattened sides.

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Witnesses:

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