Dec. 26, 1944. C. H. HAGOPIAN 2,366,103

BUBBLE GUN

Filed July 9, 1943

FIG 1

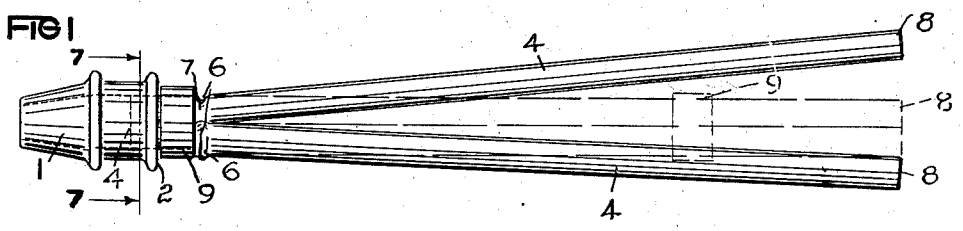


FIG 2

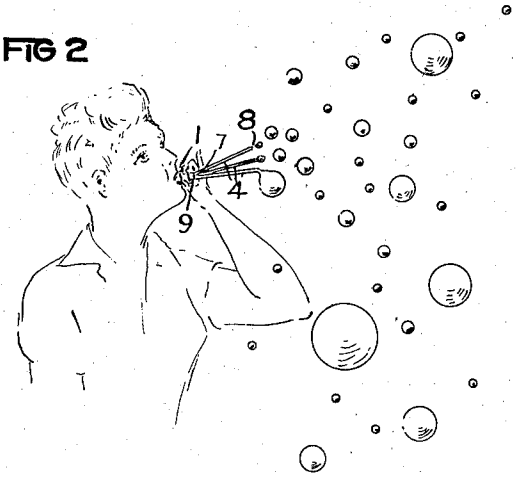


FIG 3

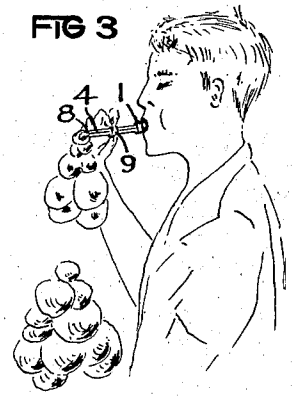


FIG 4

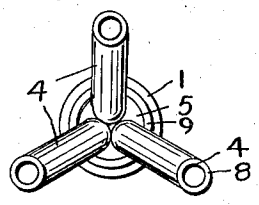


FIG 5

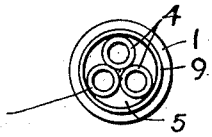


FIG 6

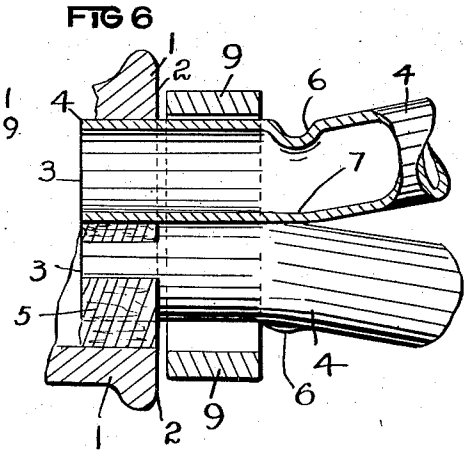
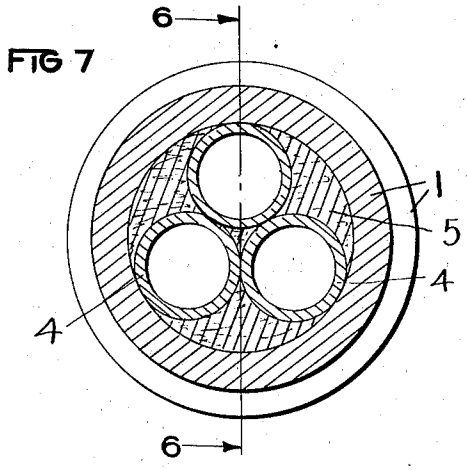


FIG 7



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BUBBLE GUN

Charles H. Hagopian, New York, N. Y.

Application July 9, 1943, Serial No. 494,023

11 Claims. (Cl. 46—6)

My invention relates to a device for blowing bubbles and particularly to bubbles of various formations. Among the purposes and objects are to provide:

A plurality of yieldingly held tubes which may be changed from parallel to a diverging relationship to each other.

A bubble blowing gun which will blow a plurality of unattached bubbles and by adjustment will blow a cluster or lantern of bubbles.

An adjustable bubble blowing device.

Bubble pipes or tubes having their discharge ends movable toward and from each other.

A mouth piece connecting a plurality of bubble pipes or tubes which are yieldingly or swingingly secured to the mouth piece and swingingly secured each to the other.

I accomplish these and other objects by the construction herein described and illustrated in the drawing forming a part of this disclosure of my invention.

In the drawing:

Fig. 1 is a side view.

Fig. 2 is a perspective view showing operation of my device with the tubes in divergent relationship and the resultant delivery of bubbles.

Fig. 3 is a perspective view showing the operation of my device with the tubes in contracted relationship and the resulting cluster or attached lantern of bubbles.

Fig. 4 is an end elevation showing a plurality of tubes in divergent relationship.

Fig. 5 is an end elevation of the same plurality of tubes contracted.

Fig. 6 is an enlarged detail and section of the tubes and spring hinge at 6—6 Fig. 7.

Fig. 7 is a transverse section at 7—7, Fig. 1.

Similar reference characters refer to similar parts throughout the several views of the drawing and in the specification to follow.

General description

I am cognizant of the desirability of improving devices for blowing bubbles; particularly to provide a variety of bubbles as well as the formation of clusters and lanterns with attached bubbles. In my Patent #2,305,382 and my application for patent, Serial Number 425,555, filed January 13, 1942, I have shown devices for blowing and also tossing a plurality of bubbles simultaneously. In the patent referred to above, tips having varying film forming tubes are provided to produce bubbles of various members and sizes and by changing the tips and also by skill and practice, a wide variety of bubbles may be formed.

By the use of my improvement herein set forth, the changes in the variety of bubbles may be more quickly made and a greater variety can be delivered by less experienced users. The relatively long tubes used also increase the number of bubbles which can be blown with a single application of bubble compound such as soap water or other liquid made for the purpose.

I have not attempted in this disclosure to show the numerous modifications which may be made to carry out the underlying principles of my invention but rather have chosen to describe in detail a preferred embodiment so that my invention may be more readily understood.

It is not the purpose of this detailed disclosure to limit the scope of my invention, as those skilled in the art to which it pertains may see various ways of modifying the construction without departing from the underlying principles of my invention. For instance, the mouth piece may be constructed of yielding material such as rubber, which will thus hold the tubes so that they may diverge from the mouth piece and may also be contracted without springing the tubes. The tubes may be yieldingly secured to each other by elastic cement so that the ends of the tubes may serve as a mouth piece. Other means than the sliding ring may also serve to vary the amount of divergence of the tubes or to contract the free or discharge ends of the tubes.

The size and number of tubes may vary from the three shown in this disclosure, and the mouth piece may vary in many ways such as to length, shape and material.

Detailed description and specification

In the drawing, I have shown a mouth piece 1, such as a ferrule of wood having an internal bore suitable at one end 2 to receive the ends 3 of a plurality of pipes or tubes 4 which may be secured within the bore of the mouth piece by cement 5. The tubes 4 may be deformed near the fixed end at 6 to form a resilient zone or hinge 7. The notch or deformation in tubes, such as of plastic material, causes the hinge not only to spring or retract to its normal position, but also causes each of the tubes to diverge away from each other to their free ends 8 which thus assume a normal position a considerable distance apart.

The hinge 7 is preferably disposed a distance substantially equal to the width of the sliding cylinder or ring 9 away from the end 2 of the mouth piece so that when the ring is adjacent the mouth piece, the tubes will spread apart or

diverge from the mouth piece. By sliding the ring along and over the plurality of tubes away from the mouth piece, the tubes are drawn together, overcoming the springy hinge 7.

The tubes may be drawn together at their free or discharge ends by merely sliding the ring and thus change the form and kind of bubbles blown.

The ends 8 of the tubes may be immersed for a considerable distance in the bubble liquid, which forms a large quantity of bubbles when blown, a dozen or more bubbles may be discharged after a single immersion and the bubbles may vary in size from tiny spheres less than ½" in diameter to large bubbles several inches in diameter, such as illustrated in Fig. 2 of the drawing. The velocity of air flow through the tubes controls the number and size of the bubbles.

By bringing the ends 8 of the tubes together as illustrated in Fig. 3, a cluster of attached bubbles may be formed and a string or lantern of bubbles may also be formed and projected into the air. The arrangement and size of the bubbles may be controlled by the air flow through the tubes.

The mouth piece 1, to which the tubes 4 are attached, may be varied in size and length, or otherwise modified as desired, and the means of spreading the ends 8 of the tubes may be modified in numerous ways to permit the ends of tubes to be drawn together or separated to provide the variety of bubbles my device is suited to form and discharge.

Having described and illustrated one construction in detail embodying my invention, what I claim as new and desire to secure by Letters Patent is set forth in the appended claims.

I claim:

1. In a bubble gun, a mouth piece, and a plurality of tubes having one of their ends connected to said mouth piece, said tubes having their opposite ends movable in relation to each other and means drawing said movable ends of said tubes together.

2. In a bubble gun, a mouth piece, and a plurality of tubes having one of their ends connected to said mouth piece, said tubes having their opposite ends movable in relation to each other, and resilient means normally holding said movable ends in separated relationship and means contracting said movable ends toward each other.

3. In a bubble gun, a mouth piece, and a plurality of tubes having one of their ends connected to said mouth piece, said tubes having their opposite ends movable in relation to each other, and resilient means normally holding said movable ends in separated relationship and a ring slidable on said tubes to draw said movable ends toward each other.

4. In a bubble making device, a plurality of tubes suitable to form bubbles, one end of said tubes being held in fixed close relation each to the other and the opposite ends of said tubes being movable each in relation to the other and means near said fixed ends yieldingly hinging said tubes whereby the movable ends are held apart.

5. In a bubble making device, a plurality of tubes suitable to form bubbles, one end of said tubes being held in close relation each to the other and the opposite ends of said tubes being movable each to the other, means holding the movable ends of said tubes in separated relation from each other.

6. In a bubble making device, a plurality of tubes suitable to form bubbles, one end of said tubes being held in close relation each to the other and the opposite ends of said tubes being movable each to the other, means holding the movable ends of said tubes in separated relation from each other, and means holding said movable ends of said tubes in close relationship each to the other.

7. In a bubble gun, a plurality of tubes each having one of their ends connected to the others in a group, said tubes having their opposite ends free to move toward and from each other, means holding said movable ends apart.

8. In a bubble gun, a plurality of tubes each having one of their ends connected to the others in a group, said tubes having their opposite ends free to move toward and from each other, means slidable along said tubes to change the spacing apart of the movable ends of said tubes.

9. In a bubble gun, a plurality of tubes each having one of their ends connected to the others in a group, said tubes having their opposite ends free to move toward and from each other, and resilient means normally holding said movable ends in separated relationship.

10. In a bubble making device, a plurality of tubes suitable to form bubbles, one end of each of said tubes being held in close relation each to the other and the opposite ends of said tubes being movable each to the other, means holding the movable ends of said tubes in separated relation from each other and means slidable over said tubes to change the relative position of said movable ends each to the other.

11. In a bubble gun, a plurality of tubes each having one end connected to the end of each of the other tubes in a group, each of said tubes having their opposite ends yieldingly movable in relation to the others whereby said movable ends may be held together and said tubes in parallel relationship to form connected bubbles or said movable ends may be separated and said tubes diverging to form separated bubbles.

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