May 22, 1956 C. S. RAIZEN 2,746,205

BUBBLE PRODUCING TOYS

Filed Jan. 22, 1954

Fig. 1

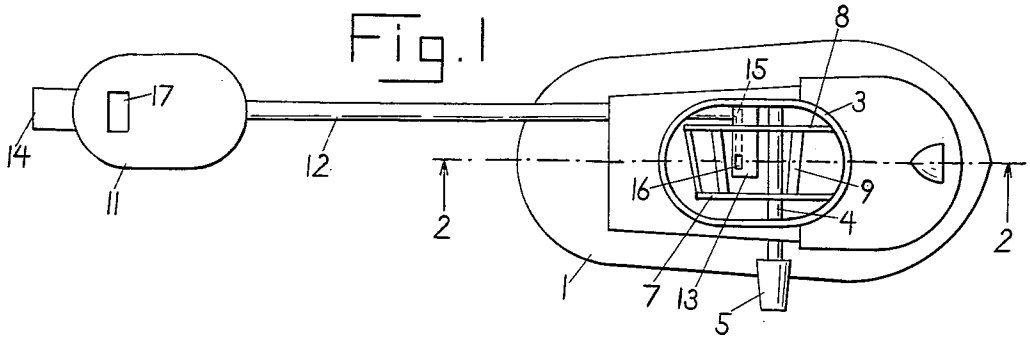
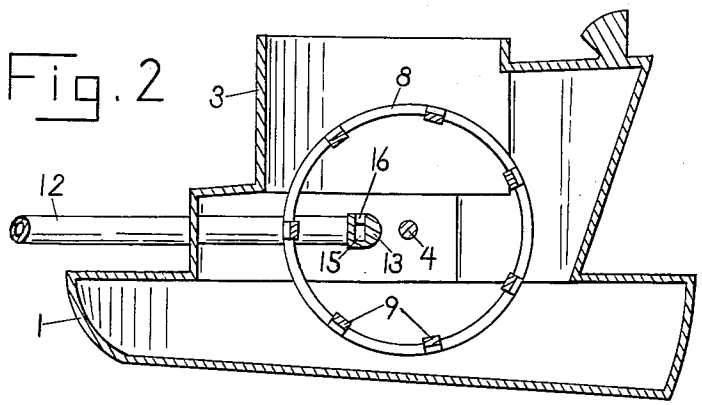


Fig. 2



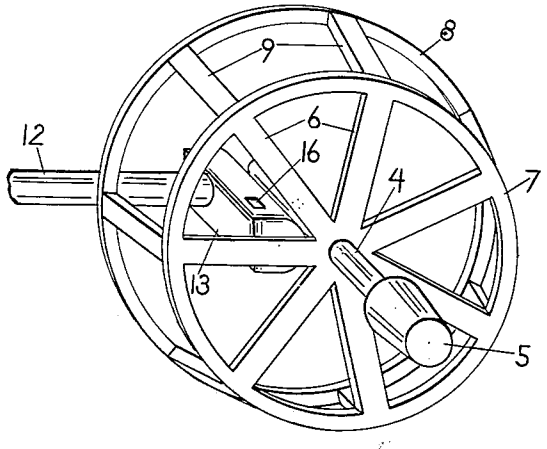


Fig. 3

INVENTOR:
CHARLES S. RAIZEN
BY Maurice Block
ATTORNEY

United States Patent Office 2,746,205
Patented May 22, 1956

2,746,205

BUBBLE PRODUCING TOYS

Charles S. Raizen, New Rochelle, N. Y.

Application January 22, 1954, Serial No. 405,578

2 Claims. (Cl. 46—7)

My invention relates to toys for the production of bubbles by blowing thin films of a soapy or similarly viscous liquid into globular shape.

Objects of my invention are to blow air from the interior of a circularly rotatable film-lifting element, thereby to blow bubbles in a direction substantially radially outward from the film-carrying element whereby the bubbles are easily, uniformly and quickly separated and spaced from the film carrier and whereby a series of well shaped bubbles can be produced in quick succession, and to provide a novel arrangement of blowing pipe and film-lifting element which operates in amusing and efficient manner.

Other objects are to lift films of a soapy solution or the like by apertured walls of a drum-shaped rotating element, to form this element with an open side for the entrance of a blowing pipe into its inner space, and to form this element of simple, thin, interconnected parts whereby the element is adapted for inexpensive mass production requiring a minimum of material, for example, of plastic material.

Further objects are to rotate the drum-like element about a horizontal axis, to provide film-carrying apertures in the peripheral wall of this element, to direct a stream of air radially outward toward the rotary path of these apertures, and thereby to blow a series of bubbles in vertically upward direction.

Still other objects are to position the film-lifting element in a housing adapted to be partly filled with a viscous solution, to support this element rotatably in the housing, to secure the blowing pipe to the housing in a position in which its outlet is within the film-lifting element, and to provide this housing with a top opening through which the bubbles can readily escape.

Still further objects are to provide the housing with a shape simulating a boat or ship, to form the top opening like a ship's chimney, and thereby to make possible the simulation of smoke or steam escaping from a ship by the bubbles produced in the toy.

Still other objects and advantages will appear from the following description of an exemplifying embodiment of my invention, from the appended claims and from the accompanying drawing in which:

Fig. 1 shows a top view of an illustrative embodiment of my invention, represented on a reduced scale.

Fig. 2 shows a cross-section of the same embodiment, taken along the line 2—2 in Fig. 1 and represented on about natural scale, a portion of the blowing pipe with its mouth piece being broken off and omitted.

Fig. 3 shows a perspective view of the rotatable parts and of portions of the blowing pipe of the embodiment shown in Figs. 1 and 2, represented on an enlarged scale.

Referring to the drawing, numeral 1 indicates a housing which is formed by walls having preferably the outer shape of a boat or steam ship. This shape comprises a chimney 3 surrounding an opening positioned at the top of the housing 1.

A shaft 4 passes horizontally through the interior of

the housing 1, is rotatable in bores of this housing and has an outward extension provided with a conical handle 5. Spokes 6 connect a ring 7 with the shaft 4. Another, preferably slightly larger ring 8 is connected with the ring 7 by bars 9. The two rings are spaced from each other in a horizontal direction parallel to the shaft 4 and are concentric with this shaft 4. The rings 7 and 8, the spokes 6 and the bars 9 together form a rotatable element and may be made together with the shaft 4 in one piece. This rotatable element has the outlines or the general shape of a drum which is open at the side formed by the ring 8. The peripheral wall of this drum has apertures formed by spaces between the bars 9 and distributed about the rotary axis of the element at regular intervals. Also the side formed by the ring 7 has apertures distributed at regular intervals about the same axis, the latter apertures being positioned between the spokes 6.

A blowing pipe preferably comprises three portions, a mouth piece 11, a flexible tube 12 and a stiff channeled body 13. The mouth piece 11 has a blowing channel leading in well known manner from an inlet end 14 to an outlet connected with the tube 12. Preferably, this channel has an additional outlet 17 adapted in known manner to produce a whistling tone when air is blown through the piece 11. The tube 12 passes through an opening of the wall of the housing 1 and has an end positioned in this housing and affixed to the body 13. This body is positioned in the housing 1, is affixed to a wall of this housing and extends through the ring 8 into the interior of the rotatable element 6 to 9. The body 13 contains an angularly bent channel 15 which has one end communicating with the tube 12 and has another end forming an outlet 16. This outlet is positioned within the element 6 to 9 and is preferably directed vertically upward and toward the periphery of the rotatable element.

Because the ring 8 is larger than the ring 7, the drum-shaped element has a relatively large open side defined by the ring 8, and the bars 9 connecting the two rings do not define a cylindrical periphery of this element, but converge slightly toward the ring 7 like the side lines of a cone. This shape of the drum element has several advantages. For example, the conical shape can be more easily taken out of a mould and resists distortion better than a cylindrical shape, and the larger ring 8 has a safe distance from the tube body 13 passing through this ring whereby the ring will not hit the body 13 even if the drum is not absolutely correctly centered or vibrates during the rotation.

The chimney 3 is positioned over the outlet 16.

The described toy operates as follows:

A suitable soapy or viscous solution is poured into the housing so that the lower portions of the rings 7 and 8 are immersed in this solution. For example, the solution may fill the housing up to a level just a little under the shaft 4. Then, the rotatable element is slowly rotated by turning the handle 5 and, at the same time, air is blown into the mouth piece 11.

The rotating element lifts portions of the viscous solution, these portions adhering to the rims, bars and spokes which form this element and forming thin films extending between these parts across the apertures between the same. The air stream coming out of the pipe outlet 16 blows all or some of these films into globular shape, separates the thus formed bubbles from the rotating element and blows the bubbles upward. The bubbles then escape from the housing through the top opening formed by the chimney 3.

If the level of the soapy liquid is relatively high and this liquid is stirred considerably by the rotating bars, some of the liquid may spill over the outlet 16. The air

stream will remove this liquid from the outlet and blow this liquid also into bubbles.

I desire it understood that my invention is not confined to the particular embodiment shown and described, the same being merely illustrative, and that my invention may be carried out in other ways within the scope of the appended claims without departing from the spirit of my invention as it is obvious that the particular embodiment shown and described is only one of the many that may be employed to attain the objects of my invention.

Having described the nature of my invention, what I claim and desire to protect by Letters Patent is:

1. A bubble-producing toy comprising a boat-shaped housing having walls surrounding an inner space, having a lower part forming a reservoir adapted for being filled with a soapy liquid, and having a chimney forming a top opening of said housing; a horizontal shaft passing rotatably through said housing and having an end projecting out of said housing whereby said shaft can be rotated; a drum-like film-lifting element positioned in said housing and having two rings concentric with said shaft, reaching into said reservoir and being spaced from each other in the direction parallel to said shaft, said element having bars connecting said rings across the peripheral side of said element and being spaced from each other whereby apertures are formed which are distributed about said shaft and are moving, when said element rotates, in a circular path, said element further having spokes connecting one of said rings with said shaft, the other ring surrounding an annular space forming an open side of said element; and a blowing pipe passing through a wall of said housing, being affixed to said housing, extending through said open side into said element aside of said shaft and having an outlet positioned within said element and being directed upward and toward said path, said chimney being positioned over said outlet.

2. A bubble-producing toy comprising a housing having walls surrounding an inner space having a lower part forming a reservoir adapted for being filled with a soapy liquid, a horizontal shaft passing rotatably through said housing and having an end projecting out of said housing whereby said shaft can be rotated; a drum-like film-lifting element positioned in said housing and having two rings concentric with said shaft, reaching into said reservoir and being spaced from each other in the direction parallel to said shaft, said element having bars connecting said rings across the peripheral side of said element and being spaced from each other whereby apertures are formed which are distributed about said shaft and are moving, when said element rotates, in a circular path, said element further having spokes connecting one of said rings with said shaft, the other ring surrounding an annular space forming an open side of said element; and a blowing pipe passing through a wall of said housing, being affixed to said housing, extending through said open side into said element aside of said shaft and having an outlet positioned within said element and being directed upward toward said path.

References Cited in the file of this patent

UNITED STATES PATENTS

2,522,376	Kalisz	Sept. 12, 1950
2,628,449	Raizen	Feb. 17, 1953
2,669,059	McNeil	Feb. 16, 1954

FOREIGN PATENTS

674,262	Great Britain	June 18, 1952