

March 17, 1953

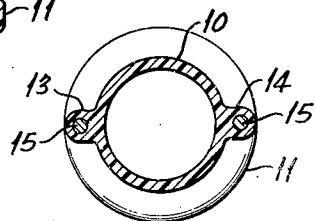
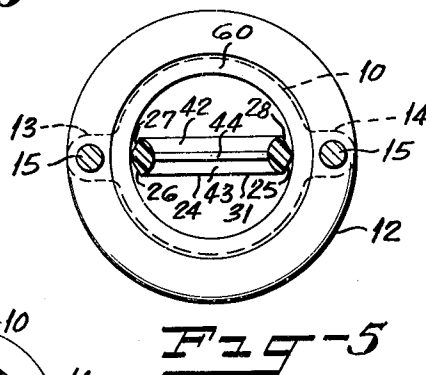
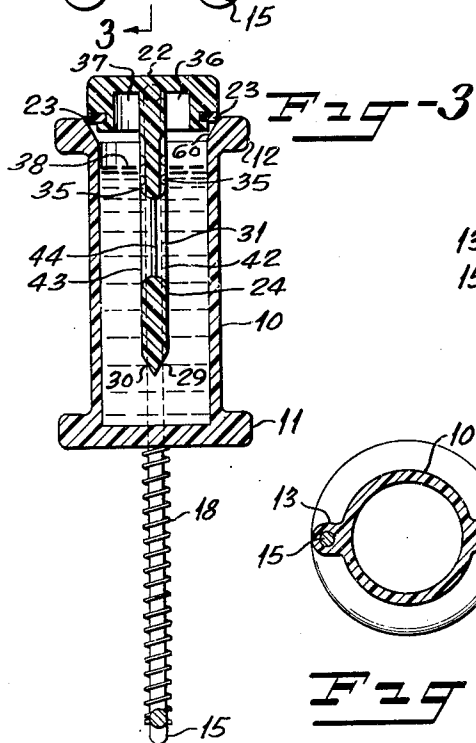
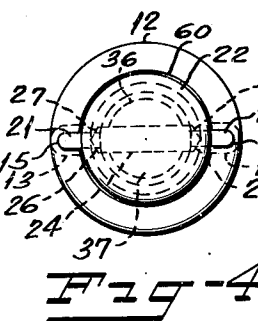
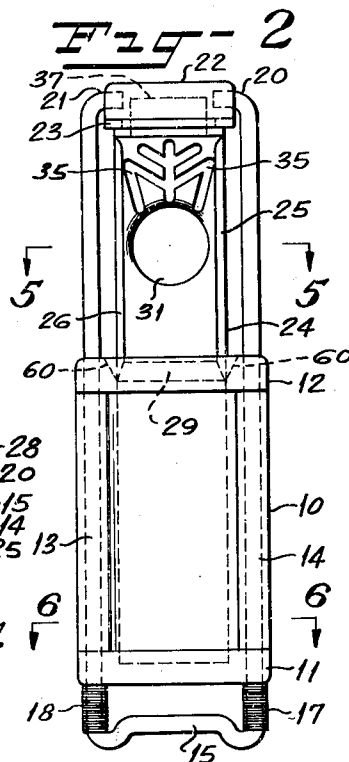
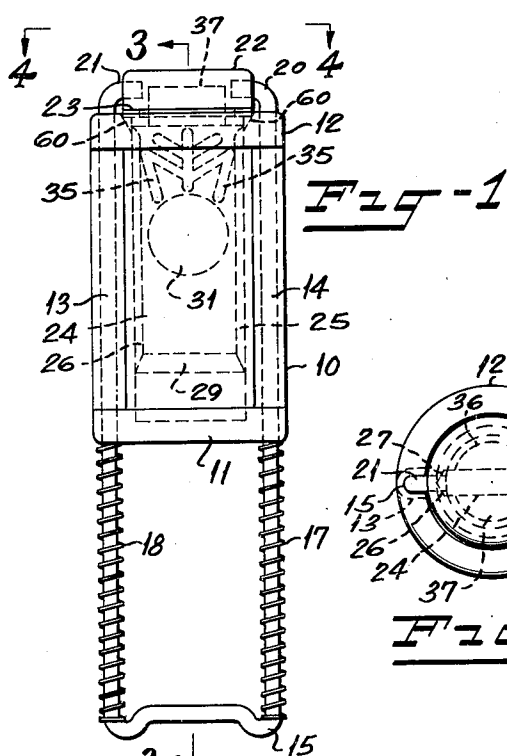
H. W. CLAUSEN

2,631,404

BUBBLE FORMING DEVICE

Filed Aug. 27, 1949

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

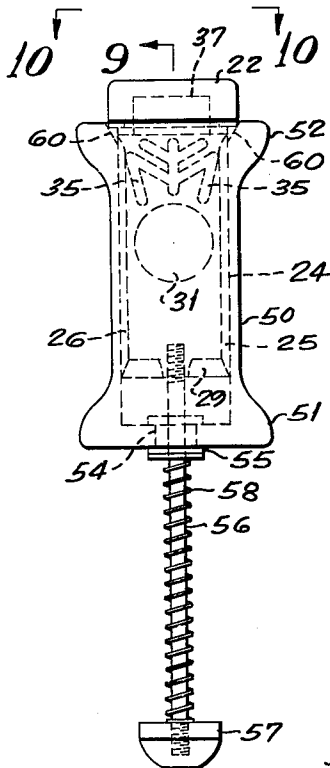


Fig-7

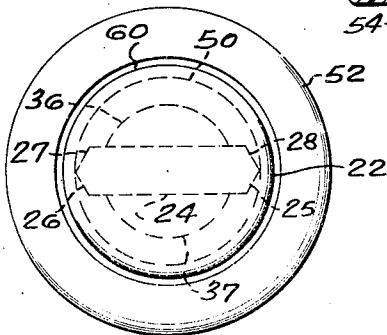


Fig-10

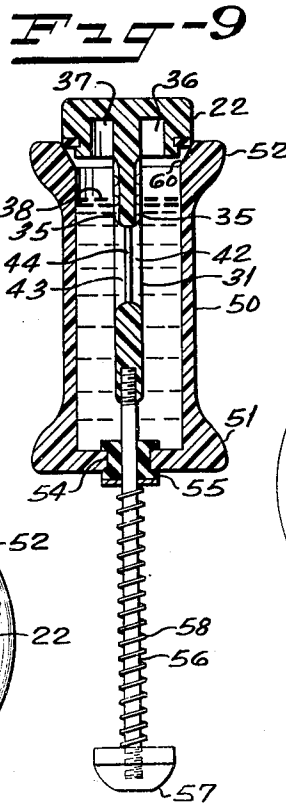


Fig-9

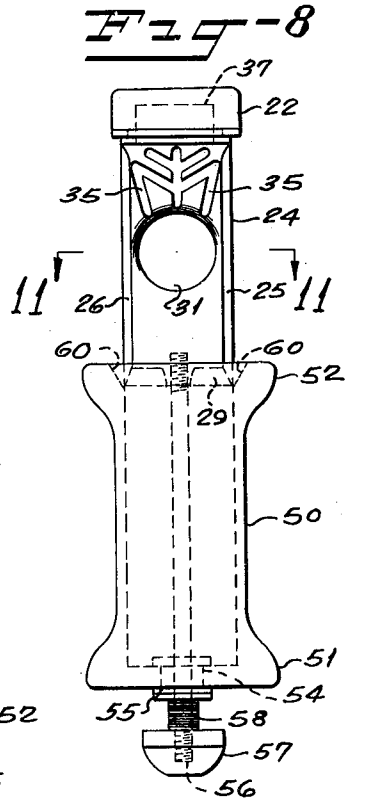


Fig-8

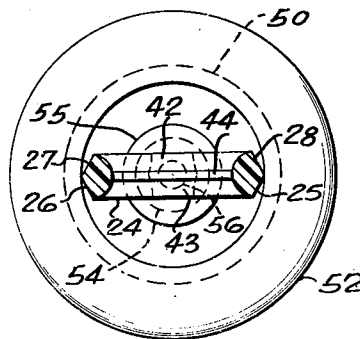


Fig-11

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UNITED STATES PATENT OFFICE

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BUBBLE FORMING DEVICE

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3 Claims. (Cl. 46-7)

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This invention relates to a bubble forming device and more especially to an apparatus having a container with a flat member movably supported by the container and having an opening therethrough normally held immersed in a bubble forming solution within the flat member and being movable longitudinally of the container and out of the container to expose the flat member above the top of the container in a position where a stream of air can be blown through the opening to form a plurality of bubbles, said flat member having integral therewith a cover portion for the container with tension means normally moving the flat member to immersed position within the container and to hold the lid or cover portion associated with the flat member in close contact with the upper open end of the container to prevent leakage of a bubble forming solution from the container.

It is an object of this invention to provide a bubble forming device comprising a container with a flat wand member slidably mounted relative to the container and having spring means normally holding the flat member encased within the container and said flat member having integral therewith a stopper or closure member which is adapted to be held over the upper open end of the container for closing the container when the flat member is housed within the container.

It is another object of this invention to provide a bubble forming device having a wand member immersible in a container and said wand member having a means associated therewith for retaining and feeding additional bubble forming solution to the opening in the wand member to thus effectively increase the duration of time during which bubbles may be continuously blown from the wand member by the passing of a stream of air through the opening in the wand member.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which

Figure 1 is an elevation of a preferred embodiment of the invention and showing it in normal closed position;

Figure 2 is an elevation similar to Figure 1 but showing the flat wand member moved out of the container in which it is normally encased;

Figure 3 is a vertical sectional view taken along the line 3-3 in Figure 1;

Figure 4 is a top plan view looking down on Figure 1;

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Figure 5 is a sectional plan view taken along the line 5-5 in Figure 2;

Figure 6 is a sectional plan view taken along the line 6-6 in Figure 2;

Figure 7 is an elevation of a modified form of a bubble forming apparatus;

Figure 8 is an elevation similar to Figure 7 but showing the wand and cover member raised relative to the container in which it is normally housed;

Figure 9 is a vertical sectional view taken along the line 9-9 in Figure 7;

Figure 10 is a top plan view taken along the line 10-10 in Figure 7;

Figure 11 is a sectional plan view taken along the line 11-11 in Figure 8.

Referring more specifically to the drawings, the numeral 10 indicates a container having an imperforate bottom therein having a bottom flange 11 and a top flange 12 and vertical ribs 13 and 14 extending vertically along the outer surface of the container which have longitudinal bores extending therethrough for the reception of a substantially U-shaped member 15. The legs of this U-shaped member 15 are slidably mounted in the bores in the rib members 13 and 14 and surrounding each of the legs and disposed between the closed end of the U-shaped member 15 and the bottom of the container 10 are coiled springs 17 and 18 for normally holding the U-shaped member in the position shown in Figure 1.

The upper ends of the U-shaped member 15, after the U-shaped member has been installed in the bores in the ribs 13 and 14, are turned inwardly as at 20 and 21 into suitable cavities in a cap or lid member 22. This cap or lid member 22 has a suitable gasket 23 disposed around its lower surface for engagement with the top edge of the container 10 to seal the same against loss of the bubble forming liquid within the container. The top 22 has integral therewith a flat vane like member 24 which has its side edges and lower end beveled as at 25, 26, 27, 28, 29 and 30, and has an opening 31 therethrough, through which air may be blown as from the mouth of the user to form bubbles from a film deposited over the opening 31.

The vane like member 24 has a plurality of grooves 35 in both sides thereof for retaining the bubble forming solution and the cap portion 22 is also hollowed out as at 36 and 37 to provide cavities for storing the bubble forming solution and to allow this bubble forming solution to flow downwardly from the cavities 36 and

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37 and the grooves 35 to continue to deposit a film of the bubble forming solution over the opening 31 to thus prolong the time interval during which bubbles may be produced from the device. The container is adapted to be substantially filled with a bubble forming solution indicated at 38. The vane like member 24 is beveled with round bevels as at 42 and 43 to provide a thin annular rib portion 44 from whence the film will be expelled by a blast of air. Regardless of the amount of bubble forming solution 38 disposed within the container 10, the opening 31 will have a film deposited thereover and a reserve of the bubble forming solution will be deposited in the grooves 35 and the cavities 36 and 37, since the device is usually turned on its side or upside down immediately prior to moving the parts from the position shown in Figure 1 to the position shown in Figure 2.

Figures 7 to 11 show a slightly modified form of the invention in which like reference characters indicate like parts, and only the matter differing from the structure shown in Figures 1 to 6, inclusive, will be described.

In this modified form of the invention, a container 50 is provided which is spool-like in shape on its exterior to provide enlarged portions 51 and 52 near its top and bottom to provide a suitable hand hold for the operator and to make the container 50 more easily gripped by a hand and to prevent sliding movement of the same in the hand of an operator. Instead of having the U-shaped rod 15 and associated parts, the bottom of the container 50 has a centrally disposed perforation 54 therein in which a suitable resilient grommet 55, preferably of rubber or synthetic rubber, is mounted and this grommet is penetrated by a plunger 56 having a knob 57 on its lower end surrounded by a compression spring 58. The upper end of this rod 56 is threaded and the lower end of the vane like member 24 is bored and threaded for reception of the upper end of the rod 56.

The upper end of both containers 10 and 50 are beveled as at 60 to provide a more perfect seal between the gasket 23 and the beveled surface 60. All the other features shown in Figures 7 to 11 inclusive, which are identical to the features shown in Figures 1 to 6, inclusive, bear like reference characters, and additional description is not deemed necessary.

Method of operation

With the parts in the position shown in Figures 1 and 7, the vane like members 24 is expelled to the position shown in Figures 2 and 8, and the container 10 or 50 is filled with a suitable bubble forming solution, and then the member 15 or 56 has the pressure released therefrom and the springs 17 and 18 or spring 58 move the parts to closed position as shown in Figures 1, 3, 7 and 9, and before bubbles are to be formed, the apparatus is turned on its side or, if desired, upside down, and then moved to the position shown in Figures 1 or 7 and then by pressure being applied to the member 15 or 56, the parts are moved to the position shown in Figures 2 or 8 and a film of bubble forming solution will be formed over the opening 31 as well as deposited in the grooves 35 and the cavities 36 and 37, and a stream of air will be blown from the mouth of an operator through the opening 31 which will form a plurality of bubbles from the film disposed over the opening 31. As the bubble forming solution will feed over the opening 31 con-

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tinuously to replace the bubble forming solution which is being consumed, it is seen that bubbles will be formed from the stream of air being forced through the opening 31 so long as the film deposited in the grooves 35 and the cavities 36 and 37 continues to flow down to maintain the film over the opening 31.

It is thus seen that this device provides means whereby the duration of time during which bubbles can be formed from a single operation will be doubled and even trebled and greatly increased from that of a wand having a film deposited thereover and which is soon exhausted by the blowing of a stream of air therethrough to form only a few bubbles.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purpose of limitation, the scope of the invention being defined in the claims.

I claim:

1. Apparatus for forming bubbles comprising a container for a bubble forming solution having a closed bottom and an open top, a member slidably mounted in the container and having a closure on the upper end thereof for closing the open top of the container when the member is encased within the container, said member having an opening therethrough over which a film of bubble forming solution is deposited while the member is disposed within the container, and spring means for normally holding the member telescoped within the container so as to cause its closure member to be held in engagement with the open end of the container, said member having a portion extending to the exterior of the container and engageable by an operator for sliding the member in the container to a point where the opening therein is disposed above the top of the container to permit air to be blown through said opening for forming bubbles, said member having depressions therein disposed between the opening and the closure member so as to store bubble forming solution and to allow it to flow downwardly over the opening when the member is moved upwardly.

2. Apparatus for forming bubbles comprising a container having an open upper end for holding a bubble forming solution and a vane slidably mounted for movement along the longitudinal axis of said container, spring pressed means for normally holding the vane within the container, the vane having a closure on its upper end adapted to close the upper end of the container, said vane having an opening therein over which a film of bubble forming solution is adapted to be deposited as the vane is moved out of the container, the closure having cavities in its lower surface adjacent the vane and the vane having depressions in at least one side thereof and disposed between the closure and the opening, said cavities and depressions being adapted to store an additional supply of bubble forming solution which is adapted to flow by gravity over the opening as the film already deposited thereover is dislodged by passing a blast of air through the opening.

3. Apparatus for forming bubbles comprising a container for a bubble forming solution having a closed bottom and an open top, a planar member slidably mounted in the container and having a closure on the upper end thereof for closing the open top of the container when the

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planar member is encased within the container, said planar member having an opening extending transversely therethrough over which a film of bubble forming solution is deposited while the planar member is disposed within the container, spring means for normally holding the member telescoped within the confines of the container so as to cause its closure member to be held in engagement with the open end of the container, said planar member being slidable to a position where the opening therein is above the top of the container to permit air to be directed thereto for forming bubbles, said means for normally holding the planar member in telescoped position within the container comprising a shaft slidably penetrating the bottom of the container and secured to the lower end of the vane and having a knob on the lower end thereof and a compression spring disposed

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on said shaft between the bottom of the container and said knob.

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