Jan. 8, 1963 P. H. KNOTT 3,071,888

BUBBLING AMUSEMENT DEVICES

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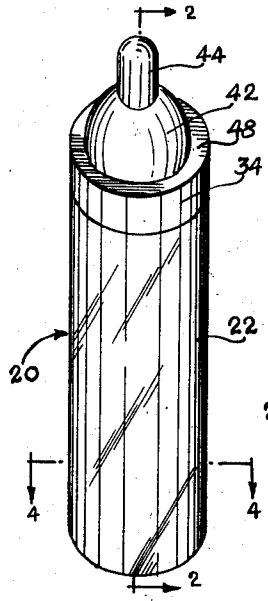

Fig. 1.

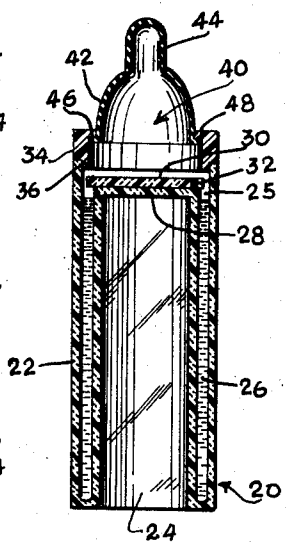

Fig. 2.

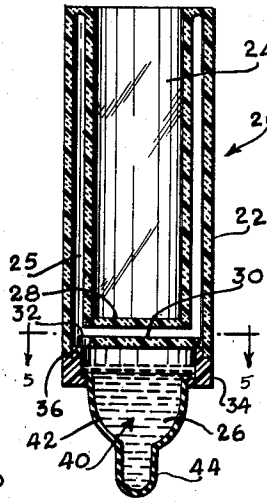

Fig. 3.

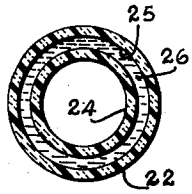

Fig. 4.

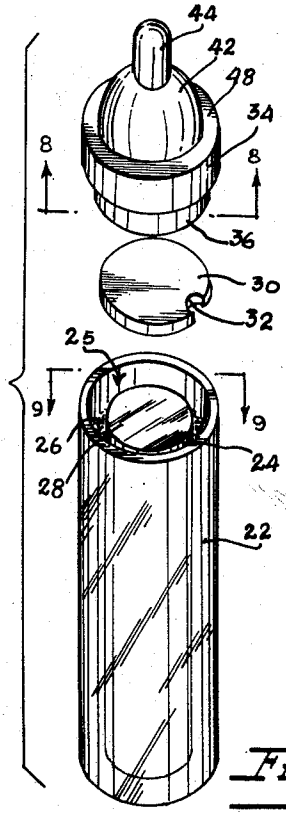

Fig. 7.

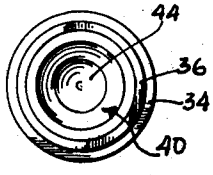

Fig. 8.

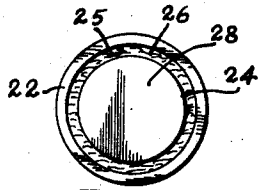

Fig. 9.

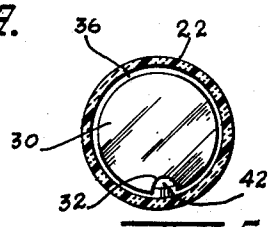

Fig. 5.

Fig. 6.

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FIG. 10

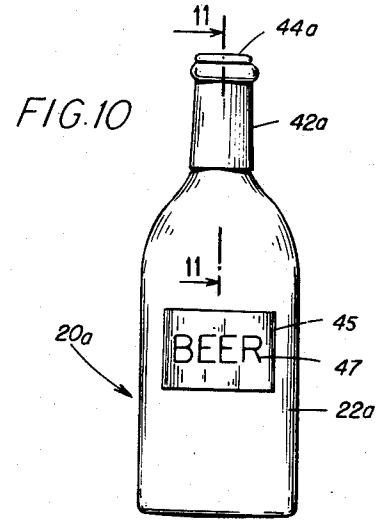


FIG. 11

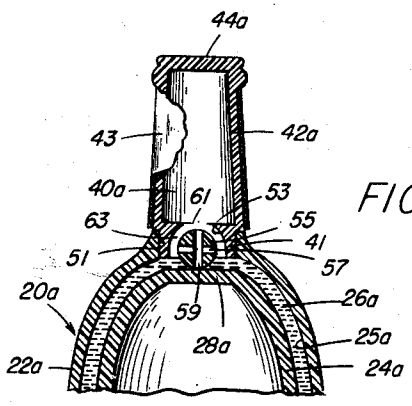


FIG. 12

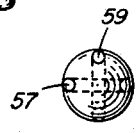


FIG. 14

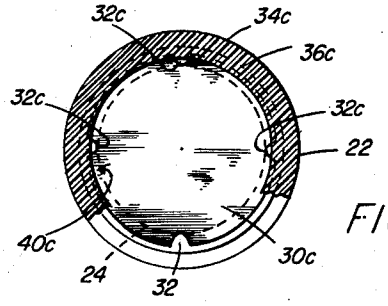


FIG. 13

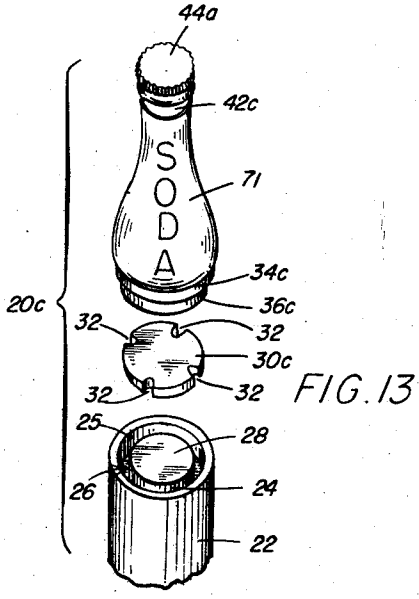
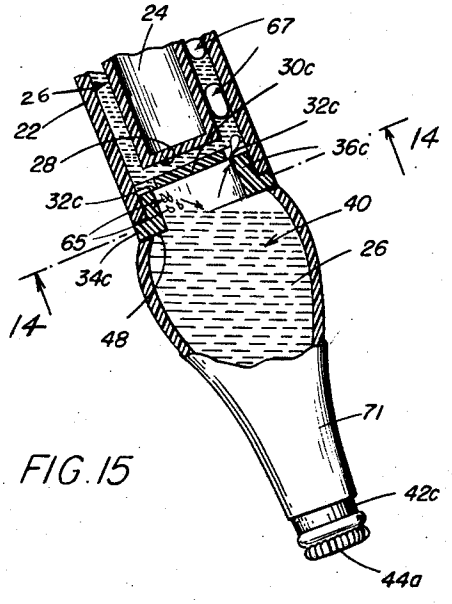


FIG. 15



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BUBBLING AMUSEMENT DEVICES

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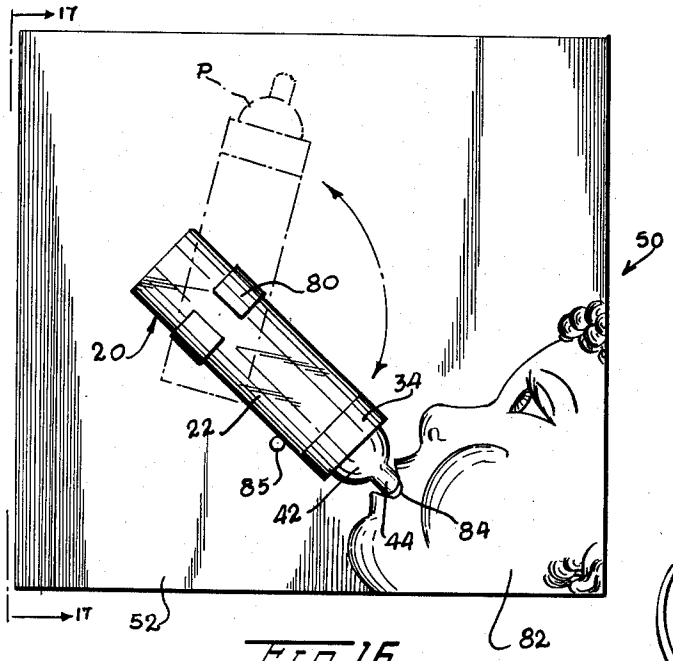

Fig. 16.

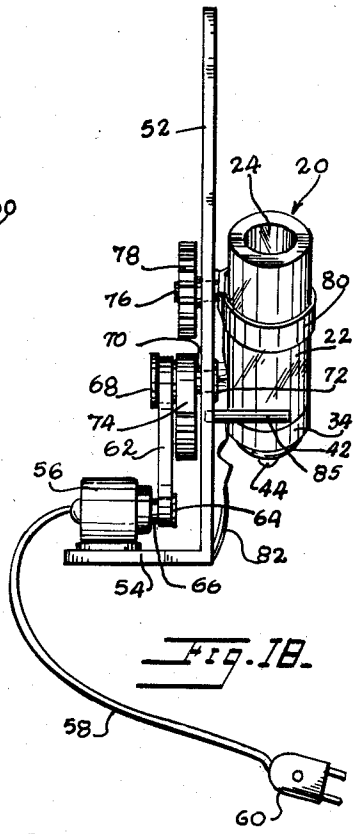

Fig. 18.

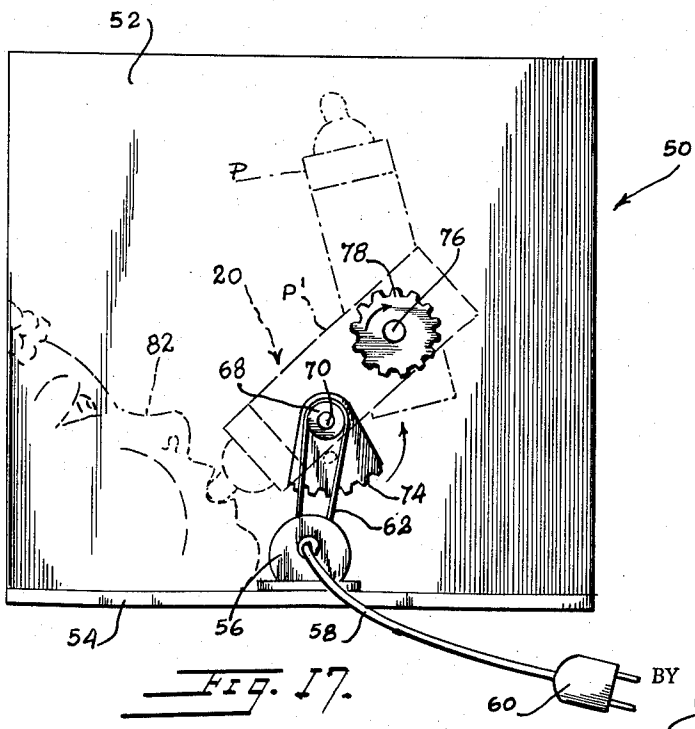

Fig. 17.

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FIG. 19

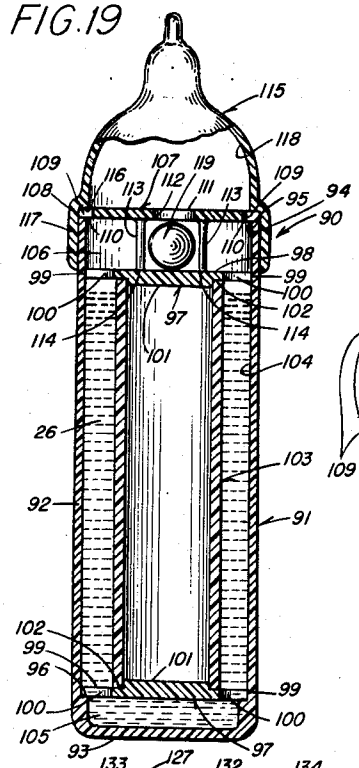


FIG. 20

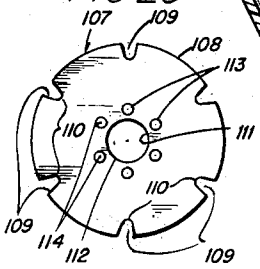


FIG. 21

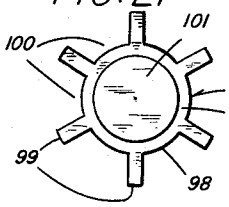


FIG. 22

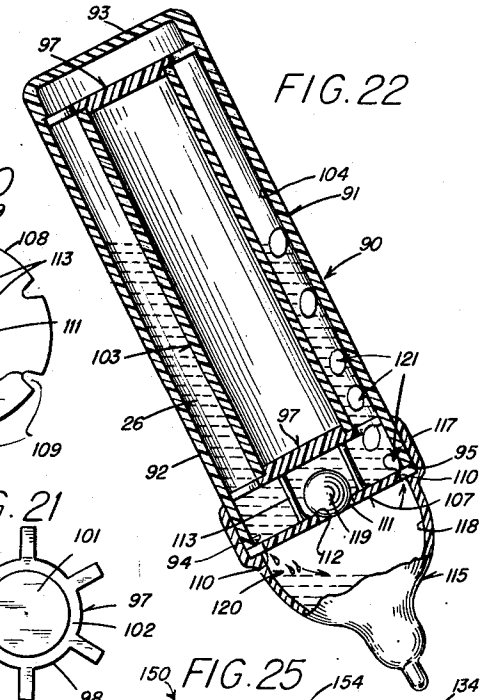


FIG. 23

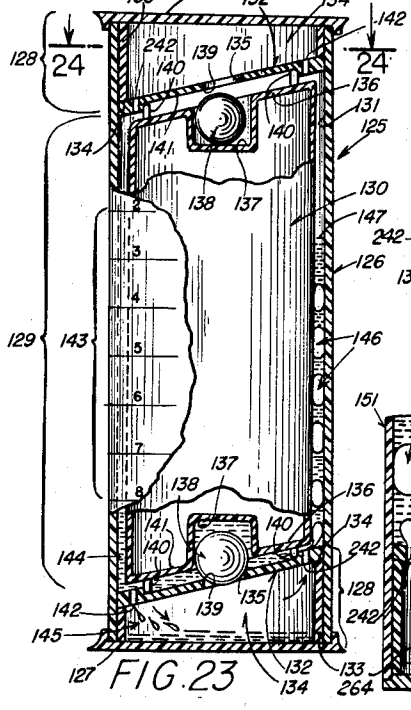


FIG. 24

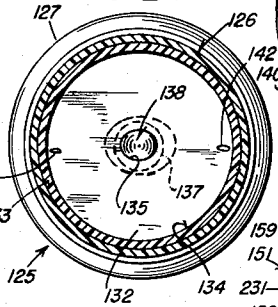


FIG. 25

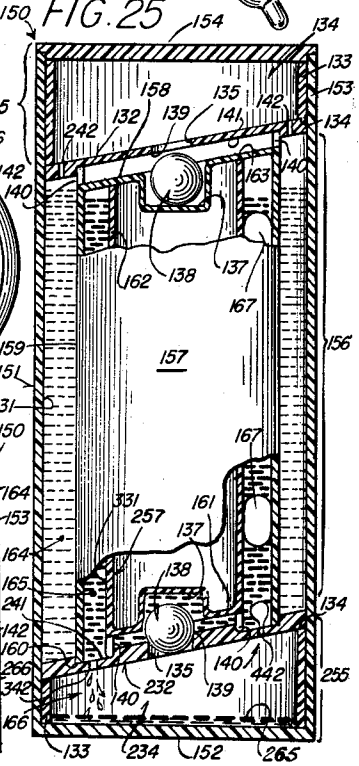
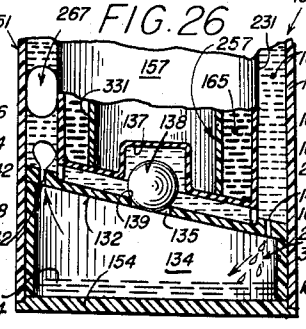


FIG. 26



United States Patent Office 3,071,888 Patented Jan. 8, 1963

3,071,888
BUBBLING AMUSEMENT DEVICES

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Filed July 27, 1962, Ser. No. 214,792
13 Claims. (Cl. 46—1)

The present invention relates to an amusement container device featuring an observable body of liquid caused alternately to disappear and reappear, or at least change position in the device with attendant alteration of appearance, upon manipulation of the device.

This application is a continuation-in-part of application Serial No. 133,675, filed August 24, 1961, and now abandoned.

According to the invention there is provided a container device which, for purposes of amusement, simulates repeated emptying of a compartment thereof having light-transmitting exterior walls for observation of liquid contents. There is provided a liquid-tight and alternately invertible, elongated hollow container having opposite closed ends and at least an intervening pair of tandem sections with one of the latter constituting a top end section and the other a lower section therebeneath in an upright position of the container. Transverse partition means are mounted within the container to define at least a part of the interior thereof into segregated supply and receiving chambers. The receiving chamber occupies the top end section and in some embodiments of the invention the walls thereof are of a character substantially to block transmission of light rays therethrough, such as by being opaque, so as to hide the liquid when transferred into the receiving chamber. A body of gaseous medium, such as air, is trapped in the receiving chamber. The supply chamber of the various embodiments of the invention is exteriorly defined in part by light-transmitting side walls, such as by being transparent or translucent, to permit observation of a body of liquid therein, and it occupies the container section beneath the receiving chamber. This supply chamber section has an interior side wall structure spaced inwardly from the light-transmitting side walls to define therebetween the supply chamber in the form of a circumscribing space of relatively small transverse dimension to limit the volumetric capacity of the supply chamber. The volumetric capacity of the receiving chamber at least approaches that of the supply chamber so that it may accommodate at least a major portion of the liquid contents of the latter. The transverse partition means includes gravity-operated valve means having a controlled flow passage or valve port extending past the partition means to allow transfer of the liquid from the receiving chamber to the observable supply chamber. The valve port is of appreciable flow area to permit relatively rapid flow of the liquid therethrough. The valve means is biased by the force of gravity to open position of the valve port in the upright position of the container to permit the relatively rapid return liquid flow through the port. When the container is inverted the valve means is gravity biased to a position of substantial closure of the valve port to limit or prevent flow of the liquid through the latter from the supply chamber, which is now uppermost, down to the receiving chamber. The transverse partition means also provides a plurality of small trickle passages eccentrically located with respect to the center thereof at angularly spaced points, thereby communicating the supply chamber to the receiving chamber in an inverted position of the container. When the container is inverted to a position which places at least one of the trickle passages at an elevation lower than another thereof the liquid will trickle down through the former to the receiving chamber with simultaneous countercurrent bubbling transfer of the trapped gaseous medium back up into the slowly

emptying supply chamber. This bubbling action is of importance to the observer since it has visual appeal and is associated with conventional depletion or delivery of liquid contents of many familiar devices that the present apparatus in many of its forms may simulate or represent in toy form. The rapid return of the liquid, which may be hidden in the receiving chamber, back to the supply chamber for another cycle of delivery operation has appeal to the observer since it eliminates tedious waiting for trickle return before the intriguing trickling and bubbling delivery can be repeated.

It is thus an object of the present invention to provide the amusement device of the present invention in forms which will intriguingly simulate the general appearance and those characteristics of the action of conventional delivery of liquid contents having considerable visual appeal of various devices familiar to many people, and particularly children.

Another object of the invention is to provide the amusement device in a miniature form simulating a milk feeding bottle for infants so that a child may mimic with a doll the feeding of milk in the conventional manner of bottle feeding infants, a slow progressive disappearance of the milk simulating liquid being accompanied by a life-like bubbling action characteristic of the real bottle feeding of infants.

A further object of the invention is to provide such an amusement device in forms wherein receiving chambers are provided at opposite ends of the container with supply annular chamber means intervening so that a common supply chamber may alternately cooperate with the receiving chambers or with each of the latter communicating with its own separate supply chamber isolated from a second supply chamber communicating only with the other receiving chamber and with the supply chambers being in the form of annular spaces telescoped one within another by light-transmitting walls so that bubbling action in either may be observed from the outside. In embodiments of the amusement device having such telescoped supply chambers the supply liquids may be translucent liquids of different colors to give unique color effects.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the constructions hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIG. 1 is an oblique side and top view of a toy bottle embodying the invention;

FIG. 2 is a longitudinal sectional view taken on line 2—2 of FIG. 1;

FIG. 3 is a longitudinal sectional view similar to FIG. 2 with the bottle in inverted position;

FIG. 4 is a cross-sectional view taken on line 4—4 of FIG. 1;

FIG. 5 is a cross-sectional view taken on line 5—5 of FIG. 3;

FIG. 6 is a side view partially in section of the bottle in tilted and inverted position;

FIG. 7 is an exploded perspective view of parts of the toy bottle of FIGS. 1 to 6 incl.;

FIGS. 8 and 9 are plan views taken on lines 8—8 and 9—9, respectively, of FIG. 7;

FIG. 10 is a side elevational view of another amusement bottle embodiment of the invention;

FIG. 11 is a fragmentary longitudinal sectional view taken on line 11—11 of FIG. 10, with parts broken away;

FIG. 12 is a side view of a valve element employed in the embodiment of FIGS. 10 and 11;

FIG. 13 is an exploded perspective view of parts of another amusement bottle embodiment of the invention, with parts broken away;

FIG. 14 is an enlarged transverse sectional view of the embodiment of FIG. 13 when the parts thereof are assembled together, taken substantially on line 14—14 of FIG. 15, parts being broken away to show details;

FIG. 15 is a sectional view, with parts broken away and others in side elevation, somewhat similar to the bottom portion of FIG. 6, illustrating operation of the FIGS. 13 and 14 embodiment in a tilted inverted position;

FIG. 16 is a front elevational view of a display assembly employing the amusement bottle embodiment of FIGS. 1 to 9 incl., illustrating inversion thereof by power driven means from an upright position shown in dot-dash lines to an inverted tilted position shown in full lines;

FIG. 17 is a rear elevational view of the display assembly of FIG. 16;

FIG. 18 is an edge or side elevational view of the display assembly of FIGS. 16 and 17;

FIG. 19 is an axial section of another embodiment of the invention in an upright position, with part of the top end in side elevation;

FIG. 20 is a plan view of a partitioning unit of the device shown in FIG. 19;

FIG. 21 is a plan view of a spacing spider of the FIG. 19 device;

FIG. 22 is a side elevational view, with parts broken away and in axial section, of the device of FIG. 19, illustrating an operational action thereof;

FIG. 23 is a view, with parts in side elevation and others broken away and in axial section, of an upright position of another embodiment featuring a pair of alternately operable receiving chambers cooperative successively with a common supply chamber;

FIG. 24 is a sectional view taken on line 24—24 of FIG. 23;

FIG. 25 is a view similar to FIG. 23 of a further embodiment of the device featuring a plurality of paired receiving and supply chambers capable of giving automatic color changing effects; and

FIG. 26 is a view similar to FIG. 25 of the device therein shown when it is inverted, with one end broken away.

Referring to FIGS. 1 to 9 incl., there is shown a toy bottle **20** intended for simulated feeding of milk to a doll, having a cylindrical transparent plastic or glass hollow body **22**. The body is formed with a hollow filler body, which may be in the form of a reentrant cylindrical section **24** defining an annular compartment or chamber **25** between the section **24** and body **22**. This compartment is substantially filled with a white or colored liquid **26**. The reentrant section **24** has a closing flat top end **28** in the upper portion of compartment **25**, and a movable disc **30** whose diameter is slightly less than the inner diameter of body **22** rests loosely thereon. The disc has a notch **32** in its circumferential edge (see FIG. 5) but preferably is provided with a plurality thereof at circumferentially spaced points.

A cylindrical ring **34** is formed with a skirt **36** to telescope or fit into the open end of body **22**. The inner diameter of the skirt **36** is less than disc **30** so that the disc lies on the skirt when the bottle is inverted as shown in FIG. 5. The radially inward tip end of notch **32** then provides a restricted opening providing communication between supply compartment or chamber **25** and a receiving compartment or chamber **40** of a hollow opaque neck **42** extending outwardly of ring **34**. The neck has a closed tubular end **44** formed to simulate a nipple of a baby's bottle. The neck has an annular external flange **46** which engages within radially extending internal flange **48** at the outer end of the ring **34**.

FIGS. 2, 3 and 6 illustrate best the mode of operation

of the toy bottle embodiment **20**. In FIG. 2 the bottle device **20** is shown upright. The liquid **26** substantially fills compartment **25** and is visible through the transparent body **22**. The liquid appears to fill the entire bottle since the presence of inner section **24** is not apparent to the viewer. This is particularly true if the plastic walls are translucent having, for example, a milky appearance characteristic of conventional polyethylenes.

FIG. 6 shows the toy bottle **20** inverted and tilted. The liquid **26** is shown flowing at a restricted rate through the radially inward, uncovered tip portion of notch **32** from compartment **25** to compartment **40**. FIG. 3 shows the bottle fully inverted. All the liquid **26** has drained into the compartment **40** of the neck and the body **22** appears empty. When the bottle is placed upright to the position of FIG. 2 from the position of FIG. 3, the valving disc **30** drops down upon the closing top end **28** of filler section **24** and the liquid will flow quite rapidly past the circumferential edge of the valving disc from the neck chamber **40** back into the compartment or chamber **25** again.

FIGS. 16 to 18 incl. show a display assembly **50** which may be used for cyclically tilting or inverting the bottle device **20** and then swinging it back to an upright position. A vertical board or panel **52** has a horizontal base **54**. On the base is a motor **56** energized by a cable **58** terminating in a plug **60** which can be connected to a convenient power outlet. A belt **62** is entrained on a pulley **64** carried by shaft **66** of the motor and on a pulley **68** carried on another shaft **70** journaled for rotation in a bearing **72** on the panel **52**. A sector gear **74** is rotatable on shaft **70**. Another shaft **76** carries a spur gear **78** behind the panel **52**. A spring clamp **80** is connected to shaft **76** and rotates therewith. The clamp holds bottle **20**. A part of a doll's head **82** is secured to the front of the panel and has a mouth **84** disposed so that when the bottle is tilted as shown in FIG. 16, the nipple end **44** is located at the mouth **84**. A stop pin **85** extends outwardly of the panel below shaft **76** and clamp **80** to limit rotational movement of the bottle during operation of the display assembly.

In operation of the display assembly, the gear **74** is rotated continuously. In FIG. 17, the gears **74** and **78** are disengaged. The bottle is supported by clamp **80** near the bottom of the bottle so that the bottle is downwardly inclined resting on pin **85** with nipple end **44** at the doll's mouth **84**. As the gear **74** rotates it engages the gear **78** and rotates the shaft **76** to an upright unbalanced position P of the bottle device **20**, as shown by dot-dash lines in FIGS. 16 and 17. The supply compartment **25** then fills rapidly with liquid **26** from the neck receiving compartment **40**. As the gear **74** continues rotation, the gears **74** and **78** disengage and the bottle device **20** swings by force of gravity down to the inverted tilted position P', shown in dash lines in FIG. 17 and full lines in FIGS. 16 and 18. The liquid in supply compartment **25** then drains slowly out of the body **22** into the receiving chamber **40** of neck **42**. The rotation of gear **74** is so timed that the bottle device **20** is placed in the unbalanced upright position P when substantially all of the liquid is drained into the neck chamber **40**, whereupon the supply compartment **25** is refilled rapidly. Thereafter, the gear **74** disengages from gear **78** and permits the bottle device **20** to be rotated to the draining, tilted position P'. The operation proceeds cyclically and continuously and the doll appears to be drinking milk from the simulated feeding bottle **20** in an interesting and amusing display, for advertising purposes or the like.

In FIGS. 10 and 11 is shown another bottle embodiment **20a** having a hollow neck **42a** which is provided with a foil label **43** to render the neck opaque. The bottle device **20a** resembles a beverage bottle with a long neck **42a**. A further label **45** having indicia **47** thereon secured to body **22a** may suggest that the contents of the bottle is a certain beverage. The liquid **26a** in the annular compartment **25a** of transparent cylindrical body

22ª may be colored to simulate the conventional color of the beverage it imitates. Neck 42ª has a closed end 44ª. Other parts of bottle embodiment 20ª corresponding to those of bottle device 20 are similarly numbered. The valving arrangement of FIGS. 11 and 12 provides for rapid refilling of supply chamber 25ª from receiving chamber 40ª. The hollow neck 42ª is closed at the bottom by a transverse partition, in the form of a depending central plug 41 fitted into a central opening 51 in the top of the body 22ª. The plug 41 is provided in its bottom end with a socket 53 which communicates at its top with neck chamber 40ª by way of a circular valve port 61. The bottom circular edge of valve port 61 serves as a valve seat and the side walls of socket 53 serve as a valve cage. The bottle 20ª has a valve ball 55 provided with crossed diametral passages 57 and 59 loosely mounted in valve cage socket 53 and resting on filler member top wall 28ª. This ball clears the valve port or opening 61 in the bottom of the neck 42ª and the valve seat defined thereby to provide a wide annular passage 63 for passing or spilling liquid 26ª from the neck receiving compartment 40ª back down to the body supply compartment 25ª when the valve ball 55 rests on the transverse top wall 28ª of the filler section 24ª. When the bottle 20ª is inverted, valve port 61 is closed by the valve ball 55, and the liquid flows at a restricted rate through the passages 57 and 59 in the ball into the top end of supply chamber 25ª.

FIGS. 13 to 15 incl. show another bottle assembly 20ᶜ which may be used for a soda bottle display. An opaque label 71 on the long hollow neck 42ᶜ conceals the liquid which is collected in the neck chamber when the bottle device 20ᶜ is inverted. Loose disc 30ᶜ is employed as a valve element to control liquid flow as explained in connection with bottle device 20. Other parts of the bottle assembly corresponding to those of the other bottles previously described are similarly numbered.

In the FIGS. 13 to 15 incl. embodiment the valving disc 30ᶜ is shown provided with a plurality of edge notches 32, which may be four in number located at quarter points. The notched valve disc 30ᶜ seats loosely into the top end of tubular light-transmitting or translucent body 22, resting upon the top transverse wall 28 of filler member 24. The bottom of the hollow neck 42ᶜ is mounted upon a connecting ring 34ᶜ that has a depending circular flange 36ᶜ which is then telescoped down into the top end of tubular body 22 above valve disc 30ᶜ but terminating appreciably short of the latter to permit some axial motion of disc when the bottle device 20ᶜ is swung to an inverted position and then reinverted to an upright position. The valve disc 30ᶜ is of a diameter appreciably less than the internal diameter of the tubular body 22, so that liquid 26 may spill about its periphery (as well as through the full area of notches 32) down from the neck receiving chamber 40ᶜ to supply annular space 25. The depending flange 36ᶜ is of less internal diameter than the outer diameter of valve disc 30ᶜ to provide a ported valve seat for the latter in an inverted position of the bottle device 20ᶜ, as will be seen from FIG. 14 and 15. The inner tip ends 32ᶜ of the notches 32 in the valve disc 30ᶜ extend inwardly to a circle of a diameter slightly less than the internal diameter of the depending flange 36ᶜ to provide small passages past the valve seat communicating the supply chamber 25 to the receiving chamber 40ᶜ in an inverted position of the bottle device 20ᶜ. In an annular marginal zone of the valve disc a plurality of pin holes may be substituted for the notches 32 at the locations of the exposed inner tips 32ᶜ of the latter, or radially inward thereof.

As will be understood from FIG. 15, when the embodiment of FIGS. 13 to 15 incl. is inverted, but tilted from a true vertical position, the transverse partition constituted by valve plate or disc 30ᶜ and its valve seat provided by the lower end of the depending flange 36ᶜ, which separates the annular supply chamber 25 from the receiving chamber 40ᶜ, will permit trickle transfer of the liquid 26 from the former to the latter. If such an embodiment of the device, which has a transverse subdividing partition extending normal to the longitudinal axis of the container is inverted to a true vertical position, the trickle passages provided by the inner tips 32ᶜ of the notches 32, or equivalent pin holes, will all be located at the same elevation. The relatively small cross-sectional areas of the trickle passages, the viscosity of the liquid and the location of the trickle passages in the same horizontal plane which places on each the same head of liquid will prevent transfer of liquid in any appreciable amount therethrough from the uppermost annular supply chamber to the lowermost receiving chamber. However, when such an embodiment of the amusement container device of the present invention is tilted slightly from the vertical inverted position such partition means is oriented to an oblique position wherein at least one of the trickle passages is located at a higher elevation than the one which is disposed on the diametrically opposite side thereof, thus providing a less liquid head on the former than on the latter. Consequently, liquid will trickle through the lower trickle passage to the receiving chamber with accompanying countercurrent bubbling transfer of air from the former up into the annular supply chamber. This action is illustrated in FIG. 15, wherein it will be seen that the trickle passage 32ᶜ at the left side is at a lower elevation than the similar trickle passage on the diametrically opposite side of valve disc 30ᶜ, so as to cause liquid contents 26 in annular supply chamber 25 to drip or trickle down, as is indicated at 65, through the former trickle passage into the receiving chamber 40ᶜ with simultaneous countercurrent transfer of air up from the latter through the higher trickle passage in the form of a series of bubbles 67. The bubbling effect has appreciable visual appeal not only because of the observable bubbling action, but also since it simulates actual operation of devices which embodiments of the present invention imitate. For example, the withdrawal of milk contents of a feeding bottle by an infant is accompanied by a transfer of replacement air through the nipple aperture into the bottle chamber in the form of a series of bubbles. Bubbling action of embodiments of the device of the present invention will simulate this bubbling action. In forms which simulate containers of carbonated beverages one not only expects to see through a light-transmitting container or transparent glass bottle bubbles which attend flow of the carbonated beverage therefrom, but also bubbles which accompany shift of the liquid contents due to release of the carbonating gas from the liquid. The bubbling action which is attainable by operation of embodiments of the present device will satisfy the expectancy and enhance the value of such amusement embodiments or displays which employ them.

It will be understood from the description above of the operation of the FIGS. 1 to 9 incl. embodiment that upon reinversion of the bottle device 20ᶜ of the embodiment of FIGS. 13 to 15 incl., the valve disc 30ᶜ drops down to rest upon the transverse top wall 28 of the filler structure 24, so that the valve port defined by the bore of the depending flange 36ᶜ is wide open and the liquid 26 flows freely and quickly from the concealed receiving chamber 40ᶜ back into the annular supply chamber 25, between the peripheral edge of the valve disc and the inner wall of the tubular body 22, as well as through the wide open notches 32, so as rapidly to recondition the device for the next cycle of trickle transfer and bubbling action operation.

The embodiment of the invention shown in FIGS. 19 to 22 incl. is in the form of a toy bottle simulating a nursing bottle for feeding milk to an infant. Container 90 of this embodiment includes a cylindrical cup-shaped shell 91 of light-transmitting plastic having a tubular side wall 92 closed off at the bottom by a transverse closing wall 93, and provided before assembly with other parts

of the device with open mouth end **94** terminating in a circular lip **95**. Near the transverse closing bottom wall **93** the bore of the shell **91** is stepped to provide an internal annular shoulder **96**.

A pair of like spacer plates or spiders **97** are inserted into the interior of the shell **91**. Each spacer plate or spider **97** is in the form of a disc **98** having a plurality of radial arms **99** extending therefrom and preferably located at a relatively few equally-spaced circumferential points to define therebetween relatively large intervening flow notches **100**, as shown in FIG. 21. The disc **98** of each spacer plate or spider **97** is provided with a concentric land **101** to define thereabout a rabbeted annular shoulder **102**, and with these spiders mounted in relatively reversed positions so that the annular shoulders **102** thereof are arranged in opposed or facing relation. A section of plastic tubing **103** is mounted between the spiders **97** and has a bore of an internal diameter about equal to the diameter of the circular lands **101**, so as to receive the latter in opposite ends thereof with a tight fit. The ends of the tubing section **103** rest upon and are suitably sealed in a fluid-tight manner to the opposed annular shoulders **102**. Consequently, the interior of the sub-assembly of the two spiders **97** and the tubing section **103** defines a closed hollow space and this structure merely serves as a filler body to reduce the fluid capacity of the interior of the shell **91**. As a result, an annular supply chamber **104** is defined between the tubing section **103** and the cylindrical side wall **92** of the shell **91** and communicates through the notches **100** with the space **105** between the shell bottom **93** and the disc **98** of the bottom spider **97** so that the latter forms a part of the supply chamber. The notches **100** of the top spider **97** communicates the top end of this supply chamber with a space **106** in the top end of the shell **91**.

A transverse partition or wall **107** is provided in the form of a circular plate, having its circumferential edge **108** seated upon the top end **95** of the shell **91**, as is shown in FIG. 19. The circumferential edge **108** of the partition plate **107** (details of which are shown in FIG. 21) is provided with a plurality of notches **109** located preferably at equally spaced circumferential points, with the inner tip end **110** of each notch arranged on a circle of a diameter slightly less than the internal diameter of the top end **94** of the shell **91**, so as to provide thereat a plurality of small flow or trickle passages which may have a flow capacity about equal to that of pin holes made by conventional common pins which may be about 0.025" in diameter or slightly larger, depending upon the viscosity of the liquid which is to trickle therethrough. The partition plate **107** is provided with a relatively large flow passage in the form of a valve port **111** located centrally therein with the bottom edge thereof serving as a valve seat **112**. The bottom face of the partition plate **107** preferably is provided with an annular series of depending legs **113** having their bottom ends **114** resting upon the top face of the top spider **97**, so that when this partition plate has its circumferential edge **108** resting upon the lip **95** of the shell **91** these depending legs will securely hold in position the filler sub-assembly consisting of the tubing section **103** and the pair of spiders **97**, with this sub-assembly seated upon the annular shell shoulder **96**.

The top end of the container **90** preferably is in the form of a hollow air-filled hood or cap **115**, preferably in a shape simulating the capping nipple of a nursing or infant feeding bottle. The bottom edge of the cap **115** is counter-bored to define an interior annular shoulder **116** and a depending annular flange **117**, with the latter telescoped down over the top end **94** of the shell **91** and sealed thereto in a fluid-tight manner, such as by cement. In this mounted position the annular shoulder **116** abuts the top side of the circumferential edge **108** of the partition plate **107**, thereby holding all of the previously described parts in their relative positions. The cap **115** and the partition plate **107** together define a receiving chamber **118** which is communicated to the supply chamber **104** and its top space **106** both by way of the valve port **111** and the plurality of trickle passages **110**.

A valve ball **119** is loosely held captive in a cage defined by the annular series of depending legs **113**, beneath the valve seat **112** and resting upon the top face of the top spider disc **98**, so as to provide a relatively large valve port opening for rapid return liquid flow from the receiving chamber **118** to the supply chamber **104**.

When the embodiment of the amusement container device of FIGS. 19 to 22 incl. is inverted to a tilted upside down position, as depicted in FIG. 22, with one or more of the small flow passages **110** to one lateral side of the center of the partition plate **107** at an elevation lower than one or others of the small flow passages on the opposite lateral side thereof, the valve ball **119** will drop and engage the circular valve seat **112** to close the valve port **111**. The lower small passage or passages **110** will permit liquid **26** to trickle down therethrough from the supply chamber **104** and its head space **106** into the receiving chamber **118**, as is indicated at **120**, with simultaneous countercurrent flow or transfer of air in the latter back up through the higher small passage or passages **110**, in the form of bubbles **121** rising in the liquid **26** remaining in the supply chamber toward the space above the surface of this liquid adjacent the closing cross-wall **93** or area **105**. When the cap **115** is molded from opaque plastic this trickling liquid **26** appears to disappear as it collects in the inverted receiving chamber **118**. The rising bubbles **121** are readily observable through the light-transmitting side wall **92** of the shell **91**, which may be molded from either transparent plastic or translucent plastic that may have a milky appearance. The rising bubbles **121** which successively travel longitudinally between the tubing section **103** and the light-transmitting shell wall **92** will be readily apparent through the latter to provide the desirable bubbling action which simulates rising bubbles in an infant's feeding bottle as milk is withdrawn therefrom during feeding.

It is important that the empty filler sub-assembly of the tubing section **103** and spiders **97** be employed so that the cubic capacity of the supply chamber **104** and the hidden receiving chamber **118** approach equality to permit the latter to receive at least almost all of the milky liquid **26** in the supply chamber while maintaining the main container portion and the nipple simulating cap **115** in relative proportions of an actual infant's feeding bottle. Also, by defining the main portion of the supply chamber **104** as an annular space the rising bubbles **121** are caused to travel adjacent the inner surface of the shell wall **92** so as to be as apparent as possible for maximum observable action. The radial width of the annular space of the supply chamber **104** and the size of the bubbles **121** will determine whether the latter will flatten out between the exterior wall of the filler tubing section **103** and the shell side wall **92** to bridge completely thereacross and form circular windows. In certain embodiments it may be desirable to form the filler tubing section **103** from colored plastic material, so that the color thereof may be observed through such circular bubble windows and the outer light-transmitting shell side wall **92**, as will appear hereinafter.

A further embodiment of the invention may employ a pair of separate receiving chambers with a single supply chamber annular space, so that the latter may alternately supply the liquid first to one of these receiving chambers and then to the other thereof as the container is inverted and then reinverted. Such a structure is shown by way of example in FIGS. 23 and 24 in the form of a timer device **125**. The amusement device **125** consists of a tubular shell **126** closed off at opposite ends by caps **127** having flat ends upon which the device may rest alternately in an upright position. The tubular shell

126 and the closing caps 127 together define a liquid-tight and alternately invertible, hollow container having opposite closed end sections 128. The tubular shell 126 is formed from light-transmitting plastic, which may be transparent or translucent, so that at least the mid-section 129 thereof, between the end sections 128 of the container, can be looked through for observation of liquid contents 26.

An interior side wall structure defines a filler body 130 telescoped within the mid-section 129 of the container, and it is spaced inwardly from the light-transmitting side wall of the latter to define therebetween a supply chamber 131 in the form of a circumscribing space 131. A pair of similar transverse partition means 132 are inserted in the tubular shell 126 to define or separate the mid-section 129 from the end sections 128. For this purpose, a tubular spacer sleeve 133 is inserted into each end of the tubular shell 126 to define an inner annular shoulder 134 against which the circumferential edge of one of the transverse partition means 132, preferably in the form of a plate, seats. Each of the end sections 128 is hollow to define therein, or within the tubular spacer sleeve 133 telescoped therein, a receiving chamber 134.

Each tubular spacer sleeve 133 may be made of opaque plastic so that the side walls of the receiving chamber 134 therein will be opaqued, so as to hide the receiving chambers. The annular space 131, which is to serve as a supply chamber, is thus separated from the pair of receiving chambers 134 by the pair of transverse partition plates 132, and the cubic capacity of each of the receiving chambers preferably at least approaches that of the supply chamber, so that a body of liquid in the latter may be transferred almost wholly or entirely therefrom into either of the receiving chambers. The tubular shell 126 may be the cylindrical for conventience of construction, which also permits tubular spacer sleeves 133 to be cylindrical, and in such event the filler body 130 may likewise be cylindrical so as to define the supply chamber 131 as an annular space.

It has been made apparent from preceding descriptions of other embodiments, and as will be further indicated hereinafter, trickle passages provided by transverse partition means require that the container be so oriented as to locate one on one lateral side lower than another on the other lateral side, for countercurrent transfer of liquid from the supply chamber through the former and bubbling transfer of air from the receiving chamber therebeneath up to the supply chamber. For this purpose, the device shown in FIGS. 23 and 24 may orient each of the transverse partition plates 132 obliquely, as shown. This may be readily attained by locating the inner end of each of the tubular spacer sleeves 133 on a plane arranged obliquely to the longitudinal axis of the container device 125. Thus, each transverse partition plate 132 will be elliptical in shape, and the circumferential edge thereof may have a fluid-tight seal with the inner cylindrical wall of the tubular shell 126 by any suitable means, which may be readily attained by forming each of the partition plates of relatively rigid plastic and the tubular shell from a plastic having some elasticity, such as polyethylene, with each partition plate being slightly oversize to attain a force fit.

Each partition plate 132 includes a gravity-operated valve means with a valve port therepast of appreciable flow area to communicate the annular supply chamber 131 to the adjacent one of the pair of receiving chambers 134 in the valve-open position when this receiving chamber is uppermost, so as to allow rapid return flow of the liquid from the latter to the supply chamber. This valve means is gravity-biased to port closing position upon inversion of the container device 125. The gravity-operated valve means may be of the type employed in the embodiment of FIGS. 13 to 15 incl. or of the type employed in the embodiment of FIGS. 19 to 22 incl. For example, the ball valve of FIGS. 19 to 22 incl. may be used for this purpose and thus each partition plate 132 is provided with a relatively large central circular hole to define a valve port 135. Each closed end 136 of the filler body 130 is provided with a central cup-shaped socket 137 in which is loosely seated a ball valve 138. When either of the receiving chambers 134 is located above the supply chamber 131, the valve ball 138 rests in the bottom of the socket 137, which serves as a valve ball cage, appreciably below the inner mouth or annular edge 139 (serving as a valve seat) of the port 135, so that the latter is wide open for rapid spill of liquid from the topmost receiving chamber 134 down into the annular supply chamber 131. Free flow of liquid from such valve port 135 to the annular supply chamber 131 is assured by appreciably spacing the associated end 136 of the filler body 130 therebelow without appreciable obstruction of the intercommunicating space. For this purpose each closed end 136 of the filler body 130 may be provided circumferentially with a plurality of widely spaced, longitudinally-extending short legs or nibs 140, such as six in number. Each of the elliptical valve plates 132 may have its inner face provided with a relatively shallow oval recess 141 into the marginal zone of which the tips of the nibs 140 are seated. Consequently, each of the closed ends 136 of the filler body 130 and the adjacent partition plate 132 are suitably spaced and arranged concentric with respect to each other, thereby locating the valve ball cage socket 137 coaxially inward of each of the valve ports 135.

Each of the partition plates 132 is provided with a plurality of small trickle passages 142 eccentrically located with respect to the center thereof and at angularly spaced points to communicate the supply chamber 131 with the adjacent receiving chamber 134 located on the opposite side of this partition plate. For example, a pair of such trickle passages may be located on diametrically opposite sides of the valve port 135, which may be in the form of pin holes 142 and 242. It will be seen from FIG. 23 that with respect to the lowermost receiving chamber 134, the canted bottom partition plate 132 thus disposes the small trickle passage 142 lower than the small passage 242 when the device 125 is in the upright position with its longitudinal axis arranged vertically.

A body of liquid 144 is housed in the container 125 of FIG. 23 for flow back and forth from one of the receiving chambers 134 to the other by way of the supply chamber 131. Such liquid may be colored to be readily apparent through the light-transmitting side wall 126, such as by being milky in appearance or a colored translucent liquid. The liquid 144 may be in a quantity sufficient substantially to fill one of the receiving chambers 134 up to the lowermost trickle passage 142. The remainder of the space in the container will be filled with air.

In operation of the embodiment of FIGS. 23 and 24, let it be assumed that it is to serve as a toy chronometric timer. For this purpose the tubular shell 126 opposite the annular supply chamber 131 may bear scale markings 143, each indicating a minute duration of time, the time required for the surface of the body of liquid 144 in the supply chamber 131 to lower to the next scale marking while trickling through trickle passage 142.

Let it be assumed that the device of FIGS. 23 and 24 is rested in an upright position, such as that illustrated in FIG. 23, with the body of liquid 144, which has been in the uppermost receiving chamber 134, rapidly spilled down into the annular supply chamber 131 through the top valve port 135 past the top ball valve 138. The toy timer device will then operate as follows. The liquid 144 will begin gradually to trickle, at 145, through the lowermost trickle passage 142 since the lower ball valve 138 seats upon the lowermost valve seat 139 and closes the lowermost valve port 135. Simultaneously, air bubbles 146 up from the lowermost receiving chamber 134 through the small passage 242 into the annular supply

chamber space 131 through the body of liquid 144, countercurrent to the downward trickling of the liquid. The rising air bubbles 146 are intriguingly observable through the light-transmitting tubular shell wall 126. As the quantity of the liquid 144 in the annular supply chamber 131 is gradually depleted by this trickling at 145 the liquid surface 147 gradually lowers from one mark of the scale markings 143 to the next mark therebeneath, to indicate a certain passage of time. Thus, the timer device appeals to the observer in a number of ways. The liquid in the supply chamber 131 seems to disappear. The bubbling action is intriguing. As the surface 147 of the liquid lowers in the supply chamber 131 from one of the scale markings to the next it indicates the duration of a definite interval of time.

When substantially all of the liquid 144 in the annular supply chamber 131 has trickled down through trickle passage 142 into the lowermost receiving chamber 134 the toy timer device 125 may then be inverted to place the liquid-containing receiving chamber 134 uppermost with the other air-filled receiving chamber lowermost. The lowermost valve ball 138 which will now be uppermost drops away from the port 135 which it was closing to permit rapid spill of the liquid down into the supply chamber 131, so that it may then trickle slowly therefrom down into the now empty lowermost receiving chamber 134, for repetition of the cycle.

A further embodiment of the invention is illustrated in FIGS. 25 and 26, which is an amusement container device for simulating repeated and alternate emptying of a pair of supply chambers having light-transmitting exterior walls for observation of receptive liquid contents thereof. In this form of the device of the present invention, container 150 embodies a pair of units of the types illustrated either in FIGS. 13 to 15 incl. or FIGS. 19 to 22 incl., each provided with its own supply chamber and associated receiving chamber separated by valved partition means equipped with trickle passages. The amusement container device 150 may be in the form of a cup-shaped cylindrical shell 151 closed off by a transverse bottom 152 and provided with a tubular side wall 153 closed off at the top by a sealed cap plate 154. Within the bottom of the cup-shaped shell 151 is telescoped a tubular spacer sleeve 133 having a top edge 134 arranged on a plane extending obliquely to the longitudinal axis of the container shell 151, to provide a canted shoulder. A similar tubular spacer sleeve 133 is telescoped into the top end of the shell 151. Transverse elliptical partition plate 132 is seated against the shoulder 134 provided by the top tubular spacer sleeve 133 and a somewhat similar transverse elliptical partition plate 232 is seated against shoulder 134 provided by the top edge of the bottom tubular spacer sleeve 133. Thus the container 150 is subdivided into opposite closed end sections 155, 255 and an intervening mid-section 156, with both of the end sections being hollow to provide a top receiving chamber 134 and a bottom receiving chamber 234.

The top transverse partition plate 132 is much like that of the embodiment of FIGS. 23 and 24 while the bottom partition plate 232 differs in detail. Thus, the top partition plate 132 is provided on its inner face with an oval shallow recess 141. The bottom partition plate is provided on its inner face with a shallow annular channel 241. Each of the partition plates 132 and 232 is provided with a central valve port 135 defining by its inner edge a valve seat 139 with which cooperates a valve ball 138. The top partition plate 132 is also provided with the small flow passages 142 and 242, which may be of pinhole size, radially outward of the shallow recess 141. The bottom position plate 232 is provided with small flow passages of the pinhole type 342 and 442 within the area of the shall annular channel 241.

The filler body of the embodiment of FIGS. 25 and 26, is provided by a pair of cup-shaped shells with one smaller than the other and telescoped into the latter in inverted position. The outer cup-shaped shell 157 has a closing transverse top wall 158 from which a tubular side wall 159 depends, with the bottom edge 160 of the latter seating in the outer marginal zone of the annular channel 241 and sealed to the bottom transverse partition plate 232 thereat. The transverse closing top wall 158 of the cup-shaped shell 159 is provided with central socket 137 to serve as a cage in which is loosely mounted top valve ball 138. The circumferential edge of the top closing transverse wall of shell 157 carries a plurality of circumferentially-spaced short legs or nibs 140 with the tips thereof seated into the shallow recess 141 of transverse partition plate 132, to space this top shell wall and this partition plate while maintaining them coaxial and providing communicating spaces for flow from the top valve port 135 to annular supply chamber 231 defined between the container shell side wall 153 and the side wall of inverted filler shell 157. The smaller inner upright filler shell 257 has a transverse bottom closing wall 161 and a longitudinally-extending cylindrical side wall 162 with the top edge 163 of the latter seated against and sealed to the inner face of the top closing wall 158 of the inverted filler shell 157. Thus, the tubular side walls 162 and 159 of the respective filler shells 257 and 157 define therebetween an inner annular supply chamber 331. The bottom transverse closing wall 161 of filler shell 257 is also provided with a central socket 137 which serves as a housing cage for the other valve ball 138 that cooperatively seats on the inner edge 139 of the valve port 135 formed in the center of the bottom transverse partition plate 232. The transverse closing bottom wall 161 of the inner upright filler shell 257 carries on its circumferential edge a plurality of depending short legs or nibs 140 which seat on the inner annular zone of the annular channel 241, thereby accomplishing the spacing and providing the communicating flow passages described above in connection with the top end of the inverted filler shell 157. As a result, the small flow passages 142 and 242 communicate the outer annular supply chamber 231 to the topmost receiving chamber 134. Likewise the small flow passages 342 and 442 communicate the inner annular supply chamber 331 with the bottom receiving chamber 234.

Let it be assumed that when the device is constructed a body of colored translucent liquid 164 (which may, for example, be blue in color) is located in the outer annular supply chamber 231, with the receiving chamber 134 associated therewith being air-filled. If the inner annular chamber 331 is likewise provided with a body of colored translucent liquid 165 (which may, for example, be yellow in color) it will in the upright position of the container 150 shown in FIG. 25 begin trickling down at 166 through trickle passage 342 to collect in the receiving chamber 234 as a pool 265. Simultaneously, air in the bottom receiving chamber 234 will flow countercurrent up through the small flow passage 442 to produce rising bubbles 167 in the yellow liquid 165. Since the yellow liquid may be observed through the light-transmitting wall 159 of the outer inverted filler cup 157, the body of blue translucent liquid 164 in the annular supply chamber 231 and the light-transmitting side wall 153 of the container shell 151 the color of the midsection 156 of the container 150 will appear to be a shade of green. If the size of the bubble transfer passage 442 is so related to the radial spacing of the filler shell walls 162 and 159 so that each bubble 167 will bridge thereacross to provide a circular window each of these bubbles will appear to be blue. Thus, the external appearance is blue bubbles rising in a body of green liquid. If the tubular side wall 162 of the inner upright filler shell 257 of the FIG. 25 device is provided with a certain different color, such as red, which may be attained by making this inner filler cup from opaque red plastic, each of the bubbles 167 may then appear to be purple (a mixture of the red of the tubular wall 162 and of the blue of the liquid 164).

When the amusement container device **150** of FIG. 25 is inverted to rest upon its top end **154**, as is proposed in FIG. 26, the lower valve **138**, which is now uppermost, will drop away from the valve port **135** in the partition plate **232** to permit the yellow liquid **165** to flow rapidly therethrough from the now uppermost receiving chamber **234** down into the inner supply chamber **331**. The valve port **135** in the partition plate **132** will be closed by its associated valve ball **138** and the blue liquid **164** will begin to trickle at **266** through small flow passage **142** into the now lowermost receiving chamber **134** with simultaneous countercurrent transfer of air from the latter up through small flow passage **242** to form bubbles **267** rising in the body of blue liquid in the outer annular supply chamber **231**. The blue liquid **164** which trickles through at **266** into the receiving chamber **134** collects in the latter as a pool **264**. The mid-section **156** of the container device **150** will still appear to be of a shade of green while these bubbles **267** will appear to be yellow.

Incidentally, in the first instance of operation of the FIGS. 25 and 26 device as the surface of the yellow liquid **165** lowers in the annular supply chamber **331**, the green shade of the container mid-section **156** above the surface of this liquid will appear to change to blue which will progressively advance downward (or progressively to purple if the side wall **162** of the inner upright filler cup **257** is of red color). In the inverted position, as the blue liquid **164** trickles from the outer annular supply chamber **231** the top end of the mid-section **156** of the container **150** above the level of the blue liquid will appear to be yellow while that below the blue liquid level will appear to be green, and the yellow shade will progressively advance downward (but should the inner filler shell **257** be red the color of this top section will turn to orange progressively).

In the embodiment of FIGS. 25 and 26, the tubular spacer sleeves **133** may be light-transmitting or transparent so that as the yellow liquid **165** is collected in the receiving chamber **234**, the lower section **255** of the container will appear progressively to turn yellow. In the inverted position of the container **150**, with the other tubular spacer sleeve **133** in receiving chamber **134** also being light-transmitting or transparent, the walls of this receiving chamber will appear progressively to turn blue when the blue liquid **164** collects therein. The tubular spacer sleeves **133** may be opaqued so that the yellow liquid **165** as it trickles into the receiving chamber **234** and the blue liquid **164** as it trickles into the receiving chamber **134** will seem to disappear. It will be understood that various color contrasts and changes may be attained in such a device.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An amusement container device for simulating repeated emptying of a compartment having light-transmitting exterior walls for observation of liquid contents comprising, in combination,

(*a*) a liquid-tight and alternately invertible, elongated hollow container having

(*b*) opposite closed ends and

(*c*) an intervening pair of tandem sections with one of the latter constituting a top end section and the other a lower section therebeneath in an upright position of said container,

(*d*) transverse partition means defining at least a part of the interior of said container into

(*e*) a receiving chamber occupying the top end section and

(*f*) a supply chamber occupying the lower section with the side walls of the latter being light-transmitting,

(*g*) said lower section having an interior side wall structure spaced inwardly from said light-transmitting side walls to define therewith the supply chamber in the form of a circumscribing space, the cubic capacity of the receiving chamber at least approaching that of the circumscribing space supply chamber,

(*h*) a body of liquid of appreciable quantity confined in the latter with a head of air in the receiving chamber,

(*i*) said transverse partition means including gravity-operated valve means with a valve port past said partition means of appreciable flow area communicating the receiving chamber to the supply chamber, said valve means operable by gravity to open the valve port in the upright position of said container for rapid return flow of liquid from the receiving chamber to the supply chamber and said valve means further operable by gravity to port closing position upon inversion of said container,

(*j*) said transverse partition means providing a plurality of small trickle passages eccentrically located with respect to the center thereof at angularly spaced points communicating the supply chamber with the receiving chamber in an inverted position of said container for trickle of the liquid from the former through at least one of the trickle passages when the latter is at an elevation lower than another of the trickle passages with simultaneous bubbling transfer of air through the latter from the receiving chamber to the supply chamber.

2. The amusement container device as defined in claim 1 characterized by said lower section of said container being generally cylindrical with the supply chamber being in the form of an annular space, said top end section being coaxially mounted on said lower section, said transverse partition means being circular and extending laterally of said container with a plurality of the trickle passages located in an annular zone of said partition means and circumferentially spaced.

3. The amusement container device as defined in claim 2 characterized by said partition means including a fixed cross wall substantially normal to the longitudinal axis of said container and having the valve port in the form of a central hole extending therethrough with the edge of the port hole forming a valve seat, said valve means being in the form of a movable body complementary to said seat and loosely located on the supply chamber side of the latter.

4. The amusement container device as defined in claim 3 characterized by said interior side wall structure being in the form of generally cylindrical tubular means concentrically located within said cylindrical lower section of said container to define therebetween the annular supply chamber, said interior tubular means having a transverse top wall closing off its top end with the space thereinside sealed off from communication with the annular supply chamber, said top wall being spaced appreciably below said partition cross wall with said valve body located therebetween and resting upon said top wall in the container upright position free from engagement of said valve seat with the valve port open.

5. The amusement device as defined in claim 4 characterized by said valve body being in the form of a valve ball with said valve seat being circular and of less diameter than said ball, and cage means surrounding said valve ball and interposed between said partition cross wall

and said top wall to guide reciprocating movement of said valve between said top wall and valve seat.

6. The amusement device as defined in claim 5 characterized by said cage means depending from said partition crosswall.

7. An amusement container device for simulating repeated emptying of a supply chamber having light-transmitting exterior walls for observation of liquid contents comprising, in combination;

(*a*) a liquid-tight and alternately invertible, hollow container having

(*b*) opposite closed end sections and

(*c*) an intervening mid-section provided with light-transmitting side walls.

(*d*) each of said end sections being hollow and defining therein a receiving chamber with one filled with air;

(*e*) an interior side wall structure telescoped within said mid-section and spaced inwardly from the light-transmitting side wall of said mid-section defining therebetween said supply chamber in the form of a circumscribing space with the cubic capacity of each of said receiving chambers at least approaching that of the supply chamber;

(*f*) a pair of transverse partition means located at opposite ends of said circumscribing space supply chamber to separate the latter from the adjacent end section receiving chambers with a body of liquid housed in said container for flow back and forth from one of said receiving chambers to the other by way of the supply chamber;

(*g*) each of said transverse partition means including a gravity-operated valve means with a valve port past said partition means of appreciable flow area communicating said supply chamber to the adjacent one of the pair of receiving chambers in the valve-open position when this receiving chamber is uppermost for rapid return flow of the liquid from the latter to the supply chamber, said valve means being gravity biased to port closing position upon inversion of said container;

(*h*) means providing in each of said partition means a plurality of small trickle passages eccentrically located with respect to the center of this partition means and at angularly spaced points communicating the supply chamber with the receiving chamber on the opposite side of this partition means for trickle of the liquid from the supply chamber down to this receiving chamber when the latter is below the former at least through one of the trickle passages when it is at an elevation lower than another of the trickle passages with simultaneous bubbling transfer of air through the latter from this lowermost receiving chamber up to the supply chamber, whereby the liquid will spill rapidly through an uppermost one of the valve ports in open condition from the topmost receiving chamber down into the supply chamber and simultaneously trickle slowly from the latter down into the lowermost receiving chamber through a trickle passage in the lowermost transverse partition means.

8. The amusement container device as defined in claim 7 characterized by said container being cylindrical with the interior side wall structure being tubular and sealed off at its opposite ends axially inward of said pair of transverse partition means, each of said transverse partition means being in the form of a transverse wall having its valve port therein in the form of a central hole circumscribed by a circular seat with the valve element being a valve ball adapted to nest in said seat to close said port when the adjacent receiving chamber is located therebeneath, said trickle passages being in the form of a plurality of pin holes in an annular zone of said partition means radially outward of said central port comprising a pair thereof located on opposite lateral sides of the latter, each of said valve balls being loosely mounted between one sealed off end of said tubular interior side wall structure and its complementary valve seat to rest on the former free of the latter when the adjacent receiving chamber is uppermost.

9. The amusement container device as defined in claim 8 characterized by each of said pair of partition walls being mounted obliquely to the longitudinal axis of said container with location of the pair of pin hole trickle passages therein on diametrically opposite sides of the valve port therein and one of this pair of trickle passages at an elevation lower than the other of the pair of trickle passages on the diametrically opposite side thereof when the container axis is oriented to the vertical position for liquid trickle transfer through the former with air bubbling transfer through the latter when the adjacent receiving chamber is located therebeneath.

10. An amusement container device for simulating repeated and alternate emptying of a pair of supply chambers having light-transmitting exterior walls for observation of liquid contents comprising, in combination;

(*a*) a liquid-tight and alternately invertible, hollow cylindrical container having

(*b*) opposite closed end sections and

(*c*) an intervening mid-section,

(*d*) each of said end sections being hollow and defining therein a receiving chamber containing air;

(*e*) a pair of tubular sections telescoped one within the other and nested in said mid-section with at least the exterior wall of the latter and the next adjacent tubular section being light-transmitting,

(*f*) each of said tubular sections being sealed off adjacent one of said receiving chambers for segregation therefrom and separated from the other by one of a pair of axially-spaced transverse partition walls,

(*g*) said pair of tubular sections defining therebetween an inner annular supply chamber and the outer of said tubular sections defining with the exterior surrounding wall of said container mid-section a second surrounding outer annular supply chamber segregated from the first supply chamber with one of said receiving chambers associated with and separated from one of said annular supply chambers by one of said transverse partition walls and the other of said receiving chambers associated with and separated from the other of said annular supply chambers by the other of said transverse partition walls;

(*h*) a body of colored translucent liquid in the outer one of said pair of supply chambers and a body of liquid of different color in the inner one of said supply chambers;

(*i*) each of said transverse partition walls being equipped with gravity-operated valve means controlling a rapid flow valved passage past it from the adjacent associated receiving chamber for rapid transfer of liquid from the latter to the adjacent associated supply chamber when the latter is therebeneath and

(*j*) means defining at least a pair of small flow passages in each of said transverse partition walls on opposite lateral sides of the latter and offset radially from its center communicating the supply and receiving chambers associated with and separated by this particular transverse partition wall, one of this pair of small flow passages serving as a trickle passage for flow of liquid from this supply chamber to the associated receiving chamber when the latter chamber is lowermost and the other of this pair of small flow passages serving simultaneously as an air transfer passage for bubbling air countercurrent up from this lowermost receiving chamber into this supply chamber in one upright position of said container with this liquid trickle passage located at an elevation lower than this air bubbling passage, the pair of small flow passages in the other of said transverse partition walls giving like simultaneous countercurrent liquid trickle down to and air bubbling

up from the other receiving chamber with respect to the supply chamber associated therewith when said container is inverted with this receiving chamber lowermost.

11. The amusement container device as defined in claim 10 characterized by said tubular sections being in the form of cup-shaped cylindrical shells each having an open mouth at one end sealed off at its other end by a liquid-tight transverse closing wall with one shell being of an external diameter smaller than that of the other and having its mouth end telescoped through the mouth end of the latter and thereinto with the transverse closing wall of the larger closing the mouth end of the smaller, one of said transverse partition walls being spaced axially outward of the transverse closing wall of the smaller of said shells at one end section and separating the receiving chamber in the latter from the annular supply chamber defined between the side walls of said shells with the other of said transverse partition walls being spaced axially outward in the opposite direction from the transverse closing wall of the larger of said shells at the other end section and separating the second receiving chamber in the latter from the annular supply chamber defined between th side walls of the larger shell and the container mid-section.

12. The amusement container device as defined in claim 11 characterized by the rapid flow valved passage and the gravity-operated valve means with which each of said transverse partition walls is equipped being in the form of a circular valve port opening centrally located in the partition wall and a ball valve loosely located between this partition wall and the adjacent transverse shell closing wall and guided for seating in the port opening when the latter is located beneath the ball and with the ball dropping free from the port opening when the latter is located above the ball, the pair of small flow passages in each of said transverse partition walls being pin holes located on substantially diametrically opposite sides of the port opening in this partition wall.

13. The amusement container device as defined in claim 12 characterized by each of said transverse partition walls being arranged obliquely to the longitudinal axis of said container to locate one of the pair of pin holes therein at a higher elevation than that of the other when the longitudinal axis of said container is vertically oriented.

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