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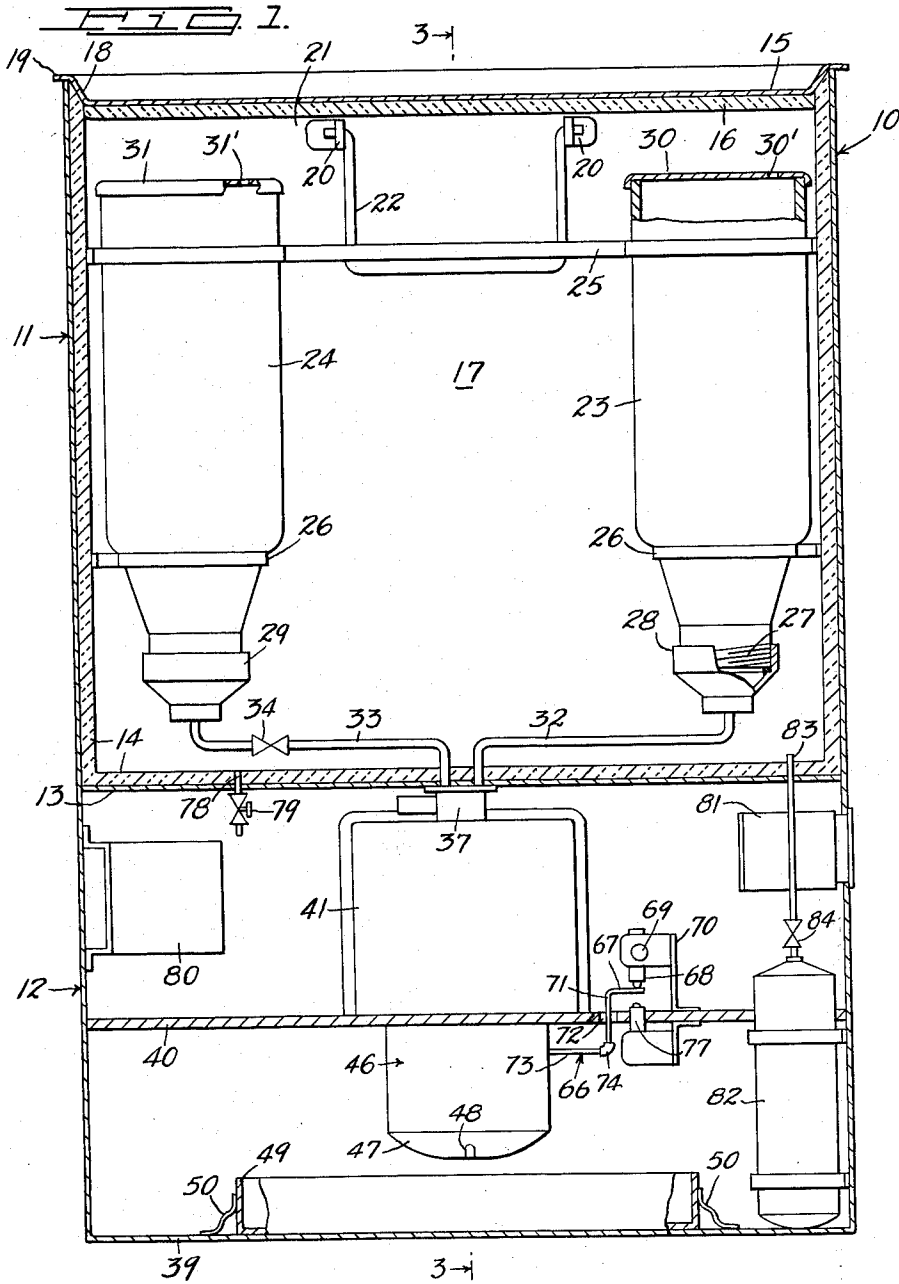
S. BERMAN

3,097,670

MIXED LIQUID DISPENSER

Filed May 5, 1961

2 Sheets-Sheet 1



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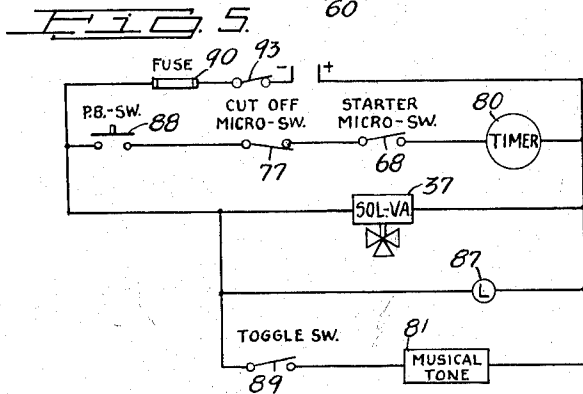
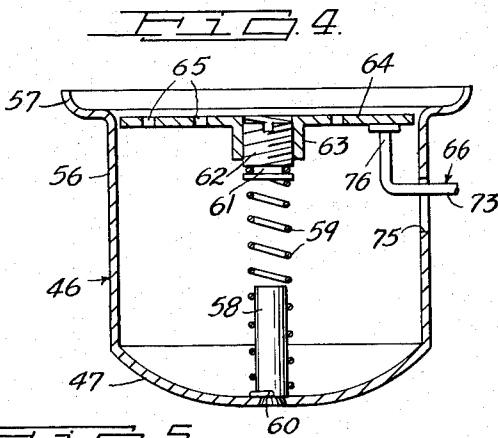
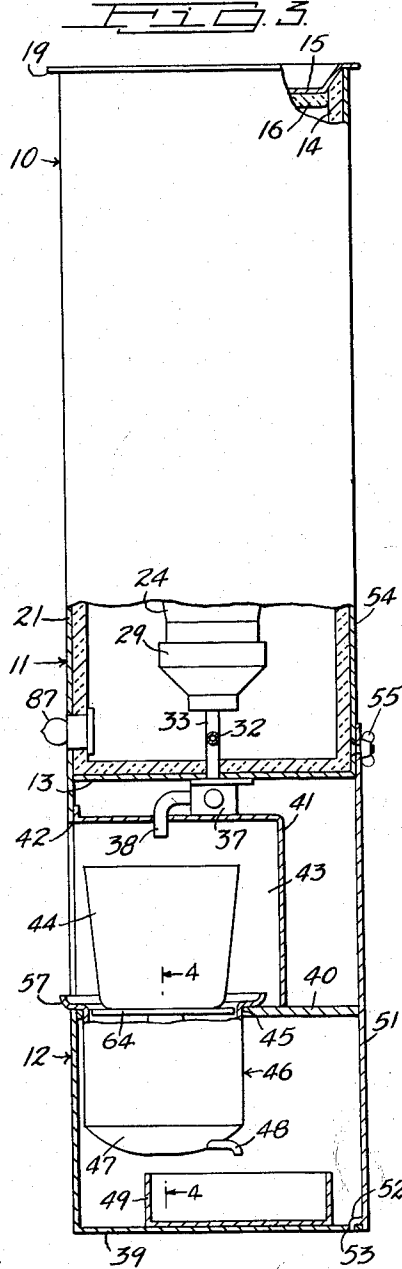
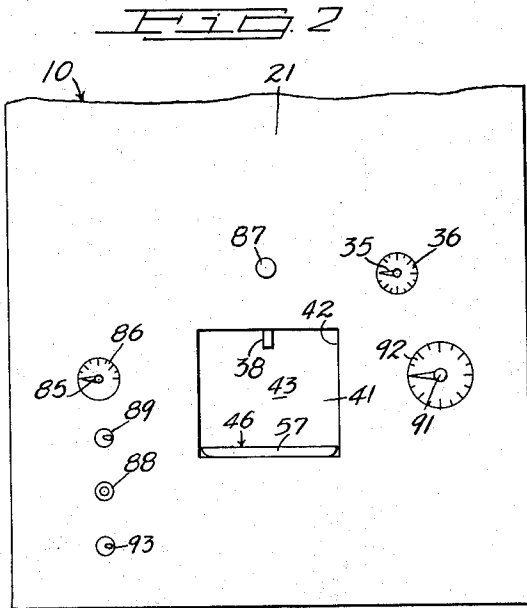
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MIXED LIQUID DISPENSER

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This invention relates to a device for dispensing two or more mixed liquids, wherein means is employed to control the proportionate amount of liquids one with respect to the other. Further, the invention deals with a device of the character described for controlling the volume of liquid dispensed into a receptacle in each operation of the dispenser. Still more particularly, the invention deals with a device of the character described, wherein containers for the liquid dispensed are arranged in an insulated section of the device, whereby means may be employed for cooling the liquids prior to dispensing the same.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

FIG. 1 is a vertical sectional view through the device, viewing the same from the back of the device, diagrammatically illustrating the various parts, with parts of the structure broken away and in section.

FIG. 2 is a diagrammatic front view of the lower portion of the device on a reduced scale from that shown in FIG. 1.

FIG. 3 is a side view of the device shown in FIG. 1, with parts of the construction broken away and in section.

FIG. 4 is an enlarged detail sectional view of the receptacle supporting unit of the device detached; and

FIG. 5 is a diagrammatic view of the circuit controlling operation of the device.

Considering FIGS. 1 and 3 of the drawing, 10 represents the casing of the device divided into an upper insulated section 11 and a lower dispensing section 12, this division being formed by a horizontal wall 13. Arranged upon the inner surfaces of the walls of the section 11, including the upper surface of the wall 13, is suitable insulating material, as diagrammatically illustrated at 14. At 15 is shown a recessed cover, the lower surface of which also includes a facing of insulating material, as indicated at 16. It will, thus, be seen that the chamber or compartment 17, within the upper insulated section 11, has insulation upon all of its boundary walls. The cover 15 has bevelled peripheral walls, as indicated at 18, to seat snugly in the top of the section 11 and upon the insulation 14 and the periphery of the cover has a projecting flange 19 facilitating removal of the cover.

Pivotaly mounted in brackets 20 on one wall of the section 11, namely the inner surface of the front wall 12, is a handle 22 normally contained within the compartment 17, but which can be swung into raised position when the cover 15 is removed for moving the device from place to place. Arranged in the compartment 17 are two liquid containers 23 and 24, having suitable upper and lower strap-like supports, as diagrammatically seen at 25 and 26 in FIG. 1 of the drawing. The lower ends of the containers are preferably threaded, the thread of the container 23 being indicated at 27 in FIG. 1 for detachable mounting in suitably supported sockets 28 and 29, respectively. The upper ends of the containers 23 and 24 are open and these open ends are closed by removable covers 30, 31, each having vent apertures, as indicated at 30', 31', in FIG. 1 of the drawing.

Coupled with the lower ends of the sockets 28 and 29 are liquid discharge pipes or tubes 32, 33, respectively, the pipe 33 having a manually operated needle valve

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therein, as diagrammatically indicated at 34, the valve 34 being actuated by a manually actuated pointer knob 35 movable over a suitable dial 36, as diagrammatically illustrated in FIG. 2 of the drawing, the dial indicating the degree of opening of the valve 34 in controlling the volume of liquid passed through the pipe 33 from the container 24.

The pipes 32 and 33 extend downwardly through the wall 13 and are coupled with a solenoid actuated mixing valve 37, diagrammatically illustrated in FIGS. 1 and 3 of the drawing. The valve 37 includes an outwardly and downwardly directed discharge spout 38, note FIG. 3 of the drawing.

The dispensing section 12 includes a bottom wall 39 and an intermediate wall 40. Supported on the wall 40 and the front wall 21 is a rounded hood 41 registering with an opening 42 in the front wall 21, the opening 42 being generally rectangular in form, as clearly noted in FIG. 2 of the drawing. It will also clearly appear, from FIG. 3 of the drawing, that the spout 38 extends through the hood 41 and is exposed in the receptacle receiving compartment 43 formed within the hood and in registration with the opening 42 to facilitate insertion and removal of a receptacle 44, as diagrammatically seen in FIG. 3 of the drawing.

The wall 40 is apertured near the front of the device and in registration with the compartment 43, as seen at 45 in FIG. 3 of the drawing, and mounted in this aperture and supported on the wall 40 is a receptacle support or unit 46, generally cup-shaped in form and having a rounded bottom 47 with a drainage discharge 48 thereon for drainage of any collection of liquid or moisture in the support 46 into a catch basin or pan 49 positioned on the bottom wall 39 by a pair of spring clips 50, as indicated in FIG. 1 of the drawing.

The back of the dispensing section 12 is open and this open back is closed by a detachable cover 51, note FIG. 3 of the drawing, the lower end of the cover having one or more hook extensions 52 entering an aperture, or apertures, 53 in the bottom wall 39; whereas, the upper portion of the cover overlies the back wall 54 of the section 11 and is detachably secured to the wall by a bolt and wing nut structure, as indicated at 55 in FIG. 3 of the drawing. The cover 51 gives access to the various elements or units supported in the section 12.

Returning now to the support 46, the upper end of the annular wall 56 of the support extends outwardly and upwardly in a rim portion 57, as clearly noted in FIG. 4 of the drawing. This rim portion extends sufficiently to collect any drip or liquid that might be discharged from the receptacle 44 for direction through 46 and, ultimately, into the basin or pan 49.

Fixed to the lower central portion of the support 46 is an upwardly extending pin 58, around which is arranged a coil spring 59, the lower end of which is fixed to the pin, as diagrammatically seen at 60, the upper end of the spring being coupled with a recessed neck portion 61 on the lower portion of an adjustment screw 62 in threaded engagement with a central threaded sleeve portion 63 on a receptacle supporting disc or member 64 arranged snugly in the upper open end of the support 46. The member 64 will preferably have a plurality of apertures 65 therein to facilitate liquid drainage into the support 46. By adjustment of the screw 62, the member 64 can be positioned to care for receptacles of different weights, such, for example, as the weight of the receptacle 44 shown in FIG. 3 of the drawing, so that a switch actuating element 66, or an upper offset portion 67 therein, note FIG. 1, can be properly positioned with respect to a micro-switch 68 adjustable by means of a setscrew 69 in a bracket 70 supported on the wall 40, as diagrammatically noted in FIG. 1 of the drawing.

The element 66 includes an upright portion 71 movable in an aperture 72 in the wall 40. The element 66 also includes a horizontal portion 73 detachably coupled with 71 by suitable means, as at 74, note FIG. 1 of the drawing. The horizontal portion 73 is shown, in part, in FIG. 4 of the drawing and this horizontal portion operates in an elongated aperture 75 in the wall of the support 46, as seen in FIG. 4, the portion 73 having an upwardly extended end 76 fixed to the member 64, again, as seen in FIG. 4 of the drawing.

From the foregoing, it will be apparent that the adjustment of the spring 59 is such that the placement of the receptacle 44 on the member 64 will be sufficient to move 67 out of engagement with the switch 68 to close the circuit, putting the dispenser into operation, assuming that the circuit has otherwise been closed, as will more clearly be hereinafter described.

Arranged immediately below the switch 68 is a cutoff micro-switch 77 so that, if for any reason an excessive volume of liquid should be deposited in the receptacle 44, 67 will actuate the switch 77 to break the circuit and stop operation of the dispenser.

Mounted in the wall 13 and opening into the chamber 17 is a drain pipe 78, having a manually controlled valve 79, as diagrammatically seen in FIG. 1, for draining the chamber 17 as and when required. Suitably supported in the section 12, as for example, on one side wall, is an electrical timer, diagrammatically illustrated at 80 at the left of FIG. 1 of the drawing. Supported on the opposed side wall of the section 12 is an electrically actuated musical novelty device 81, which can be of any type and kind, but preferably of the type well known in the arts for playing musical selections. Also suitably supported in the section 12, adjacent one side thereof, is a carbon dioxide (CO₂) cylinder 82, having a discharge pipe 83 opening into the chamber 17 with a manually controlled valve in said pipe, as diagrammatically illustrated at 84 in FIG. 1 of the drawing. The valve 84 also preferably includes a manually actuated pointer knob 85 operating in conjunction with a dial 86 on the front wall of the device, as diagrammatically seen at the left of FIG. 2 of the drawing, the dial providing means for judging the discharge of CO₂ into the compartment in cooling the liquids in the containers 23 and 24. Small amounts of the CO₂ can be discharged into the chamber and expanded to accomplish this cooling effect periodically in the use of the device. In other instances, however, cracked ice or ice cubes can be mounted in the chamber 17 for cooling the liquids in the container, as and when this is desired.

Suitably positioned on the front wall 21 of the casing and above the aperture 42, as noted in FIGS. 2 and 3 of the drawing, is an electric light bulb 87, also indicated in the diagrammatic showing of the circuit in FIG. 5 of the drawing. Also on the wall 21 is a push-button switch 88, also represented in FIG. 5, for controlling the circuit or, in other words, for putting the dispenser in operation or for shutting-off the circuit to prevent operation thereof. At 89 is shown a toggle switch for putting the musical novelty 81 in operation, it being understood that the operation of the musical background in the use of the dispenser can be constant or intermittently applied under manual control.

Considering the diagrammatic illustration of the circuit, the various parts of the dispenser are diagrammatically shown in the circuit, including the switches, the valve 37 and the light bulb 87 and a fuse 90 is also preferably included in the circuit.

The operation of the dispenser will be readily understood from the foregoing description and the following statement.

While the dispenser can be utilized in mixing proportionate amounts of different liquids to be dispensed into a receiving receptacle, in order to illustrate one adaptation and use of my invention, I have illustrated a dispenser which would be suitable for dispensing two beverages.

For example, the container 23 can store rye or a blend of rye whiskey and the container 24 can store a vermouth so that, in operation of the dispenser, a Manhattan will be discharged into the receiving receptacle 44 in the proportions of rye and vermouth controlled by manual adjustment of the valve 34, the guide for which would be positioning the pointer knob 35 on the dial 36. At this time, it would be well to mention that a user or operator of the dispenser can, from time to time, vary adjustment of the valve 34 to serve the desired drink to the individual being served.

Considering FIG. 2 of the drawing, it will appear that on the front wall of the dispenser is another pointer knob 91 for actuating the timer 80, the pointer knob being adjustable with respect to a dial 92 to control the time period of actuation of the timer 80 in governing automatic closing of the circuit as and when a predetermined and desired volume of the liquid mix, namely the Manhattan, has been discharged into the receptacle 44.

Assuming that the timer 80 is set for the desired volume and the needle valve 34 at its desired adjustment, the placement of a receptacle 44 on the member 64 of the unit 46 will automatically move 67 out of engagement with 68 to close the circuit through 68. Now, upon operation of the push-button switch 88, the circuit will be completed, resulting in actuation of the solenoid valve releasing the liquid, or the mix, for discharge through the spout 38 into the receptacle 44 and, at the period controlled by the timer, the circuit will then be broken, resulting in a closure of the valve 37 and the desired mix volume, namely the Manhattan, will have been dispensed into the receptacle 44.

In the above operation, the light bulb 86 will be automatically illuminated and, if the switch 89 has been actuated to close the circuit through the musical novelty 81, this novelty will be put into operation, rendering a signal or playing a predetermined musical selection, depending upon the characteristics of 81 employed. It is also to be understood that, as required, the means cooling the liquids in the containers 23 and 24 will have been placed in or introduced into the chamber 17.

Upon removal of the receptacle with the measured Manhattan therein from the dispenser, the spring 59 will automatically return 64 to its normal position and, at the same time, 67 will again engage 68 to break the circuit through the switch 68, which position is diagrammatically illustrated in FIG. 5 of the drawing. It will be apparent that, if a series of mixes are to be intermittently dispensed, the automatic placement of the receptacle 44 on 64 will automatically result in a discharge of another mix or Manhattan, bearing in mind that the push-button switch 88 is still in operation.

In some uses of the dispenser, the valve 34 can be closed and the liquid discharge can be discharged solely from the container 23 and this operation can be performed intermittently in the serving of Manhattans in the illustration given so that a predetermined volume of the rye can be discharged into the receptacle 44, preparatory to serving an unmixed drink of any type or kind.

Further, in some instances, particularly where it would be desirable to serve a number of beverages "on the rocks," the term commonly used, the ice cubes can be preplaced in the receptacle 44 and, in this event, the screw 62 will be adjusted to compensate for the difference in weight of the receptacle, plus the ice cubes. Then, in each operation of inserting a receptacle 44 into position, as shown in FIG. 3, the beverage from the container 23 will be deposited into the receptacle 44 containing the ice cube, or cubes. In all instances, the timer will be adjusted to control the volume of beverage released by the valve 37.

An off and on switch 93 is preferably employed in the circuit to positively control the use and non-use of the dispenser. This is incorporated as a safety measure.

While one example is illustrated heretofore of a use of

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the dispenser, it will be apparent that two or more liquids of any type and kind can be mixed and discharged into a single receptacle or receiver. Furthermore, in the present illustration, means has been disclosed for introducing a cooling medium or agent into the compartment 17 of the insulated section 11. In some instances, a heating medium of any type and kind can, in like manner, be introduced into this chamber to heat the liquids in the containers arranged in the chamber.

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

1. A mixed liquid dispenser comprising two suitably supported containers, a liquid in one container, another contrasting liquid in the other container, a solenoid mixing valve in an electric circuit, means including tubes placing each container in communication with said mixing valve, said means of one container including a manually adjustable needle valve controlling proportionate discharge of liquid from said container to that of the associated container, said mixing valve having a discharge positioned over a receptacle support for discharge of a liquid mix discharged from said mixing valve into a receptacle arranged on said support, and a switch in the circuit with said mixing valve actuated by the weight of a receptacle placed on said support for putting said mixing valve into operation to discharge a mixture from said liquid containers into said receptacle.

2. A dispenser as defined in claim 1, wherein said means includes threaded sockets, said containers being in threaded engagement with the sockets for detachable coupling therewith, and means for venting said containers.

3. A mixed liquid dispenser of the character described comprising a casing having an upper section including a closed insulated chamber in which two containers are stored, a lower dispensing section, a receptacle supporting unit in the dispensing section accessible through an opening in the front wall of the dispensing section, a hood in the upper portion of said dispensing section forming a receptacle receiving compartment exposed to the upper portion of said unit, a solenoid mixing valve between said chamber and compartment and having a spout for discharge of a liquid mix into a receptacle positioned in said compartment, said mixing valve being in an electric circuit, means including tubes placing each container in communication with said solenoid mixing valve, a needle valve in one of said tubes controlling volume discharge of liquid from one of said containers, and a switch in said electric circuit to said mixing valve automatically actuated by said unit in putting the mixing valve into operation for dispensing a mix of liquids from said containers through said spout into a receptacle arranged in said compartment and supported on said unit.

4. A dispenser as defined in claim 3, wherein said unit includes a tensionally supported member forming a bottom wall of the compartment upon which the receptacle is positioned.

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5. A dispenser as defined in claim 4, wherein means is employed for adjusting the tensional support of said member.

6. A dispenser as defined in claim 3, wherein a cutoff switch is employed and actuated by the receptacle's depression of said unit in checking dispensing of liquid through said mixing valve.

7. A dispenser as defined in claim 3, wherein said upper section is open at the top, and an insulated cover closing said open top in forming said closed insulated chamber.

8. A dispenser as defined in claim 3, wherein said lower section includes means for manually controlling discharge of CO₂ into the chamber of said upper section.

9. A dispenser as defined in claim 8, wherein a valve controlled drain tube is exposed to the chamber of said upper section.

10. A dispenser as defined in claim 4, wherein said unit includes a cup-shaped casing having at the upper end thereof an outwardly and upwardly directed rim bordering said tensionally supported member, and said cup-shaped casing including a drain tube.

11. A dispenser as defined in claim 10, wherein a basin is arranged in the lower section in registration with said drain tube.

12. A dispenser as defined in claim 3, wherein an electric bulb is positioned on the front of said casing, said bulb being in said electric circuit, a musical novelty in the lower section and in said electric circuit, and a manually actuated switch controlling operation of said musical novelty.

13. A dispenser as defined in claim 3, wherein a volume controlled timer is in said electric circuit controlling the volume of liquid dispensed from the mixing valve through said spout into a receptacle.

14. A dispenser as defined in claim 13, wherein the front of the casing includes manually actuated means for controlling operation of said timer.

15. A dispenser as defined in claim 14, wherein the front of the casing includes means indicating setting of said needle valve in porportioning the discharge from one container to that of the associated container.

16. A dispenser as defined in claim 15, wherein the lower section of the casing includes a CO₂ cylinder having a discharge opening into the chamber of the upper section, a valve controlling said discharge, and manually actuated means on the front of the casing for controlling the CO₂ discharge into said chamber.

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