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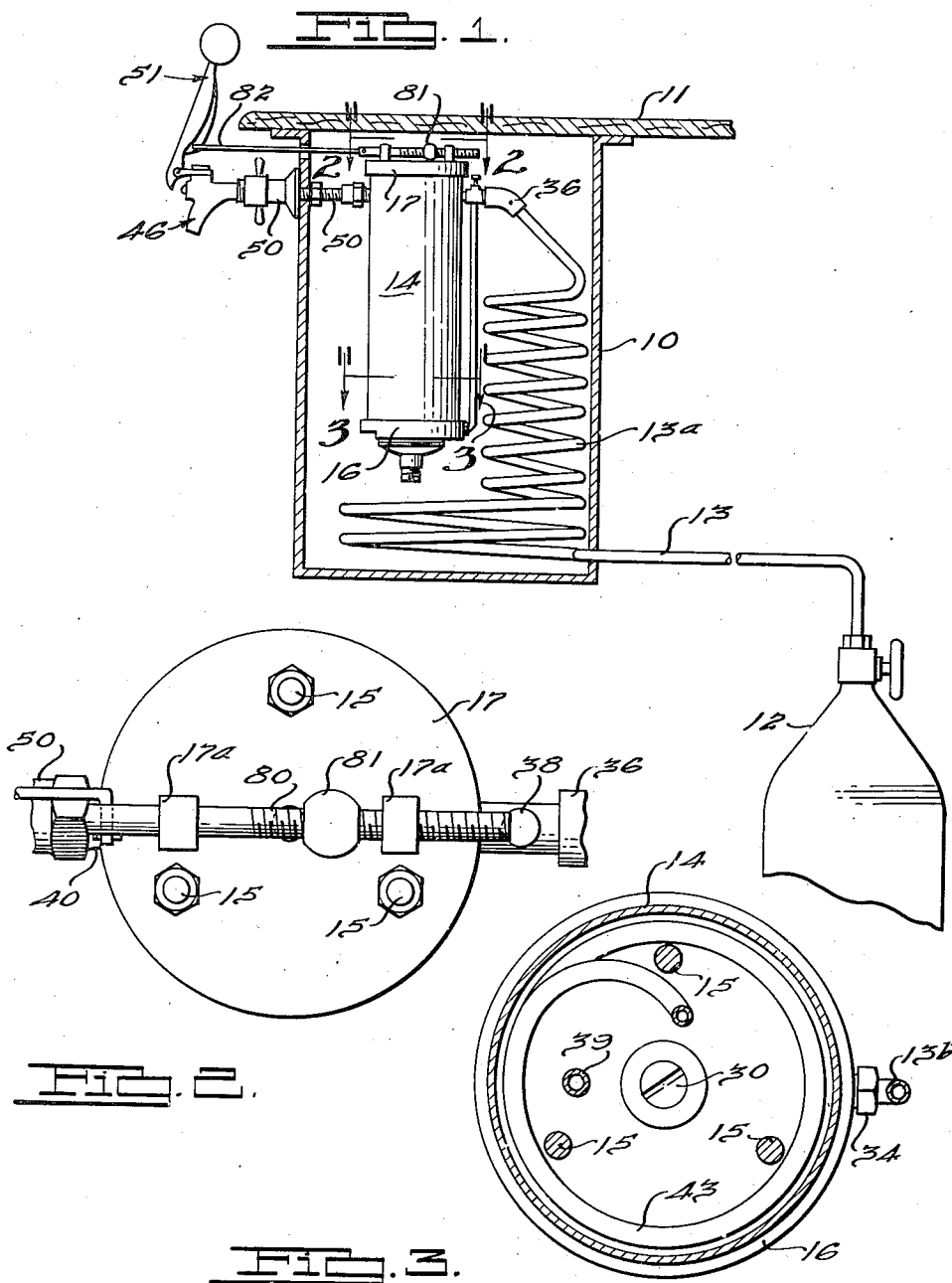
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BEVERAGE DISPENSING APPARATUS

Filed Oct. 4, 1941

2 Sheets-Sheet 1



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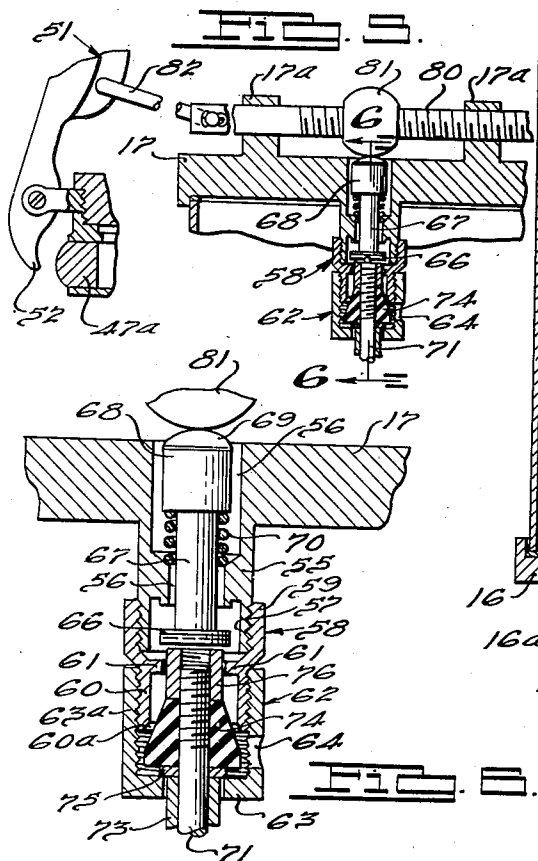
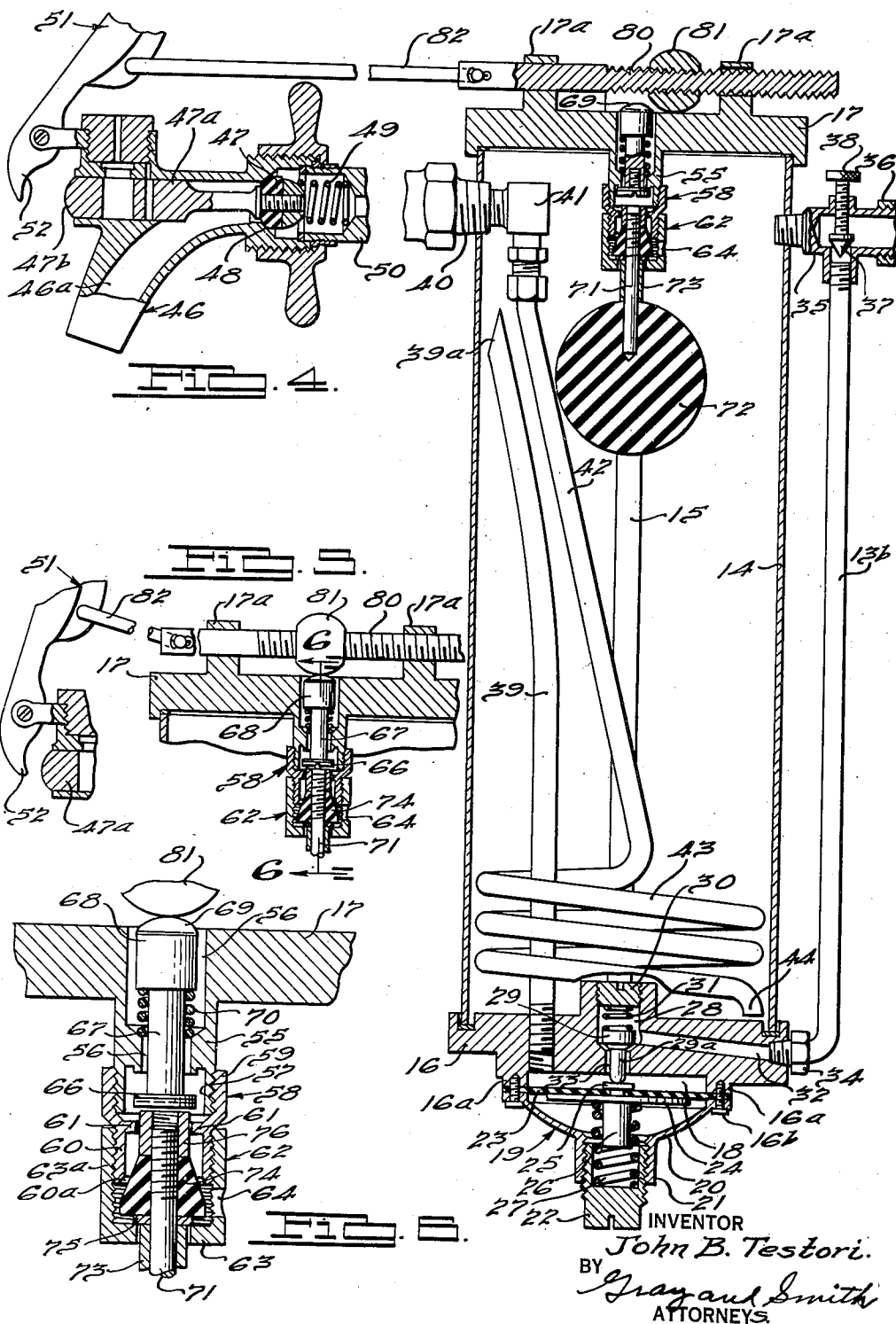
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,331,872

BEVERAGE DISPENSING APPARATUS

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9 Claims. (Cl. 225—9)

This invention relates to the dispensing of carbonated beverages such, for example, as ginger ale, seltzer, beer and the like.

An object of the present invention is to provide an improved beverage dispensing apparatus, device or system which is capable of storing the carbonated beverage at a higher degree of pressure than that at which it is dispensed or drawn.

Another object of the invention is to provide an improved beverage dispensing apparatus or system in which the carbonated beverage flows into the storage reservoir of the apparatus at the same rate as the beverage is drawn from the reservoir past the dispensing valve, thus preventing surging or any disturbance of the liquid in the reservoir which would cause the production of foam therein.

A further object of the invention is to provide an improved apparatus or device of the foregoing character having mechanical means controlled by the manual actuation of the dispensing valve for releasing excess pressures in the storage reservoir of the apparatus at predetermined times to maintain a constant or uniform flow of liquid into and out of the storage reservoir of the apparatus while the dispensing valve is open.

Another object of the present invention is to provide an improved apparatus or device of the foregoing character in which the manual operation of opening and/or closing of the dispensing valve of the apparatus will effect the operation of an auxiliary pressure relief valve for the purpose of releasing excessive pressures in the storage reservoir at predetermined times.

A further object of the invention is to provide an improved dispensing apparatus or device in which a pressure relief valve is controlled and actuated through the medium of the means for actuating the dispensing valve prior to the opening of said dispensing valve to draw the beverage and also subsequent to the closing of the dispensing valve, for the purpose of releasing excess pressures in the storage reservoir both prior to and after each dispensing operation of the apparatus or device.

A further object of the invention is to provide an improved beverage dispensing apparatus or device having a separate mechanically operated pressure relief valve which is opened momentarily at predetermined times by the operation of manually controlled means for actuating the dispensing valve, and one in which adjustable means is provided for opening said relief valve so that the structure may be used with different types of dispensing faucets.

A further object of the invention is to provide an improved device or apparatus of the foregoing character having a float controlled safety check valve which operates independently of the dispensing valve and the pressure relief valve.

Another object of the present invention is to provide an improved beverage dispensing apparatus having an improved beverage outlet tube or pipe line connected to the dispensing faucet to enable the liquid to be withdrawn under higher pressures than was possible heretofore.

A further object of the present invention is to provide an improved beverage dispensing apparatus or device in which the carbonated beverage to be dispensed enters the liquid reservoir from the storage tank at a point located above the level of the liquid in the reservoir, and one in which the liquid is withdrawn from the reservoir from the bottom thereof.

The above and other objects and advantages of the invention will appear from the following description and appended claims when considered in connection with the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In said drawings:

Fig. 1 is a view partly in vertical section and partly in elevation of a dispensing apparatus or device constructed in accordance with the present invention.

Fig. 2 is a fragmentary top plan view, on an enlarged scale, taken substantially along the line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is an enlarged horizontal sectional view taken substantially along the line 3—3 of Fig. 1, looking in the direction of the arrows.

Fig. 4 is an enlarged vertical sectional view, partly in elevation and partly broken away, of the storage reservoir or compartment and associated mechanism of the present invention.

Fig. 5 is a fragmentary detail sectional view, partly broken away, of the improved valve structure for releasing excessive pressures from the storage reservoir or tank; and

Fig. 6 is an enlarged vertical sectional view taken substantially along the line 6—6 of Fig. 5, looking in the direction of the arrows.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of be-

ing practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

Referring now to the drawings, there is shown therein one form of dispensing apparatus or device embodying the present invention.

In Fig. 1 of the drawings the entire assembly is illustrated, somewhat diagrammatically. In this view, there is shown a cooling chamber or tank 10 which, as shown, merely by way of illustration, is mounted below a shelf, bar or counter 11 which in the present instance serves as a cover or top for the cooling chamber. The supply of carbonated liquid or beverage is contained in a supply tank 12 which is connected by means of a pipe line 13 having a plurality of superimposed coiled sections 13a to a storage reservoir or tank 14. It will be seen that the coiled portions 13a of the pipe line and the storage reservoir 14 are located within the cooling chamber 10. The bottom of the storage reservoir or tank 14 is closed by means of a head or base cap member 16 and the upper end of said reservoir is closed by means of a head or cap member 17 (Fig. 4). It will be seen that the upper cap member 17 is provided with a pair of spaced lugs or upward projections 17a which are drilled or bored transversely for a purpose to be described hereinafter. The end members, caps or heads 16 and 17 are secured together and to the cylindrical portion of the storage reservoir 14 by means of a series of bolts or rods 15 provided with securing nuts to hold the parts together as a unit.

The lower or under face of the bottom cap or head member 16 is provided with an annular rib 16a so as to form a centrally disposed depression, recess or chamber 18. Secured to the annular rib in any suitable manner, as by means of screws or bolts 16b, is a pressure regulator device, shown as a whole at 19. This pressure regulator comprises, as shown, a dome-shaped cap 20 having a downwardly projecting internally threaded nipple or annular boss 21 to receive a recessed screw-threaded plug 22. The regulator comprises also a diaphragm 23 which is formed of rubber or other suitable flexible material which is secured between the dome-shaped cap 20 and the annular rib 16a of the head member 16. As shown, the diaphragm 23 is also clamped between a pair of metal disks 24 and 25, there being a centrally disposed depending stem or pin 26 attached to the disk 25 and having a shoulder which engages the larger disk 24. This stem portion extends into the threaded nipple 21 and also into the recess or socket formed in a screw-threaded closure plug 22. A pressure control or regulating coil tension spring 27 surrounds the stem 26 and is seated at its lower end in the plug 22 and against the disk 24 at its upper end. It will be understood that the mechanical pressure upon the diaphragm and the disk 24 can be varied or regulated by means of the adjustable plug 22 which may be manipulated to increase or decrease the tension of the spring 27.

The head member or cap 16 is provided centrally thereof in its upper face with a socket or chamber 23 within which is located a spring pressed valve 29 having a downwardly projecting stem portion 29a. The upper end of the chamber or socket 23 is closed by a screw-threaded closure plug 30 between which and the head of the valve 29 there is disposed a tension coil spring

31. The valve stem 29a engages the disk 25 above the diaphragm 23.

The body portion of the head or closure member 16 is also provided with a transverse bore or passageway 32 which communicates at its inner end with the chamber or space 23 and also with the space 18 through the medium of the bore 33 extending from the pocket or space 23. The outer end of the bore or passageway 32 is tapped and threaded to receive a coupling member or pipe fitting 34 to which is attached an extension 13b of the tube or pipe line 13, 13a.

Adjacent the upper end of the wall of the storage reservoir 14 there is provided a substantially T-shaped plug or coupling 35 which, as shown, is threaded into the upright wall of the storage reservoir. The lower portion of the coupling 35 is connected with the upright pipe section 13b and at its outer end is in communication with the section 13a of the pipe line through the medium of a coupling member or fitting 36.

The plug or coupling 35 is provided with a conical manually controlled or actuated valve 37 having a threaded stem and a knurled operating handle portion 38. It will be seen that when the valve 37 is screwed down it can be made to seat upon the body of the coupling 35. By adjusting the position of the valve 37, it will be understood that carbonated beverage from the supply tank 12 can be supplied to the storage reservoir 14 in a controlled supply, the amount of opening or space between the conical valve 37 and its seat controlling the quantity and the rate of flow of the liquid which can pass into the storage reservoir.

The interior of the storage reservoir 14 is in communication with the chamber or space 18 formed in the lower cap member 16 by means of a stand pipe or tube 39 which has its lower end threaded into a drilled bore formed in the cap or head 16. It will be noted that this stand pipe or tube 39 extends upwardly and terminates at 39a adjacent the upper portion of the storage reservoir. Thus, carbonated beverage supplied to the reservoir 14 enters said reservoir at the upper end thereof.

The purpose of the pressure regulator 19 is to control or regulate the pressure of the carbonated beverage which is supplied to the storage reservoir from the supply tank 12. By adjusting the tension of the spring member 27, this can be regulated as desired.

The upright wall portion of the storage reservoir 14 is tapped at a point substantially opposite the location of the coupling or fitting 35 to receive and support a coupling member or fitting 40 which, as explained hereinafter, is connected by means of a pipe or tube with the dispensing faucet of the apparatus. Threaded into the fitting or coupling member 40 is an L-shaped fitting 41 to the lower end of which the upright section or portion of a liquid feed pipe 42 is threadedly connected. This feed pipe 42 is provided at its lower end with a series or plurality of spiral coils 43, the diameter of these spiral coils being nearly as large as the inside diameter of the storage reservoir 14. It will be noted that the lower end of the pipe 42, 43 is placed just above and adjacent to the inner or top face of the head or cap member 16, the intake portion of this pipe being designated at 44. Thus, it will be seen that liquid from the storage reservoir 14, while being supplied thereto by the end 39a of the tube 39 adjacent the upper end of said reservoir, is withdrawn therefrom through the pipe

end 44 at a point located adjacent the bottom thereof, thus eliminating any excess gaseous pressure in the liquid.

By particular reference to Figs. 1 and 4 of the drawings, it will be seen that the beverage dispensing pipe 42, through the medium of the coupling members 40 and 41, is connected with the dispensing faucet of the apparatus which is shown as a whole at 46. This faucet is of conventional structure and is provided with a substantially ball-like valve 47 which valve is normally maintained against its seat 48 by means of a tension spring 49. The inner end of the spring rests against a seat formed in a connecting pipe 50 which is connected to the coupling 40 at its inner end and to the dispensing faucet 46 at its outer end.

The valve 47 is provided with a valve stem 47a which has a sliding fit in a longitudinal bore in the dispensing faucet 46, the outer end portion of the valve stem being rounded or dome-shaped as shown at 47b. When it is desired to dispense liquid through the faucet 46, an operating handle 51 is moved in a counterclockwise direction so as to bring the lower end portion or nose 52 thereof into contact with the end portion 47b of the valve stem so as to move or shift the valve stem to the right of Fig. 4 and remove or unseat the valve 47 from its seat 48, thus allowing liquid to be discharged through the bore or passage 46a in the faucet. After a sufficient quantity of liquid has been withdrawn through the faucet, the handle is moved in a clockwise direction to its original position which removes its nose portion 52 from contact with the end 47b of the valve stem, whereupon the tension spring 49 comes into action and returns the valve 47 to its seat to shut off the flow of liquid to the faucet. The return of the valve 48 to its seat or to closed position is, of course, assisted by the pressure of the liquid in the pipe line 50. The dispensing faucet 46 and also the operating handle 51, 52 are, as shown, of conventional construction.

Referring now particularly to Figs. 4, 5 and 6 of the drawings, there is shown in these figures further novel features of construction embodying the present invention. It will be seen that the head or cap member 17 is provided with a centrally disposed depending annular boss 55 having a passageway 56 therethrough. The lower end portion 57 of the boss 55 is externally threaded to receive and support a removable coupling member or fitting shown as a whole at 58. The coupling member 58, as shown, comprises an upper internally threaded portion 59 and a lower externally threaded portion 60, the diameter of the lower portion being somewhat less than the diameter of the upper portion. The walls of the coupling member 59 are provided with an internally projecting guide portion, rib or apertured web 61. The lower end of the portion 60 of the fitting or coupling member is provided with a valve seat 60a.

A closure member or cap, shown as a whole at 62, is adapted to be threaded onto the lower portion 60 of the coupling or fitting member and has an apertured lower or bottom wall 63, and internally threaded side walls 63a. The side wall 63a is provided with a port or opening 64 through which gas or air from within the storage reservoir 14 may pass.

The boss 55 at approximately its mid-section is enlarged or thickened to provide a valve seat 65 located in its under face and against which

a reciprocating valve, such as a disk valve 66, is adapted to seat. The valve 66 is provided with a stem 67 which, as shown, has an enlarged head 68. The outer or upper end of the head 68 is rounded or of dome-like formation as shown at 69. The stem 67 of the valve is surrounded by a coiled tension spring 70 which finds a seat at its upper end against the head 68 of the valve stem and seats at its lower end against the enlarged portion of the boss 55.

As shown, the cap or closure member 62 carries the stem 71 of a ball-like float 72, the valve stem 71 passing through a guide sleeve 73 which has a sliding fit within the apertured lower wall 63 of the cap member. The upper end of the stem 71 supports a rubber frusto-conical valve member 74 which is held in place between a metal disk or nut 75 surrounding the valve stem and a sleeve or collar 76 which is threaded onto the upper end of the stem 71. It will be seen that the sleeve or collar 76 has an easy-sliding fit within the opening formed in the internal projecting portion or web 61 of the coupling member 59 which serves as a guide for the upper end of the valve stem 71. The guide member 73 may be omitted, if desired, in which case the opening in the bottom wall 63 would be made somewhat smaller than shown so that said wall would serve as a guide for the stem 71.

When the float member 72 is raised or elevated by the liquid in the storage reservoir 14 to a predetermined point, the valve member 74 will engage the valve seat 60a and close communication between the storage reservoir 14 and the upper portion of the boss and cap assembly. It will be understood that the tension spring 70 normally maintains the disk-like valve 66 against its seat 65. It will be understood further that the valves 66 and 74 operate and function separately and also independently of one another.

The valve member 66 provides an excess pressure release device or means for the dispensing apparatus. It is desirable in apparatus of the character embodying the present invention to release a certain amount of excess or surplus pressure from within the storage reservoir 14 just prior to opening the dispensing faucet valve 42 and it is also desirable to release some additional excess or surplus pressure from within the storage receptacle just after the dispensing valve has closed to permit additional liquid to enter the storage reservoir. For this purpose, I have devised novel means for opening the valve 66 during the manipulation or operation of the manually controlled handle 51 for actuating the dispensing valve 42. Thus, when the handle 51 is moved in a counterclockwise direction to open the valve 48, during its movement in such direction the valve 66 will be temporarily or momentarily unseated to allow the escape through the passageway or exhaust port 66 of any surplus or excess of gas or pressure within the storage receptacle 14.

As clearly shown in the drawings, there is provided a threaded rod or member, shown as a whole at 80, see particularly Figs. 4 and 5, which has a sliding fit within the aligned apertures formed in the lugs or bosses 17a of the upper head or cap member 17 for the storage reservoir. Threaded onto the member 80 is a ball-like member or valve actuator 81 which, by being rotated relative to the member 80, may be adjusted lengthwise of said member. The forward end of the member 80 is connected by means of a link

or rod 82 to the handle member 51. Thus, as the handle member 51 is moved, for example, in a counterclockwise direction to open or unseat the dispensing valve 48, the ball-like member 81 will engage the dome-like end portion 69 of the valve 66 and force the valve 66 from off its seat 65 against the action of the tension spring 70. This momentary unseating of the valve 66 will allow the escape of any excess or surplus pressure within the storage reservoir 14 through the port or passageway 56. As the handle 51 is moved further toward the left of Fig. 4 to unseat the dispensing valve 48, the ball-like member 81 will pass or ride over the end 69 and allow the tension spring 70 to again seat the valve 66 against its seat 65.

When the handle 51 is again returned to its original position or moved in a clockwise direction to permit the dispensing valve 48 to be returned to its seat by virtue of the tension spring 49, the ball-like member 81 is again brought into contact with the end 69 of the valve 66 and moves the valve off its seat momentarily to allow the escape of excess pressure through the passageway 56. As the handle 51 is moved further in a clockwise direction to its inoperative position, the ball member 81 rides over the dome-like end 69 and permits the tension spring 70 to again seat the valve against its valve seat 65 and again close or seal the passageway or opening 56.

The valve 37 regulates the flow of liquid into reservoir 14 at the same rate that the liquid flows through the faucet 46 when the dispensing valve 48 is open, thus preventing any surging or disturbance of the liquid in the reservoir which would cause the production of foam in the reservoir as would be the case if the flow of fluid past the valve 37 and into the reservoir were at a greater rate than the flow of the fluid out of the dispensing faucet.

The purpose of the relief valve 66 is to reduce the pressure within the reservoir 14 while the liquid is being drawn through the faucet 46 to equalize the flow. If the inflowing rate of the liquid were greater than that of the outflowing rate through the faucet 46, the pressure within the reservoir 14 would be built up to its original high pressure which is maintained when the dispensing valve is closed. The conical valve 37 is adjustable so as to regulate this flow of the liquid so that it will be constant through the apparatus or system when the dispensing valve is open.

The ball member 81, if desired, can be made of substantially oval shape so as to present a longer contact surface with the dome-shaped end 69 of the relief valve structure to hold the valve 66 open longer, allowing more gas to escape through the port 56 in cases where the apparatus is used to dispense beverages or liquids having a higher gaseous content. If desired, the ball 81 can be adjusted or set at a point along the threaded rod 80 so that when the dispensing valve 48 is opened, the relief valve 66 will be held partly open constantly while the beverage is flowing through the faucet, such for example, as where the beverage is being drawn in larger quantities to fill large containers.

The float actuated valve member 74 is in the nature of a safety valve for the apparatus and is controlled solely by the upward and downward movement of the ball-like float member 72. In the event that the handle 51 should be left in an intermediate position accidentally, with the ball member 81 engaging the end 69 of the valve 66 to

hold said valve unseated, the inrush of carbonated beverage from the supply tank to the storage reservoir 14 will raise the level of the liquid in the reservoir and cause the float to move upwardly, whereupon the valve member 74 will engage its seat 60a and prevent the escape of liquid through the passageway 56. Thus, it will be seen, that the float actuated valve 74 operates entirely independently of the mechanical valve member 66 and also independently of the manually opened and spring-closed dispensing valve member 48.

By virtue of the fact that the so-called outlet tubing or pipe 42, 43 which is connected with the dispensing faucet 46 is provided with a plurality of turns 43, it is possible to withdraw liquid from the storage reservoir 14 which is under higher pressure than has heretofore been possible with beverage dispensing apparatus.

Because of the present improved construction, the carbonated liquid may be stored in the apparatus at a higher pressure than that at which it is withdrawn from the storage reservoir. This preserves the carbonation in the liquid so that the beverage, when drawn, it not flat.

The release of excessive pressures from within the storage reservoir through the mechanically operated valve 66 also allows the storage of carbonated liquid at a higher pressure. Due to the fact that the operation of the handle for controlling the dispensing valve 48 effects the opening of the valve 66 through the movement of said handle and interconnecting mechanism, excess pressures are released prior to the drawing of the beverage and also when the handle 51 is returned so as to permit the closing of the dispensing valve. This release of pressure on the return stroke or movement of handle 51 is important since new liquid coming into the storage reservoir 14 releases extra gas and thus the reservoir is full of a gas and liquid under rather high pressures. By releasing this extra gas on the return stroke of the handle 51, additional liquid can be drawn into the storage reservoir or tank 14. The float actuated valve 74 is, as stated above, used as a safety check in case something should happen and the handle, for example, becomes stuck so that the pressure reducing valve 66 is left continually open. The release of the mechanically actuated valve 66 is, as stated above, adjustable so that the device may be used with different types of dispensing faucets.

The liquid inlet 39a from the supply tank 12 is, as clearly shown in Fig. 4, placed above the level of the liquid in the storage reservoir 14 and thus discharges the liquid coming in from the storage tank above this level. This permits excessive gas to be freed from the liquid so as to be drawn from the top of the reservoir. The draw of the liquid through the dispensing faucet 46 is from the bottom of the reservoir tank, note the intake for the dispensing pipe line as shown at 44, Fig. 4.

The pressures of the carbonated beverage contained in the apparatus or system embodying the present invention may vary considerably but I have discovered from actual use of the apparatus embodying said invention that in certain instances the pressures are approximately as follows:

The pressure of the beverage as drawn from the faucet 46 is at approximately ten pounds per square inch; the pressure of the beverage in the storage reservoir 14 is at approximately twenty-five pounds per square inch; and the pressure of

the beverage in the storage tank or container 12 is maintained at approximately one hundred and fifty pounds per square inch.

The pressures in the storage reservoir reduce approximately ten pounds per square inch upon opening of the mechanical valve 56, but the pressures built up to approximately twenty-five pounds when the dispensing valve 43 is closed and the additional beverage flows into the storage reservoir 14 from the supply tank 12.

It is to be understood that the foregoing pressures are, as stated above, merely approximate and are given merely by way of example and it is entirely possible that these pressures will vary considerably from the figures given above.

I claim:

1. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in communication with the supply tank, a pressure regulator associated with the storage reservoir and interposed between the supply tank and said reservoir to regulate the pressures within said reservoir, manually controlled dispensing valve means for drawing carbonated liquid from the storage reservoir, an excess pressure release valve associated with the storage reservoir and adapted for periodic opening and closing movements prior to the opening of the dispensing valve and also subsequent to the closing of said dispensing valve, and adjustable means operable by the manual actuation of the dispensing valve for opening said excess pressure release valve at a predetermined time relative to both the opening and closing of said dispensing valve.

2. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in controlled communication with the supply tank, a pressure regulator associated with the storage reservoir and interposed between the supply tank and said reservoir to regulate the pressures within said reservoir, a beverage dispensing valve connected with said storage reservoir, a handle for opening said dispensing valve, an excess pressure release valve associated with the storage reservoir, and an adjustable release valve actuating member connected to said handle for opening said release valve at predetermined but variable time intervals both prior to opening the dispensing valve and subsequent to the closing of said dispensing valve.

3. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in communication with the supply tank, a pressure regulator associated with the storage reservoir and interposed between said supply tank and said reservoir for regulating pressures within said reservoir, dispensing valve means for drawing carbonated liquid from the storage reservoir, a manually controlled handle for operating said dispensing valve, excess pressure release means associated with said storage reservoir, and adjustable means connected to said handle for operating said excess pressure release means during both the opening and closing movements of the dispensing valve for releasing excess gas pressure from within the storage reservoir at predetermined variable time intervals.

4. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in communication with the supply tank, said storage reservoir having upper and lower closure members, said upper closure member having an excess pressure discharge port lo-

located therein, a pressure regulator associated with the storage reservoir and interposed between the supply tank and said reservoir for regulating the pressure within the reservoir, beverage dispensing valve means connected with said storage reservoir, a manually controlled handle for actuating said valve means, a pressure release valve for controlling said port, and an adjustable release valve operating member connected with said handle for effecting the periodic opening of said last named valve during the manual operation of both opening and closing the dispensing valve to release excess gas from within the storage reservoir both prior to the opening of the dispensing valve and subsequent to the closing of said dispensing valve.

5. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in communication with the supply tank, said storage reservoir having upper and lower closure members, said upper closure member having an excess pressure discharge port located therein, a pressure regulator associated with the storage reservoir and interposed between the supply tank and said reservoir for regulating the pressure within the reservoir, beverage dispensing valve means connected with said storage reservoir, a manually controlled handle for actuating said valve means, a pressure release valve for controlling said port, adjustable means connected with said handle for effecting the periodic opening of said last named valve during the manual operation of opening and closing the dispensing valve whereby to release excess pressure from within the storage reservoir prior to the opening of the dispensing valve and also subsequent to the closing of said dispensing valve, and a float controlled safety valve for closing said port independently of said pressure release valve.

6. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in communication with the supply tank, said storage reservoir having upper and lower closure members, said upper closure member having an excess pressure discharge port located therein, a pressure regulator associated with the storage reservoir and interposed between the supply tank and said reservoir for regulating the pressure within the reservoir, beverage dispensing valve means connected with said storage reservoir, a manually controlled handle for actuating said valve means, a pressure release valve for controlling said port, an adjustable timing means connected with said handle for effecting the periodic opening of said last named valve during the manual operation of opening and closing the dispensing valve whereby to release excess pressure from within the storage reservoir prior to the opening of the dispensing valve and also subsequent to the closing of said dispensing valve, and a float controlled safety valve operated by the liquid level in said reservoir and located in said reservoir below said pressure relief valve for closing said port independently of said pressure release valve.

7. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir connected to the supply tank, an adjustable valve device interposed between the supply tank and storage reservoir for regulating the flow of liquid into the reservoir, a pressure regulator associated with the storage reservoir and interposed between said supply tank and said reservoir to regulate the pressures within said reservoir, a dispensing faucet attached to

the reservoir, manually operated handle on said faucet and an adjustable excess pressure release valve associated with said storage reservoir and operably connected with said handle and adapted for periodic timed opening and closing movements whereby to relieve said reservoir of excess pressures at predetermined times to permit the flow of liquid from the supply tank into the reservoir at the same rate that the liquid is discharged from said reservoir through the faucet when open.

8. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in controlled communication with the supply tank, a pressure regulator associated with the storage reservoir and interposed between said tank and reservoir to regulate pressures within said reservoir, manually controlled dispensing valve means communicating with a spiral feed tube opening adjacent the bottom of said storage reservoir for drawing carbonated liquid therefrom, and an adjustable excess gas pressure release valve on said storage reservoir and connected with said manually controlled dispensing valve means for periodic opening and closing movements both prior to the opening of the dis-

5 pensing valve and subsequent to the closing of said dispensing valve, whereby excess gas is vented from said storage reservoir to relieve pressures therein prior to drawing a liquid therefrom and prior to refilling said reservoir.

10 9. In an apparatus for dispensing carbonated beverages, the combination of a supply tank, a storage reservoir in controlled communication with the supply tank, a pressure regulator associated with the storage reservoir and interposed between said tank and reservoir and adapted to regulate the pressures created within said reservoir, manually controlled dispensing valve means communicating with a spiral feed tube opening adjacent the bottom of said storage reservoir for drawing carbonated liquid therefrom, an excess pressure release valve on said storage reservoir and connected with said manually controlled dispensing valve means for periodic opening and closing movements both prior to the opening of the dispensing valve, and means operable by the manual opening and closing of the dispensing valve for opening said excess pressure release valve to vent gas from said storage reservoir both before and after drawing a liquid therefrom.

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