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H. J. FORBES, JR
BEVERAGE DISPENSER

3,078,013

Filed Dec. 21, 1960

2 Sheets-Sheet 1

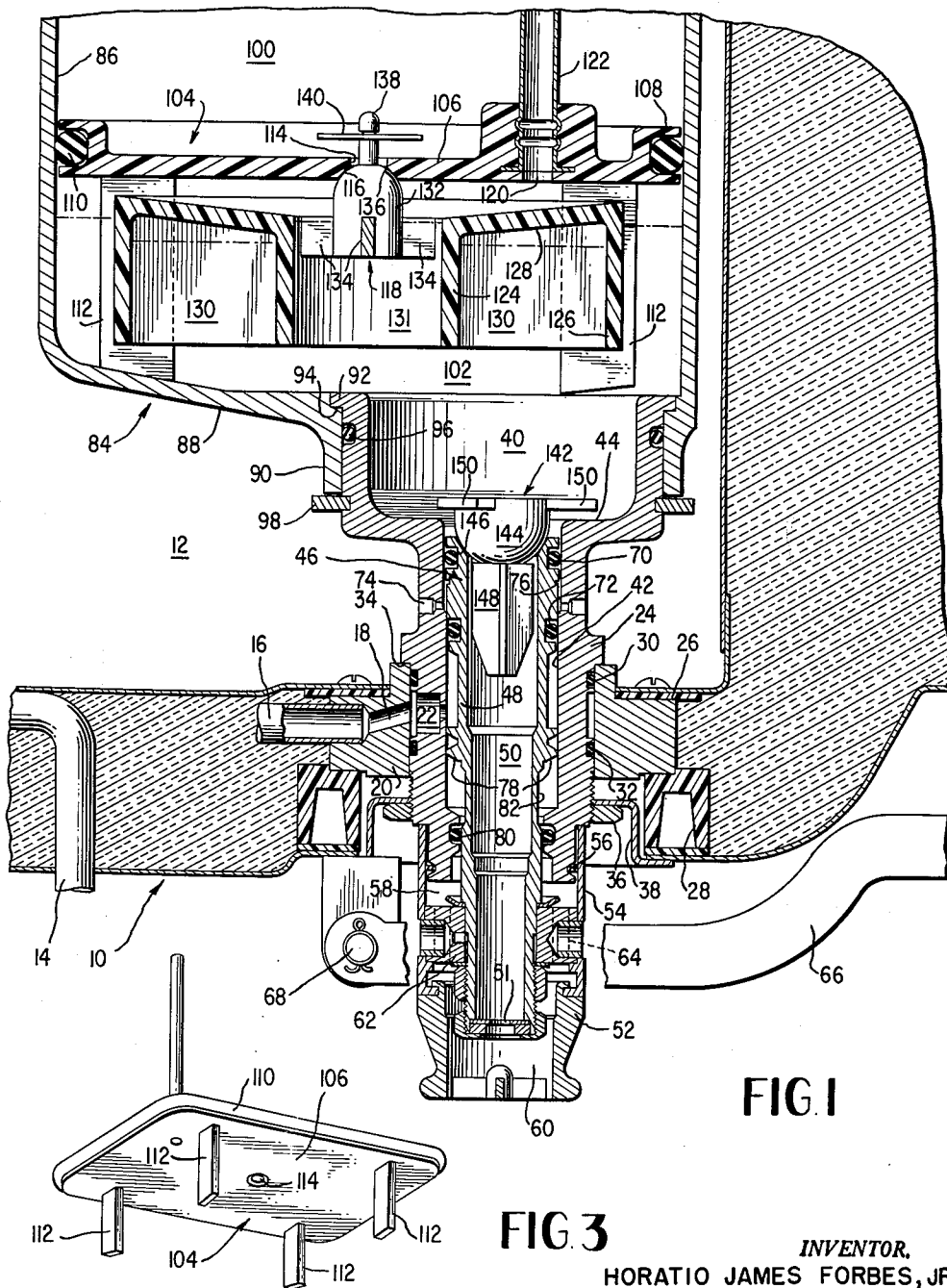


FIG 1

FIG 3

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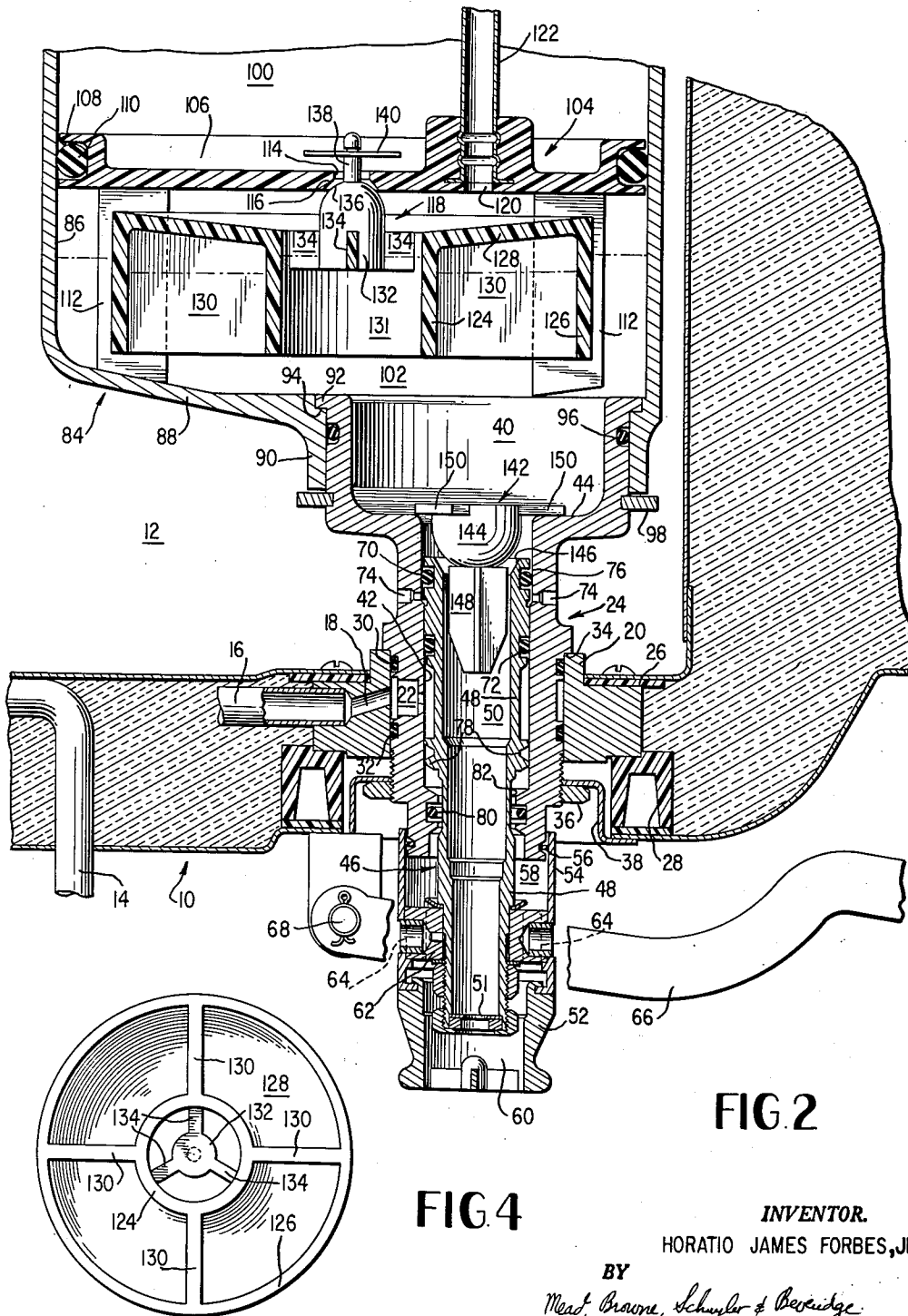


FIG 2

FIG 4

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3,078,013

BEVERAGE DISPENSER

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10 Claims. (Cl. 222-67)

This invention relates to beverage dispensers, and more particularly to apparatus for dispensing a beverage consisting of a mixture of two or more constituents, at least one of which is dispensed at a rate dependent upon the static head pressure of a supply of the constituent above a mixing nozzle.

The invention is particularly directed to dispensing apparatus employed in soda fountains or the like for dispensing soft drinks composed of carbonated water mixed in a preselected ratio with a flavoring syrup. These dispensers are known as "post-mix" dispensers wherein the flavoring syrup and carbonated water are mixed as they are drawn from the dispenser. Such dispensers include a syrup tank or reservoir for maintaining a supply of syrup at the dispenser and some means for connecting the dispenser to a supply of carbonated water under pressure. Valve means are employed to simultaneously connect both the carbonated water supply and syrup tank to a mixing nozzle, and both syrup and carbonated water flow to the nozzle upon actuation of the dispenser to be mixed within and dispensed from the nozzle.

It is apparent that an important factor affecting the flavor of the beverage so dispensed is the mixture ratio of flavoring syrup to carbonated water. Conventionally, this desired mixture ratio is achieved in a "slug" type process by filling a measuring chamber with a predetermined volume or "slug" of syrup prior to actuation of the dispenser. When the dispenser is actuated, the slug of syrup flows into the mixing nozzle, and carbonated water also flows into the mixing nozzle, the syrup and water mixing with each other as the drink is drawn. Theoretically, when a standard size glass is filled, all of the syrup slug will have been drawn and the drink will have the desired syrup to water ratio. However, this obviously depends on the ability of the operator to actuate the dispenser exactly the correct length of time. Otherwise, too little or, as is more common, too much water will be drawn.

In recent years, efforts have been made to develop a so-called continuous flow dispenser in which the measuring chamber is eliminated so that a constant mixture ratio of syrup to water is maintained at the mixing nozzle regardless of the volume of beverage which may be dispensed by a single actuation of the dispenser. A dispenser of this type would, in theory, eliminate reliance on the skill of the attendant to obtain a properly flavored drink. It would also eliminate the necessity of closing the dispensing valve between the dispensing of successive drinks, and the necessity of actuating the delivery valve two or more times in order to fill a container larger than the standard size glass for which the volume of the syrup measuring chamber was calculated. While previous efforts have been made by others to develop such a continuous flow type dispenser, none of which I am aware has proven to be fully satisfactory.

Accordingly, it is a primary object of the present invention to provide a new and improved constant or continuous flow beverage dispenser which, when actuated, dispenses a beverage having a substantially constant syrup to water ratio regardless of the volume of beverage drawn during a single actuation of the dispenser.

It is another object of the invention to provide beverage dispensing apparatus for dispensing successive drinks having a uniform syrup to water ratio regardless of the volume of a given drink.

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It is a further object of the invention to provide such a dispenser in which syrup is dispensed at the mixing nozzle under a static head pressure which is maintained substantially constant, regardless of the total volume of syrup maintained in the dispenser.

It is still another object of the invention to provide such a dispenser in which a modified form of syrup dispensing apparatus may be employed with presently available dispensing valve and mixing nozzle structures whereby a slug type dispenser can readily be converted to a dispenser embodying the invention.

Still another object of the invention is to provide such a dispenser in which the syrup dispensing components are readily accessible for cleaning in order to maintain a high standard of sanitation.

In a preferred embodiment of the present invention, the foregoing objects are achieved in an assembly in which the syrup tank or reservoir is divided into an upper and a lower chamber communicating with each other through an orifice in a partition. When the dispenser is actuated to dispense beverage, syrup flows gravitationally from the lower chamber through a dispensing valve assembly, which may be of conventional construction, to a syrup outlet orifice located in a mixing nozzle where the syrup is mixed with carbonated water supplied to the mixing nozzle in a conventional manner. The rate of flow of syrup through the syrup outlet orifice is dependent upon the static head pressure of syrup which is determined by the level of syrup in the lower chamber of the syrup tank.

In normal operation of the dispenser, syrup is maintained in both the upper and the lower chambers of the tank. A float valve assembly in the lower chamber cooperates with the orifice in the tank dividing partition to close the partition orifice when syrup is at a selected level in the lower chamber. However, when the level of syrup within the lower chamber drops below the selected, or normal, level, the float valve assembly moves downwardly away from the partition orifice to permit syrup to flow gravitationally from the upper chamber into the lower chamber. The size of the orifice in the partition is related to the size of the syrup outlet orifice at the mixing nozzle so that syrup can, if necessary, flow from the upper chamber into the lower chamber at a rate at least equal to the normal rate of flow of syrup through the syrup outlet orifice.

Other objects and features of the invention will become more apparent by reference to the following specification and to the drawings.

In the drawings:

FIG. 1 is a detailed vertical cross-sectional view of a portion of a constant flow dispenser embodying the present invention, showing the parts in their normal, inactive position;

FIG. 2 is a vertical cross-sectional view, similar to FIG. 1, but showing the parts in their actuated beverage dispensing position;

FIG. 3 is a detailed perspective view of the syrup tank partition assembly; and

FIG. 4 is a bottom plan view of the float member.

In the drawings, the invention is disclosed as being employed in combination with a thermally insulated container 10 of conventional construction whose interior 12 is normally filled with ice or refrigerated in any suitable manner. The dispenser is supplied with carbonated water under pressure from an external source, not shown, which is connected to an inlet conduit 14. Carbonated water passes into conduit 14, then through a set of cooling coils of conventional construction, not shown, and then passes to conduit 16. From conduit 16, the carbonated water flows through a passage 18 in a mounting collar 20 into an inlet opening 22 in a dispensing valve housing 24.

Mounting collar 20 is fixedly secured to container 10

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and sealed, around its outer periphery, to the container as by gaskets 26 and 28. Dispensing valve housing 24 is, in turn, sealed to the inner periphery of mounting collar 18 by upper and lower O-rings 30 and 32, and is mechanically secured in fixed position upon container 10 by the engagement of a shoulder 34 against the upper side of mounting collar 18 and by a mounting nut 36 which bears against the lower side of a bushing 38 seated on the lower side of container 10.

Dispensing valve housing 24 is constructed with a central passage which extends vertically through the housing, the passage being divided into an enlarged diameter upper passage section 40 and a reduced diameter lower passage section 42 joining each other at an upwardly facing shoulder 44. A valve sleeve assembly, designated generally 46, is slidably mounted within lower section 42 of the valve housing passage. The structure of valve sleeve assembly 46 and its cooperative relationship with housing 24 and passage 42 does not, per se, form a part of the present invention since such structure is disclosed in United States Patent No. 2,698,701, granted to El Roy J. Kraft on January 4, 1955. However, it is believed that a brief description of this structure is necessary to a complete understanding of the present invention.

Valve sleeve assembly 46 includes an aligned tubular valve sleeve 48 through which a centrally located vertical syrup passage 50 extends, terminating at its lower end at a knife-edged syrup outlet orifice 51. Valve sleeve 48 projects from the lower end of housing 24, and a mixing nozzle assembly designated generally 52 is mounted on the exterior of the projecting portion of sleeve 48. On the upper end of nozzle assembly 52, a skirt 54 projects upwardly from the nozzle assembly and is slidably engaged with a wiping seal 56 mounted on the lower end of housing 24. Wiping seal 56 enables skirt 54 to define, with the exterior of sleeve 48, an annular chamber 58 which is in direct fluid communication at all times with the opening 60 at the lower end of nozzle assembly 52. Element 62 serves to mount nozzle assembly 52 on the lower end of sleeve 48, and is vertically bored as at 64 to provide communication between chamber 58 and the lower end 60 of the nozzle passage.

An actuating handle 66 is pivoted on container 10 as at 68 and is pivotally connected by means, not shown, to nozzle assembly 52 so that pivotal movement of handle 66 about pivot 68 shifts valve sleeve assembly 46 vertically within passage 42 between the positions shown in FIG. 1 and FIG. 2.

At its upper end, valve sleeve 48 is in sliding sealing engagement with the wall of lower passage section 42 at spaced O-ring seals 70 and 72. O-ring seal 70 prevents fluid or syrup from flowing from upper passage section 40 into the lower portion of lower passage section 42, while O-ring seal 72 prevents carbonated water under pressure from flowing upwardly into the upper portion of reduced diameter section 42. In order to permit the escape of fluid, the space between seals 70 and 72 is vented as at 74 because a section of reduced diameter section 42 is slightly enlarged as at 76. A helical V thread 78 on sleeve 48 slidably engages the inner wall of lower passage section 42 as a restrictor to reduce the pressure energy of carbonated water passing through thread 78 in a downstream direction.

With the dispensing valve assembly in its normal or non-dispensing position (FIG. 1), the flow of carbonated beverage from inlet 22 into nozzle assembly 52 is prevented by the sealing engagement between an O-ring 80 and the exterior surface of valve sleeve 48. When the valve sleeve assembly is moved to its lower or dispensing position (FIG. 2) O-ring 80 is aligned with a reduced diameter section 82 on the exterior of sleeve 48 and carbonated water is free to pass below O-ring 80 into nozzle assembly 52.

The structure described thus far is disclosed in the above-identified Kraft Patent No. 2,698,701, and reference to that disclosure may be had for details.

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The present invention is primarily concerned with the control of the flow of syrup into syrup passage 50 of valve sleeve 48. Structure for supplying and controlling the flow of syrup includes a syrup tank designated generally 84 having vertically extending side walls such as 86 and a bottom wall 88 formed with an annular flange 90 adapted to receive the upper end of valve housing 24. In assembly, valve housing 24 is passed downwardly through the opening in flange 90 until a projecting flange 92 is seated upon a shoulder 94 in bottom wall 88. Valve housing 24 is sealed to syrup tank 84 by an O-ring 96 mounted in a groove on the exterior of valve housing 24. A split ring 98 seated on the exterior of housing 24 maintains syrup tank 84 in position upon housing 24.

The interior of syrup tank 84 is divided into an upper chamber 100 and a lower chamber 102 by a partition assembly designated generally 104. Partition assembly 104 includes a plate-like body 106 having a groove 108 extending around its outer periphery. An O-ring type seal 110 is received within groove 108 and extends continuously around the periphery of body 106. The shape of the periphery of body 106 is related to the horizontal cross-sectional shape of tank 84 so that seal 110 is in continuous sealing engagement with the inner surfaces of the vertical side walls 86 of tank 84 when the partition assembly 104 is located within the tank. A plurality of dependent legs 112 are fixed to and project downwardly from the lower side of body 106 and are adapted to rest upon bottom wall 88 of tank 84 to support body portion 106 of partition assembly 104 at a selected height above bottom wall 88.

Fluid communication between upper chamber 100 and lower chamber 102 takes place, when necessary, through an orifice 114 which extends vertically through body portion 106. The lower end of orifice 114 is formed with a downwardly facing conical valve seat 116 which cooperates with a float valve assembly 118, described in greater detail below, to control communication between the upper and lower chambers. In addition to orifice 114, a venting opening 120 is formed in body 106 and a vertically extending vent tube 122 projects upwardly from body 106 to a location above the normal level of syrup in upper chamber 100. Vent tube 122 is open to atmosphere at its upper end.

Flow of syrup through orifice 114 is controlled by float valve assembly 118. Assembly 118 is formed as an integrally molded structure which includes vertically extending inner and outer annular skirts 124 and 126 connected to each other, in concentric relationship, by an annular top wall member 128. As best seen in FIG. 4, a suitable number of vertical webs such as 130 may also extend radially between skirts 124 and 126. The upper end of inner skirt 124 is located at a level somewhat below the upper end of outer skirt 126 and thus the top surface of top wall member 128 is inclined downwardly toward the central vertical opening 131 in annular skirt 124.

A valve head 132 is supported centrally within opening 131 in skirt 124 as by a plurality of radially extending webs 134. Valve head 132 projects upwardly above the remainder of the float and is curved at its upper end as at 136 to assure proper seating of the valve head against downwardly facing valve seat 116 on the partition assembly. To keep valve head 132 in alignment with orifice 114 and seat 116, an integral projection 138 extends upwardly from the top of valve head 132 to pass freely through orifice 114. A retainer clip such as 140 may be mounted upon projection 138 to prevent float valve assembly 118 from becoming disengaged from partition assembly 104.

In operation, float assembly 118 acts to control the flow of syrup from upper chamber 100 into lower chamber 102. Syrup is withdrawn from lower chamber 102 in accordance with the actuation of valve sleeve assembly 46 described above. Chamber 102 is in direct communication with upper passage section 40. Communication

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between enlarged upper passage section 40 and syrup passage 50 is controlled by a gravitationally operated valve or syrup weight 142. Weight 142 is formed with a generally hemispherical valve head portion 144 which is adapted to seat upon an upwardly facing conical valve seat 146 formed on the upper end of valve sleeve 48. Weight 142 is maintained in alignment with seat 146 as by a plurality of downwardly projecting radial fins 148 fixed to the lower end of head portion 144 and received within the upper end of syrup passage 50.

When the dispenser is in its normal, non-dispensing position, valve sleeve assembly 46 is located in its upper position (FIG. 1) with valve head portion 144 seated upon seat 146 so that syrup weight 142 is supported by valve sleeve assembly 46. When the dispenser is actuated to its beverage dispensing position (FIG. 2) valve sleeve assembly 46 is drawn downwardly and since syrup weight 142 is supported upon valve sleeve assembly 46, it moves downwardly with the valve sleeve assembly until radially projecting arms 150 on the upper end of valve head portion 144 engage upwardly facing shoulder 44, at which time support of syrup weight 142 is transferred to the stationary valve housing. As shown in FIG. 2, the transfer of support of syrup weight 142 from valve sleeve assembly 46 to the valve housing occurs before valve sleeve assembly 46 reaches its lower position. Thus, valve seat 146 is drawn downwardly out of engagement with valve head portion 144 to thereby establish communication between syrup passage 50 and upper passage section 40. This action places lower chamber 102 in direct communication with syrup passage 50.

Operation of the dispenser is as follows. With the parts assembled in the relationship of FIG. 1 of the drawings, conduit 14 is connected in a conventional manner to a source of carbonated water under pressure which fills the cooling coils (not shown), conduit 16, passage 18, inlet opening 22 and that portion of lower valve housing passage section 42 between O-ring 72 and O-ring 80. During this initial connection, actuating handle 66 is maintained in the FIG. 1 position and, when the carbonated water supply is connected, the pressure of the supply assists in holding valve sleeve assembly 46 in the upper or inactive position shown in FIG. 1 by virtue of the difference in area exposed to the carbonated water source pressure at O-ring 72 and O-ring 80.

With valve sleeve assembly 46 in the upper position shown in FIG. 1, syrup weight 142 is supported upon valve seat 146 thus closing the upper end of syrup passage 50 through the valve sleeve. At this time, no syrup has been placed in syrup tank 84 and, with partition assembly 104 in the FIG. 1 position, float 118 will be suspended from plate 106 of the partition by the engagement of retainer clip 140 with the upper surface of the plate.

Syrup is then poured into upper chamber 100 of syrup tank 84 and, since valve head 132 of the float member is not seated against valve seat 116 of the partition plate, syrup flows from upper chamber 100 through orifice 114 into lower chamber 102 and upper passage section 40 of valve housing 24. Since syrup weight 142 is seated upon valve seat 146 at this time, the syrup cannot flow from upper passage section 40 into syrup passage 50, and O-ring 70 seals the space between the outer side of valve sleeve assembly 46 and lower passage section 42.

The level of syrup thus rises in upper passage section 40 and eventually in lower chamber 102 in syrup tank 84 until float 118 becomes buoyant. The syrup level in chamber 102 continues to rise until the buoyancy of float 118, assisted by air trapped beneath top wall member 128 and skirts 124 and 126, exerts a buoyant force sufficient to seat valve head 132 against valve seat 116 on partition assembly 104 to thereby close orifice 114 and prevent further flow of syrup from upper chamber 100 into lower chamber 102.

Upper chamber 100 is then filled with syrup, the maxi-

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imum level of syrup within the upper chamber being below the upper end of vent tube 122 so that head space in lower chamber 102 is in communication with the atmosphere at all times.

When actuating handle 66 is depressed to dispense beverage from the dispenser, valve sleeve assembly 46 is moved, by depression of handle 66, from the upper or inactive position shown in FIG. 1 to the lower or dispensing position shown in FIG. 2. This movement of valve sleeve assembly 46 shifts valve sleeve 48 downwardly to a location where O-ring 80 is aligned with reduced external diameter section 82 on valve sleeve 48, thus permitting carbonated water to flow downwardly below O-ring 80 along the exterior of valve sleeve 48 into the mixing nozzle assembly 52.

During downward movement of valve sleeve assembly 46, syrup weight 142 is lowered to a position where projecting arms 150 on the weight engage upwardly facing shoulder 44 in the interior of valve housing 24. Engagement of arms 150 with shoulder 44 transfers support of syrup weight 142 from valve seat 146 to valve housing 24 and, as valve sleeve assembly 46 moves toward the position of FIG. 2, syrup weight 142 is disengaged from valve seat 146, thus placing syrup passage 50 in communication with upper passage section 40 and lower chamber 102 of the syrup tank. Syrup thus flows gravitationally from lower chamber 102 downwardly through syrup passage 50 and emerges from the lower end of syrup passage 50 at knife edged orifice 51 to mix within mixing nozzle 52 with carbonated water now reduced by helical V threads 78 to substantially atmospheric pressure.

While the carbonated water is supplied to mixing nozzle 52 under a substantially constant pressure, the pressure at which syrup is supplied to mixing nozzle 52 is determined by the static head pressure represented by the level of syrup within lower chamber 102 above orifice 51. Since the characteristics of the beverage dispensed from nozzle 52 are dependent upon the mixture ratio of syrup to carbonated water, in order to maintain a substantially constant mixture ratio it is necessary to maintain the level of syrup within chamber 102 at a substantially constant level.

This is accomplished by float 118. As syrup flows from chamber 102 through syrup passage 50, the level of syrup within chamber 102 drops, and thus the buoyant force holding valve head 132 in seated engagement with valve seat 116 decreases. When the level of syrup within chamber 102 drops below a certain level, valve head 132 becomes unseated from valve seat 116, and thus syrup begins to flow from chamber 100 through orifice 114 to replenish the supply of syrup within chamber 102. Syrup will continue to flow from chamber 100 into chamber 102 until the level of syrup within chamber 102 has been restored to a level at which float 118 is buoyed up with a sufficient force to cause valve head 132 to seat against valve seat 116.

The size of orifice 114 is so related to the size of orifice 51 that when orifice 114 is fully open, the rate at which syrup flows from chamber 100 into chamber 102 is substantially the same as the rate at which syrup flows through orifice 51 in a continuous dispensing operation. Thus, the level of syrup in chamber 102 is maintained substantially constant regardless of the quantity of beverage which is dispensed in a single actuation of the dispenser.

To increase the precision of operation of float 118, central opening 131 through inner skirt 124 provides a path through which syrup can pass from orifice 114 into chamber 102 without flowing over the top surface of the float. This assures that the level of float 118 within the chamber is determined by the level of syrup within the chamber and is not influenced by the weight of syrup flowing onto or over the top surface of the float. The diameter of opening 131 is sufficient so that during the normal course of operation, substantially all of the syrup

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flowing through orifice 114 passes directly into central opening 131. The small amount of syrup which may find its way onto the upper surface of float 118 is quickly directed into opening 131 by the inward inclination of top wall member 128 of the float as shown in FIGS. 1 and 2.

From the foregoing, it can be seen that the cooperation between partition assembly 104 and float 118 achieves a precisely regulated level of syrup within lower chamber 102, thus maintaining the rate at which syrup is dispensed through syrup outlet orifice 51 substantially constant. The precision of maintaining the level within chamber 102 substantially constant is further assisted by the relatively large cross-sectional area of lower chamber 102 as compared with the relatively small diameter orifice 51. The relationship between orifice 114 and orifice 51 is such that in the event of a dispensing operation involving the dispensing of a large volume of beverage, the supply of syrup within chamber 102 can be replenished at a rate at least equal to the rate at which it is dispensed through orifice 51.

By virtue of the cooperative relationship between partition assembly 104 and the vertical side walls of syrup tank 84, partition assembly 104 and float assembly 118 may be easily removed from tank 84 merely by grasping vent tube 122 and lifting the partition assembly upwardly. Retainer clip 140 retains float 118 coupled to partition 104 and thus the partition and float may be simultaneously withdrawn from or replaced in syrup tank 84. The ready accessibility of partition assembly 104 and float 118 is extremely desirable from the standpoint of sanitation since such dispensers must meet rigidly enforced health regulations. The smooth vertical side walls of syrup tank 84 may be easily cleaned once the float and partition assembly are removed from the syrup tank.

While I have described one embodiment of the invention, it will be apparent to those skilled in the art that the disclosed embodiment may be modified. Therefore, the foregoing description is to be considered exemplary rather than limiting and the true scope of the invention is that defined in the following claims.

What I claim is:

1. A constant flow beverage dispenser comprising a syrup tank, a partition having an orifice therethrough mounted within said tank to divide said tank into an upper chamber and a lower chamber in communication with each other through said orifice, valve controlled means defining a tank outlet in the bottom of said lower chamber, a float in said lower chamber having a central opening extending vertically therethrough defining a flow passage through said float, and a valve head supported on said float centrally of said flow passage and projecting upwardly above said float, said valve head being operable to close said orifice to block communication between said chambers when said lower chamber is filled with syrup to a predetermined level.

2. A constant flow beverage dispenser comprising a syrup tank, a partition having an orifice therethrough mounted within said tank to divide said tank into an upper chamber and a lower chamber in communication with each other through said orifice, a vent tube on said partition for venting said lower chamber, valve controlled means defining a tank outlet in the bottom of said lower chamber, a float in said lower chamber having a central opening extending vertically therethrough, means on said float defining a downwardly opening recess in said float for trapping air beneath said float when said float is supported by syrup in said lower chamber, and a valve head supported on said float centrally of said opening and projecting upwardly above said float, said valve head being operable to close said orifice to prevent the flow of syrup from said upper chamber into said lower chamber when said lower chamber is filled with syrup to a predetermined level.

3. A constant flow beverage dispenser comprising a

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syrup tank, a partition having an orifice therethrough mounted within said tank to divide said tank into an upper chamber and a lower chamber communicating with each other through said orifice, a vent tube on said partition for venting said lower chamber, valve controlled means defining a syrup outlet in the bottom of said lower chamber, a float in said lower chamber, said float comprising concentric vertically disposed inner and outer annular skirts integrally connected to each other by an annular top wall member extending between the respective upper ends of said inner and outer annular skirts, a valve head supported centrally within said inner annular skirt in spaced relationship therewith and projecting upwardly above said top wall member, said valve head being operable to close said orifice to prevent the flow of syrup from said upper chamber into said lower chamber when said lower chamber is filled with syrup to a predetermined level.

4. A constant flow dispenser as defined in claim 3 wherein the upper end of said inner annular skirt is disposed vertically below the upper end of said outer annular skirt, said annular top wall member being inclined downwardly from said outer skirt toward said inner skirt.

5. A constant flow dispenser as defined in claim 3 including an annular guide projection extending upwardly from said valve head to pass freely through the orifice in said partition to maintain said valve head in operative alignment with said orifice.

6. A constant flow beverage dispenser comprising a syrup tank having vertical side walls and a bottom wall, valve controlled means defining a tank outlet in said bottom wall, a partition having an orifice therethrough located within said tank, sealing means mounted upon the periphery of said partition, means on said partition for supporting said partition at a predetermined level above the bottom wall of said tank with said sealing means engaged with the side walls of said tank whereby said partition divides said tank into an upper chamber and a lower chamber communicating with each other through said orifice, and float controlled valve means in said lower chamber for blocking communication between said upper chamber and said lower chamber when the level of syrup in said lower chamber rises to a predetermined level and for restoring communication between said upper chamber and said lower chamber when the level of syrup within the said lower chamber falls below the predetermined level.

7. A constant flow beverage dispenser comprising a syrup tank having vertical side walls and a bottom wall, valve controlled means defining a tank outlet in said bottom wall, a partition having an orifice therethrough located within said tank, an O-ring seal extending around the outer periphery of said partition, means on said partition for supporting said partition in a horizontal position at a predetermined level above the bottom wall of said tank with said seal disposed in sealing engagement with the side walls of said tank, whereby said partition divides said tank into an upper chamber and a lower chamber communicating with each other through said orifice, a vent tube mounted in said partition and in communication with said lower chamber for venting said lower chamber, and float controlled valve means responsive to the level of syrup within said lower chamber for sealing said orifice to block communication between said upper chamber and said lower chamber when the level of syrup within said lower chamber is at a predetermined level and for unblocking said orifice to restore communication between said upper and said lower chamber when the level of syrup in said lower chamber falls below said predetermined level, said float controlled valve means having a central flow passage therethrough for passing the flow of fluid from said orifice into said lower chamber when said orifice is unblocked.

8. A constant flow dispenser as defined in claim 7 wherein said means on said partition for supporting said

partition comprises a plurality of legs projecting downwardly from said partition into engagement with the bottom wall of said syrup tank.

9. In a constant flow beverage dispenser comprising a syrup tank having vertical sidewalls and a bottom wall, means defining an outlet passage extending vertically downwardly from said bottom wall to terminate at its lower end at an orifice means defining a syrup inlet to a mixing nozzle, a syrup weight normally gravitationally maintained in seated engagement with the upper end of said passage defining means to block communication between said tank and said passage, valve means operatively associated with said passage operable to unseat said syrup weight to place said outlet passage in communication with said tank and to simultaneously supply carbonated water to said mixing nozzle to be mixed with syrup flowing through said orifice, and means for maintaining a constant static head of syrup above said orifice; the improvement wherein said means for maintaining a constant static head comprises a horizontal partition wall having a flow passage therethrough disposed within said tank, means extending around the periphery of said partition wall disposed in sliding sealing engagement with the vertical sidewalls of said tank to divide said tank into an upper syrup supply chamber and a lower syrup dispens-

ing chamber communicating with each other through said flow passage, means for supporting said partition wall at a predetermined level above the bottom wall of said tank, means in said partition wall for venting the upper portion of said lower chamber to atmosphere, a float in said lower chamber, and valve means on said float cooperable with said flow passage in said partition wall for controlling the flow of syrup from said upper syrup supply chamber into said lower syrup dispensing chamber to maintain a predetermined level of syrup in said lower chamber.

10. In a constant flow beverage dispenser as defined in claim 9; the further improvement comprising means defining a central opening extending vertically through said float, and means supporting said valve means centrally within said opening whereby syrup flowing through said flow passage into said lower chamber is prevented from flowing over the upper surface of said float.

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