

April 11, 1944.

J. W. CARLSON

2,346,290

SELECTIVE MIXING ASSEMBLY

Filed Aug. 3, 1940

3 Sheets-Sheet 1

Fig. 1.

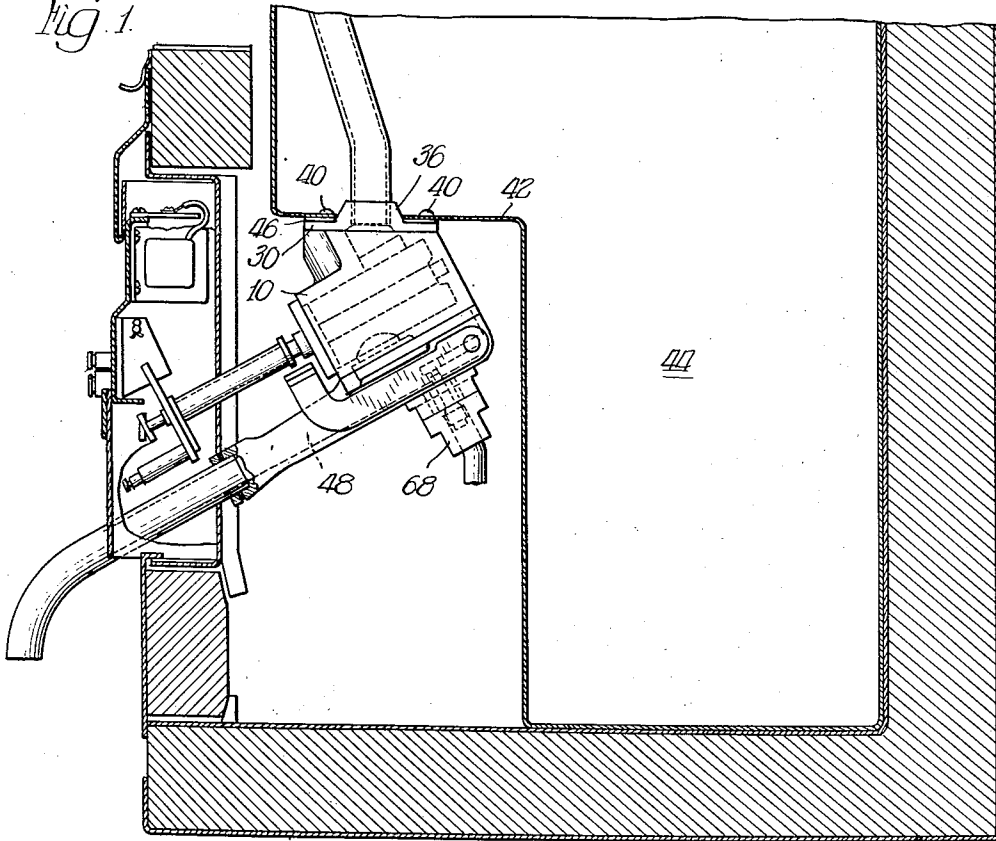
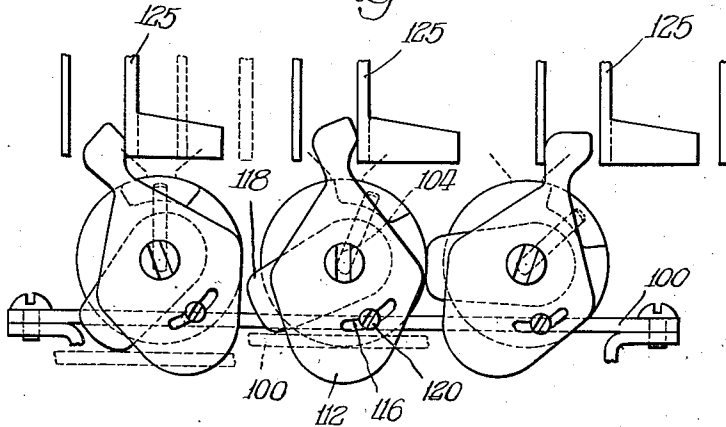


Fig. 5.



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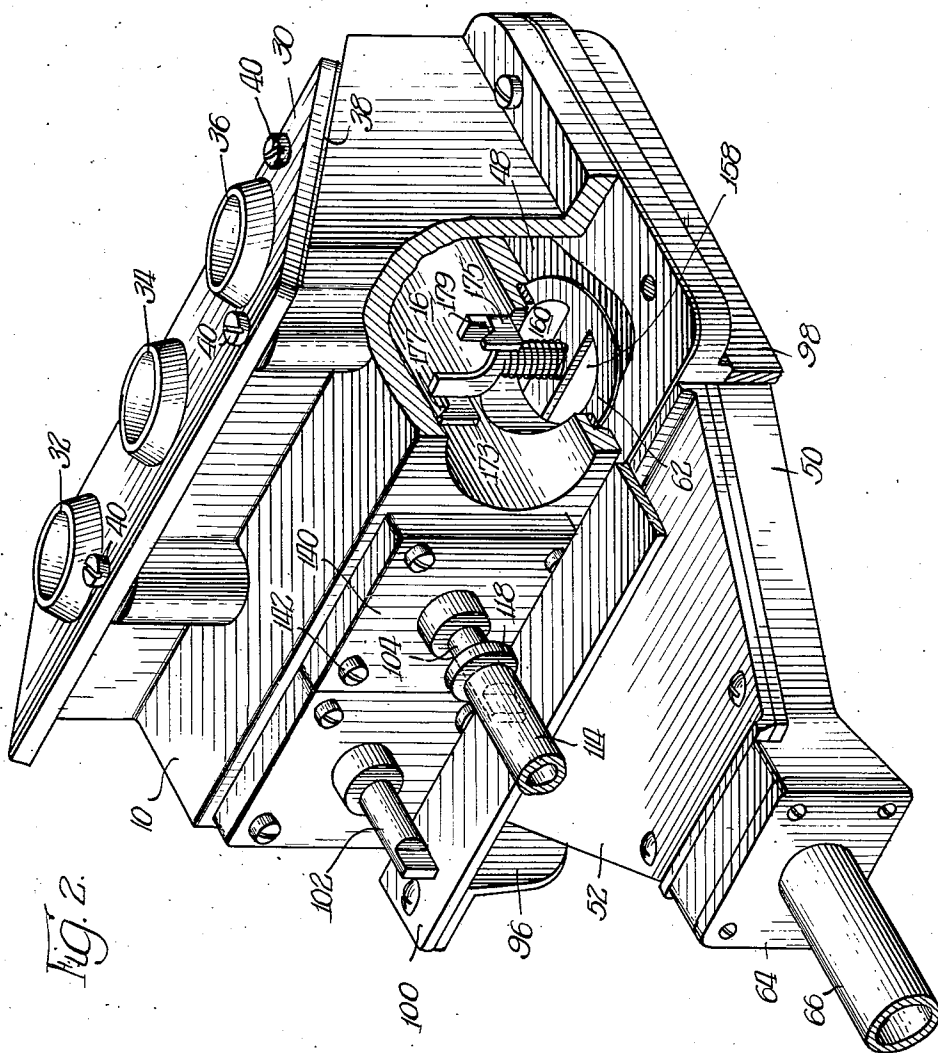
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3 Sheets-Sheet 2



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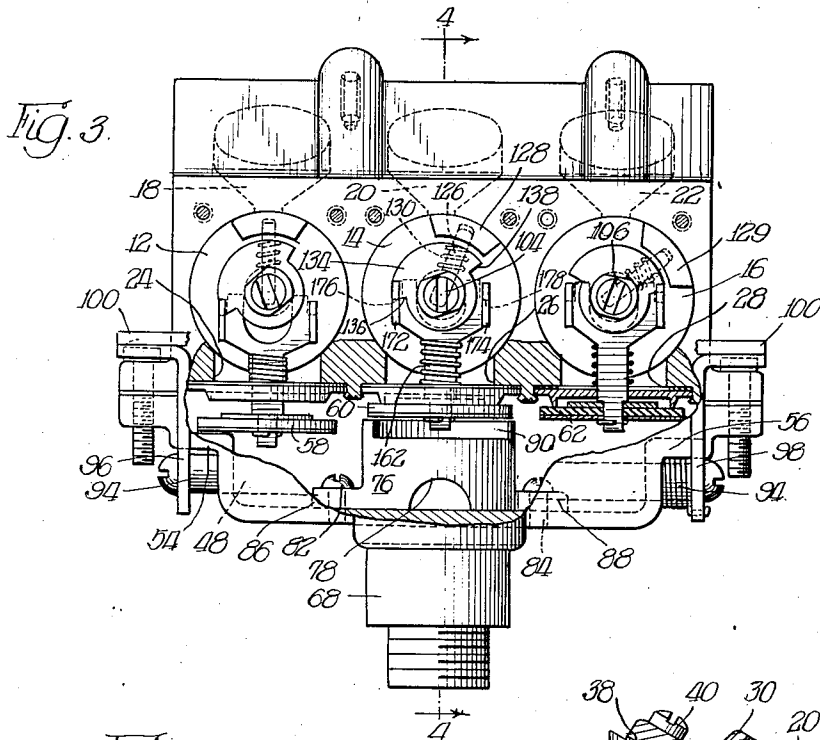
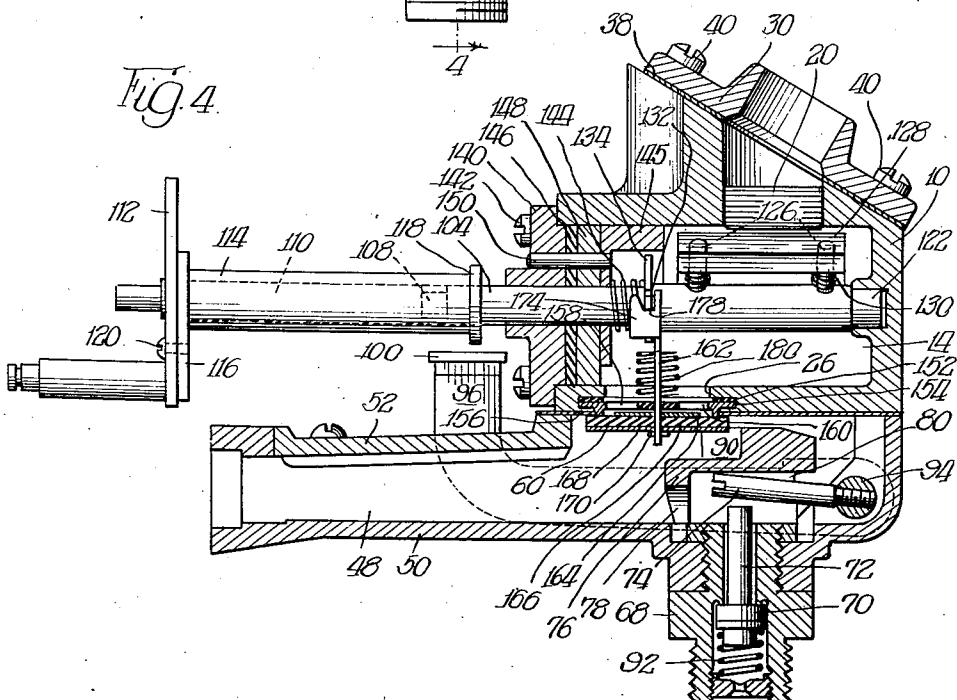
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SELECTIVE MIXING ASSEMBLY

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3 Sheets-Sheet 3



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SELECTIVE MIXING ASSEMBLY

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Application August 3, 1940, Serial No. 350,191

13 Claims. (Cl. 225—21)

This invention relates to improvements in mixing assemblies for selective drink vending machines. The specific application of this invention is in machines for vending beverages compounded from a syrup and a liquid such as carbonated water.

One object of this invention is to provide a new and improved means for delivering one of a plurality of syrups to a mixing chamber simultaneously with the introduction of a mixing fluid such as carbonated water. Toward this end, the applicant provides a plurality of syrup measuring valves, a term used herein to describe a chamber having alternately opened and closed inlet and outlet valves, one for each type of beverage syrup, in association with a single mixing chamber having a carbonated water inlet valve, and further provides a mechanical means for opening the carbonated water valve when any one of the syrup measuring valves is caused to discharge its contents into the mixing chamber. By this arrangement the external controls for the mixing assembly do not exceed in number the syrup measuring valves with the beneficial result that a simple lever train extending from each one of these controls to a point outside of the vending machine cabinet will make it possible for a customer to cause the mixing assembly to prepare the beverage selected. As an illustration of this feature, see applicant's co-pending application, Serial No. 301,528, filed October 27, 1939, now Patent 2,261,338, of which application the present constitutes a continuation in part.

Another object of this invention is to provide a syrup measuring valve which lends itself readily to use in close relationship with similar valves so that a plurality of identical external controls, one for each valve, will occupy a minimum amount of space. The importance of this objective lies in the fact that it is desirable to refrigerate a mixing assembly of the type here disclosed and it follows that in mechanical structures it is necessary to pass the control elements through the wall of an insulated cabinet. A vending machine employing the type of mixing assembly here disclosed within a refrigerated cabinet may be seen in the application of Ernest H. Thompson and Leo W. Doggett, Serial No. 319,224, filed February 16, 1940, wherein it will be observed that the external controls for the mixing assembly are parallel rotatable shafts positioned in close relationship to one another whereby all of them may be brought through a comparatively small opening in the wall of the refrigerated cabinet. A feature of this invention contributing toward attainment of this object is the employment of cylindrical measuring valves having axes in parallel or side by side alignment and each controlled by a rotatable shaft lying in the axis of the asso-

ciated cylindrical valve. These shafts are elongated on the outside of the mixing assembly so that they may be extended through a small opening in the wall of a refrigerated cabinet.

A further object of this invention is to assure the cleansing of the mixing chamber after each mixing operation for it is undesirable to alter the taste of one beverage, such as root beer, by the flavor of a different beverage, such as carbonated orange, which was previously prepared in the same mixing chamber. Toward accomplishing this, the invention of the applicant includes several features. One of these is the shaping, particularly the rounding, of the interior walls of the mixing chamber so as to eliminate any nooks which will not be reached by the swishing action of the carbonated water which is introduced under considerable pressure. Another feature is the sharp sloping of the mixing chamber floor together with a long tapering funnel-like construction leading to the discharge spout. These features supplement the force of the carbonated water in causing the syrup to be completely removed from the mixing chamber. A third feature is the employment of a unique baffle over the carbonated water intake. This baffle is shaped to perform two functions: its principal function is to introduce a substantial portion of the carbonated water to that part of the mixing chamber where most of the syrup discharged from any one of the syrup measuring valves is to be found so as to co-mingle with this syrup to form a beverage, while its second function is to sweep the remainder of the carbonated water to all points of the mixing chamber and downwardly along a funnel-like course into a spout.

Another object of this invention has the same general purpose as the last named object, namely, it seeks to prevent the taste of one drink appearing in a different subsequently-mixed drink. More specifically, this object is to cause the shutting off of the carbonated water during the mixing operation to lag the closing of any one of the syrup measuring valves so that under ideal operations the last liquid to leave the mixing chamber will be clear carbonated water. In actual use it has been found necessary to make considerable adjustments as to each valve in order to control the amount of clear liquid that flows into the cup at the end of each dispensing operation. In order that this control may be readily made for each syrup measuring valve with respect to the common carbonated water valve, this invention provides a common bar for actuating the carbonated water valve which is positioned in actuatable relationship with a plurality of cams, one on each measuring valve actuating element. These cams are adjustable with respect to the bar so that even though syrups of varying viscosities be used in the syrup measuring valves,

nevertheless a uniform quantity of clear flush water after each mixing operation will be provided.

A further object of this invention is to provide means for rapidly emptying a syrup measuring valve. These measuring valves have only a very limited period of time in which to drain, because the mixing assembly here disclosed is of the type which measures a selected quantity of carbonated water for each drink by holding a carbonated water valve open for a given length of time. This length of time is comparatively short and hence it follows that a syrup measuring valve must completely empty itself during that interval of time in which the carbonated water is flowing. In this invention the applicant provides a modified gate valve having a large orifice which permits the quick emptying of a syrup measuring valve. The measuring valve disclosed herein may be compared with that shown in applicant's co-pending application, Serial No. 214,431, filed June 18, 1938.

Another object of this invention is to provide means for readily altering the volume of the syrup measuring valve. It will be appreciated that it is desirable from a manufacturing standpoint to have the measuring valves of like size with all movable parts interchangeable. On the other hand the amount of syrup required for five ounces of one type of drink is not necessarily the same as the amount of syrup required for five ounces of another type of carbonated drink. The applicant has provided new and novel means for altering the volume content of a syrup measuring valve without necessitating changes in its operation or essential structure.

These and such other objects as may hereinafter appear are attained by one embodiment of the invention shown in the accompanying drawings, wherein:

Figure 1 is a side elevational view of the mixing assembly mounted inside of a refrigerated cabinet;

Figure 2 is a perspective view of the mixing assembly with one of the syrup measuring valves partly cut away;

Figure 3 is a front view partly in elevation and partly in cross-section showing the syrup measuring valves in three different positions;

Figure 4 is a view taken on the line 4-4 of Figure 3; and

Figure 5 is a front view of the valve actuating elements and the cams.

Continuing to refer to the drawings and particularly to Figures 2, 3 and 4 where the mixing assembly is shown without reference to its specific mounting as in Figure 1, it will be noted that the assembly comprises a central casting 10, see Figure 3, having three cylindrical chambers 12, 14 and 16 into the top of which are syrup inlets 18, 20 and 22 which, as may be seen in Figures 3 and 4, have a substantial width at the point of opening into the cylindrical chamber and are of considerable length. The purpose of this is to make certain that the measuring valve quickly fills with syrup from the feed lines above. Into the bottom wall of each cylindrical chamber is cut an aperture, these bearing the numbers 24, 26 and 28. These openings approximate in size the cross-sectional area of the cylindrical chamber so that it will be understood that they are capable of draining that chamber by means hereinafter described very quickly.

Means for coupling the syrup inlets 18, 20 and 22

to syrup supply lines is provided by means of a top casting 30, see Figure 2, having tapering collar openings 32, 34 and 36. This top casting and a gasket 38 are maintained in assembled relationship with the main casting 10 by means of screws such as 40. Referring for a moment to Figure 1, it will be noted that in the particular mounting of the mixing assembly there shown, the bottom 42 of a projecting portion of a flash cooler 44 has been perforated by three holes to receive the tapering collar openings 32, 34 and 36. Here, the screws 40 not only hold the top casting 30 to the main casting 10 but with a second gasket 46 between the bottom 42 of the flash cooler 44 and the upper surface of the top casting 30 maintain the whole mixing assembly in assembled relationship with the flash cooler 44. By this arrangement the mixing assembly is disposed at a fairly sharp angle with the horizontal which provides certain benefits in draining the syrup measuring chambers 12, 14 and 16 and in effecting a cleansing action in a mixing chamber 48.

One of the features of this invention is the employment of a single mixing chamber for all of the various syrups. Referring to Figure 2 or 4, this mixing chamber 48 is defined by the bottom of the main casting 10, an open topped casting 50 and a cover member 52. Referring to Figure 3, the main portion of the mixing chamber 48 is narrower than the combined width of the measuring valve chambers 12, 14 and 16 with the result that outwardly directed shoulders 54 and 56 are provided in that portion of the mixing chamber beneath the gate valves 58, 60 and 62 in order to permit the valves to function. On the forward end of the mixing chamber is affixed by any suitable means a plate 64 carrying a delivery spout 66.

Carbonated water is admitted to this mixing chamber through a valve and coupling generally identified by the numeral 68, see Figure 4, wherein a valve member 70 shown in closed position may be moved downwardly by the pin 72 when so urged by the arm 74.

A feature of this invention is the baffle 76. This baffle, as may be seen in Figures 3 and 4, comprises a cylindrical chamber having a small aperture 78 opening forwardly and a larger opening 80 directed toward the rear of the mixing chamber 48. This baffle 76 is disposed directly over the carbonated water valve 68 and is fastened to the base, see Figure 3, by means of screws 82 and 84 passed through the wing members 86 and 88 on the baffle 76. Inasmuch as the carbonated water inlet valve 68 is mounted midway between the two sides of the bottom of the mixing chamber 48, it has been necessary to provide a cut-out portion 90 in the upper part of the baffle 76 in order to permit actuation of the gate valve 60.

The means for opening the carbonated water valve 68, which is normally held in closed position by a spring 92, comprises the arm 74, referring to Figure 4, mounted in a shaft 94 which is disposed in the rear portion of the bottom casting 50 and extends across its entire width, see Figure 3. Affixed to each end of this shaft 94 are forwardly projecting arm members 96 and 98 which at their forward ends are joined by any suitable means to a bar 100. Referring to Figure 2, this bar 100 and the two arm members 96 and 98 form a U-shaped member rigidly fastened to the shaft 94 with the bar 100 disposed beneath the three valve stems 102, 104 and 106 which, as described

hereafter, actuate the various elements within the syrup measuring valves. Moreover, referring to Figure 4, each valve stem such as 104 has its end 108 flattened to receive a complementary driving means on a shaft 110 which is rigidly fastened to a driving member 112. Rotatory movement of the driving member 112, the means for which is not pertinent to this invention, will cause a like rotational movement in the shaft 110 and the valve stem 104. Additionally, a sleeve 114 to which is rigidly fastened a plate 116 disposed adjacent to the driving member 112 has at its inner end a cam 118, which may be seen in Figure 2. This cam 118 will engage the bar 100 on a counter-clockwise movement of the driving member 112. The sleeve 114 and hence the cam 118 is adjustable with reference to the driving member 112 by means of a screw 120 seated in the plate 116 and riding in a slot in the driving member 112. By loosening the screw 120, the plate 116 may be moved in a relative rotational manner to the driving member 112, that is within the confines of the slot in the driving member 112, and by tightening the screw 120 the head of the screw engaging the driving member 112 will draw it tightly to the plate 116.

This sleeve 114 is one of the features of this invention in that it makes possible a ready adjustment for the opening and closing of the carbonated water valve with reference to the opening and closing of the elements within a syrup measuring valve. By means of this sleeve which is on each of the valve stems 102, 104 and 106, the proper relationship may be established between each of the syrup measuring valves and the common carbonated water valves. Thus, referring to Figure 5, the cam 118 is shown in intermediate position with the bar 100 partly pressed down so that the carbonated water valve 68 is partially open. Referring to Figure 3, in the intermediate position, it will be noted that the gate valve 60 is closed. It follows that the flow of carbonated water may be caused to lag the closing of the gate valve 60. By this arrangement, the cam on each syrup measuring valve may be adjusted with respect to the carbonated water valve until each will prepare its special type of beverage properly with the requisite flush of clear carbonated water and then a single driving means may be utilized to provide a common stroke for all of the actuating elements such as 112. Such a single driving means is suggested in Figure 5, by the elements 125.

Describing the central syrup measuring valves having the cylindrical chamber 14 and the valve stem 104 as an example of all three of the measuring valves, which are identical, referring to Figure 4, the valve stem 104 is disposed in a bearing 122 in the rear wall of the main casting 10. At right angles to the valve stem 104 and securely mounted therein are the posts 126 on the outer ends of which are closely held a valve shoe 128 which has its outer surface curved to conform to the inner cylindrical wall of the chamber 14 and is held against the chamber wall by means of the springs 130. That portion of the valve stem 104 which supports the valve shoe 128 has a greater diameter than the forward portion with the result that a shoulder is formed at the point indicated by the numeral 132. Fastened to this shoulder rigidly by any suitable means is a driving plate 134, the front face of which may be seen in Figure 3, where it will be observed that it has an outer extending portion with resulting shoulders 136 and 138. The forward end of the

valve stem 104 is journaled in a cover plate 140 which is fastened to the main casting 10 by any suitable means such as screws 142 and the valve stem 104 is held against forward movement by the spring 144 which is disposed between the driving plate 134 and the inner wall of the cover plate 140.

It will be observed that as a matter of fact the spring 144 does not engage the inner wall of the cover plate 140 but rather the member 145 which is spaced from the cover plate 140 by the gasket 146 and the member 148. The members 145 and 148 are space inserts and are held against rotation by the pin 150. These space inserts are for the purpose of reducing the volume of the measuring chamber 14 in order that there may be introduced into the measuring chamber that quantity of the particular syrup used which will make a desired five ounce beverage.

As for the gate valve 60, there is disposed beneath the opening 26 a gasket 152 and a plate 154 which is anchored in position by swaging the casting 10 at points around its circumference as at 156. This plate 154 has two large segmental openings 158 and 160 which are best seen in the cut away portion of Figure 2 showing the gate valve 62. Centrally of the plate 154 is a slot to pass a valve stem 162 on the lower end of which is a washer 164, a gasket 166, a plate 168 and an S-cotter pin 170 which holds these in assembled relationship with the valve stem 162. The upper part of the valve stem 162 has on each side thereof forwardly projecting brackets 172 and 174, see Figure 3 and particularly Figure 2, where these brackets bear the numbers 173 and 175 for the valve stem in measuring valve chamber 16. The brackets 172 and 174 have notches in their upper edge as 176 and 178, which in Figure 2 bear the numbers 177 and 179. These notches 176 and 178 are in alignment and are engageable by the shoulders 136 and 138 respectively of the plate 134 fastened to the valve stem 104. A spring 180 between the bracket portion of the valve stem 162 and the plate 154 holds the gate valve 60 normally in closed position.

The operation of the gate valve 60 is apparent from examining Figure 3 where the right-hand gate valve 62 is shown in closed position, the central gate valve 60 in intermediate position, and the left-hand gate valve 58 in open position. The respective positions of the other operable members inside a syrup measuring valve are also shown. Thus, in the right-hand syrup measuring valve, the inlet closing shoe 129 corresponding to the shoe 128 clears the syrup inlet 22 so that the chamber 16 may fill with syrup. Under these circumstances the gate valve 62 is closed. This is the normal or unactuated condition of a syrup measuring valve. Upon a counter-clockwise movement of the valve stem to an intermediate position, referring now to the central syrup measuring valve in Figure 3, the shoe 128 completes the closing of the syrup inlet 20 at the moment the shoulder 136 on the plate 134 engages the notch 176 and the bracket 172 of the valve stem 162. At this moment, flow of additional syrup into the measuring valve closes and the gate valve 60 is about to be opened. As the counter-clockwise movement of the valve stem 104 continues, the operable elements occupy the position shown in the left-hand syrup measuring valve. Here the valve shoe corresponding to 128 has advanced furthest to the left while the shoulder corresponding to 136 has depressed the valve stem corresponding to 162

until the gate valve 58 has been unseated so as to provide a substantial aperture through which the syrup may flow into the mixing chamber 48.

Having described the operable elements of a selective mixing assembly embodying the features of applicant's invention, a cycle of operation pointing out various features will now be described. This mixing assembly may be used in association with any selective drink vending machine under which circumstances means will be provided for rotating the driving member such as 112 mounted on the end of the valve stems 102, 104 and 106. Means are indicated in Figure 5. Upon a counter-clockwise motion of one of these valve stems the cam 118, see Figure 4, will engage the bar 100 and open the carbonated water valve 58. Simultaneously, referring to Figure 3, the syrup inlet valve shoe 128 will cut off the supply of syrup and at the moment when this operation is complete, the plate 134 will cause the valve stem 162 to descend, thereby opening the gate valve 60. The contents of the syrup measuring valve thereupon enter the mixing chamber 48 where it is violently agitated and co-mingled with the carbonated water which is flowing backwardly through the opening 80 of the baffle 76 around the entire rear bottom, upper and side walls of the mixing chamber 48 and by a fairly heavy stream flowing through the smaller opening 78 of the baffle 76. The relative amount of carbonated water passing through the different sized holes 78 and 80 may be varied not only by altering the relative size of the holes but changing the slope of the floor of the mixing chamber 48. As will be appreciated by studying the mounting of this mixing assembly shown in Figure 1, gravity tends to increase the amount of water flowing through the opening 78. The ceiling of the baffle 76, against which is directed all of the carbonated water which does not strike the arm 74, may be sloped in various ways to obtain slightly different results.

The provision of syrup mixing chambers having their axes in parallel or side by side alignment with rotatable valve stems has many advantages. The mixing assembly is rendered compact and the valve stems make it possible to provide simple actuating elements which may be passed through an insulated cabinet wall with a minimum clearance.

The use of the cams such as 118 on a plurality of syrup measuring valve controls in cooperation with a single bar 100 makes it possible to dispense with a plurality of syrup mixing chambers and carbonated water valves. Making these cams separately adjustable with respect to the syrup measuring valve control with which each of them is associated, makes it possible to adjust the flow of the single carbonated water valve to each syrup measuring valve. By this arrangement it is possible to use syrups of different viscosities in the syrup measuring valves and yet provide a force having a single stroke which may be keyed into or crushed to any one of the syrup measuring valve controls such as the plate 112 and valve stem 104.

The use of the gate valve such as 60, which has a large opening, is beneficial not only because it permits a quick release of the syrup from the chamber of the syrup measuring valve but also because there is sufficient agitation of the various elements within the syrup measuring valve chamber in conjunction with the large opening to upset the surface tension of the syrup

and make it possible to dispense with breather lines. In applicant's earlier structure which is shown in the co-pending application, Serial No. 301,528, filed October 27, 1939, for a Selective drink vending machine, these breather lines which join a point in the upper part of the syrup measuring valve chamber to the mixing chamber may be seen.

Having thus described by invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A selective beverage mixing assembly comprising a plurality of cylindrical liquid measuring valves having their axes in parallel alignment, an inlet in the upper part and an outlet in the lower part of each liquid measuring valve, a rotatable valve stem mounted in the axis of each measuring valve, a shoe disposed on each valve stem yieldably pressed against the inside wall of its associated liquid measuring valve to open or close the inlet, a gate valve closing the outlet of each liquid measuring valve with a cam on the associated valve stem for opening and closing said gate valve, and means responsive to a rotational movement of the valve stem for adding a quantity of fluid to the contents of its associated liquid measuring valve when the outlet of the latter is opened.

2. A selective beverage mixing assembly comprising a plurality of liquid measuring valves mounted in horizontal alignment, a separate mixing zone adapted to receive the contents of any of said valves upon actuation thereof, a valve for introducing a second liquid to said mixing zone, an actuating element operatively associated with each of said liquid measuring valves for actuation thereof and means responsive to operation of any of said actuating elements for automatically opening said second liquid valve concurrently with the draining of any actuated liquid measuring valve into the mixing zone.

3. A selective beverage mixing assembly comprising a plurality of liquid measuring valves, a separate mixing chamber disposed to receive the contents of any one of said liquid measuring valves, a valve for introducing a second liquid to the mixing chamber, an actuating element operatively associated with each of said liquid measuring valves for actuation thereof, means responsive to the operation of any of said actuating elements for automatically opening the second liquid valve with the emptying of any liquid measuring valve to the mixing chamber, and means for directing the second liquid over substantially all of the interior surfaces of the mixing chamber.

4. A selective beverage mixing assembly comprising a plurality of liquid measuring valves each having a discharge port, a mixing zone in communication with said discharge ports having a sloping floor with walls tapering downwardly to an outlet, a valve controlling the introduction of a second liquid to said mixing zone, an actuating means operatively associated with each of said liquid measuring valves for actuation thereof, means responsive to the operation of any of said actuating means for opening said second liquid valve automatically with the actuation of any one of said liquid measuring valves and means for directing the second liquid in different predetermined directions in said mixing zone, a portion of said liquid being directed toward said outlet and a portion being directed toward said discharge port.

5. A selective beverage mixing assembly comprising a plurality of liquid measuring valves, a single mixing chamber disposed to receive the contents of any one of said liquid measuring valves upon actuation thereof, an actuating element operatively associated with each of said liquid measuring valves for actuation thereof, means responsive to the operation of any of said actuating elements for automatically admitting a charge of a second liquid to the mixing chamber concurrently with the emptying of any liquid measuring valve into the mixing chamber, and means for closing an actuated liquid measuring valve prior to the closing of the second liquid valve.

6. A selective beverage mixing assembly comprising a plurality of liquid measuring valves, a single mixing chamber disposed to receive the contents of any one of said liquid measuring valves upon actuation thereof, an actuating element operatively associated with each of said liquid measuring valves for actuation thereof, means responsive to the operation of any of said actuating elements for admitting a charge of a second liquid to the mixing chamber concurrently with the emptying of any liquid measuring valve into the mixing chamber, and means for closing an actuated liquid measuring valve prior to the closing of the second liquid valve, said means comprising an adjustable cam carried by a means for actuating each liquid measuring valve and being in engageable relationship with means for opening and closing the second liquid fluid valve.

7. A selective beverage mixing assembly comprising a plurality of liquid measuring valves, an actuating element operatively associated with each of said liquid measuring valves for actuation thereof, means for mixing a quantity of a second liquid with the contents of any of the liquid measuring valves, and means for actuating said admixing means responsive to the actuation of any one of said actuating elements, said last named means comprising a single bar engageable by a cam member operatively associated with each of said actuating elements.

8. A selective beverage mixing assembly comprising a plurality of liquid measuring valves wherein the operable elements of each valve are disposed on a rotatable valve stem in the axis of each liquid measuring valve, means for admixing a second liquid to the contents of any one of said liquid measuring valves, and removable means for varying the volume content of each liquid measuring valve, said removable means comprising elements disposed on each valve stem, whereby the mixing assembly may be used for syrups of different strengths.

9. A selective beverage mixing assembly comprising a casting having a plurality of cylindrical chambers opening on one face thereof, inlets in the upper part and outlets in the lower part of each cylindrical chamber, a seat in the closed wall of each cylindrical chamber to journal a rotatable valve stem, a cover plate for the open front of each cylindrical valve chamber having a hole therein for journalling the forward portion of each valve stem, means mounted on each valve stem for opening and closing the associated inlet and outlet, a second casting having an open top attached to the main casting so as to form a

mixing chamber whereby a fluid discharging through one of said outlets will be received by the mixing chamber, a valve for introducing a second liquid into the mixing chamber of the second casting and means responsive to each rotation of the valve stem for opening said second liquid valve.

10. A selective beverage mixing assembly comprising a plurality of liquid measuring valves each having an inlet to receive a charge of liquid and an outlet to discharge a measured quantity of said liquid, a single mixing chamber common to the outlets of all of said valves and disposed to receive the contents of any one of said valves upon actuation thereof, an actuating element operatively associated with each of said valves for actuation thereof, and means responsive to the actuation of any of said actuating elements for admitting a charge of a second liquid to the mixing chamber concurrently with the discharge of the contents of the measuring valve operatively associated with said actuating element.

11. In combination with a drink vending machine, a plurality of liquid measuring valves each having an inlet to receive a charge of liquid and an outlet to discharge a measured quantity of said liquid, and each sloping downwardly in the direction of its outlet, a mixing chamber disposed to receive the contents of any one of said liquid measuring valves upon actuation thereof and sloping in the same general direction as said valves, an actuating element operatively associated with each of said valves for actuation thereof, and means responsive to the actuation of any of said actuating elements for admitting a charge of a second liquid to the mixing chamber concurrently with the discharge of the contents of the measuring valve operatively associated with said actuating element.

12. In a beverage mixing assembly, the combination of a measuring valve adapted to measure and discharge a predetermined volume of liquid, a discharge port associated with said measuring valve through which said measured volume of liquid is discharged, a mixing zone into which the contents of the measuring valve are adapted to be discharged when said valve is actuated, a valve controlling the introduction of a second liquid into said mixing zone and means directing the flow of said second liquid in a plurality of directions, a portion of said second liquid being directed across the mouth of said discharge port of said measuring valve.

13. In a beverage mixing assembly, the combination of a measuring valve adapted to measure and discharge a predetermined volume of liquid, a discharge port associated with said measuring valve through which said measured volume of liquid is discharged, a mixing zone into which the contents of the measuring valve are adapted to be discharged when said valve is actuated, a valve controlling the introduction of a second liquid into said mixing zone and means operative concurrently with the actuation of said measuring valve for automatically opening and closing said second valve in timed relationship with the discharge of the contents of said measuring valve into said mixing zone to cause said second valve to close a short time after the discharge of said liquid from said measuring valve.

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