Feb. 15, 1955 F. WELTY ET AL 2,702,051

DISPENSING AND MIXING VALVE

Filed March 13, 1951 2 Sheets-Sheet 1

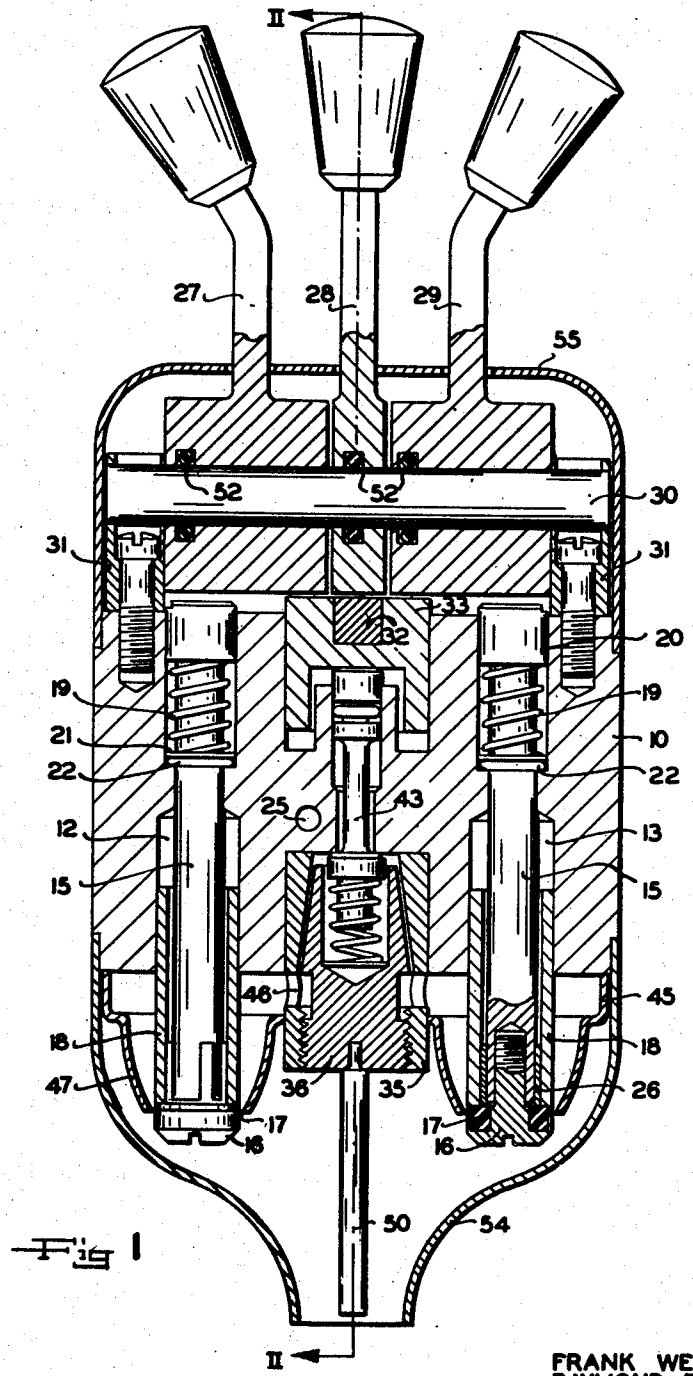


Fig 1

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2 Sheets-Sheet 2

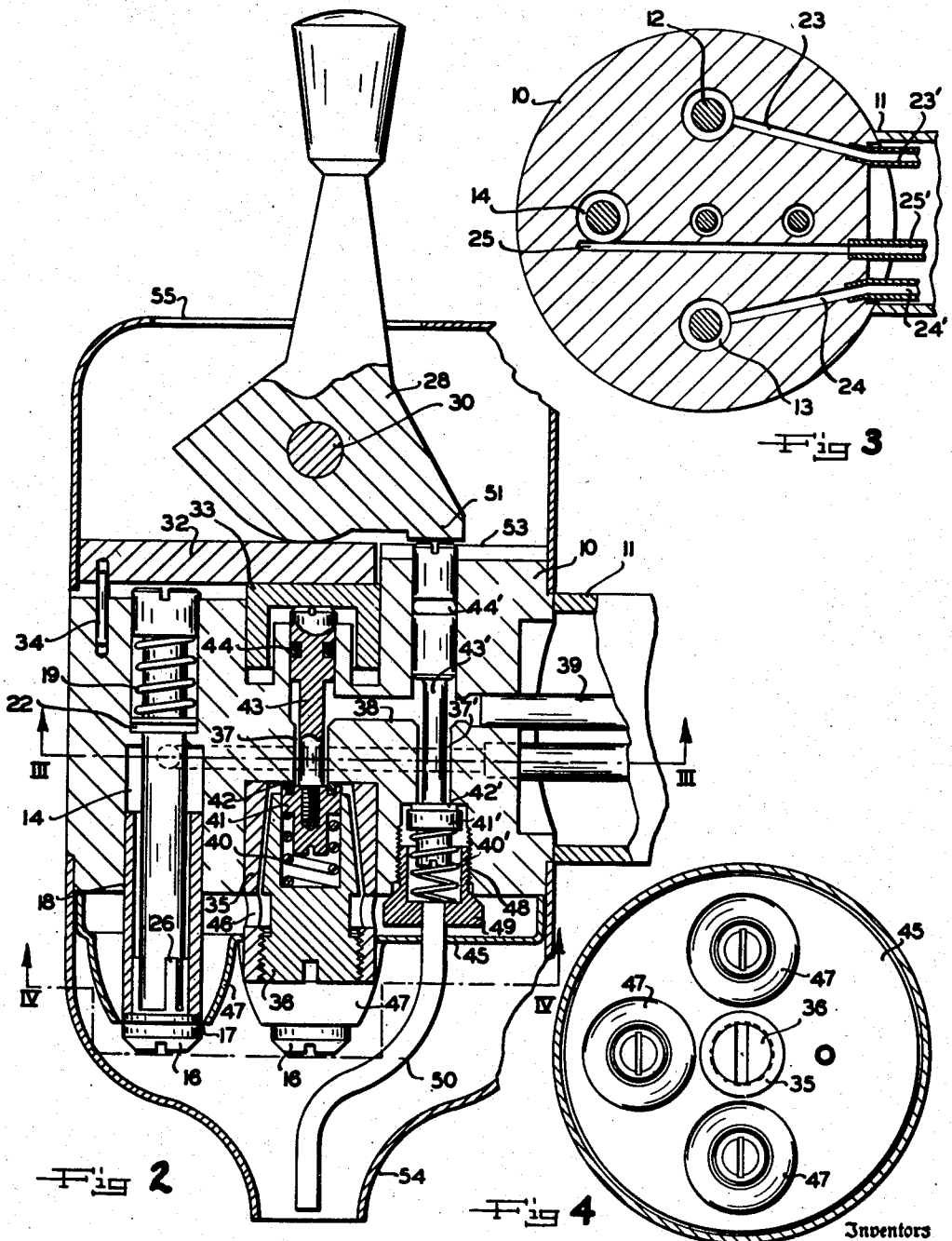


Fig 2

Fig 3

Fig 4

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DISPENSING AND MIXING VALVE

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Application March 13, 1951, Serial No. 215,205

15 Claims. (Cl. 137—628)

This invention relates to the art of dispensing liquids and more particularly to the dispensing of carbonated beverages such as beer and soft drinks, for example.

It is an object of this invention to provide an improved valve of this nature which is operative to mix and dispense the syrup and carbonated water components of soft drinks in a uniform manner and with a minimum loss of carbonation. In the interest of conserving space, and especially since the development of compact and effective carbonating apparatus, it has been found desirable, in many soda fountain and tavern dispensing installations, to utilize the syrup concentrate of the various types of soft drinks along with a single source of carbonated water, rather than the relatively bulky form of the premixed drinks. Heretofore, however, it has been a problem of considerable magnitude to provide a properly mixed drink and yet avoid undue loss of carbonation. As may be understood, the two conditions work directly against each other, since a certain degree of turbulence, necessary to obtain a uniform mix of the components, causes considerable loss of carbonation at the low dispensing pressure. We have therefore provided a valve of such design as to mitigate the counteracting effects of the mixing and decarbonation.

It is another object of this invention to provide an improved valve of this type wherein are combined several independently operated syrup dispensing valves which act cooperatively with a single valve for the control of carbonated water to automatically dispense a properly mixed beverage upon actuation of any of the independently operated syrup valves.

It is yet another object of the invention to provide a valve having the characteristics enumerated above which is compact to the degree that it requires but little more space than that required by a similar valve having provisions for dispensing but a single flavor.

A further object of our invention is the provision of an improved valve of the character described which is of such inherent versatility that minor adaptations will render it capable of dispensing uncarbonated beverages, such as fruit ades or uncarbonated water for example, along with various carbonated beverages from other of its several outlets. It is also an object of the invention to provide a high pressure soda dispensing valve which is operated independently of the syrup valves but by an operator which is utilized for one of said syrup valves.

A still further object of our invention is the inclusion in our valve of an element which is operative to provide a surge trap for carbonated water emitted at relatively high velocity from a restricted pressure reducing passage. Our novel element further provides a somewhat restricted cup by means of which the carbonated water is forced to surround the syrup valves as it is issued from the valve, thus insuring uniform mixing of the components and further insuring that the syrup valves will be thoroughly washed by the water after closing of the valves.

The above and other objects and advantages of the invention will become apparent upon full consideration of the following detailed specification and the accompanying drawings wherein there is disclosed a certain preferred embodiment of the invention.

In the drawings:

Figure 1 is a front view, in axial section, of a dispensing and mixing valve constructed in accordance with the principles of our invention;

Figure 2 is a vertical section of our valve taken along line II—II of Figure 1;

Figure 3 is a horizontal section taken along line III—III of Figure 2; and

Figure 4 is a horizontal section taken along line IV—IV of Figure 2.

Referring now to the drawings, and in particular to Figures 1 and 2 thereof, the reference numeral **10** denotes a generally cylindrical block which forms the main or body portion of our valve. Rigidly secured to the body **10** by welding or other suitable means, not shown, is a tubular support **11** which extends outwardly of the body **10** in normal relation to the axis thereof. The support **11** is normally provided with means, not shown, by which it may be secured to a dispensing panel or cooling tank as may be understood. In the embodiment shown we have provided three vertical bores **12, 13** and **14** which are spaced as shown in Figure 3. The bores **12–14** are enlarged at their upper and lower end portions and are reduced centrally as shown in Figures 1 and 2. Slidably retained in each of the said bores **12–14** are plungers **15** each of which is bored and tapped at its lower end to receive a cap screw **16**. A resilient washer **17** is carried in a recess provided therefor in each of the said cap screws **16**. The washers **17** extend outwardly of the plungers **15** and are adapted to act upwardly to provide a liquid seal as will become apparent.

In accordance with the principles of the invention, the syrup dispensing valves of our apparatus, which comprise the bores **12–14** and the plungers **15**, must discharge the syrup at a point considerably below the lower end of the body member **10**. To accomplish this we provide tubular extensions **18** which are adapted to be rigidly retained in the lower enlarged portions of the bores **12–14** and which depend downwardly therefrom in spaced concentric relation to the plungers **15**. The lower ends of the tubular extensions **18** are adapted to seat the resilient washers **17** to thus, in cooperation therewith, form a liquid-tight seal. In order to provide a normally closed valve we utilize compressible coil springs **19** which are positioned over the plungers **15** and act upon the enlarged heads **20** thereof to yieldably urge the said plungers upwardly. Also acted upon by the springs **19**, at their lower ends, are metal washers **21** and resilient O ring washers **22** which prevent the upward passage of syrup into the upper enlarged portions of the bores **12–14**. As may be observed from Figure 3 the syrup is supplied to the lower enlarged portions of the bores **12–14** by means of horizontal bores **23, 24** and **25** respectively which are connected to conduits **23', 24'** and **25'** respectively. The said conduits **23'–25'** communicate in the conventional manner with pressurized sources of syrup flavoring, not shown.

Inasmuch as the relatively short length of the reduced central portion of the bores **12–14** is insufficient to provide proper guidance for the plungers **15**, we have devised insertable guide pieces **26** which are secured to the bottom of the plungers **15** by means of the cap screws **16** and which have a plurality of circumferentially spaced upwardly extending legs. The upwardly extending leg portions of the guide pieces **26** are so dimensioned to slidably retain the plungers **15** in spaced concentric relation to the tubular extensions **18** and yet provide for the relatively unrestricted flow of syrup from the valves.

To open the normally closed syrup valves it is of course necessary to force the plungers downwardly against the action of the springs **19**. To this end we provide operating levers **27, 28** and **29** each of which is adapted to actuate a separate plunger **15**. As shown, the levers **27–29** are pivotally mounted on a rod **30** which is secured at each end by lugs **31** fastened to and extending upwardly from the body **10** in diametrically opposed relation. The levers **27** and **29** each have cam surfaces such as is shown at the lower portion of the lever **28**. The cam surfaces of levers **27** and **29** overlie the plungers **15** which are retained in bores **12** and **13** respectively and, as may be observed, drawing the upper ends of the said levers forwardly will cause the above mentioned plungers to be forced downwardly to thus separate the washers **17** from their seats—the tubular extensions **18**. It is, of course, understood that the levers **27** and **29** may be operated

independently of each other and of the center lever 28, and that each of the plungers 15 is thus operated independently of the others.

For reasons which will become apparent upon further consideration of this specification the plunger 15 which is retained in bore 14 is positioned substantially out of line with respect to the axis of the rod 30 which serves as a pivotal mounting for the operation levers 27—29. Due to the aforesaid positioning the actuating cam surface of the operator 28 cannot act directly upon the plunger retained in the bore 14. To overcome this we have provided a short bar 32 which is operative to move vertically while maintaining a horizontal disposition. The inner end of the bar 32 is retained in a recess provided therefor in an inverted cup member 33 which is slidably received in the body member 10 in substantially concentric relation thereto. As shown in Figure 2, forward movement of the operating lever 28 will cause the bar 32 and thus the cup member 33 to move vertically downward. As may be observed, the bar 32 may move freely for a short distance whereupon it comes into contact with the plunger 15 over which it is positioned. After the said contact has been made the plunger moves downwardly with the bar 32 into the open position.

To insure proper guidance of the bar 32 in its vertical movement we provide a short pin 34 which is normally retained in a mating bore provided in the outer portion of the bar 32.

In accordance with the principles of the invention we have provided a single carbonated-water valve which may be operated by each of the three levers 27–29 so that carbonated water will be automatically dispensed along with syrup flavoring. The said carbonated water valve includes an internally tapered tubular insert 35 which is rigidly retained in the lower portion of the body 10 in centrally disposed relation thereto. The lower end of the insert 35 is threaded internally to receive a tapered plug 36. As shown in the drawings, a small clearance is provided between the two parts 35 and 36 to form a relatively restricted passage through which the carbonated water must flow to be discharged. As is well known to the art such restricted passage is provided as a means of reducing the necessarily high pressure of the carbonated water so that it may be readily dispensed without undue loss of carbonation. In the interest of obtaining optimum performance under conditions which are likely to vary in each particular installation, the restricted passage should be accurately adjustable. According to principles disclosed in our copending application, Ser. No. 97,409, filed June 6, 1949, now Patent No. 2,653,055, the use of a tapered plug having a screw-threaded axial adjustment provides a restricted passage having such accurate regulation.

Communicating between the bores provided for the reception of the tubular insert 35 and the inverted cup member 33 is a relatively small diametered bore 37 which is in communication with a source of carbonated water, not shown, by means of an intersecting bore 38 and conduit 39. As may be observed, a vertical bore has been provided in the upper portion of the tapered plug 36 for the reception of a compressible coil spring 40. A valving piston 41, carrying a resilient washer 42 at its upper end, is slidably received in the said bore and is urged upwardly by said spring 40 into contact with the horizontal shoulder formed at the junction of the bore 37 with that provided for the reception of the tubular insert 35. As means of operating the valving piston 41 we provide an actuating rod 43 which is screw-threadedly connected to the piston 41 and which extends upwardly through the bore 37 in spaced concentric relation thereto. The upper end of the actuating rod 43 is enlarged for slidable contact with the bore 37 and is provided with an annular recess for the reception of an O ring washer 44, the purpose of the washer 44 being, of course, to prevent the passage of the carbonated water upwardly past the enlarged portion of the actuating rod 43. As shown, the upper end portion of the rod 43 projects above the body member 10, and supported thereon is the inverted cup member 33. It will be noted, then, that downward movement of the cup member 33 will cause the opening of the valve to permit the flow of the carbonated water. It will be further noted that the cam surface of each of the operating levers 27–29 at least partially overlies the cup member 33 so that upon actuation of any of the said levers 27–29 carbonated water as well as the particular choice of syrup will be caused to flow. Experimental determinations have shown the proper size of valve opening to be used to obtain the proper mixture of the components and this, of course, must be strictly adhered to if a drink of the correct proportions is to be obtained.

Secured to the lower end of the body 10 so as to form a fluid-tight seal therewith is a liquid trap 45, the function of which is to arrest the flow of carbonated water issuing from a plurality of radical apertures 46 provided in the tubular insert 35. As will be understood the carbonated water emerging from the restricted passage formed by the members 35 and 36 will be moving at a relatively high velocity and will be at substantially atomspheric pressures—conditions which are very conducive to the loss of carbonation. By the provision of an enlarged liquid trap at the exit of the restricted passage we provide means of reducing the velocity of the stream and of preventing excessive loss of carbonation by causing the stream to smother itself in the enclosure.

Depending integrally from liquid trap 45 are conical drip cups 47 which are positioned about each of the syrup valves as shown, with the lower or outlet ends of the tubular extension 18. As may be observed, the conical drip cups 47 provide the only outlet for carbonated water issuing from the radial apertures 46 of the tubular insert 35 so that the water will be discharged at the same point as the syrup to thus obtain thorough intermixing of the components. As regards the mixing of the fluids, particular attention should be focused upon the small clearance provided between the lower end of the drip cups 47 and the washers 17 of the syrup valves, and to the relative positioning of the lower end of the drip cup 47 with respect to the syrup outlet as defined by the lower end of the tubular extension and the upper surface of the washer 17. By providing a small clearance between the parts 47 and 17 we insure a relatively restricted flow of water about a closed valve while permitting a greater flow about an opened valve. As will be noted, the opening of a syrup valve creates a larger clearance through which the water may pass. Thus uniform mixing of the liquids is furthered by having a major portion of the carbonated water pass around that particular valve which is discharging syrup. In addition, it will be noted that the inward tapering of the conical cups 47 provides a certain degree of impingement of the water upon the outwardly moving syrup. This action further insures uniform mixing of the fluids. There is little loss of carbonation at this point, however, since the water is moving at a relatively slow gravity flow.

A further effect of restricted opening between the cup 47 and syrup valve is that water is retained in the cup for a short time after the operating lever has been returned to the upright position to close the syrup and water valves. This feature provides that the syrup which would ordinarily be retained around the valve opening is dissolved and washed away by the trapped water, rather than left to congeal and impair the operation of the valve. To further the washing action we provide that the valve controlling the flow of carbonated water be opened slightly before, and remain open for a short time after, the syrup valve. This is easily accomplished by providing for a certain degree of lost motion between the operating levers and their respective syrup valves, while having substantially none between the said levers and the water valve. This construction should be apparent from Figures 1 and 2 which show a substantial clearance above each of the plungers 15.

In the embodiment of our invention shown herein we have incorporated a means of discharging carbonated water at high velocity, such as would be desired in the preparation of sodas and phosphates, for example. The valving elements of this last mentioned means are in general similar to those of the previously described water valve and the corresponding parts will therefore be referred to by corresponding primed numerals without further description. The vertical bore 37', as shown, intersects the bore 38 to provide communication with the supply of carbonated water, not shown, via the conduit 39. A seat for the washer 42' is provided by the upper end face of a vertical bore 48 at the point where the said bore 48 communicates with the vertical bore 37'. Threadedly engaging the bore 48 is a fitting 49 which has a bore therein for the reception of the coil spring 40',

and which carries at its lower end a discharge tube **50**. As should be apparent, opening of the valve by downward movement of the rod **43'** will allow the discharge of relatively high pressure carbonated water through the tube **50**. To accomplish downward movement of the rod **43'** we provide a foot **51** at the lower and rearward portion of the operating lever **28**. The foot **51** is adapted to overlie the upwardly extending portion of the rod **43'** so that rearward movement of the lever **28** will cause downward movement and consequent opening of the valve. It will be noted that the returning force of the spring **40'** acts at a considerable distance from the pivotal center of the operating lever **28** and is therefore effective, upon release of the lever to return it to its normal position and close the valve.

It should be noted that while the restoring force applied to the rod **43'** is operative to return the lever **28** to the normal or upright position, the restoring forces of the various syrup valves and the centrally located water valve act directly through the center of the pivot rod **30** and therefore have no tendency of return the levers **27–29** to the normal from the forward position. This provision has been made purposely since this type of operation has been found to be most satisfactory in most instances. To further insure that the levers **27–29** do not restore themselves or otherwise move on their own accord we provide each with a resilient O ring washer **52** which is operative to increase the friction between the said levers and the stationary pivot rod **30**. It will be understood, of course, that self-restoring characteristics may be incorporated by merely altering the cam surfaces to the extent that the restoring forces of the valves are applied at a point forward of the pivot point of the levers.

To provide an upright reference position for each of the levers to which they may be returned when closing the valves, each of the levers **27** and **29** has been provided with a foot similar to the foot **51** of the lever **28**. The upper surface **53** of the body **10** then serves as a positive stop for the return of levers **27** and **29**. The lever **28** will of course be stopped upon its foot **51** contacting the upper end of the rod **43**, although sufficient additional pressure will permit further movement of this lever to open the high pressure water valve, as explained.

To complete the assembly and to enclose the principal parts of the dispensing valve for the sake of outward appearance we provide a discharge funnel **54** which has a single central outlet for the discharge of liquid from the various valves. A cap **55** encloses the upper end of the assembly and houses the levers **27–29**. Suitable slots are, of course, provided in the cap **55** to permit movement of the levers as required.

From the foregoing disclosure it should be apparent that we have provided apparatus for the dispensing of carbonated beverages and the like embodying several novel principles of operation and construction which render it desirable from the standpoint of manufacture as well as that of use. We have in the embodiment herein described incorporated five individual valves into a compact and practical structure, the construction of which necessitates only elementary machining operations.

In our valve we have incorporated numerous features deemed desirable by consumers of such devices. Further, our novel liquid trap element with its integral drip cups insures proper delivery of the carbonated water with a minimum loss of carbonation. Into the drip cups themselves we have incorporated features which insure proper and uniform mixing of the constituents by causing the major portion of the carbonated water to pass around the valve from which syrup flavoring is being issued while substantially limiting the flow of water around the closed valves. We have also, by means of the aforementioned drip cups, provided a unit which is self-cleaning in operation. The relatively restricted passage between the drips cups and the closed syrup valves causes the retention of a small amount of the carbonated water after the closing of the valves. The thus retained water passes slowly out of the cup, and in doing so dissolves and washes away any syrup which may have been retained at the valve opening. The self washing action is furthered by providing that the water valve open before and close after the syrup valves. It should be understood that by incorporating the last mentioned features we substantially eliminate undesirable crosscontamination of the various flavors and insure a "pure" drink.

A further advantage of our valve is its versatility. As mentioned previously, minor adaptations may be made in the structure to permit the dispensation of plain water or other uncarbonated beverages such as fruit ades, for example. This may be accomplished by merely recessing the actuating cam surface of one or both of the extreme operating levers **27** and/or **28** so that it will not bear upon the inverted cup member **33**. Thus conduits **24'** and/or **23'** may be connected to any suitable pressurized source of plain water or other beverage to permit the same to be dispensed free of carbonation.

The incorporation of the short bar **32** as a means of actuating a remotely positioned syrup valve is a novel principle of operation by virtue of which our valve may be constructed in such a compact and self contained manner. As may be understood, this same principle may be utilized in producing a similar valve having four, five, or more syrup flavors as may be desired in some cases.

It should be understood, however, that the embodiment of our invention herein shown and specifically described is illustrative only as many changes may be made in the specific structure without departing from the spirit of the invention. Reference should therefore be had to the appended claims in determining the scope of the invention.

We claim:

1. In a valve assembly for mixing and dispensing carbonated beverages the combination of a body member having a centrally disposed outlet for low pressure carbonated water and a plurality of syrup outlets positioned in spaced relation mutually and with respect to said carbonated water outlet, a cup-like member secured to the lower end of said body member in fluid tight relation therewith and having therein an enlarged chamber for the entrapment of carbonated water issuing from said carbonated water valve, conical drip cups, one for each of said syrup outlets, depending integrally from said cup-like member and surrounding said syrup outlets in closely spaced concentric relation, said drip cups providing the only openings from said chamber for the discharge of carbonated water, the arrangement being such that a relatively restricted water outlet is formed between said drip cups and said syrup outlets whereby said syrup outlets are washed during each operation of the valve.

2. In a valve assembly for mixing and dispensing carbonated beverages the combination of a body member having a vertical bore therethrough with an enlargement in its lower end portion providing an internal shoulder, a sleeve having a tapered inner surface partially received in said enlarged portion of said bore, said sleeve having a plurality of circumferentially spaced openings in its side wall below said tapered surface and being internally threaded below said openings, a tapered plug screw threadedly received in said sleeve, a centrally disposed recess in the upper portion of said plug, a valve having a sealing member vertically movable in said bore and adapted to be brought into and out of engagement with said shoulder and having an upwardly extending operating stem, a valve return spring received in said recess in said plug, and means mounted on the upper end portion of said body member to move said stem downwardly.

3. Apparatus according to claim 2 further including means at the bottom end of said body member to provide a liquid trap to receive the liquid passing between the upper portions of said sleeve and plug and outwardly through said circumferentially spaced openings, and said body member having an inlet port communicating with the upper end portion of said bore.

4. In an assembly for mixing and dispensing carbonated beverages the combination of a body member having a plurality of valves for controlling the flow of flavoring syrup; an operating lever for each of said valves pivotally mounted on said body member and operative upon forward movement to cause said valves to open, each of said operating levers having a foot positioned outwardly of its pivotal center adapted to limit the rearward motion of said levers; a valve for controlling the flow of low velocity carbonated water, said last-mentioned valve being operable by each and any of said operating levers; and a valve for controlling the flow of high velocity carbonated water, said last mentioned valve comprising an operating stem adapted for vertical opening and closing movement in a bore in said body member, said operating stem adapted to underlie the foot of one of said operating levers and to be moved downwardly thereby, yieldable means opera-

tive to urge said valve upwardly into the closed position, the arrangement being such that the rearward movement of said last-mentioned operating lever is normally limited by contact of its foot with the upper end of said operating stem, but such that sufficient force to overcome the action of said yieldable means will cause continued rearward movement of the said lever to open said last-mentioned valve.

5. In a valve assembly for mixing and dispensing carbonated beverages the combination of a body member having a plurality of inlet ports and a valve for each of said ports, each of said valves having an operating member positioned in the upper end of said body member and movable vertically therein, means at the lower end of said body member to collect and discharge liquid issuing from any and all of said valves, a plurality of operating levers pivotally mounted at the upper end of said body member and having common driving engagement with one of said operating members and individual driving engagement with the other of said operating members, a valve for the discharge of carbonated water at high velocity, said valve comprising an operating stem adapted to move vertically in a bore in said body member, said bore being enlarged at its lower end portion to provide an internal shoulder, a sealing member carried at the lower end of said operating stem and operable to move into and out of contact with said internal shoulder to control the flow of carbonated water through the said bore, an internally bored fitting adapted to threadedly engage the enlarged lower portion of said first-mentioned bore, a discharge tube carried by said fitting, and a spring retained by said fitting and adapted to act upwardly upon said sealing member to normally maintain the same in contact with said internal shoulder; and means to control the operation of said last mentioned valve comprising one of said operating levers, said one of said levers having a foot positioned outwardly of its pivotal center and adapted to overlie the upper end of said operating stem, the arrangement being such that movement of the said operating lever in one direction will cause said foot, and consequently said operating stem, to move downwardly against the action of said spring.

6. In a valve assembly for dispensing a beverage the combination of a body member having first and second valves for controlling the flow of said beverage through said assembly, said body member having an inlet passage connecting said first and second valves with a source of beverage, an operating lever for said first valve pivotally mounted on said body member and operative upon forward pivotal movement to cause said first valve to open, said lever having abutment means positioned outwardly of its pivotal center to engage said second valve, means to yieldably urge said second valve into a closed position whereby said second valve and said abutment means normally limit the rearward pivotal movement of said lever, said abutment means being further operative to move said second valve into an open position upon continued rearward pivotal movement of said lever, beverage outlets for each of said valves, and flow restricting means positioned between one of said valves and the outlet therefor.

7. Apparatus according to claim 6 further characterized by beverage entrapping means secured to said body member for receiving beverage flowing from said restricting means, said beverage entrapping means comprising said last mentioned outlet.

8. Apparatus according to claim 6 further characterized by said body member having beverage outlet passages therein leading from each of said valves to an end of said body member, one of said outlet passages including said flow restricting means, beverage entrapping means secured to said body member at said end in communication with said one of said outlet passages, and a jet tube communicating with the other of said outlet passages and passing through said beverage entrapping means, said tube comprising the outlet for the other of said valves, said entrapping means comprising the outlet for said one of said valves.

9. In a valve assembly for dispensing beverages the combination of a body member having first and second valves for controlling the flow of beverages through said assembly, said body member having inlet and outlet passages communicating with each of said valves, an operating lever for said first valve pivotally mounted on said body member and operative upon forward pivotal movement to cause said first valve to open, said lever having abutment means positioned outwardly of its pivotal center to engage said second valve, means to yieldably urge said second valve into a closed position whereby said second valve and said abutment means normally limit the rearward pivotal movement of said lever, said abutment means being further operative to move said second valve into an open position upon continued rearward pivotal movement of said lever.

10. In a valve assembly for mixing and dispensing a plurality of beverages the combination of a body member, a plurality of spaced syrup valves in said body member, said syrup valves having outlet openings spaced outwardly of one end of said body member, valve means in said body member for controlling the flow of a base liquid to be dispensed with said flavoring syrups, outlet passage means for said valve means including flow restricting means and an outlet opening adjacent said one end of said body member, and a cup-shaped member secured to said one end of said body member in communication with said outlet opening whereby to form a liquid entrapping chamber for base liquid issuing from said outlet opening, said cup-shaped member having a plurality of outlet openings therein each adjacent an outlet opening of a syrup valve and arranged substantially concentrically therewith whereby to provide a partially restricted annular outlet for base liquid about the outlet opening of each of said syrup valves.

11. Apparatus according to claim 10 further characterized by the outlet openings in said cup-shaped member comprising integrally depending conical drip cups.

12. Apparatus according to claim 10 further characterized by said syrup valves being normally closed and comprising depending tubular members and operating stems movable longitudinally in said tubular members and having enlarged head portions for engaging the annular end surfaces of said tubular members to control the flow of syrup therethrough, said enlarged head portions being normally positioned substantially within said openings whereby to partially restrict the same and being movable outwardly of said openings to simultaneously open said syrup valves and enlarge said openings, the arrangement being such that when one of said syrup valves is opened the flow of base liquid is greater through the opening about said one of said syrup valves than through the opening about any of the other of said syrup valves.

13. In a valve assembly for mixing and dispensing carbonated beverages the combination of a body member having a vertical bore therethrough, a valve plunger slidable in said bore, said bore including a tapered outwardly diverging lower portion, a tapered plug positioned in said lower portion below said plunger, a spring acting on said plunger and said tapered plug to urge said plunger in an upward direction, lever means on said body member to urge said plunger in a downward direction, valve means carried by said plunger and arranged to be closed upon upward movement thereof, water inlet passage means including said valve means leading into the tapered portion of said bore, and water outlet means, said tapered bore and plug constituting a restricted passage for water positioned between said valve and outlet means.

14. Apparatus according to claim 13 further characterized by said tapered plug having a cylindrical recess in its upper end, said spring being received in said recess.

15. Apparatus according to claim 13 further characterized by said valve assembly including a plurality of syrup valves positioned in spaced relation to said water valve, and said water outlet means comprising passage means leading from said restricted passage toward said plurality of syrup valves and means providing separate water outlet openings about each of said syrup valves.

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