Our invention relates to a new and useful apparatus for the mixing and dispensing of variously flavored beverages of the carbonated water type, known as "soda" or "soda water"; and it relates more particularly to apparatus of the character stated, adapted to be controlled by means of a coin of a particular denomination; whereby the mixed beverage may be sold as well as dispensed through mechanical means, without the aid or attendance of an operator, clerk or salesman.

Our invention relates more particularly to the "automat" type of beverage dispensing device, wherein the apparatus is normally locked in an inoperative position and may be released therefrom so as to permit the operation thereof only by the insertion of a particular denomination coin into a suitable coin receiving aperture.

Our invention further relates to a mixing device adapted to mix one or several flavors or syrups with a diluent such as carbonated water; suitable means for automatically pre-measuring both the flavor or syrup as well as the carbonated water for each portion of beverage to be discharged; and a coin controlled mechanism for first releasing the flavor or syrup measuring and dispensing devices, and thereafter to release the carbonated water dispensing device so as to permit the mixing of the two liquids to form the completed beverage.

Our invention further relates to an individual drinking receptacle dispensing device, in novel combination with such beverage mixing and dispensing devices, and also controlled by the coin controlling mechanisms; adapted automatically to supply a new and unused individual paper or other cup, beneath and in vertical alignment with the discharging nozzle at the beginning of each operation, before the liquid has been discharged.

Our invention also relates to a novel water carbonating or charging device, in novel combination with such beverage mixing, dispensing mechanism and vending devices mentioned hereinbefore, adapted continuously to carbonate a supply of fresh water, and to keep the same on tap at the mixing device, in pre-measured quantities, for each discharge of beverage.

With the above ends in view our invention consists of a novel water carbonating or charging battery or unit, of the general type disclosed in our co-pending application Serial No. 725,986, filed on July 25th, 1914, adapted to receive at one end thereof, an intermittent supply of fresh water, to carbonate the same through several stages of carbonation in the successive absorption chambers thereof, and to measure predetermined quantities or portions of completely carbonated water.

Our invention further consists of a novel control valve or "draft arm" and a mixing chamber co-operating therewith, adapted to control the flow of water and the carbonating gas from and to the charging or carbonating battery or unit, to receive within the mixing chamber a suitable quantity of flavoring liquid or other liquid ingredient of the beverage, to discharge into said mixing chamber containing the flavoring liquid, a premeasured quantity of carbonated water, to mix the same with the flavoring liquid and to discharge the mixture through a suitable discharge nozzle into a cup or other receptacle positioned beneath the latter.

Our invention further consists of a series of novel syrup or flavor measuring and ejecting devices, adapted to receive a measured quantity of syrup or other liquid and then to eject and force the same into the above mentioned carbonating mixing chamber by the manual operation of one of a corresponding series of plungers.

Our invention further consists of a coin controlling device in combination with such measuring and dispensing devices adapted to receive a coin; to deposit and position the same in operative relation with respect to the syrup measuring and ejecting device so as to make such device operative; to release said coin from said position only after said syrup measuring and ejecting device has been moved through a complete cycle of operations, namely after such device has passed through a forward and reverse stroke; to drop said coin thereafter into a second coin controlling device adapted to release thereby, from its locked position, the control valve or "draft arm" mentioned heretofore; and finally to discharge said coin into a receiving or collecting receptacle, after the "draft arm" has been moved through a full cycle of operations with said coin.

Our invention further consists of a drinking cup or receptacle supply and dispensing device, in novel combination with such beverage...
age mixing and dispensing devices, controlled and operated through the second coin operated device, namely the "draft arm", and adapted to discharge a new and unused receptacle, such as a paper cup, at the beginning of each stroke of the "draft arm" so as to deposit the same, through suitable guiding means beneath the discharge nozzle or faucet of the mixing valve onto a serving platform, from which the cup may be removed by the purchaser of the beverage only after the same has been filled or substantially filled with the beverage.

Our invention further consists of a novel serving platform adapted to receive an empty drinking cup or receptacle and to retain such empty receptacle inaccessible to the purchaser until the same has been filled, or substantially filled, with the mixed beverage dispensed and ready to be sold.

For the purpose of illustrating our invention, we have shown in the accompanying drawings, forms thereof which are at present preferred by us, since they have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentality of which our invention consists can be variously arranged and organized and that our invention is not limited to the precise arrangement and organization of these instrumentalties as herein shown and described.

Referring to the drawings, in which like reference characters indicate like parts:

Fig. 1 represents a rear elevational view of a novel coin controlled mixed beverage dispensing apparatus, embodying our invention.

Fig. 2 represents a section on line 2—2 of Fig. 1 on an enlarged scale.

Fig. 3 represents a perspective view of a coin retaining and gaging plate.

Fig. 4 represents a vertical section of our novel water carbonating or charging battery or unit.

Fig. 5 represents a section on line 5—5 of Fig. 2.

Fig. 6 represents a section on line 6—6 of Fig. 2.

Fig. 7 represents a front elevation of the coin controlled draft arm latch.

Fig. 8 represents a top plan view of the same, with the coin box in section.

Fig. 9 represents a section on line 9—9 of Fig. 10.

Fig. 10 represents a section on line 10—10 of Fig. 9.

Fig. 11 represents elevational views of the faces of the stationary and movable portions respectively, of our novel mixing valve, in the closed or "off" position of the valve.

Fig. 12 represents elevational views of the faces of the stationary and movable portions respectively of our novel mixing valve, in the open or discharging position of the same.

Fig. 13 represents a section on line 13—13 of Fig. 11, showing the movable or disc portion of our novel mixing valve.

Fig. 14 represents a top plan view of the movable or disc portion of the mixing valve, showing the arrangement of passageways and discharging apertures in the valve stem.

Fig. 15 represents a section on line 15—15 of Fig. 11.

Fig. 16 represents a section on line 16—16 of Fig. 11.

Referring to the drawings there is shown in Fig. 1, in the rear elevation, a series of syrup or flavor liquid reservoirs 1, 2, 3 and 4, which may be increased to any desired number, within practical limits of the apparatus, each containing one or a series of different flavoring liquids or other liquid ingredients of the beverage to be dispensed. Each of the syrup reservoirs is connected by means of a suitable pipe connection 5, 6, 7 and 8 respectively, to a corresponding series of measuring and ejecting pumps 9, 10, 11 and 12, one of which is shown in detailed section in Fig. 2. The flavoring liquid or other liquid ingredient normally fills the pipes 5, 6 and 7 or in the particular illustration shown in Figs. 2 and 3, the pipe 6; and also fills the corresponding ejector chamber 13 to which it is connected through the ball check valve 14, (Fig. 2) which permits the flow of the liquid towards the chamber 13 and prevents any reversal of the flow, by the seating of the check ball 15, on the valve seat 16 of said check valve. The liquid contained in the tank also fills therefore the pipe or passageway 18 in the particular illustration shown in Fig. 2, in a manner similar to passageways 17, 19 and 20 illustrated in Fig. 1. Each of the passageways 17, 18, 19 and 20 terminate in a corresponding series of check valve devices 21, 22, 23 and 24 shown in Figs. 1, 2, 9 and 10, which are connected to, and carried by, the wall 25 of the mixing chamber 26 of our novel mixing and dispensing valve mechanism 27. Each of the check valve devices 21, 22, 23 and 24 is provided with a check ball or a suitable valve plate 28, which is normally held seated against the valve seat 29, in a yieldable manner, by means of the helical compression spring 30 surrounding the valve stem 31, and interposed between the upper plate 32 carried by said valve stem 31, and the stationary spring seat portion 33 of such check valve devices. Thus the weight of the flavor syrup or other liquid ingredient which normally fills the pipe 6 and chamber 13 as well as the passageway 18, is retained within said passageways by means of the yieldable valve ball 28 held against the valve seat 29 in a yieldable manner by means of the spring 30 or other suitable tensioning means. Whenever the piston 34 of the ejector pump 10 is forced forward in the direction of the arrow 35, the check ball 15 being thereby forced up against the valve seat 16, causes the piston 34 to
force a quantity of flavoring liquid through the yieldable check device 22 into the mixing chamber 26. The quantity of flavoring liquid thus discharged or forced into the mixing chamber 26 by the piston 24, is equal therefore to the volume displacement of the piston 34, which in practice is substantially uniform, since the stroke of the piston is the same at all times.

In order to retain the measured quantity of the flavoring liquid within the mixing chamber 26, after it has been discharged thereinto, and before it is mixed with a suitable quantity of carbonated water, there is provided a check ball valve 36, seated on the valve seat 37 by gravity, the ball 38 being of such weight that it will not be disturbed or removed from said valve seat 37 by the entrance or discharge of the flavoring liquid into the mixing chamber 26, and yet of such weight and bulk that it will be readily removed from the valve seat by the force of the carbonated water as it is projected into the mixing chamber 26.

In the rear of the mixing chamber 26, integral with the wall 25 thereof, is the stationary portion 28 of the mixing valve 27, into which are led, a series of five pipes 41, 42, 43, 44 and 45, which interconnect the corresponding series of stationary port holes 51, 52, 53, 54 and 55 in the face 39 of the stationary portion 38 of the valve, with the various elements of the carbonating apparatus. Thus the port 51 of the stationary portion of the valve is permanently connected, through the pipe 41, with the storage tank 80 containing a supply of compressed carbonating gas or carbon dioxide. The port 52 is connected through the pipe 42 to the discharge end of the charging or carbonating battery 81. The port 53 is permanently connected, through the pipe 43, with the receiving end of the charging or carbonating battery 81. The port 54, through the pipe 44, is connected with the top of the measuring chamber 82; and lastly the port 55 is connected through the pipe 45, to the manifold 83 of the charging or carbonating battery 81, at a point between the measuring chamber 82 and the series of absorption chambers 84, 85 and 86.

The movable or disc portion 87 of the valve 27, revolved by means of the valve stem 88, and held in operative contact with the face 39 of the stationary portion 38 of said valve, is provided on its contacting face 39 with a number of port holes 61 to 67 inclusive so located with respect to the port holes 51 to 55 inclusive in the stationary portion 38 of the valve 27, and so provided with passageways interconnecting the various port holes 61 to 67 inclusive in said disc or movable portion 87, as to properly and differently connect up the various pipes 41 to 45 inclusive and the mixing chamber 26, in two different angular positions of said disc, namely in the closed and in the open position thereof respectively. The closed position of the valve shown in Fig. 11, and the open position thereof shown in Fig. 12, are approximately 45 degrees apart, in the direction indicated by the arrow 30 in Fig. 12. Accordingly the ports 61 and 65 are interconnected by the passageway 71 shown in Figs. 11, 12 and 13 particularly; the ports 62 and 64 are interconnected by means of the passageways 72 as shown in particular in Figs. 11, 12 and 15; the port 64 passes straight through the disc 87 through the passageway 73, directly into the mixing chamber 26; while the ports 65 and 66 are connected by means of the passageways 73 and 75 respectively through an axial passageway 78 in the stem 86 of the valve disc 87, and a plurality of radially disposed discharging openings 79, with the mixing chamber 26. Thus in the closed position of the valve, as shown in Fig. 11, the ports 61 and 65 inclusive correspond and coincide with the ports 51 to 55 inclusive in the stationary portion 38 of the valve 27. It will be seen that in this position of the valve, the carbonating gas from the tank 80 is conveyed directly, through the pipe 41 to the ports 61, 65 and then through the passageway 71 through the ports 63 and 65 back through the pipe 43 into the first absorption chamber 84 of the charging battery 81, thus exerting a full pressure of the gas on the series of absorption chambers 84, 85 and 86. In this closed position of the valve disc moreover, the pipes 42 and 45 are interconnected through the ports 52 and 55, and 62 and 65 and the passageway 72, so as to permit the water to flow freely from the last absorption chamber 81 into the measuring chamber 82. Lastly, in this closed position of the valve disc 87 the pipe 44 from the top of the measuring chamber 82 is connected through the passageway 74 and the corresponding ports 54 to 64, to the mixing chamber 26 of the valve 27. The charging or carbonating operation, which takes place during the "off" or closed position of the valve 27, is as follows:—The gas entering the absorption chamber 80, from the tank 80, through the pipes 41 and 43 and through the valve 87 as mentioned hereinbefore, passes through the water contained in said absorption chamber 86, and at the same time forces the water out from the chamber 86, through the passageway 91 in the manifold 83, into the vertical spray pipe 92 and forcing the water, mixed with gas, out through the perforated funnel 94, in the form of a spray, which then descends to the bottom of the chamber 85, through the mixing screen 95. The water then continues to travel on through the successive absorption chambers 86, urged by the pressure of the gas supplied from the pipe 43, through the series of passageways 96, in the common manifold 83 and the corresponding series of vertical spray tubes 97 extending into said absorption chambers 84. The water thus fully charged with the carbonating gas, in its
passage through the series of absorption chambers, enters into the passageway 98 in the manifold 83, from whence it will pass into the measuring chamber 82, either by raising the check valve 99, which is provided on the valve seat 100, to prevent the retreat of the carbonating water from the measuring chamber into the absorption chambers, or through the pipe 45 and the ports 55, and 52, and 65 and 62, and through the pipe 42 and passageway 101 as shown particularly in Fig. 4. As the measuring chamber 82 is filled with the carbonated water, entering the same through the bottom thereof, the gas originally filling the measuring chamber 82 passes out through the pipe 44 and the ports 54 and 64 and the passageway 74, into the mixing chamber 26 of the valve 27. When however the carbonated water has risen to the height of the check valve ball 102, contained within the cage 103, it lifts and forces the check valve ball 102 against the corresponding valve seat 104, thereby shutting off the pipe 44, and preventing the exit of the carbonated water from the measuring chamber 82, so as to retain within said chamber 82 while the valve 27 is closed, or in the “off” position, a premeasured and fixed quantity of fully charged or carbonated water. The check valve ball 105, normally held seated on the valve seat 106 by the force of gravity, is provided for the purpose of shutting off the fresh water intake port 107, when the pressure of the carbonated gas is exerted on the series of absorption chambers, namely during the “off” position of the control valve 27. Upon revolving the valve disc 89 of the valve 27, in a right hand direction indicated by the arrow 90, from the “off” position shown in Figure 11, into the “on” position shown in Figure 12, namely the open or discharging position, the following cycle of events takes place:—The carbonating gas (CO₂) from the storage tank 80 passing through the pipe 41 and port 51, now instead of passing to the top of the first absorption chamber 86, as in the “off”, charging or closed position of the valve 27, passes through the movable port 63, the passageway 71, and the ports 61 and 54, and through the pipe 44 into the top of the measuring chamber 82, and exerts the full pressure of the carbonating gas on the premeasured quantity of carbonated water contained in said measuring chamber 82. The pressure of the gas thus exerted on the water of the chamber 82 seats the check valve ball 99 tightly on the valve seat 100, thereby shutting off the measuring chamber from the absorption chambers, and forces the measured quantity or charged water through the passageway 101, the pipe 42, ports 52 and 67, and through the passageways 77 and 78, out through the discharge apertures 79 into the mixing chamber 28. The force of the carbonated water, instilled by the pressure of the gas from tank 80 discharging through the series of radial discharge openings 79, raises the check valve ball 36, resting on the valve seat 37, thereby permitting the discharge of the carbonated water now thoroughly mixed with the flavoring liquid previously deposited in said mixing chamber 28, through the discharge nozzle 108. In this position of the valve disc 89 moreover, the port 66, coinciding with the port 53, connects the first absorption chamber 88, through the pipes 43 and the passageway 76, with the axial passageway 78, at a point a slight distance in front of the point where the passageway 77 meets the passageway 78. Thus the carbonated water passing through the passageways 77 and 78 and the discharging apertures 79 with great velocity, due to the pressure of the carbonating gas urging the same, produces a jetting action on the gas contained within the passageway 76; hence producing suction in the pipe 43. Since the ball check valve 33 prevents retreat of any water or gas from the absorption chamber 85, back into the absorption chamber 86, the suction created by the jetting action of discharging carbonated water through the passageways 77 and 78, reduces the pressure within the chamber 86 to a point where the fresh supply of water connected to the supply port 107, raises the check valve ball 105 from the valve seat 106, and thus enters and refills the absorption chamber 86 with a fresh supply of water.

Upon resetting, or turning back the valve disc 87 into the “off” or closed position shown in Fig. 11, the cycle of carbonating or charging operations and events is again repeated, and a quantity of water is again charged or carbonated, and is caused to refill the measuring chamber 82, which has been emptied during the discharging or “on” position of the valve, by relieving the gas within the measuring chamber 82 the gas being allowed to pass off from the top of the chamber; through the pipe 44; the check valve ball 102 thereafter shutting off said pipe 44 from the measuring chamber, when the liquid has reached the ball.

The cycle of operations between the flavoring liquid or syrup measuring devices and the cup supply device is as follows:—First a given quantity of flavoring liquid or syrup is forced into the mixing chamber 28, secondly the cup is deposited beneath and in vertical alignment with the nozzle 108, and lastly the carbonated water, mixed with the flavoring liquid, is discharged through the nozzle 108 into the cup beneath the latter.

In order to permit the automatic vending of the mixed beverage, independently of a salesman or operator, as is customary in dispensing beverages over the counter, the various mechanisms hereinafter described, and those to be described hereinafter, are all mounted upon and back of a vertical panel 109 which may be of any suitable finished...
material, such as is commonly employed in soda fountain construction, and there is provided a novel series of locking and releasing devices for the syrup injectors, for the carbonated water discharging and mixing valve, for the paper cup supply mechanism 110, as well as for the serving platform 111; all released in proper succession by a single coin of the proper denomination dropped into the coin slot 112. Thus in the normal position of the apparatus, before a coin has been deposited in the coin slot 112, the syrup plunger knob 113 may be forced inwardly, against the tension of the spring 114, without however actuating the syrup piston 34, since the plunger 134 enters freely the hollow rod 115, of the ejector 10. Similarly the valve stem 88 carrying the crank handle 116, as well as the locking arm 117, is locked against any movement by means of a latch mechanism shown in Figs. 2, 6, 7 and 8, which is only released by the dropping of the coin from the syrup ejecting mechanism, after the same has passed through a full cycle of operations with said coin, into the coin box 119 carried by the locking arm 117. Similarly the paper cup supply mechanism 110, may be of any usual construction now found on the market, operated by the lever 119, is not brought into action unless the arm 117 is actuated, since the arm 117 and the arm 119 are operatively interconnected by means of the spring or other suitable connection 120. The serving platform 111, being pivotally mounted at a point 121, on the hinge door 122 carried on the hinges 123, is in turn locked in the closed position shown in Fig. 2, by means of the catch 124 engaging the slight notch 125 in the base 126, the platform 111 being retained in the normal raised position by one of several flat springs 127, or by any other suitable yielding means.

Upon depositing the coin of the proper denomination in the coin slot 112, the same is guided by means of the chute 128, into the coin box 129, which is shown in detail in Fig. 5 as well as in Fig. 2. The coin box 129 is carried rigidly on the end of the hollow piston rod 115 and travels with the latter, and is provided with the vertical slot 130, open at its bottom. In the coin receiving position of the coin box 129, the same is superimposed upon the narrow portion 131 of a coin gauging and retaining plate 132, fixed in a stationary manner on the panel 109, as shown in Fig. 2, which narrow portion 131 is of a width just sufficient to prevent the coin of the proper denomination from falling through, yet wide enough to permit any smaller coin to drop through. After the coin 133, indicated by the dotted circle in Fig. 5, has been dropped into the coin box 129, it blocks the passage of the piston rod 113 through the coin box 129. The plunger 134 upon being forced inwardly thus encounters and engages the coin 133, and by means of such engagement with the coin 133, forces the coin box 129, and hence the piston rod 115 and the piston 34 rearwardly, in the direction of the arrow 35, thereby forcing the predetermined quantity of syrup or other flavoring liquid into the mixing chamber 26 of the valve 27. Upon releasing the plunger knob 113, the same is returned by the spring 114, while the piston 34 is returned by the spring 136, against the compression of the air behind the piston 34, as the same escapes slowly through the vent hole 138. The tension of the springs 114 and 135 and the size of the vent hole 136, are so fixed, that the plunger rod 134 is returned much faster and therefore ahead of the piston rod 115 and the coin box 129, so as to release its hold upon the coin contained in the slot 130, during the return. The coin 133 thus freed of the plunger 134, and the coin box 129, being thus superimposed upon the wide portion 137 of the coin gauging plate 132 during the return stroke, the coin 133 drops out of the slot 130 in the coin box 129, through the wide portion 127 of the plate 132, into a chute 138 positioned beneath the plates 132, which chute 138 guides the coin to the second coin box 133 carried by the arm 117, shown in Figs. 1, 2, 6 and 8 of the drawings. The coin box 118 is again provided with the coin slot 139, having a bottom opening 140 which is slightly smaller than the diameter of the coin of the proper denomination, so as to retain said coin but permit any smaller coin to fall through. The coin box 118 is also provided with an edge opening 141 adapted to permit the coin 133 to drop out of the coin box 118 when the arm 117 is lifted or swung into the extreme right inclined position. The coin box 118 is further provided in one wall thereof, with a small plunger 142, slidable mounted in a suitable bearing opening 143, which plunger is retained and held out and clear of the slot 139 by a spring 144 interposed between the head 145 of said plunger 142 and the coin box 118. The opposed side of the coin box 118, is also provided with an opening 146 into which the plunger 142 may enter. The latch member 147 fixed to the panel 109 and made preferably of a thin springy material, is provided at its lower half 148 with a locking notch or ledge 149 which is in alignment with the arm 117 so as to lock the wall against any movement thereof in the normal position of the latch, while the upper portion 150 of said latch member 147 is shaped to act as a cam or wedge on the head 145 of the plunger 142, while their free ends 151 are joined so as to move in unison with each other. Thus so long as there is no coin in the slot 139 of the coin box 118, the plunger 42 will be forced into and through the slot 139, and into the opening 146, by the cam 150, when the arm 117 is swung towards the right a slight distance in the direction of the arrow 152, by means of the handle 116. Thus the arm 117 soon
encounters the ledge or notch 149, of the latch member 148, and is stopped and locked thereby. Whenever a coin is deposited in the coin box 118 in the position indicated by the dotted circle in Fig. 6, the plunger 142 cannot enter the coin box 118, being stopped by the coin therein, and the head 145, of said plunger 142, acting upon the cam 150 as the arm 117 is being swung in the direction 152, causes the latch members 148 and 150 away from the arm 117 in the direction of the arrow 153, thereby withdrawing the ledge or notch 149 from alignment with the arm 117, so as to permit the arm 117 to be swung freely to the limit of its deflected or open position. It is thus that the valve stem 36 is locked in the closed position of the valve, when there is no coin in the coin box 118, and is released by the insertion of a coin thereinto.

During the first small fraction of the forward movement of the arm 117, in the direction of the arrow 152, after it is released by the coin 150 in the coin box 118, it actuates an operating arm 119 of the paper cup dispensing and supply mechanism 110 shown in Figures 1 and 2, through the spring or other suitable connection 190, causing the same to drop a paper cup 153 into the guide members 154, which guide the paper cup in an upright position onto the serving platform 111, where it is caught and positioned in vertical alignment with the nozzle 108, by supporting prongs 155. As the handle 116 is swung completely to the open or deflected position, revolving the valve disc 87 into the open or discharging position thereof, the mixture of syrup and carbonated water is discharged through the nozzle 108 into the cup 153.

As the cup 153 is approximately three quarters filled with the beverage to be dispensed, the serving platform 111 is deflected a slight amount against the tension of the spring 127, thereby raising the catch 124 clear of the locking notch 125, so as to unlock the door 122. The door 122 may then be swung open, upon the hinges 128, by grasping the knob 156. A return spring, not shown in the drawings, may be provided to return the door 122 into the closed position thereof, after the cup 153 has been removed from the serving platform 111, so as to position said platform 111 beneath the nozzle 108 in a locked position again, for a subsequent operation of the device.

It will now be apparent that we have devised a new and useful mixed beverage vending apparatus, which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while we have, in the present instance, shown and described a preferred embodiment thereof which will give in practice satisfactory and reliable results, it is to be understood that such embodiment is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is:

1. A device of the character stated, a charging unit having a plurality of consecutive charging chambers upon a common manifold, a measuring chamber upon said manifold, a passage-way intermediate the last of a series of charging chambers and the said measuring chamber, a pipe communicating with said passage-way, a check valve intermediate said measuring chamber and said passage-way, opening into said chamber, an opening in the top of said measuring chamber, and a check valve in said opening, adapted to open in to the mixing chamber, said valve being closed only by engagement with a liquid, and being unaffected by the passage of the gas therethrough.

2. A device of the character stated, a control valve, a mixing chamber communicating therewith, said valve including a set of stationary ports, and a set of movable ports, a charging unit operatively connected to the stationary ports of said valve, a syrups ejector operatively connected to the stationary ports of said valve, a control valve, and a check valve intermediate said ejector and said mixing chamber to limit the passage of liquid from the ejector to the chamber.

3. A device of the character stated, a door, a vertically movable serving platform adapted to receive and retain in an upright position a drinking receptacle, yielding means to retain said platform in its uppermost position, adapted to support the empty receptacle and adapted to permit the downward movement of said platform under the weight of the filled receptacle and means whereby said door will be unlocked by the downward movement of said platform.

4. A device of the character stated, a door, a latch normally to lock the same, a vertically movable serving platform carried by said door, and adapted to receive and retain in an upright position a drinking receptacle, yielding means to retain said platform in its uppermost position, and adapted to support the empty receptacle and adapted to permit the downward movement of said platform under the weight of the filled receptacle and means intermediate of said latch and said platform whereby said door will be unlocked by the downward movement of the platform.

5. A device of the character stated, a door, a serving platform adapted to receive a receptacle, a discharging nozzle above and in vertical alignment with the receptacle, means to retain said door in a locked posi-
tion with the platform free, and means actuated by the weight of the liquid in the receptacle for releasing said locking means.

6. In a device of the character stated, a
door, a serving platform normally retained in
an uppermost position, means common to
said door and said platform for retaining said
door in a locked position when said
platform is in its uppermost position, and to
release the same when the platform is in
its lowermost position, and means positioned
above and in alignment with said platform
for so weighting said platform as to release
the door from its locked position.

7. In a device of the character stated, a
control valve having a casing, a stationary
valve face carried by said casing, a rotatable
valve disc mounted in said casing, and hav-
ing a movable valve face juxtaposed to said
stationary face, a port in said stationary
valve face communicating with a source of
carbonating gas supply, a port in said sta-
tionary valve face, communicating with a
carbonating battery and a third port in said
stationary valve face communicating with a
measuring device, said three ports being lo-
cated on the same circle with respect to the
center of rotation of said movable valve disc,
and equally spaced from the central port, two
ports in said movable valve face, intercon-
ected within said valve disc by means of a
passage-way, adapted to connect said first
mentioned stationary port with either one
of the two succeeding stationary ports alter-
nately, a port in said stationary valve face
communicating with the discharge end of a
measuring device, and a corresponding port
in the movable valve face, an axial valve stem
conducted by said valve disc, a discharge open-
ing therein, and a passage-way between said
discharge opening and said last mentioned
port in the movable disc.

8. In a device of the character stated, a con-
trol valve, a mixing chamber carried thereby
and communicating therewith, a syrup sup-
ply pipe communicating with said mixing
chamber, a check valve at the end of said sup-
ply pipe, opening into said mixing chamber,
a discharge nozzle at the bottom of said mix-
ing chamber and a gravity check valve on
said nozzle adapted to be lifted by a jet of
liquid.

9. In a device of the character stated, a
valve housing, a valve seat therein, a mixing
chamber formed integral therewith, a series
of syrup supply pipes communicating with
said mixing chamber, a check valve at the end
of each of said pipes opening into said cham-
ber, a discharge nozzle at the bottom of said
chamber, a check valve seated on the top of
said nozzle, and a valve seat on said valve
seat, by its own weight.

10. In a device of the character stated, a
valve housing, a valve seat therein, a mixing
chamber formed integral therewith, a series
of syrup supply pipes communicating with
said mixing chamber, a check valve at the end
of each of said pipes opening into said cham-
ber, a discharge nozzle at the bottom of said
chamber, a valve seat seated on the top of
said nozzle, a valve disc seated within said
valve casing and rotatable therein, an axial
valve stem carried by said valve disc and
journaling within said casing and radial dis-
charge openings in said valve stem, com-
unicating with a port in said valve.

11. In a device of the character stated, a
valve disc having the ports 61, 62, 63, 64, 65,
66 and 67, the passage-ways 71, 72, 76 and 77,
a co-axial valve stem, a passage-way 78 in
said stem, and radial discharge openings in
said stem communicating with said passage-
way 78.

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