May 11, 1954 C. A. BROWN 2,678,064

MIXING AND DISPENSING VALVE

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Fig. 1

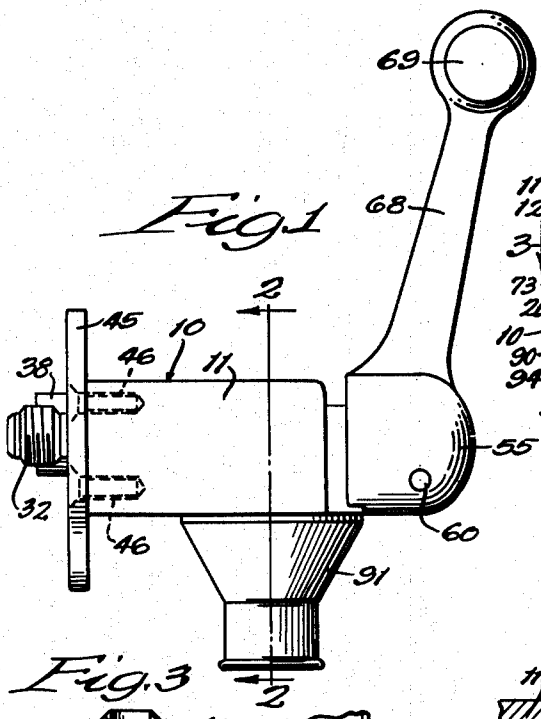


Fig. 2

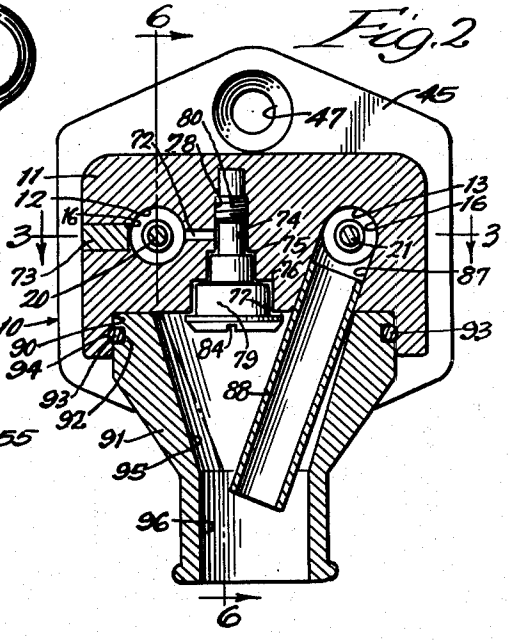


Fig. 3

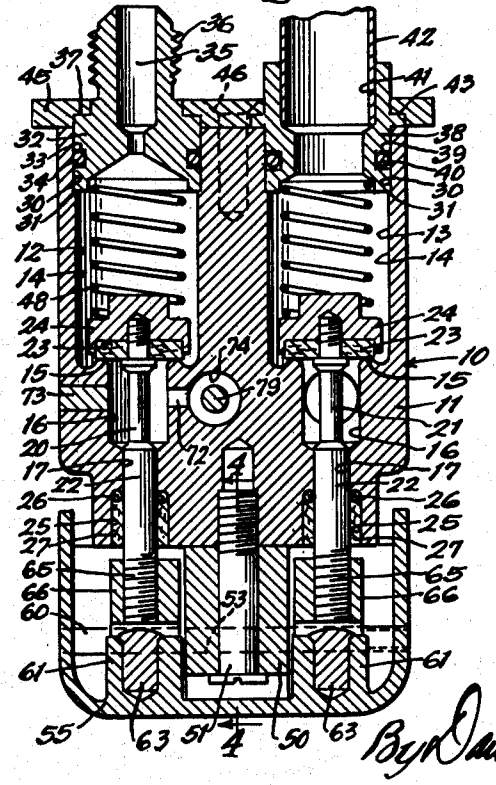


Fig. 4

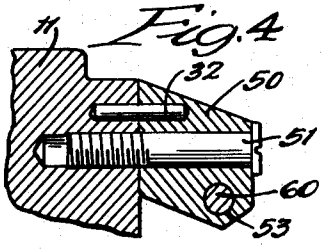
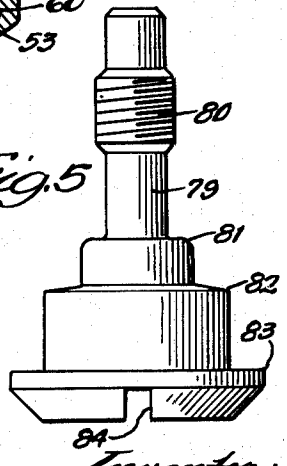


Fig. 5



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Fig. 6

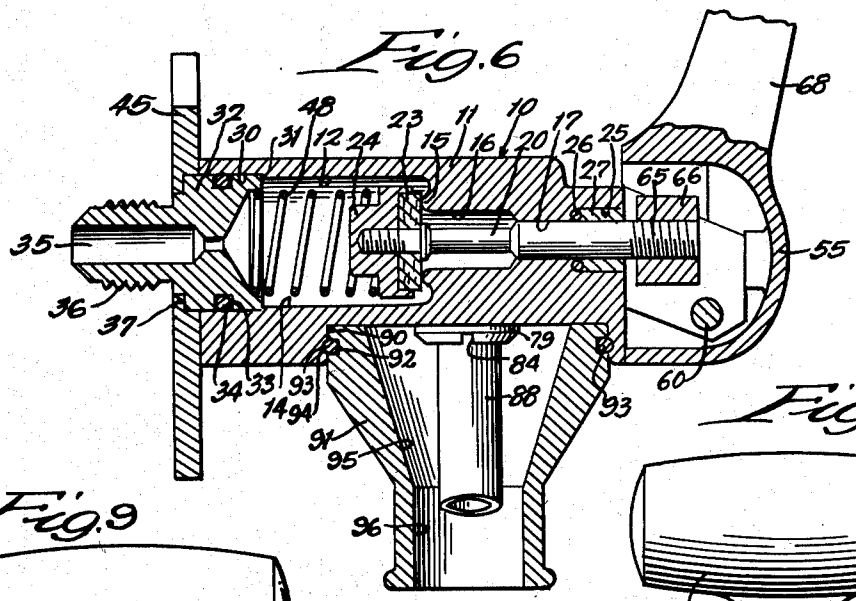


Fig. 7

Fig. 9

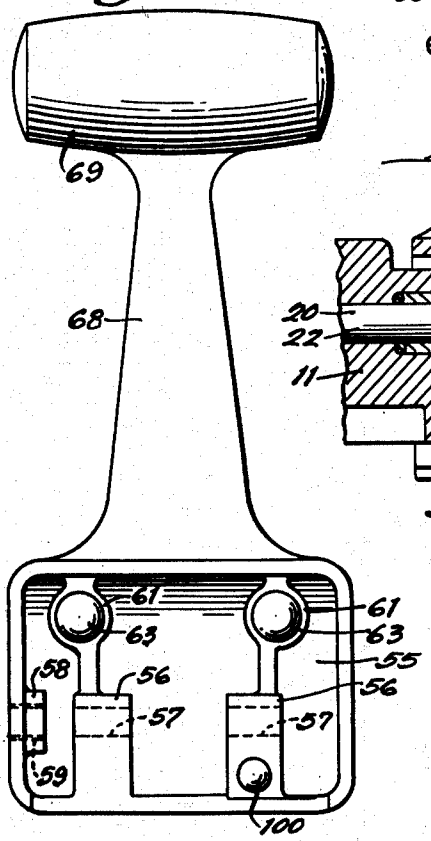
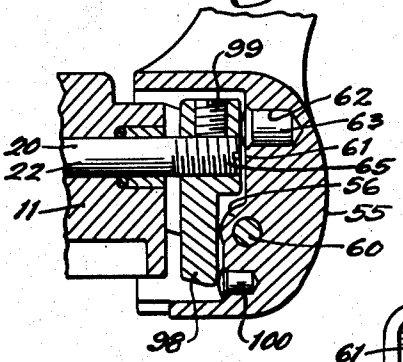
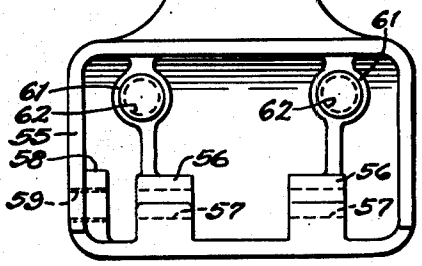


Fig. 8





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2,678,064

MIXING AND DISPENSING VALVE

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Application September 2, 1948, Serial No. 47,476

4 Claims. (Cl. 137—636)

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This invention relates to mixing and dispensing valves generally and more particularly to such valves for proportioning, mixing and dispensing syrup and soda water for making mixed drinks. This invention is an improvement over the mixing and dispensing valve disclosed and claimed in application Ser. No. 750,553 filed by Arthur B. Segal on May 17, 1947, now Patent No. 2,645,246.

The principal object of this invention is to provide an improved mixing and dispensing valve which may be inexpensively manufactured and assembled, which may be readily mounted for use on a fountain or bar, which may be adjusted for regulating or proportioning the relative amounts of syrup and soda water dispensed, which effervesces to a desired degree the soda water to regulate the carbonation and enhance the appearance of the mixed drinks, which may be readily cleaned, and which may be readily removed from the fountain or bar and readily disassembled for cleaning purposes.

Further objects of this invention reside in the details of construction of the mixing and dispensing valve and the cooperative relationship between the component parts thereof.

Other objects and advantages will become apparent to those skilled in the art upon reference to the accompanying specification, claims and drawing in which:

Figure 1 is a side elevational view of the mixing and dispensing valve of this invention;

Figure 2 is an enlarged vertical sectional view taken substantially along the line 2—2 of Fig. 1;

Figure 3 is a sectional view taken substantially along the line 3—3 of Figure 2;

Figure 4 is a partial sectional view taken substantially along the line 4—4 of Figure 3;

Figure 5 is an enlarged elevational view of the baffle member;

Figure 6 is a vertical sectional view taken substantially along the line 6—6 of Figure 2;

Figure 7 is an end elevational view of the operating handle looking from the left in Fig. 6;

Figure 8 is a partial sectional view similar to the right hand portion of Fig. 6, but illustrating another form of the invention and

Figure 9 is an elevational view of the operating handle utilized in Figure 8.

The mixing and dispensing valve of this invenion is generally designated at 10 and includes a valve body or housing 11. The valve housing is provided with pair of parallel longitudinal valve bores 12 and 13, the constructions of which are identical. Each valve bore includes an inlet

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passage 14 at one end, an intermediate valve seat 15, a fluid passage 16 and a valve guide 17.

Located in the valve bores 12 and 13 are valve elements 20 and 21, respectively, which are also of identical constructions. Each valve element includes a valve stem 22, a valve disc 23 adapted to seat on the seat 15 and a retainer 24 for securing the valve disc 23 to the valve stem 22. The valve stem 22 is guided for sliding movement in the valve guide 17. The valve guide 17 is recessed at 25 for the purpose of receiving packing in the form of an O-ring 26 which is held in place by a sleeve 27. The O-ring 26 effectively seals the valve stem 22.

The inlet passages 14 are recessed at 30 to provide an internal shoulder 31. The recessed portions 30 of the valve bores 12 and 13 are adapted to receive connector fittings 32 and 38, respectively, the fitting 32 being adapted to be connected to a supply of soda water and the fitting 38 being adapted to be connected to a supply of syrup.

The fitting 32 is provided with an annular groove 33 for receiving packing in the form of an O-ring 34, the fitting 32 being slidably received in the inlet passage with the end thereof engaging the shoulder 31. The O-ring 34 forms an effective seal between the connector fitting 32 and the inlet passage 12. The connector fitting 32 is provided with a passage 35 for soda water and is also provided with screw threads 36 for attaching the same to a soda water supply pipe. The fitting 32 is also provided with an external abutment 37.

The connector fitting 38 likewise includes an annular groove 39 for receiving packing in the form of an O-ring 40 to form an effective seal between the fitting 38 and the inlet passage of the valve bore 13. The connector fitting 38 is adapted to be slidably received in the inlet passage with the end thereof engaging the shoulder 31. The fitting 38 may be provided with an opening 41 for receiving a pipe 42 leading from the source of syrup. The fitting 38 is also provided with an external abutment 43.

The fittings 32 and 38 are held in place in the inlet passages by a mounting plate 45 having openings for receiving the fittings 32 and 38 and having internal abutments for engaging the external abutments 37 and 43 of the fittings. The mounting plate 45 is secured to the valve housing 11 by means of screws 46. Also the mounting plate is provided with a pair of holes 47 by which the end of the valve housing may be fastened to a mounting frame of a fountain or bar.

Springs 48 are located between the fittings 32 and 38 and the retainers 24 for the purpose of maintaining the valves seated.

In assembling the mixing and dispensing valve, the valve elements and springs are first inserted in the valve bores through the inlet passages with the valve discs engaging the valve seats and then the connector fittings are inserted in the inlet passages. The mounting plate is then secured to the valve housing whereby the connector fittings are secured in the valve housing and the springs maintain the valves seated. To disassemble the valve for cleaning, inspection and repair purposes, the screws 46 may be removed to remove the mounting plate 45 whereupon the connector fittings may be removed as well as the springs and valve elements.

The forward end of the valve housing 11 carries a bracket 50 which is secured thereto by a screw 51 and a dowel pin 52. The bracket 50 is provided with a hole 53 for pivotally mounting an operating handle 55.

The base portion of the operating handle 55 is provided with a pair of bosses 56 having holes 57 and a boss 58 having a screw threaded hole 59, the holes being in alinement. The bracket 50 extends between the bosses 56 and a pivot pin 60 extends through the holes 53 and 57 for pivotally mounting the operating handle 55 transversely to the valve elements. The pivot pin 60 is provided with screw threads co-acting with the screw threads 59 of the boss 58 whereby the pivot pin 60 is maintained in position. The handle is also provided with a pair of bosses 61 having holes 62 for receiving operating pins 63.

The outer ends of the valve stems 22 are screw threaded at 65 to receive valve actuators 66. By rotating the valves with respect to the actuators 66 they may be relatively adjusted for varying the extent of opening of the valves. In this way the relative amounts of soda water and syrup dispensed may be varied. The operating pins 63 carried by the handle are adapted to engage the valve actuators 66 upon movement of the operating handle in a counterclockwise direction as illustrated in Fig. 1 for the purpose of opening the valves against the action of the springs 48. The operating handle is provided with an extension 68 and knob 69 to facilitate operation of the same.

The fluid passage 16 of the soda water valve bore 12 is connected by a passage 72 to a downwardly extending discharge passage 74. The passage 72 may be formed by drilling, and the outer end of the bore may be closed by a plug 73. The discharge passage 74 includes a plurality of stepped internal shoulders 75, 76 and 77 and the upper end of the passage is preferably screw threaded at 78. A baffle member 79 is adapted to be carried in the discharge passage and preferably is provided with screw threads 80 cooperating with the screw threads 78 for holding the same in place in the discharge passage. The baffle member 79 is provided with a plurality of stepped external shoulders of the discharge passage to provide an annular tortuous path for the flow of soda water. This annular tortuous path operates to retain the proper degree of carbonation in the soda water and to control the degree of effervescence thereof and, also, laterally to discharge the same at the outlet of the discharge passage. The baffle member 79 may be provided with a screw driver slot 84 to facilitate mounting the same in the discharge passage.

The fluid passage 16 of the syrup valve bore 13 is provided with a downwardly and inwardly extending discharge passage 87 in which is mounted a syrup pipe 88 to direct centrally the flow of dispensed syrup.

The bottom of the valve housing 11 is provided with a recess 90 which is substantially concentric with the soda water discharge passage 74 and which is eccentric to the syrup discharge passage 87. However, the syrup pipe 88 terminates below the recess and substantially concentric therewith. The recess 90 is adapted to receive a nozzle 91 for mixing and directing the mixture of soda water and syrup into a glass. Preferably, the nozzle 91 is provided with an external groove 92 carrying an O-ring 93 which is adapted to enter into an internal groove 94 in the recess 90. Thus, the O-ring 93 operates removably to secure the nozzle 91 in the recess 90.

The nozzle 91 is provided with a frustro-conical interior 95 and a discharge outlet 96 for thoroughly mixing the syrup and soda water discharged from the mixing and dispensing valve.

When soda water and syrup are dispensed, the syrup is dispensed substantially centrally of the discharge opening 96 so that it does not impinge upon, and adhere to, the interior of the nozzle. The soda water discharged laterally by the baffle member 79 in an effervescent state flows downwardly through the nozzle and thoroughly mixes with the syrup being discharged. At the same time the effervescing soda water operates to maintain the interior of the nozzle clean and sanitary. In the event that it is desirable to clean the nozzle, all that is necessary is to pull the same from the valve housing since it is releasably held in place by the O-ring 94.

In the form of the invention illustrated in Figures 8 and 9, it is possible to dispense either soda water alone or a mixture of syrup and soda water. The mixture of syrup and soda water is dispensed in exactly the same manner as heretofore described by a counterclockwise rotation of the operating handle. Soda water alone is dispensed by a clockwise rotation of the operating handle. To accomplish this the valve stem 22 of the soda water valve element 20 is provided with an actuator 98 screw threaded on the valve stem and provided with a downward extension. The actuator 98 may be locked in place by a set screw 99. The boss 56 in alinement with the soda water valve element is provided with a hole for receiving a pin 100 which is adapted to engage the extension of the actuator 98 when the holder is operated in a clockwise direction. Thus, the soda water valve element may be opened upon either direction of rotation of the operating handle while, the syrup valve element is opened only when the operating handle is moved in one direction.

While for purposes of illustration two forms of this invention have been disclosed, other forms thereof may become apparent to those skilled in the art upon reference to this disclosure, and therefore, this invention is to be limited only by the scope of the appended claims.

I claim:

1. A dispensing valve comprising, a valve housing having a valve bore therein, a valve element axially slidable in the valve bore and extending out from the valve housing, an actuator carried by the end of the valve element, a handle pivoted to the valve housing for movement about an axis substantially perpendicular to the axis of the valve element, and a pair of pins carried by the handle, one on each side of the pivoting axis of

said handle, for engaging the actuator when the handle is moved in either direction about its pivot for sliding the valve element.

2. A dispensing valve comprising, a valve housing having a valve bore therein, a valve element axially slidable in the valve bore and extending out from the valve housing, an actuator carried by the end of the valve element, a bracket secured to the valve housing adjacent the valve bore, an operating handle, means for pivoting the handle to the bracket for movement about an axis substantially perpendicular to the axis of the valve element, and a pair of pins carried by the handle, one on each side of the pivoting axis of said handle, for engaging the actuator when the handle is moved in either direction about its pivot for sliding the valve element.

3. A mixing and dispensing valve comprising, a valve housing having a pair of parallel valve bores therein, a valve element slidable in each valve bore and extending out from the valve housing, an actuator carried by the end of each valve element, a handle pivoted to the valve housing transversely of the valve elements, a pair of pins carried by and fixed to the handle for respectively engaging each actuator when the handle is moved in one direction about its pivot for sliding both valve elements, said pins being symmetrically arranged on opposite sides of said handle whereby they exert substantially equal forces on the two valve actuators when said handle is moved in said one direction, and a third pin carried by and fixed to the handle for engaging one of the actuators when the handle is moved in the opposite direction about its pivot for sliding one of the valve elements.

4. A mixing and dispensing valve comprising a valve housing having a pair of parallel valve bores therein, a valve element axially slidable in each valve bore and having an end extending outwardly from said housing, a handle mounted on said housing for pivotal movement about an axis extending transversely with respect to the axes of said valve elements, said handle being

pivotable from a neutral position in either direction about its axis, a pair of pins secured in fixed relation to said handle, each of said pins being positioned to effectively engage the extending end of one of said valve elements when said handle is pivoted in one direction from said neutral position, the pins of said pair of pins being located on the same side of the pivotal axis of said handle and being substantially equally spaced from said axis whereby the ratio of the forces exerted on said valve elements by said pins as said handle is moved in said one direction remains substantially constant, and a third pin secured in fixed relation to said handle on the other side of the pivoting axis of the handle from said pair of pins and positioned to effectively engage the extending end of one of said valve elements when said handle is pivoted from said neutral position in the other direction about its axis.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
626,447	Strater	June 6, 1899
1,139,754	Denzinger	May 18, 1915
1,202,670	Carlson	Oct. 24, 1916
1,268,232	Furman	Aug. 4, 1918
1,274,362	Adams	Aug. 6, 1918
1,308,829	Young et al.	July 8, 1919
1,574,767	Thurtell	Mar. 2, 1926
1,600,170	Henderson	Sept. 14, 1926
1,986,206	Kennedy	Jan. 1, 1935
2,116,806	Zinkil	May 10, 1938
2,259,215	Scheuer	Oct. 14, 1941
2,321,267	Van Der Werff	June 8, 1943
2,367,077	Ward	Jan. 9, 1945
2,371,432	Di Pietro	Mar. 13, 1945
2,401,914	Di Pietro	June 11, 1946
2,416,581	Harr	Feb. 25, 1947
2,453,391	Whittingham	Nov. 9, 1948

FOREIGN PATENTS

Number	Country	Date
614,066	Germany	of 1935