

Aug. 19, 1924.

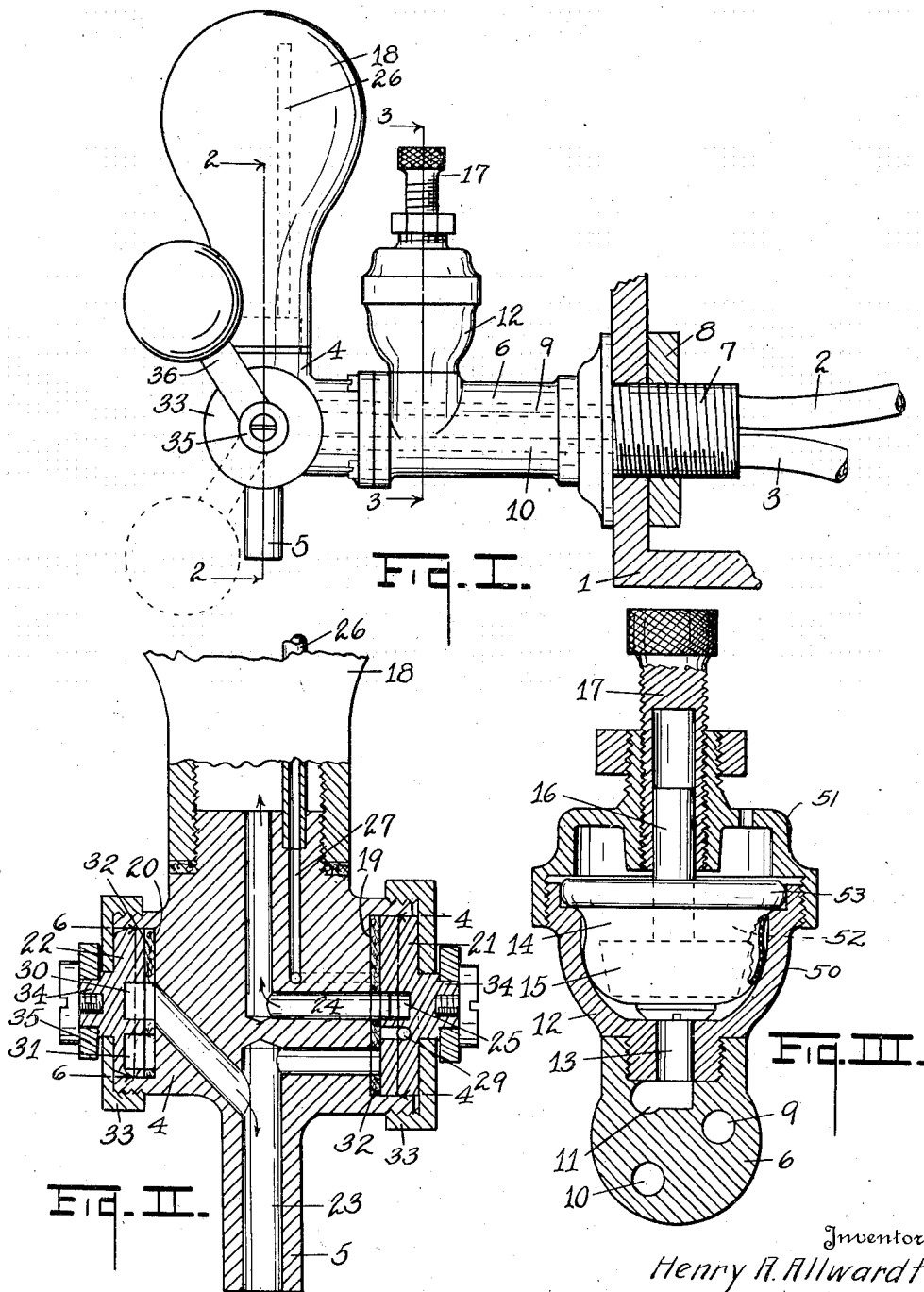
1,505,122

H. A. ALLWARDT

LIQUID DISPENSING DEVICE

Filed Dec. 5, 1922

3 Sheets-Sheet 1



By

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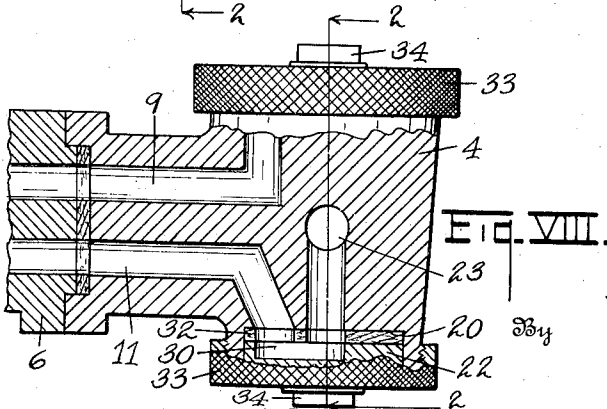
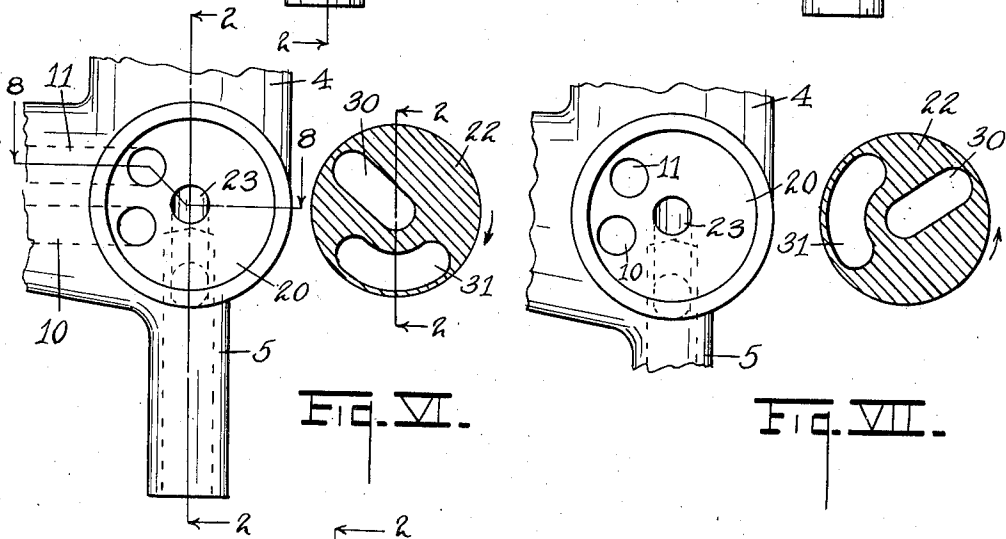
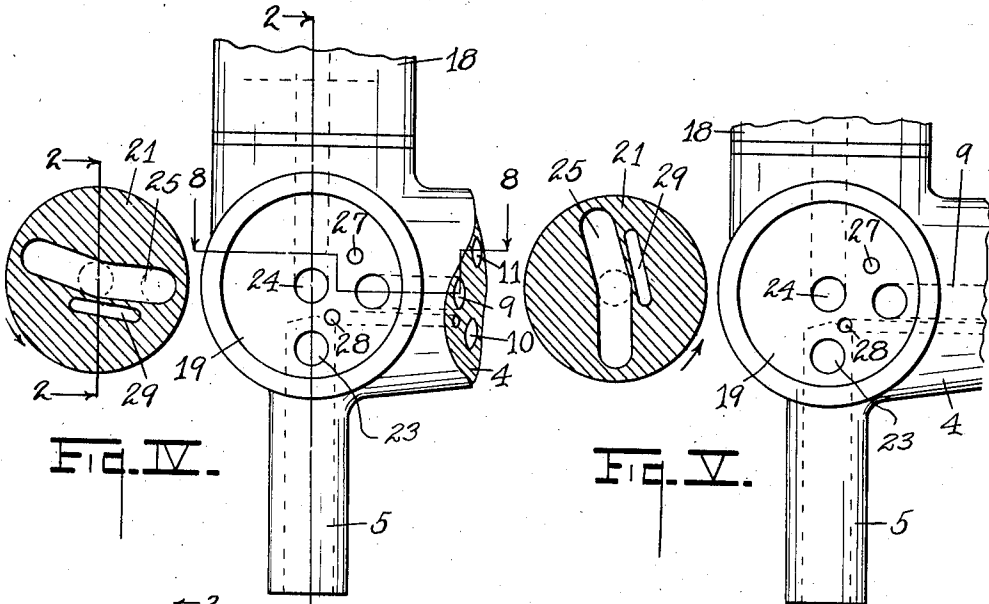
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3 Sheets-Sheet 3

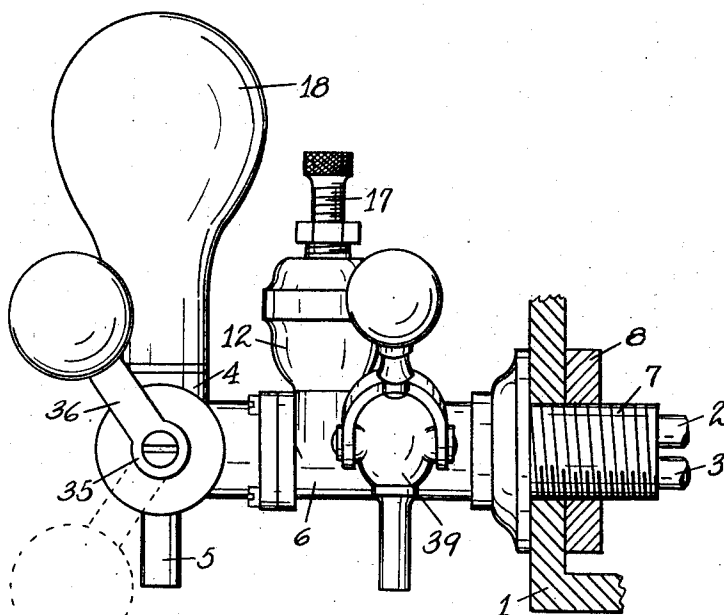


FIG. IX.

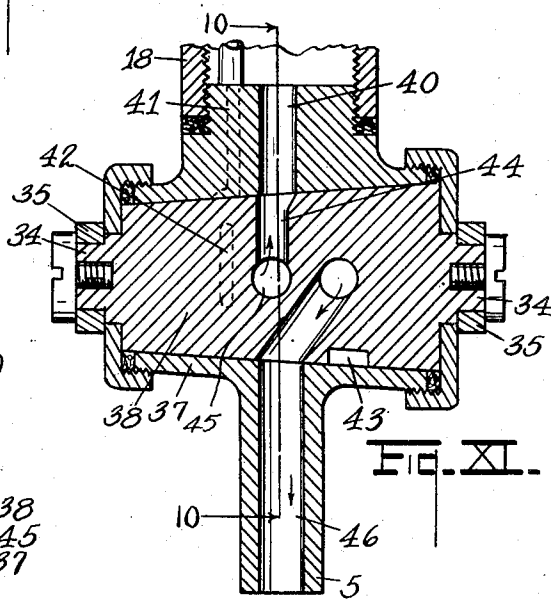


FIG. XI.

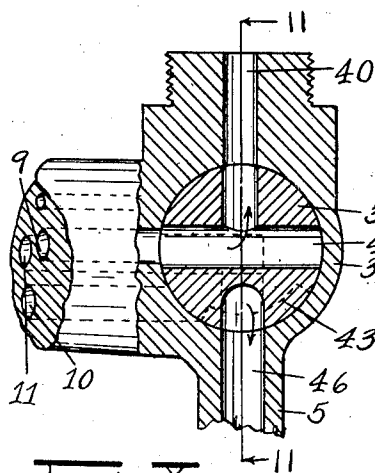


FIG. X.

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1,505,122

UNITED STATES PATENT OFFICE.

HENRY A. ALLWARDT, OF BATTLE CREEK, MICHIGAN.

LIQUID-DISPENSING DEVICE.

Application filed December 5, 1922. Serial No. 605,064.

To all whom it may concern:

Be it known that I, HENRY A. ALLWARDT, a citizen of the United States, residing at the city of Battle Creek, county of Calhoun, State of Michigan, have invented certain new and useful Improvements in Liquid-Dispensing Devices, of which the following is a specification.

This invention relates to improvements in liquid dispensing devices.

The main objects of the invention are:

First, to provide an improved dispensing faucet for soda fountains by means of which the carbonated water is delivered so as to retain a large percentage of the gas.

Second, to provide an improved dispensing device for soda fountains and the like in which the syrup and the carbonated water are delivered through a single nozzle and by means of a single operating lever.

Third, to provide an improved dispensing device in which the quantity of syrup may be accurately measured or gaged.

Fourth, to provide an improved dispensing device in which the likelihood of leakage of the valve is minimized.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. I is a side elevation of my improved dispensing device, the water and syrup supply conduits being partially broken away, the frame of the fountain or other support being partially broken away and sectioned.

Fig. II is an enlarged detail view partially in section on a line corresponding to line 2—2 of Figs. I, IV, VI and VIII.

Fig. III is a detail view mainly in vertical section on a line corresponding to line 3—3 of Fig. I.

Fig. IV is a detail side elevation looking from the right of Fig. II with the water valve removed and shown in section on a line corresponding to line 4—4 of Fig. II in the position occupied when filling or charging the water receptacle.

Fig. V is a detail side elevation corre-

sponding to Fig. IV with the water valve in its water discharging position.

Fig. VI is a detail side elevation looking from the left of Fig. II with the syrup valve removed and shown in section on a line corresponding to line 6—6 of Fig. II in syrup discharging position.

Fig. VII is a detail side elevation corresponding to that of Fig. VI with the syrup valve in its receptacle filling position.

Fig. VIII is a detail section on a line corresponding to line 8—8 of Figs. IV, VI.

Fig. IX is a side elevation corresponding to that of Fig. I of a modified form of my invention.

Fig. X is a detail view partially in vertical section on a line corresponding to line 10—10 of Fig. XI.

Fig. XI is a detail section on a line corresponding to line 11—11 of Fig. X.

In the drawing similar reference characters refer to similar parts throughout the several views and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents the casing or body of a soda fountain, 2 a carbonated water supply pipe, and 3 a syrup supply pipe. The body of my improved fixture comprises a valve body 4 having a discharge nozzle 5 and body member 6 in the form of a coupling to which the valve body 4 is secured, the member 6 being provided with a coupling member 7 inserted through the support 1 and secured thereto by clamping nut 8. The valve body 4 and the member 6 have a registering water inlet passage 9 and the syrup inlet passage 10 and syrup receptacle passage 11. The receptacle 12 consists of a base section 50 and a cap section 51 threaded upon the base section. A cup-shaped flexible diaphragm 52 having a rim 53 at its upper end is disposed with its rim clamped between the sections of the receptacle—see Fig. III. A disc 15 is secured to the bottom of the diaphragm and has a stem 16 projecting upwardly into an adjustable stop 17 threaded into the top section 14 of the receptacle. This stop limits the upward movement of the flexible diaphragm part, thereby regulating the capacity of the receptacle. A dome-like water receptacle 18 is mounted upon the valve body 4. This valve body has oppositely facing valve seats 19 and 20 with which the disk valves 21 and 22 respectively coact.

The branched discharge passage 23 opens into both of the valve seats, the valve 21 being the water valve. The valve body is provided with a passage 24 opening centrally to the valve seat 19 and to the bottom of the receptacle 18. The water inlet passage 9 opens into this valve seat 19 as shown in Figs. IV and V. The valve 21 has a groove-like port 25 in its face which is adapted when the valve is adjusted to one position as shown in Fig. IV to connect the passages 9 and 24 and when adjusted to another position as shown in Fig. V to connect the passage 24 with the passage 23, the first position being the receptacle filling position and the second the receptacle discharging position.

The vent tube 26 projects upwardly within the receptacle to a point adjacent the top thereof and is connected to the passage 27 which opens into the valve seat 19. A vent discharge passage 28,—see Figs. IV and V, opens into the valve seat 19, while the valve 21 is provided with a groove-like port 29, and is adapted to connect these passages 27 and 28 when the valve is moved to a point intermediate its filling and discharging positions so that the gas may be vented from the top of the receptacle permitting the water to discharge with less agitation than would otherwise result.

The syrup control valve 22 is provided with a groove-like port 30 which is adapted to connect the syrup receptacle passage 11 with the discharge passage 23 and with a second groove-like port 31 which is adapted to connect the syrup inlet passage 10 with the receptacle passage 11.

I preferably provide hard fiber facings or gaskets 32 between the valves and their seats, the purpose being to avoid the friction of metal on metal and also to effectively seal the joints. The valves are retained by the caps 33 threaded upon the valve body, the short stems 34 of the valves projecting through the caps to receive the arms 35 of the valve lever 36, the valve lever being shown by full lines in Fig. I in its water receptacle filling position, which is also the syrup discharging position, the closed position of the valve being indicated by dotted lines, which position, however, connects the passages 10 and 11 so that the syrup receptacle is filled.

In operating the device, when the handle is thrown from the dotted position to the position shown in full lines the charge of syrup is discharged and the charge of water allowed to enter the receptacle 18. The return movement of the valve first vents the receptacle, as stated, and then draws the water from the receptacle. This is found to result in a very superior beverage as it is delivered with a very large proportion of its gas.

I desire to state in this connection that while I have shown the syrup and water valves adjusted so that the syrup is discharged while the water charge is entering the receptacle, the valves may be readily adjusted so that the receptacles are simultaneously filled and discharged. However, I prefer the arrangement shown and have, therefore, illustrated and described it in detail.

In the modification shown in Fig. IX the parts are the same with the exception that the valve body 37 is adapted to receive the tapered plug valve 38 and the member 6 is provided with a water valve 39 so that the water may be drawn directly from the water supply passage, that is, it may be drawn independently of the main valve which also controls the syrup. In this modification the water receptacle passage 40 opens to the water receptacle. The vent passage 41 is indicated by dotted lines, the valve having the vent port 42 also being indicated by dotted lines.

The valve has a syrup port 43. The port 44 is the water inlet port of the valve. The port 45 is the discharge port thereof which is adapted to be brought into register with the discharge passage 46. This valve has the advantage of controlling both the syrup and the water and the valve lever 36 is manipulated in the same manner as described. The structure shown in Figs. I to VIII, however, is preferred in that the valves effectively retain the liquid and at the same time are very simple to produce and assemble and durable in use.

I have not attempted to illustrate or describe certain other embodiments or adaptations which I contemplate as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired within the scope of the appended claims.

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

1. In a dispensing device of the class described, the combination with a water receptacle and a syrup measuring receptacle, of a valve body having oppositely facing water and syrup valve seats, water and syrup inlet passages open to said water and syrup valve seats, water and syrup receptacle passages communicating with the bottoms thereof and open to said water and syrup valve seats, a discharge passage open to both of said valve seats, a vent tube projecting upwardly within said water receptacle and opening at the top thereof, said valve body having a vent tube passage open to said water valve seat, and a vent discharge passage open to said water valve seat, rotary disk valves having groove-like ports in

their faces adapted when in one position to connect the said receptacle passages with the said inlet passages and when in another position to connect the receptacle passages with the discharge passage, the water valve having an independent port adapted to connect the vent tube passage with the vent discharge passage prior to the connection of the water receptacle passage with the water discharge passage, and an operating means common to both of said valves.

2. In a dispensing device of the class described, the combination with a water receptacle and a syrup receptacle, of a valve body having water and syrup inlet passages,

water and syrup receptacle passages communicating with the bottoms thereof, a discharge passage, a vent tube projecting upwardly within said water receptacle and opening at the top thereof, said valve body having a vent tube passage, and a vent discharge passage, and a valve means for controlling said passages whereby the syrup receptacle is filled while the water receptacle is discharged and vice versa and the water receptacle is vented prior to the discharging thereof.

In witness whereof, I have hereunto set my hand and seal.

HENRY A. ALLWARDT. [L. s.]