

June 4, 1940.

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2,203,054

AUTOMATIC MIXER AND DISPENSER OF CARBONATED AND NONCARBONATED DRINKS

Filed Aug. 8, 1938

2 Sheets-Sheet 1

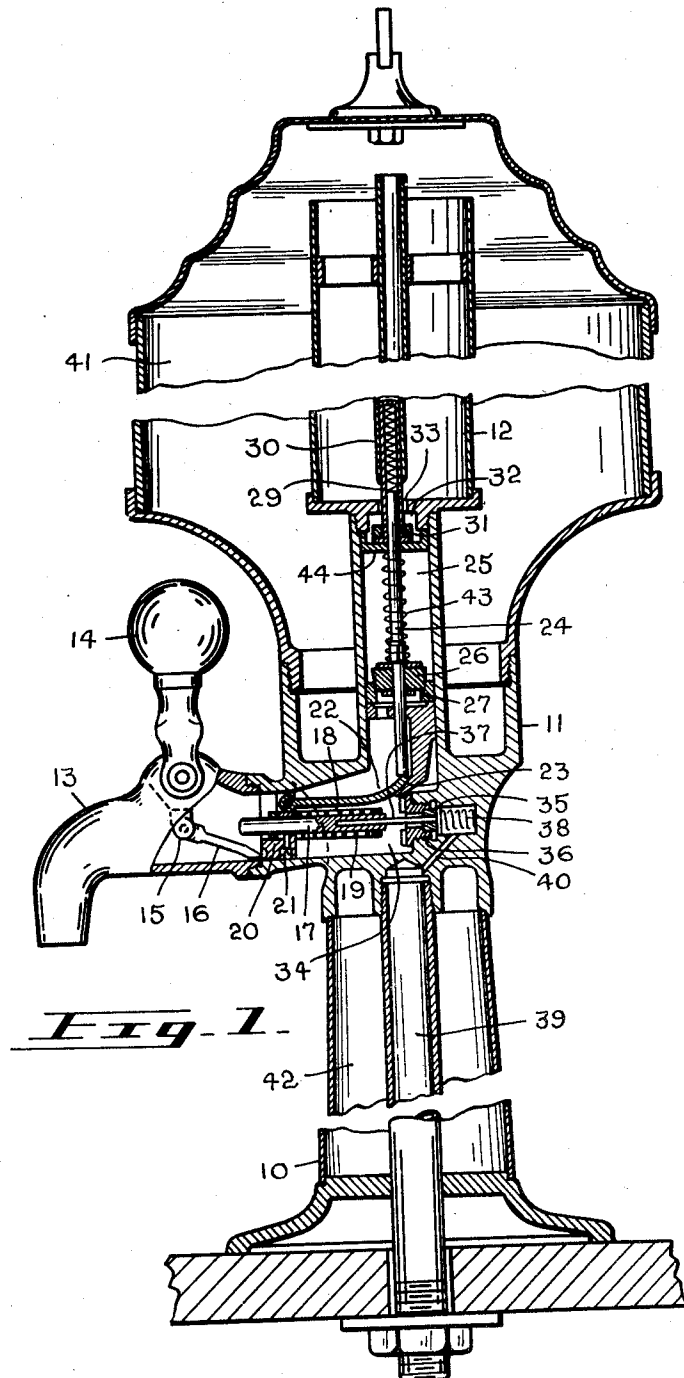


Fig. 1.

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2 Sheets-Sheet 2

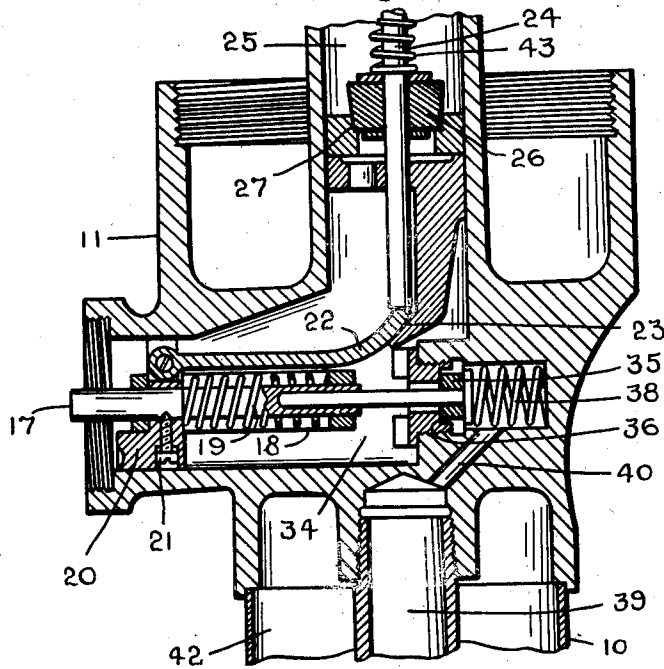


Fig. 2.

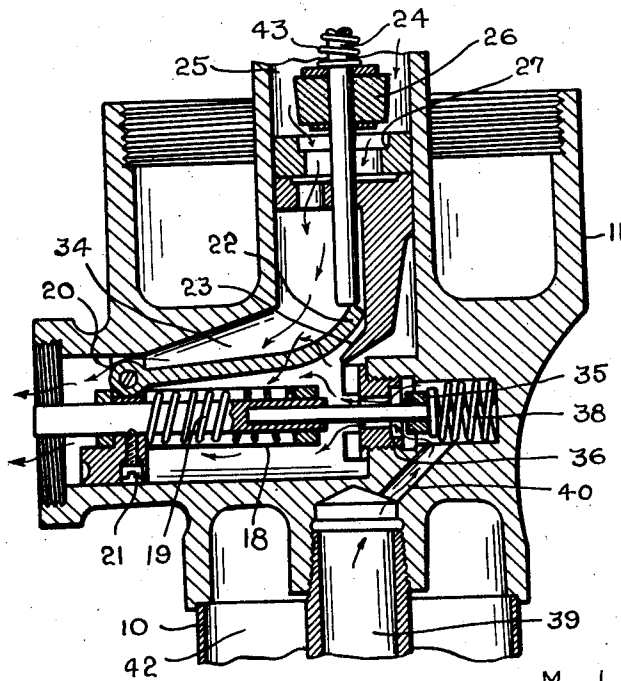


Fig. 3.

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UNITED STATES PATENT OFFICE

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AUTOMATIC MIXER AND DISPENSER OF
CARBONATED AND NONCARBONATED
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Application August 8, 1938, Serial No. 223,747

9 Claims. (Cl. 225—26)

This invention relates to improvements in an automatic mixer and dispenser for use at soda fountains or similar refreshment counters or the like. Its primary object being to provide means to dispense a predetermined quantity of prepared syrup with a quantity of carbonated or non-carbonated water thereby obviating the necessity of measuring the former from one container then filling with the latter from another container.

Another object of the device is to provide a dispenser which in conjunction with two containers will control the flow from both in their relative proportions to make the correct mixture and at the same time mix the two elements and deliver the mixture from one faucet.

With these and other objects in view that may appear while the description proceeds the invention consists in the novel construction and arrangement of parts as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming part of the application and in which:

Fig. 1 is a general view partially in section of my improved automatic mixer and dispenser.

Fig. 2 is an enlarged detail view of the valve mechanism in closed position.

Fig. 3 is an enlarged detail view of the valve mechanism in open position.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views it will be seen the invention comprises a standard 10 supporting a valve casing 11 on which a syrup container 12 is mounted. A faucet 13, is threadably mounted in said valve casing and a control handle 14 is pivoted in the upper part thereof. Said handle has a depending lug 15 to which a plunger pin 16 is pivoted. Said plunger pin engages a plunger assembly when the faucet handle is pulled downward to move the valve mechanism and open the same.

The plunger assembly consists of a plunger stem 17 reciprocally mounted in a bifurcated guide member 18 and normally urged forward by a retraction spring 19 which bears against a collar 20 and the transverse portion of the said guide member.

The collar 20 is adjustably secured to the plunger stem 17 by a screw 21 by means of which the travel of the plunger is governed as the plunger pin 16 also engages the said collar which is adjusted to normally touch the collar when the handle is in the upward position. A curved arm valve operating arm 22 is loosely pivoted to the collar 20 and engages a cam face

23 formed in the valve casing when the plunger moves backward causing the end thereof to move in an upward direction and to engage a valve stem 24.

A measuring chamber 25 is formed concentrically in the valve casing 11 and the valve stem 24 reciprocates centrally therein. A valve 26 is secured to the stem 24 and is arranged to engage a valve face 27 in the bottom of the measuring chamber. A second valve is actuated by the valve stem 24 to control the flow of the syrup from the container 12 to the measuring chamber. The valve stem 24 enters a tubular member 29 having a spring 30 in the lower end of the tubular member between the top of the valve stem and the closed end of the member 29. Said tubular member 29 is provided with a circular valve 31 on the lower end thereof which engages a valve face 32 when in the raised position thereby closing the entrance aperture. 33 and stopping the flow of syrup from the container to the measuring chamber. When in the normal or open position the syrup is permitted to flow into the measuring chamber until the same is full. When the valve 31 engages the valve face 32 the valve stem may continue to travel upwards, in which case the spring 30 will be compressed and will hold the valve firmly closed.

There is a coil spring 43 which encircles valve stem 24 in measuring chamber 25. It extends from the upper face of 26 to a U shaped shoulder 44. Even when in the normal or open position the coil spring 43 is under tension. The purpose of coil spring 43 is to keep 26 compressed against valve face 27. Valve stem 24 operates through shoulder 44 and is not permanently attached thereto. The projections of 44 rest on the bottom of 12.

It will be seen from the foregoing that as the lower or exit valve opens the upper or entrance valve closes thus permitting a prescribed quantity of syrup, according to the size of the measuring chamber, to be passed into the mixing chamber 34.

Further valve means are provided to control the flow of the carbonated or non-carbonated water. This consists of a valve 35 engaging a valve face 36, said valve is mounted on a stem 37 guided by the plunger stem 17 and actuated thereby and by an additional retraction spring 38 to ensure proper closing of the valve. The carbonated or non-carbonated water enters under pressure through a conduit 39 from a container which is threadably attached and en-

ters the mixing chamber 34 through a duct 40 and the valve 35.

The two elements are therefore permitted to enter the mixing chamber 34 at the same time and as the carbonated and noncarbonated water is under pressure and usually forms the greater quantity, the two elements are mixed and pass out from the mixing chamber to the faucet.

An upper transparent container or chamber 41 which may be filled or partially filled with attractive liquid displays. The space 42 between the conduit 39 and the standard 10 may be filled with an insulating medium to keep the liquid in the pipe at the same temperature as when it leaves the cooling coils associated therewith.

From the foregoing description it will be readily understood that I have devised means to automatically mix and dispense a liquid at one operation thus saving much time and providing for the correct means and proportions of the elements at each operation.

It is believed that the construction and advantages of the structure shown may be apparent from the foregoing paragraphs taken in conjunction with the accompanying drawings without further detailed description.

While the preferred embodiment of the invention has been disclosed it is understood that minor changes in the details of construction, combination and arrangement of co-operating parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

I claim:

1. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon and a reciprocating valve actuating means operated by said handle to control the flow of liquids to said mixing chamber.

2. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon, a plunger positioned horizontally in said mixing chamber, a plunger pin pivoted to said operating handle and arranged to actuate said plunger by the movement thereof and valve means controlling the flow of the liquid to the mixing chamber.

3. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon, a plunger posi-

tioned horizontally in said mixing chamber, a plunger pin pivoted to said operating handle and arranged to actuate said plunger by the movement thereof, and valve means controlling the flow of the liquid to the mixing chamber, a retraction spring associated with said plunger to return same to normal position.

4. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon, a plunger positioned horizontally in said mixing chamber, a plunger pin pivoted to said operating handle and arranged to actuate said plunger by the movement thereof, and valve means controlling the flow of the liquid to the mixing chamber, a retraction spring associated with said plunger to return same to normal position, valve means in alignment with said plunger controlling the flow of liquid from the lower container, upper valve means at right angles thereto controlling the flow of liquid from the upper container, said valve means also actuated by the horizontal movement of the plunger.

5. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon, a plunger positioned horizontally in said mixing chamber, a plunger pin pivoted to said operating handle and arranged to actuate said plunger by the movement thereof, and valve means controlling the flow of the liquid to the mixing chamber, a retraction spring associated with said plunger to return same to normal position, valve means in alignment with said plunger controlling the flow of liquid from the lower container, upper valve means at right angles thereto controlling the flow of liquid from the upper container, and means connected to said plunger to transfer the horizontal movement of the plunger to the vertical movement of the upper valve means.

6. In an automatic liquid mixer and dispenser as described comprising a support standard, a valve casing mounted thereon, an upper liquid container supported on said valve casing, a mixing chamber constructed in said valve casing, conduit means in said standard adapted to be connected to carbonated or non-carbonated water container, conduit means leading from said upper containers to said mixing chamber, an outlet faucet formed on said mixing chamber, an operating handle pivoted thereon, a plunger positioned horizontally in said mixing chamber, a plunger pin pivoted to said operating handle and arranged to actuate said plunger by the movement thereof, and valve means controlling the flow of the liquid to the mixing chamber, a retraction spring associated with said plunger to return same to normal position, valve means in alignment with said plunger controlling the flow

of liquid from the lower container, upper valve means at right angles thereto controlling the flow of liquid from the upper container, an upward curved arm pivoted loosely to a collar on said plunger, an upward curved cam face formed in said valve casing, said arm arranged to engage said cam face when the plunger is moved toward the same, and thereby to be moved in an upward direction to engage and actuate the vertical or upper valve means.

7. In a device as claimed in claim 6 wherein said vertical valve means consists of a valve stem having a circular valve secured thereon and engaging a valve face positioned at the lower outlet of the measuring chamber controlling the flow therefrom to the mixing chamber and a second valve stem slides, spring means positioned in closed end of the tubular member between the end thereof and the upper end of the valve stem allowing for independent movement of each valve, said second valve controlling the flow of liquid from the upper container through an aperture to the measuring chamber and arranged to be closed when the lower valve is open and vice-versa, substantially as set forth.

8. A liquid mixer and dispenser comprising a valve casing having a mixing chamber, a conduit

for conducting a liquid to the mixing chamber, a valve controlling the flow of liquid from said conduit, a liquid container in communication with the mixing chamber, a valve for controlling the flow of liquid from said container, a reciprocating plunger mounted in said valve casing adapted to simultaneously actuate said valves, and a handle for operating said plunger.

9. A liquid mixer and dispenser comprising a valve casing having a mixing chamber, a conduit for conducting a liquid to the mixing chamber, a valve controlling the flow of liquid from said conduit, a measuring chamber in communication with said mixing chamber, a valve for controlling the flow of liquid from said measuring chamber, a liquid container above and in communication with said measuring chamber, a valve controlling the flow of liquid from said container to said measuring chamber, a valve actuating rod for alternately opening and closing the valves of said measuring chamber and liquid container, a reciprocating plunger mounted in said valve casing adapted to actuate said valve actuating rod and the valve of said conduit, and a handle for operating said plunger.

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