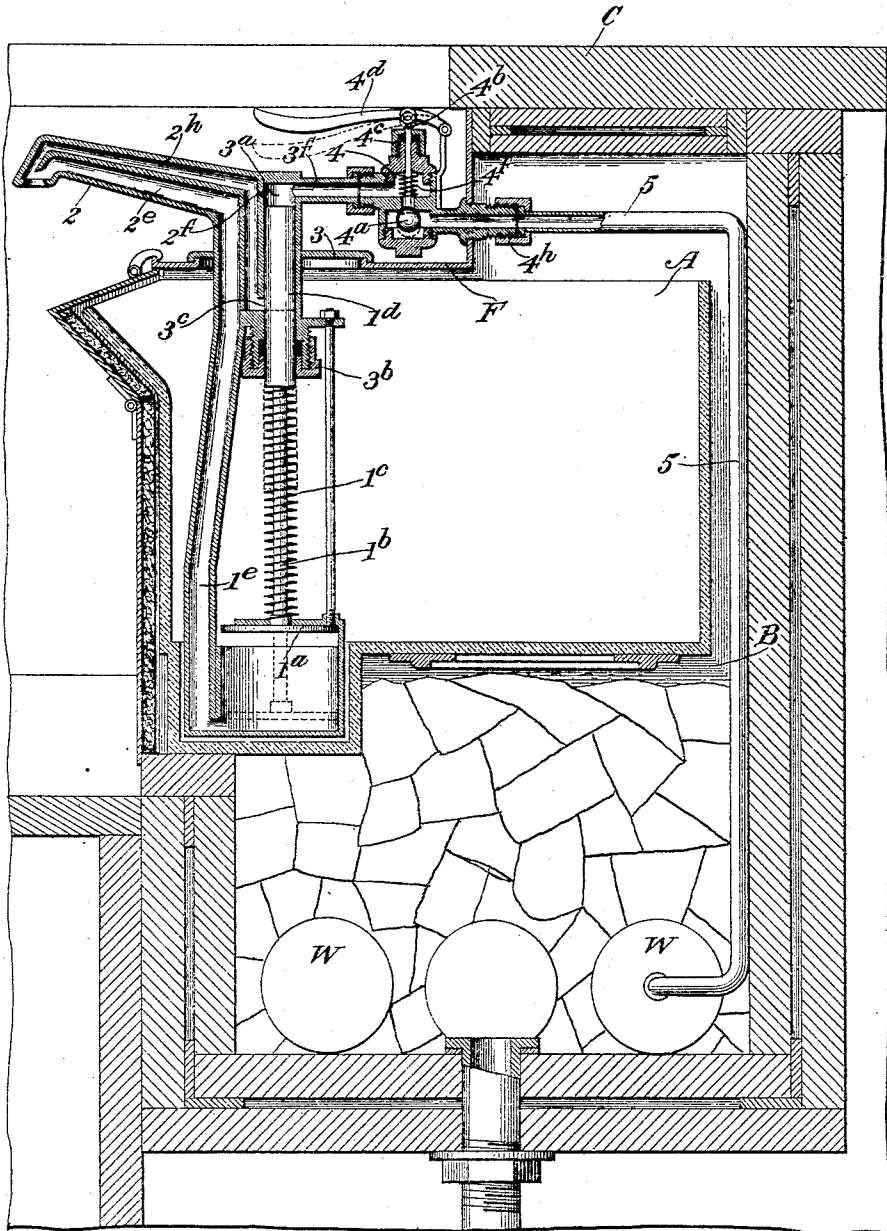


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 AUTOMATIC SYRUP DELIVERY FOR SODA FOUNTAINS.
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ANGUS ROY GROSS, OF CATONSVILLE, MARYLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO JAMES D. BROWN, OF BALTIMORE, MARYLAND, AND ONE-HALF TO JOSHUA T. GILLELAN, OF EMMITSBURG, MARYLAND.

AUTOMATIC SYRUP DELIVERY FOR SODA-FOUNTAINS.

932,386.

Specification of Letters Patent.

Patented Aug. 24, 1909.

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To all whom it may concern:

Be it known that I, ANGUS ROY GROSS, of Oaklawn, Catonsville, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Automatic Syrup Delivery for Soda-Fountains; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in dispensing apparatus for soda-water fountains and has particular reference to the means for discharging the syrup. Its object is to enable the proper quantity of the desired syrup or flavor to be delivered automatically by the action of the charged water when the latter is drawn off into a glass or receiver so that the attendant merely has to draw the water and the syrup will be delivered simultaneously therewith, and the operator has simply to depress a single lever or open a single valve in order to obtain both the syrup and the water this double result being obtained without any particular exertion on his part and by one operation, thus effecting a saving of labor in operating the apparatus and rendering the same more compact and speedy in operation.

The invention will now be explained in detail in connection with the accompanying drawings, which illustrate one practical form of apparatus embodying the invention and operating on the principles above outlined, but it will be obvious that the invention is not restricted to the particular mechanical details shown in the drawings and can be utilized in a variety of mechanical embodiments to suit the wish of the manufacturer and to best accord with the design of the fountain or dispensing apparatus with which it is to be used.

The drawings represent a sectional elevation through the upper part of a dispensing fountain, showing syrup pump, a container, a charged water connection, whereby the syrup may be automatically delivered upon the opening of the water valve; the parts being shown closed in full lines and in operative or discharging position in dotted lines.

In the said drawings A designates the syrup container which may be of ordinary construction and arranged within a cooler B located beneath or in rear of the top C, as usual in dispensing apparatus. Customarily the containers A are arranged in series and can be removed from the cooler through doors in the front side thereof, as indicated in the drawing, but these features are well understood and form no part of the present invention. It is therefore unnecessary to enter into any detailed explanation thereof.

Within each syrup container A is inserted a pump which may be of any desired construction and is shown as provided with a cylinder at bottom in which works a plunger 1^a connected to a rod 1^b and normally raised above the top of the cylinder, by means of a spring 1^c, or any other suitable means. In the present instance the pump cylinder communicates at bottom with a discharge pipe 1^c which extends upward and connects with a channel 2^c in a delivery pipe 2 which extends through a plate 3, removably fitted over an opening in the top plate F of the cooler above the container. Plunger rod 1^b is connected to, or formed with, a piston 1^d at its upper end, which enters a short cylinder 3^a formed with or secured to plate 3, adjacent the delivery pipe 2, and said cylinder has at its bottom a stuffing box 3^b and at its side an outlet port 3^c connecting with a channel 2^b in the delivery pipe 2 adjacent channel 2^c. The spring 1^c normally holds the plunger 1^a and the piston 1^d raised as shown in full lines in Fig. 1 so that the port 3^c is normally closed.

The cylinder 3^a is connected at top by pipe 3^e with a valve chamber 4 which has a port closed by a valve 4^a, which preferably is an upwardly closing valve and is connected to a stem 4^b passing through a stuffing box 4^c and pivoted to a hand lever 4^d. A spring 4^e may be arranged to close the valve but its closure will ordinarily be effected by the pressure of the liquid. The valve chamber 4 is connected, in a suitable manner, as indicated at 4^h in drawings with a water supply pipe 5, which connects with the coolers in the ice box, or charged water containers W, which may be located in the ice box

or arranged in any preferred manner, the essential requirements being that the valve chamber 4 shall be in direct communication with the charged water supply so that when valve 4^a is opened the charged water will flow through the valve chamber into the cylinder 3^a where owing to its pressure it will force piston 1^a downward until port 3^c is uncovered and then the water will flow through said port and channel 2^b until discharged and will continue to flow so long as valve 4^a is held open. The depression of piston 1^a causes plunger 1^a to descend into the pump cylinder 1 and as the latter is normally filled with syrup the syrup in said cylinder is forced out through the pipe 1^e into the channel 2^e and is discharged simultaneously with the water into a glass or receptacle held under the delivery pipe 2.

The syrup will be discharged substantially simultaneously with the water and I consider this method of operation preferable, but it is within the scope of the invention to arrange the apparatus so that the syrup may be discharged before or after the water has begun to flow from the delivery pipe. As soon as valve 4^a is closed the water is cut off and piston 1^a and plunger 1^a are raised so that the cylinder 1 can fill with syrup. Any pressure between the piston 1^a and the valve 4^a is relieved by means of a small vent 2^f at the upper end of the cylinder communicating with channel 2^b as shown.

Among the advantages of the invention as applied to dispensing apparatus are the automatic operation of the syrup discharge; the utilization of the charged water pressure to operate the syrup delivery; the doing away with any manual operation of the syrup pump and the simultaneous discharge of water and syrup from the same delivery pipe or nozzle; the lessening of manual labor as slight pressure on the valve lever suffices to open the water valve; and the saving of time in that the water and syrup are drawn simultaneously.

It is obvious that the principal features of the invention, to wit: utilization of the water pressure or gas pressure in the fountain to operate the syrup discharge can be embodied in various forms of apparatus and therefore the specific apparatus shown in drawings is but one of many that could be readily devised while at this time the present preferred form of the apparatus.

Having thus described the invention, I claim:

1. In a dispensing apparatus the combination of a flavor supply, a charged water supply, a valve controlling the dispensing of the water, and a pump actuated by the charged water for delivering the proper quantity of flavor when said valve is open.

2. In a dispensing apparatus the combination of a water supply, a syrup or flavor

supply, a pump for discharging predetermined quantities of syrup, and means for operating said pump by pressure of the escaping water.

3. In a dispensing apparatus for soda fountains, the combination of a water supply, a water dispensing valve, a syrup container, a pump for discharging predetermined quantities of syrup from the container, and means for operating said pump by pressure of the escaping water when the water valve is opened.

4. In a dispensing apparatus the combination of a container, a pump therein, a delivery pipe connected with the pump, a charged water supply, a valve for controlling the water discharge and means actuated by the water pressure to operate the syrup pump when the water valve is open.

5. In a dispensing apparatus the combination of a container, a pump therein, a delivery pipe connected with the pump, a charged water supply also connected with the delivery pipe, a valve for controlling the water discharge and means actuated by the water pressure to operate the syrup pump when the water valve is opened.

6. In combination a syrup container, a charged water dispensing pipe, a valve therein, a syrup pump connected with said pipe, and means for operating the syrup pump by water pressure connected with the water pipe between its valve and discharge end.

7. In a dispensing apparatus, the combination of a delivery pipe, a charged water pipe connected therewith and a valve for regulating the discharge of the charged water with a syrup container, a pump therein, a cylinder connected with the water pipe and a piston in said cylinder connected with the pump for operating the latter when the water valve is open.

8. In a dispensing apparatus the combination of a delivery pipe, a charged water pipe connected therewith, a valve for regulating the discharge of the charged water, a cylinder connected with the water pipe between the valve and the delivery pipe, and a piston in said cylinder; with a syrup container and a syrup pump connected with said piston whereby the pump is operated when the water valve is opened.

9. The combination of a syrup container, a syrup pump and a delivery pipe with a charged water supply pipe, a valve therein, a cylinder connected with said supply and discharge pipes, and a piston in said cylinder normally closing communication between the supply and the discharge pipes, said piston being connected with the syrup pump whereby the latter is operated when the water valve is opened.

10. In combination a syrup container and a pump therein, a delivery pipe, a charged

water dispensing pipe, a valve therein, a
cylinder connected with said delivery and
dispensing pipes, a piston in said cylinder
normally closing communication between the
5 said pipes and connections between said pis-
ton and the pump whereby the pump is
operated when the water valve is opened.

In testimony that I claim the foregoing as
my own, I affix my signature in presence of
two witnesses.

ANGUS ROY GROSS.

Witnesses:

SAM D. BUCK,
JAMES D. BROWN.