No. 650,166. Patented May 22, 1900.

C. N. CHADBOURN.

PNEUMATIC SYRUP JAR FOR SODA FOUNTAINS.

(Application filed July 17, 1899.)

(No Model.)

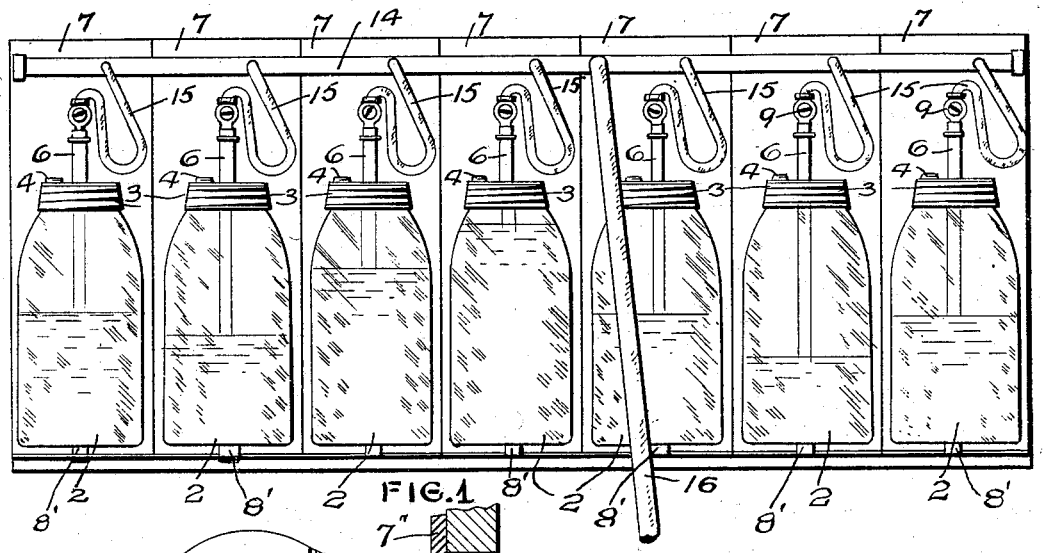

FIG. 1.

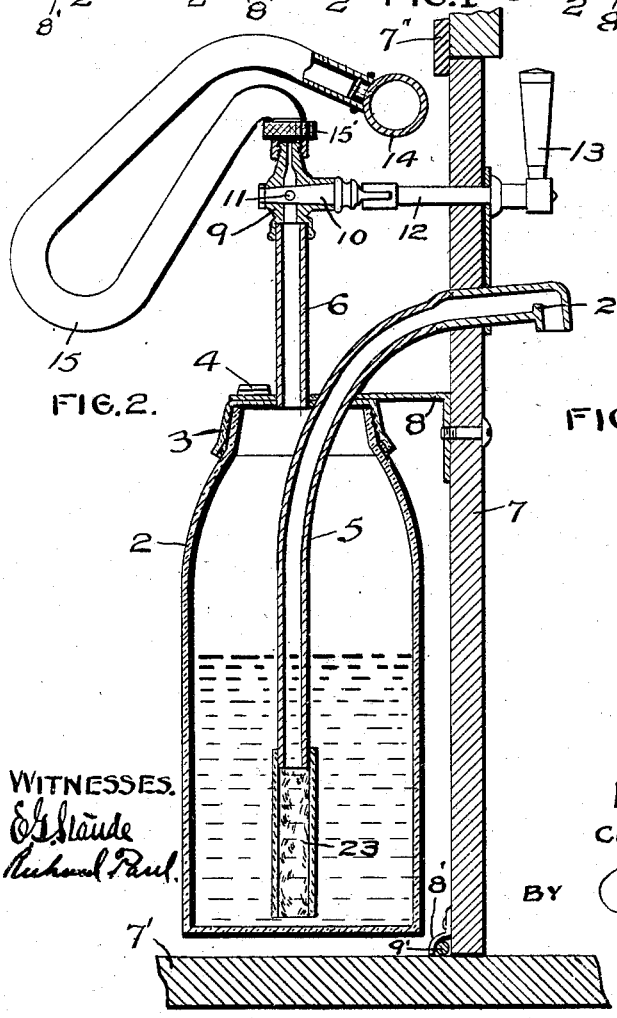

FIG. 2.

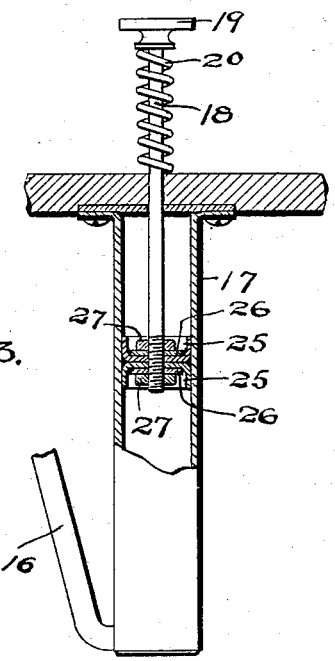

FIG. 3.

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CHARLES N. CHADBOURN, OF MINNEAPOLIS, MINNESOTA.

PNEUMATIC SYRUP-JAR FOR SODA-FOUNTAINS.

SPECIFICATION forming part of Letters Patent No. 650,166, dated May 22, 1900.

Application filed July 17, 1899. Serial No. 724,048. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. CHADBOURN, of Minneapolis, in the county of Hennepin, State of Minnesota, have invented certain Improvements in Pneumatic Syrup-Jars for Soda-Fountains, of which the following is a specification.

This invention relates to improvements in syrup-jars for soda-fountains; and the objects I have in view are to provide a syrup-jar from which the syrup may be forced by pneumatic pressure; also, to provide a series of such jars in connection with a single pump so arranged that the syrup may be forced from any one of the jars at will; also, to provide a jar that can be readily removed and refilled without removing any of the other jars; also, to provide a jar with an outlet pipe or tube in which any of the syrup remaining in the tube may be drawn back into the jar instead of being allowed to drip from the open end of the tube.

Other objects of the invention will appear from the following detailed description, taken in connection with the accompanying drawings, in which—

Figure 1 is a rear view of a number of syrup-jars embodying my invention, showing the arrangement of the jars in the soda-fountain. Fig. 2 is a vertical section of a portion of a soda-fountain and one of the jars and its connections. Fig. 3 is a representation of a pump that may be employed in connection with the jar.

In the drawings, 2 represents a syrup-jar that may be of any ordinary or preferred construction. I prefer to employ a common Mason glass jar having a screw-threaded top, which is adapted to be screwed into a screw-threaded cover 3. The cover 3 is provided with a suitable filling-orifice having a cap 4. The cover 3 is also provided with an outlet-tube 5 and an air-inlet tube 6. The jar, with its connections, is preferably located behind a narrow plate or slab 7, preferably of marble, and a series of these slabs arranged side by side, as shown in Fig. 1, make up a section of the front of the soda-fountain. These plates preferably rest on a marble or other slab 7′ (see Fig. 2) and fit against a stop 7″. Each of said plates or slabs is preferably provided with a hook 8′ at its lower end, which hooks over a rod 9′. (See Fig. 2.) The weight of the jar holds the plate in position. When it is desired to remove any jar and plate, the handle 13 is grasped and the top of the plate is tipped outward until it clears the slab or plate above, and then the plate is lifted to free the hook 8′ from the rod 9′. The jar-cover 3 is secured to the back of the plate or slab 7 by a suitable bracket 8. The cover being held by the bracket and the jar being screwed into the cover, the jar is held suspended thereby, as shown in Fig. 2. The tube 6 is connected to a cock 9, the plug 10 of which is provided with a hole or opening 11, and a stem 12 is connected to the plug 10 and passes through the plate or slab 7 and is provided with a handle 13, by means of which the plug may be turned. A pipe 14 is arranged above the series of jars, as shown in Fig. 1, and each cock 9 is connected to the pipe 14 by a rubber or other flexible tube 15 and coupling 15′, which permits any one of the jars to be drawn forward a sufficient distance to enable it to be filled or detached at the coupling. A suitable air-pump is connected to the pipe 14 by any suitable means, as the tube 16, Fig. 1. In Fig. 3 I have represented an air-pump provided with a barrel 17 and plunger-rod 18, having a cap or head 19 and surrounded by a spring 20. The tube 16 is connected to the barrel of the air-pump.

The cocks 9 are normally closed, so as to prevent air being forced into the jars. When it is desired to draw syrup from any jar, the cock for that jar is opened, the pump is operated by foot or other pressure, and air is forced into that jar and the syrup is forced out of the pipe 5. In practice a partial stroke of the piston of the pump will force from the jar as much syrup as it will be necessary to draw at one time, and the return stroke of the pump-piston will suck back into the jar any syrup there may be in the tube 5. I may also provide a lip or ledge 2 near the end of the tube 5, so that any syrup in the tube when the air-pressure ceases will be compelled to run back into the jar, the tube 5 being preferably arranged on an incline.

For the purpose of insuring the immediate stoppage of the flow of the syrup when the pump is stopped and the drawing back into

the jar of any syrup there may be in the tube I prefer to employ a pump with a piston that fits air-tight in the pump-cylinder during both movements. For this purpose I provide the piston-rod with two cup-shaped leather parts 25, arranged back to back and held on the rod between the washers 26 by the nuts 27, as shown in Fig. 3. With this construction, the instant the downward movement of the piston ceases and the pressure is removed from the piston-rod the spring begins to move the piston in the opposite direction and the movement of the piston draws the air back into the jar through the tube 5, and thereby sucks back into the jar any syrup there may be in this tube.

I do not confine myself to any particular construction or arrangement of the air-pump, but prefer to use a pump that may be operated by foot-power, as I consider this the most convenient. A hand-pump may, however, be used, if preferred.

The tube 5 is preferably provided with a movable extension 23, arranged to telescope over the lower end of the tube for the purpose of adapting the tube for use with jars of different heights.

Instead of using a pump I may use any other suitable means for creating a pressure of air in the jar. Instead of using the screw-threaded connection between the cover and jar I may use any other clamp that will insure an air-tight closure of the jar.

I do not confine myself to the details of the construction shown and described, as the same may be varied in many particulars without departing from my invention.

I claim as my invention—

1. The combination, with a movable plate or slab, of a screw-threaded cover secured thereto, and a syrup-jar having a threaded top adapted to be screwed into said cover, substantially as described.

2. The combination, with a series of movable plates or slabs, of syrup-jars connected to and supported by said plates or slabs, an air-pump connected to all of said jars and adapted to force air into or draw same from said jars, and means to shut off the air-pressure from any jar, substantially as described.

3. The combination, in a soda-fountain, with a series of movable plates or slabs, of syrup-jars supported upon said plates, an air-pump, flexible connections between said pump and said jars permitting any plate and jar to be drawn out without disconnecting it from the pump, and means to shut off the pressure from any jar, substantially as described.

4. The combination, in a soda-fountain, with a movable plate or slab, of a cover secured thereto, and a syrup-jar connected to said cover, the joint between said cover and jar being air-tight, substantially as described.

5. The combination, with a pneumatic syrup-jar, of a pump provided with a double-acting piston, and having a valved connection with said jar, and said jar having an open outlet-pipe for the purpose set forth.

6. The combination, with the syrup-jar having a normally-open outlet for syrup, of the pump connected therewith and provided with a piston having two cup-shaped leather parts 25 arranged back to back, whereby said pump alternately forces air into and draws it from said jar, for the purpose set forth.

7. The combination, in a soda-water fountain, of a plurality of jars, with an air-pipe whereto each is joined by a valved connection, an open outlet for each jar discharging at a point above the level of the liquid therein, and an air-pump connected with said pipe to force air into or draw air therefrom, according to the direction in which the pump is operated.

8. The combination, in a soda-water fountain, of the fountain-frame, the plurality of jars arranged therein and each attached to a plate or panel in said frame, and removable therefrom with said panel, an air-pipe provided in said frame, flexible valved connections leading therefrom to each jar, means for forcing air into said pipe or drawing the same therefrom, and each jar having an outlet or discharge nozzle above the same, leading through the plate carrying the jar, substantially as described.

9. The combination, with the frame, of the pressure-pipe arranged therein, a suitable source of pressure connected therewith, two or more jar-couplings provided on said frame, connections leading therefrom to said pipe and containing pressure-valves, the discharge-nozzles also leading from said couplings and extending beneath the same and on their lower ends provided with yielding or movable extensions, and the common glass jars attached to said couplings, to contain syrup, substantially as described.

10. The combination, in a soda-water fountain, of a suitable frame, with the plates or panels therein, an air-pipe also provided therein, the jar heads or caps provided upon said panels and each having a valved connection with said pipe, the valve-handle in each case being upon the face of the panel, each said head also having a discharge-pipe appearing at the front of the panel, said panels and the parts attached thereto being removable from said frame as permitted by said connections, means for creating pressure or suction in said pipe, and the cylindrical glass syrup-jars removably attached to said heads or caps and closed thereby, substantially as described.

11. The combination, in a soda-water fountain, of a plurality of closed syrup-jars, having outlet or discharge tubes leading above said jars from the bottoms thereof, with a pressure-pipe having a valved connection with each of said jars, upon the opening of which connections pressure may be exerted, through said pipe, upon the liquid in a jar to force the liquid out through its discharge-

tube, or suction created to draw the liquid back into the jar, and means creating pressure and suction in said pipe, alternately, only when desired, substantially as described.

12. The combination, in a soda-water fountain, of a plurality of closed syrup-jars, having outlet or discharge tubes leading above said jars from the bottoms thereof, with a pressure-pipe having a valved connection with each of said jars, upon the opening of which connections pressure may be exerted, through said pipe, upon the liquid in a jar to force the liquid out through its discharge-tube, or suction created to draw the liquid back into the jar, means creating pressure and suction in said pipe, alternately, only when desired, and said connections and suitable couplings between the said pipe and jars permitting the removal of said jars, substantially as described.

13. The combination, in a soda-water fountain, of a plurality of closed syrup-jars, having outlet or discharge tubes leading above said jars from the bottoms thereof, with a pressure-pipe having a valved connection with each of said jars, upon the opening of which connection pressure may be exerted, through said pipe, upon the liquid in a jar to force the liquid out through its discharge-tube, or suction created to draw the liquid back into the jar, means creating pressure and suction in said pipe, alternately, only when desired, said connections and suitable couplings between the said pipe and jars permitting the removal of said jars, without dismembering said connections, substantially as described.

14. The combination, in a soda-water fountain, of a plurality of closed syrup-jars, each having an outlet or discharge tube leading above its jar from the bottoms thereof, a pressure-pipe having a valved connection with each of said jars upon the opening of which pressure may be exerted, through said pipe, upon the liquid in a jar, to force the liquid out through its discharge-tube, or suction created, to draw the liquid back into the jar, and means creating pressure and suction in said pipe alternately, only when desired, the said means being automatic in creating said suction, substantially as described.

15. The combination, in a soda-water fountain, of a frame, with a plurality of plates or panels removably arranged therein and carrying jar heads or caps, suitable valves and discharge-ducts, and the round glass jars detachably secured to said heads and removable with said panels, substantially as described.

16. In a soda-water fountain, a common cylindrical glass jar, in combination with the cap thereof forming a permanent part of the fountain and provided with a discharge-nozzle, substantially as described.

In witness whereof I have hereunto set my hand this 13th day of July, 1899.

CHARLES N. CHADBOURN.

Witnesses:
A. C. PAUL,
A. F. HOLMES.