No. 708,714. Patented Sept. 9, 1902.

J. P. JACKSON.

APPARATUS FOR SERVING AERATED WATERS ON DRAFT.

(Application filed Feb. 25, 1902.)

(No Model.) 3 Sheets—Sheet 1.

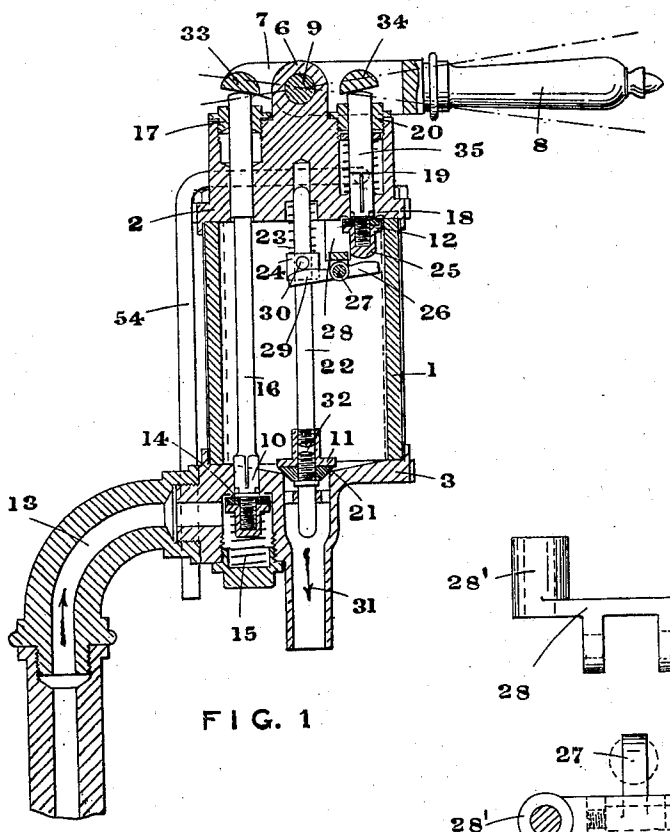


FIG. 1

FIG. 3.

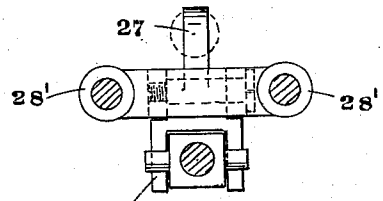


FIG. 4.

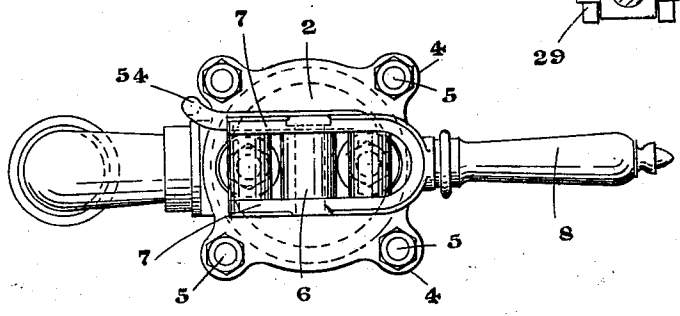


FIG. 2.

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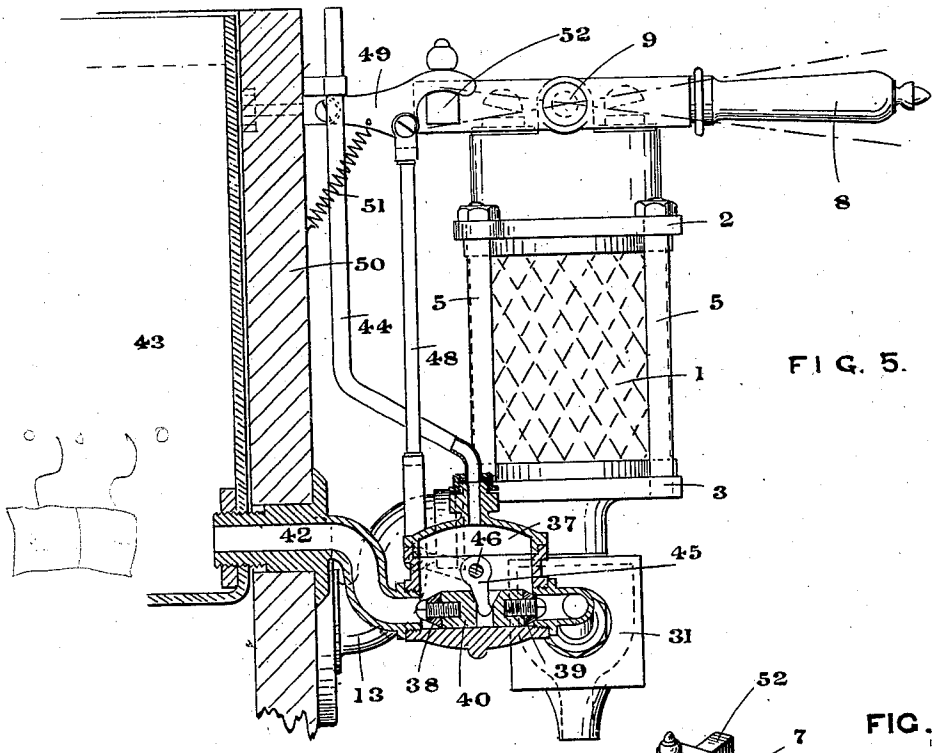


FIG. 5.

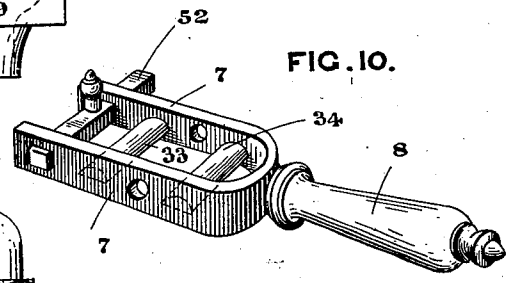


FIG. 10.

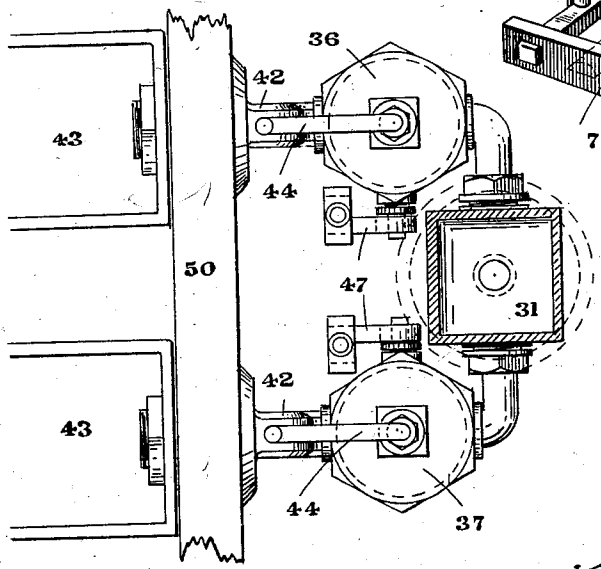


FIG. 6.

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APPARATUS FOR SERVING AERATED WATERS ON DRAFT.

(Application filed Feb. 25, 1902.)

(No Model.) 3 Sheets—Sheet 3.

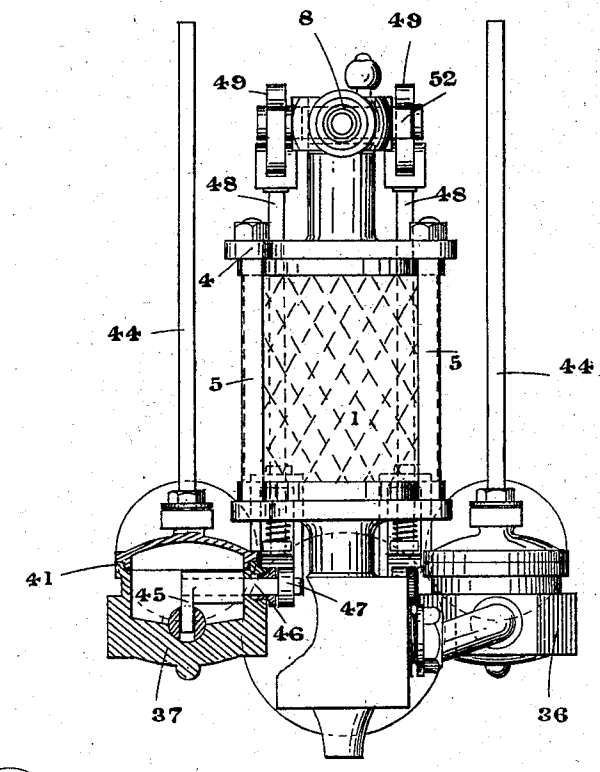


FIG. 7.

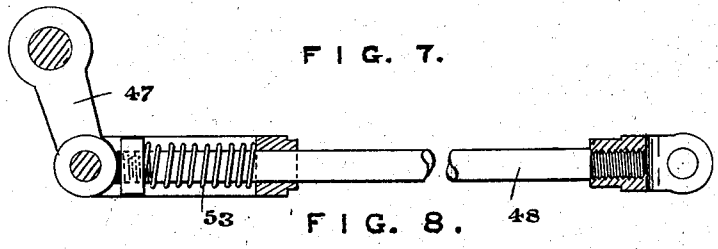


FIG. 8.

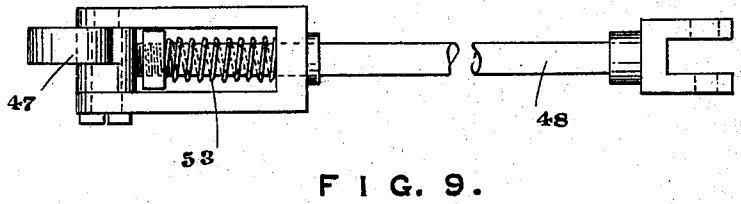


FIG. 9.

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UNITED STATES PATENT OFFICE.

JOHN PERKINS JACKSON, OF LIVERPOOL, ENGLAND.

APPARATUS FOR SERVING AERATED WATERS ON DRAFT.

SPECIFICATION forming part of Letters Patent No. 708,714, dated September 9, 1902.

Application filed February 25, 1902. Serial No. 95,527. (No model.)

To all whom it may concern:

Be it known that I, JOHN PERKINS JACKSON, a subject of the King of Great Britain, residing in Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in Apparatus for Serving Aerated Waters on Draft, of which the following is a specification.

This invention relates to that class of apparatus known as counter-fountains, which are designed to dispense on draft any aerated or carbonated beverage previously prepared and stored close by and in communication with the fountain itself with or without the addition of syrup flavorings.

In the accompanying drawings, Figure 1 is a sectional elevation through the aerated-liquid-measuring chamber of the fountain, and Fig. 2 is a plan view of same. Fig. 3 is an elevation, to a larger scale, of the bracket carrying the lever for actuating the outlet-valve; Fig. 4, a plan view of this lever and bracket. Fig. 5 is a side elevation of the fountain, showing one of the syrup-measuring chambers in section. Fig. 6 is a plan view with the fountain removed. Fig. 7 is a front elevation of the fountain and syrup-valves. Figs. 8 and 9 are detail views, to an enlarged scale, of the tappet-rod for actuating the syrup-valves. Fig. 10 is a perspective view of the handle, showing the sliding latch.

The fountain itself may stand on a pedestal or base or may have a side bracket to allow it to be secured to the side of the counter or ice-box.

Dealing first with the action of the fountain itself, a measured quantity of aerated liquid is run into its interior, the top pressure of the gas is let off, or "snifted," and the aerated liquid then flows out into a glass or other vessel, these three operations of filling, snifting, and discharging being effected by the rocking action of a single lever or handle, which actuates the inlet, snifting, and outlet valves.

1 is the aerated-liquid-measuring chamber of the fountain, preferably a strong glass cylinder held between an upper disk 2 and lower disk 3. These disks are provided with lugs 4, through which pass bolts or stays 5 to hold the disks in position, the joints between the glass cylinder and the disks being made by leather or rubber washers. The upper disk 2 carries a bearing 6, through which and the forked ends 7 of the hand-lever 8 is threaded a pin 9, so that the lever may rock thereon. In a plane at right angles to the axis of the pin 9 are arranged the axes of the three valves 10, 11, and 12. The inlet-valve 10, controlling the admission of aerated liquid through the pipe 13 to the cylinder, is normally held to its seating 14 on the under side of the lower disk 3 by means of a strong spring 15 and the pressure of the aerated liquid, and its spindle 16, guided in the upper and lower disks, is extended and continued through a gland 17 in the upper disk. The snifting-valve 12 is similarly normally held to its seating 18 on the under side of the upper disk by the spring 19, its spindle 35 passing through the guide 20. The outlet-valve 11 is placed in the center of the lower disk and is normally held to its seating 21 by its own weight; but the closing of the two valves may be rendered more certain by weighting the spindle 22 or by the action of a compression-spring 23 between the upper disk and a collar 24 on the spindle. The lower head 25 of the snifting-valve is arranged on the full opening of the valve to depress the arm 26 of a small rocking lever pivoted at 27 to a bracket 28, carried by two feet 28′ from the under side of the upper disk. The other arm 29 of this lever is forked, as shown in Fig. 4, and bears against a stop 30 on the collar 24. The valve-head 25 is clear of the arm 26 when the valve is closed and only begins to operate the rocking lever when the valve 12 has been opened some distance. As the fulcrum 27 is nearer to the snifting-valve head than the stop 30, a small amount of travel of the valve-head will cause the valve 11 to lift a proportionately-increased amount. The upper or working surfaces of the rocking lever are curved, so that the farther the snifting-valve is pushed down or opened the greater the proportional increase of movement given to the outlet-valve becomes. The collar 24 is preferably of rectangular form, fitting inside the forks 29 of the rocking-lever, thus preventing the valve 11 turning while being lifted and lowered. The valve-spindle 22 is guided in the upper disk and also in the delivery-nozzle 31,

and means 32 are provided for adjusting the position of the valve along the axis of its spindle. Bridge-pieces 33 34, fixed between the forks of the handle, open the valves 10 and 12 by depressing their respective valve-spindles 16 and 35. It will thus be seen that on raising the handle 8 the bridge-piece 33 depresses the spindle 16 and opens the inlet-valve 10 against the pressure of the spring 15, admitting the aerated liquid into the cylinder 1, which partly fills, forming a cushion of air and gas in the upper part of the cylinder. The handle 8 is then lowered, allowing the spring 15 to close the inlet-valve. The bridge-piece 34 then depresses the spindle 35 and opens the snifting-valve 12 and allows the confined air and gas to pass out into the atmosphere by the exhaust-pipe 54. On further depressing the handle the valve-head 25 bears upon the rocking lever-arm 26, causing the forked arms 29, acting on the stops 30, to lift the outlet-valve, and the aerated liquid then flows out quietly.

When it is desired to flavor the aerated liquid, the fountain is provided with the syrup apparatus, as shown in Figs. 5, 6, and 7. In this apparatus I provide two syrup-measuring chambers 36 and 37, preferably fixed one on each side of the fountain, and they are so arranged that a measured quantity of the syrup flows into the delivery-nozzle 31 together with the aerated liquid, the nozzle being at this point widened out in order that they may be more thoroughly mixed. As the required proportion of aerated liquid is much greater than that of syrup and since the syrup is of such a nature that its movement is comparatively slow, the flows of the proportionate amounts of syrup and aerated liquid practically take place in the same time. The syrup-measuring chamber 37 is provided with inlet and outlet valves 38 and 39, respectively, rigidly connected by the distance-piece 40, so that each movement of the valves opens one passage and closes the other. These valves consist of rubber or leather washers, preferably cone-shaped and fixed by screws to the distance-piece, the whole being capable of sliding in a groove in the bottom of the measuring-chamber, which is cylindrical in shape and in two parts jointed at 41. The syrup flows into the measuring-chambers 36 and 37 from the syrup-reservoirs 43 through passages 42, controlled by the valve 38 and a corresponding valve in chamber 36. I preferably arrange the valves so that when not in use the outlet-passage is closed, and the measuring-chamber is therefore full and ready to discharge at the next operation. On top of the syrup-measuring chamber I provide a small-bore air-pipe 44, reaching to the top of the syrup-reservoir to allow the air to escape and the syrup to rise in the tube at each filling of the chamber, so that the differences in the amount of syrup delivered due to the continual lowering of the surface in the reservoir will be very minute. The measuring-chamber is also arranged a little below the reservoir to insure that the whole of the syrup may be measured and used. To operate the valve-rod, I provide an internal arm 45, projecting into a slot in the distance-piece 40. This arm is mounted on a horizontal rocking spindle 46, which is carried through a stuffing-box in the side of the chamber and has attached at its outer end another arm 47, the combined arm 45 and 47, with the spindle 46, forming a kind of bell-crank lever. The lower end of the spring tappet-rod 48 is pivoted to the external arm 47, the upper end being attached to the latch 49, pivoted to the casing 50 and normally held down by the tension-spring 51. Each of the reservoirs and measuring-chambers is provided with its own latch and tappet-gear, a sliding bolt 52 in the handle-forks being arranged to slide under and engage either of the latches at the choice of the operator.

The cycle of operations is as follows: The handle 8 is first raised, the inlet-valve 10 being thereby opened and a supply of aerated liquid admitted into the cylinder 1. The handle is now depressed, when simultaneously with the opening of the snifting-valve 12 the syrup inlet and outlet valves 38 39 are respectively shut and opened by means of the bolt 52, latch 49, tappet-rod 48, and bell-crank 47 45. On further depression of the handle the outlet-valve 11 is opened by means of rock-lever 26 29, the issuing streams of aerated liquid and syrup mingling in the enlarged chamber 31 and passing out through the nozzle.

The object of the spring 53 in the tappet-rod 48 is to permit of varying lifts of the latch 49 without straining the valve, as would be the case if the connection were positive.

When the apparatus is not in use, the weight of the levers, tappet-rod, &c., and the pressure of the syrup tend to keep the valve 39 closed, and the chamber is therefore always full at the beginning of each operation.

The whole of the contrivance is mounted on a marble or walnut cabinet, as usually provided, and one fountain may be used for every two sweetened drinks.

In my apparatus the measuring-chambers are fixed close up to the fountain, thus taking up little room, and all the working gear is at the back of the chambers and almost hidden, so that two, three, or four sets of these machines can be arranged without appearing cumbersome.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a counter-fountain, in combination, a receiver connected to a supply of aerated water, inlet, outlet, and snifting valves therefor, a syrup-measuring chamber communicating with the outlet from said receiver, a syrup-reservoir connected with said chamber, valves controlling the inlet of syrup to and its exit from said chamber, and a single

operating-handle having connections for controlling all of said valves, substantially as described.

2. In a counter-fountain in combination with a receiver in communication with a supply of aerated water and having inlet, outlet and snifting valves, a handle operating said valves; two syrup-chambers in communication with syrup-reservoirs and having inlet and outlet valves and means capable of being adjusted whereby the movement of the handle may be made to operate the valve of either syrup-chamber at will; substantially as described.

3. In a counter-fountain, in combination with a receiver in communication with a supply of aerated water and having inlet, outlet and snifting valves, a handle for operating said valves; two syrup-chambers whose outlets communicate with the outlet of the receiver, a syrup-reservoir connected with each chamber each of said chambers being provided with a double valve which normally closes the outlet and a vent-pipe which allows the said chambers to fill from the reservoir, and adjustable means interposed between the handle and double valves whereby the movement of the handle when discharging the receiver moves the double valve of either chamber as may be desired so as to close the inlet and open the outlet; substantially as described.

4. In a counter-fountain in combination with the receiver, and its valves, the two syrup-chambers and their valves; the handle adapted to operate the valves of the receiver and having a movable catch 52 adapted to operate the valve of either syrup-chamber at will; substantially as described.

5. In a counter-fountain and in combination with the receiver, a syrup-chamber communicating with a syrup-reservoir and provided with a vent-pipe, a double valve which normally opens the inlet and closes the outlet; and means consisting of an operating-handle, a spring tappet-rod and levers connected to the operating-handle and adapted, when the latter is operated to discharge the receiver, to move the said double valve so that it closes the inlet and opens the outlet; substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN PERKINS JACKSON.

Witnesses:

J. E. LLOYD BARNES,

J. E. HIRST.