(No Model.) 2 Sheets—Sheet 1.

W. B. SMITH.

SODA WATER APPARATUS.

No. 594,573. Patented Nov. 30, 1897.

Fig. 1.

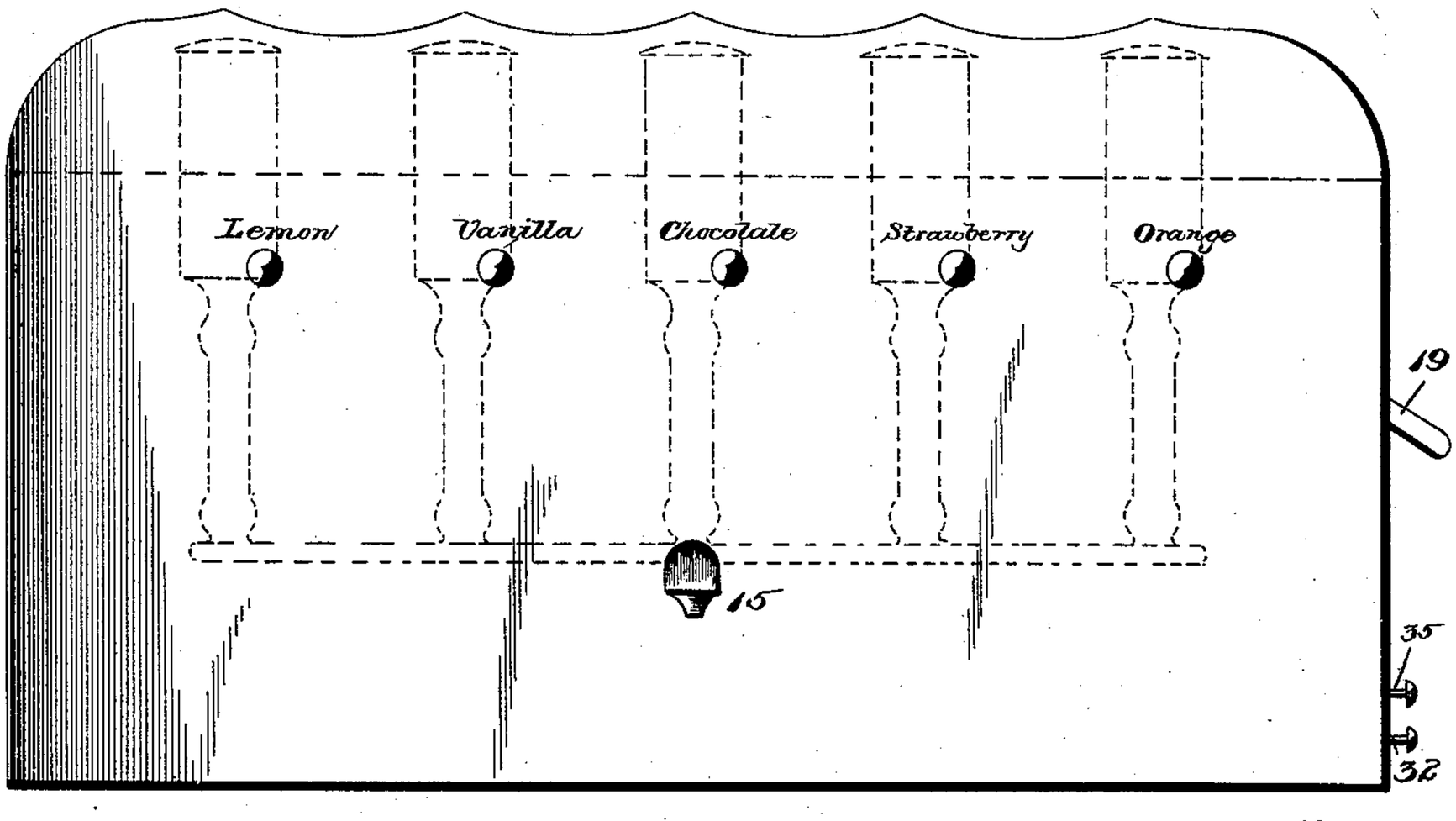


Fig. 3.

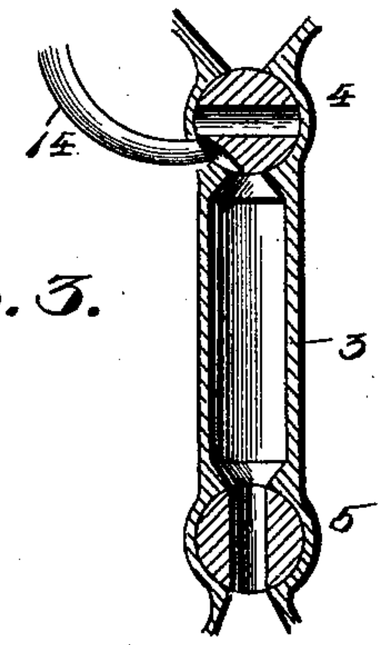
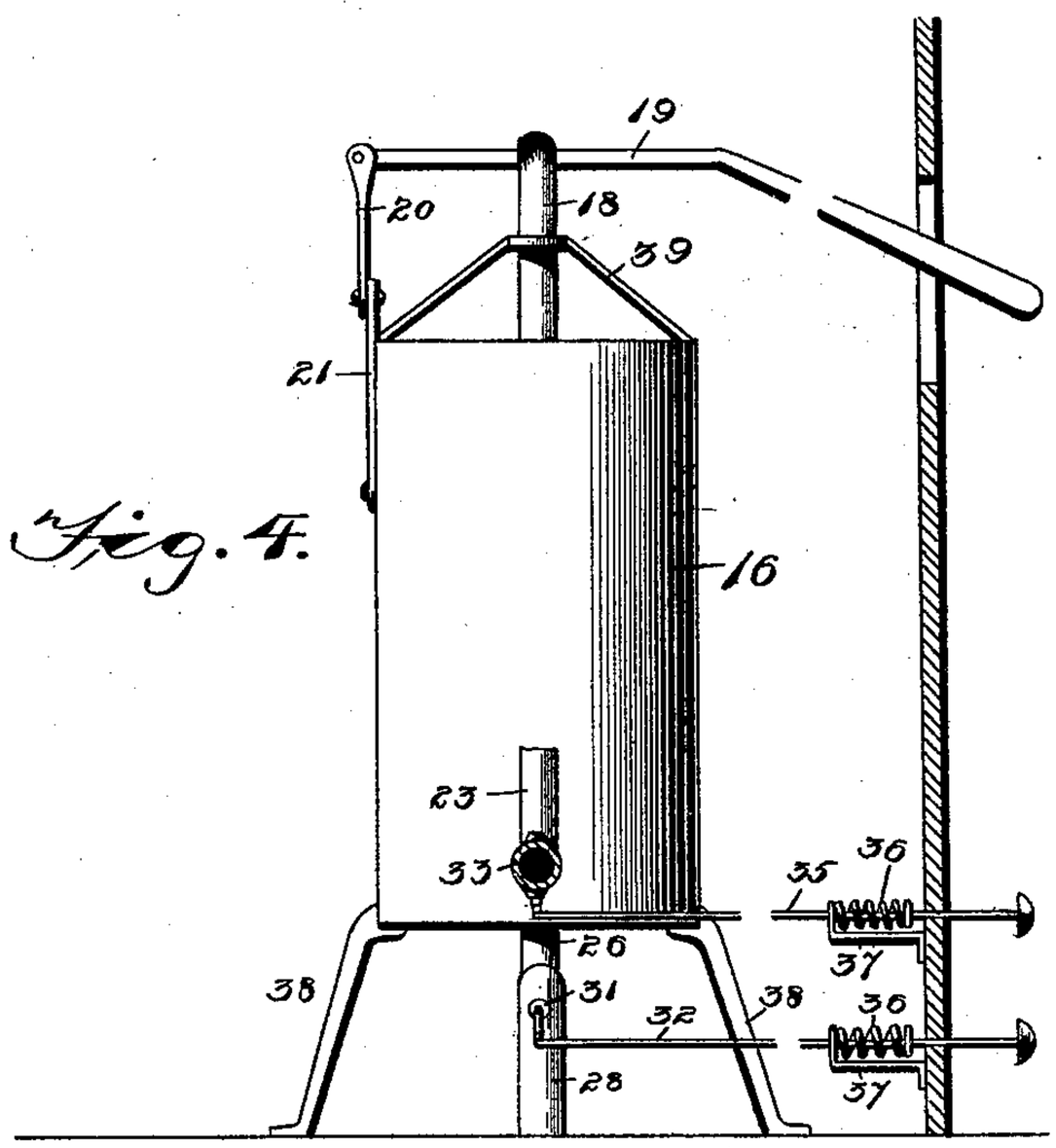


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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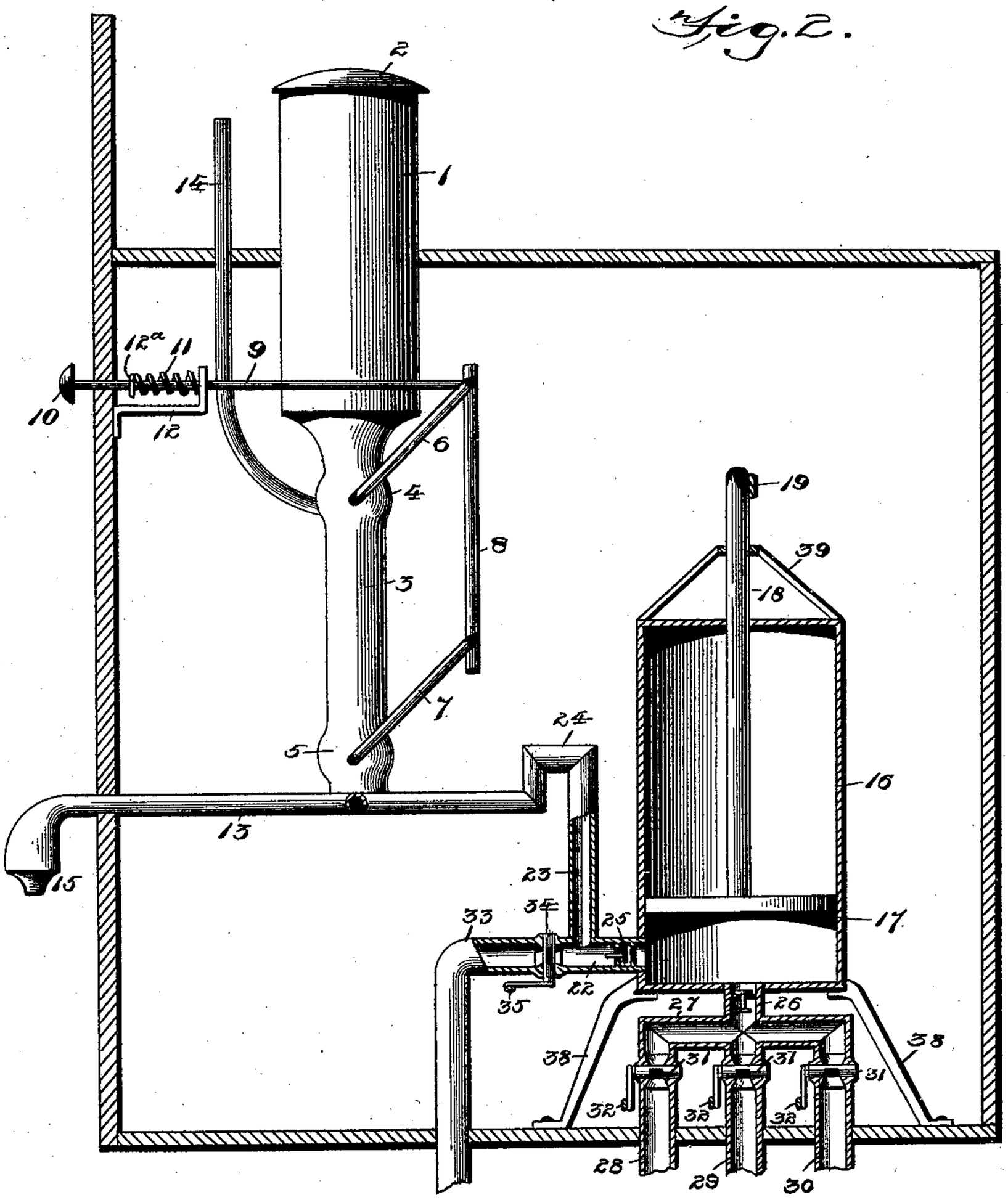
Fig. 2.



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UNITED STATES PATENT OFFICE.

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SODA-WATER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 594,573, dated November 30, 1897.

Application filed March 6, 1897. Serial No. 626,238. (No model.)

To all whom it may concern:

Be it known that I, WALTER BELLINGER SMITH, a citizen of the United States, residing at St. Johnsville, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Soda-Water Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in soda-water apparatus, the object of the same being to produce a carbonated beverage of a variety of kinds and flavors without the use of the expensive apparatus in general use, embodying the employment of expensive apparatus to obtain a carbonated drink.

The invention also provides for automatically gaging the amount of fruit-syrup drawn for each glass and for gaging the amount of soda which is mixed with the fruit-syrup.

With the above objects in view my invention consists in the construction and combination of parts constituting the apparatus, all as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a front view of a soda-water apparatus constructed in accordance with my invention, the connection between the fruit-jars and discharge-pipe being indicated in dotted lines. Fig. 2 is a vertical sectional view through the apparatus. Fig. 3 is a detail sectional view of one of the gages used in connection with the syrup-jars. Fig. 4 is a detail view of the mixing apparatus.

The inclosing case of the fountain is constructed to present an ornamental appearance. At the top of the fountain are arranged a suitable number of jars 1, having the usual covers 2. These syrup-jars are connected at their lower ends to cylinders or gages 3, at the upper and lower ends of which are arranged cut-offs 4 and 5, respectively, the size of the gage between these cut-offs determining the amount of syrup supplied at each operation of the device. The cut-offs 4 and 5 are provided with operating-levers 6 and 7, connected to each other by a rod 8, and to one of the levers is connected a rod 9, which extends through the front wall of the fountain and provides for operating the cut-offs of the syrup-gage. The operating-rods are provided with push-buttons 10 and with a helical spring 11, interposed between a suitable bracket 12 and a rigid collar 12^a on said rod. The spring 11 acts to normally close the cut-off or valve 4, and it will be noted that when the said cut-off or valve is closed the other cut-off or valve 5 is opened. Therefore the operation of the rod 9 acts to open the valve 4 and close the valve 5, so that the cylinder or gage will be filled with syrup when the push-button 10 is pressed inward, the releasing of said push-button causing the opposite movement of the valve to discharge the syrup from the gage into the discharge-pipe 13. The discharge-pipe 13 is common to all the syrup-gages for the purpose hereinafter set forth. Each syrup-gage is provided with a vent-tube 14, extending from the extreme upper end thereof to a point above the fountain, these vent-tubes being preferably closed by the valve 4 when said valve is open and open when said valve is closed to permit all of the syrup in the gage or cylinder 3 to flow into the discharge-pipe of the apparatus. The outer end of this discharge-pipe is provided with the ordinary reducing cap or nozzle 15. By arranging the lower end of the vent-tube 14 so that it will be opened and closed by the valve 4, as hereinbefore stated, the syrup will not at any time find its way into said vent-tube, for when the communication is established between the cylinder 3 and syrup-jar the said vent-tube will be closed, and opened when the valves are operated to discharge the syrup into the pipe 13. This construction and arrangement provides a very simple and effective device for gaging the amount of fruit-syrup for each glass of soda-water, and the operation is very simple. The names of the different fruit-syrups may be placed upon the push-buttons 10 or upon the apparatus above or below said push-buttons.

In connection with the particular construction of the gage for the fruit-syrups I provide an apparatus for mixing the soda-water with the fruit-syrup, said apparatus consisting of a cylinder 16 of a capacity to receive about a tumblerful of water, and within this cylinder is arranged a piston 17, the piston-rod 18 of

which is connected to a lever 19, the operating end of which extends through a slot in one side of the fountain. The operating-lever 19 is fulcrumed to a short link 20, pivoted to a standard 21, extending from the cylinder. The piston 17 is provided with the usual packing, and the cylinder at its lower end has an outlet-pipe 22, connected by a pipe 23 to the discharge-pipe 13, hereinbefore referred to. The connecting-pipe 23 is provided at its upper end with an elbow-coupling 24 to prevent any liquid from the discharge-pipe flowing back into the cylinder. The outlet-pipe 22 is provided with an ordinary check-valve 25 to prevent back pressure when the piston is raised within the cylinder. In the bottom of the cylinder is an inlet-pipe 26, having a check-valve and connected to a horizontal pipe 27, communicating with a series of three or more pipes 28, 29, and 30, leading to supply-tanks containing hot water, hot bicarbonate of soda, and cold bicarbonate of soda, respectively. Each supply-pipe 28, 29, and 30 is provided with a cut-off 31, which is connected to an operating-rod 32. The outlet-pipe 22 in addition to being connected to the pipe 23, extending to the discharge-pipe 13, is provided with a waste-pipe 33, having a valve 34 therein connected to an operating-rod 35. The several operating-rods 32 and 35, connecting the valves in the supply and waste pipes, are provided with helical springs 36, bearing against brackets 37 at one end and attached to said rods at their other end. The object of these springs is to hold said valves normally closed. The cylinder is supported upon suitable feet 38, and the piston-rod 18 passes through a truss-gude 39.

With my improved soda-water fountain I use two elements—the acid-syrup and alkali bicarbonate-of-soda solution, the former being made from sugar, water, tartaric acid, and the whites of eggs, while the alkaline bicarbonate-of-soda solution is made in the usual manner. The mixture of the alkali bicarbonate-of-soda and the tartaric acid under pressure by the piston 18 causes a violent effervescence and produces a carbonated beverage equal to and more healthful than the best carbonated waters now produced from the expensive fountains using compressed gas. This drink is obtained by opening the valves in the supply-pipes 29 and 30 and then elevating the piston to draw a quantity into the cylinder 16. Then by depressing the piston the soda will be forced through the pipes 23 and 13 to and out of the reducing cap or nozzle 15 into a glass or tumbler placed below the same.

When it is desired to mix hot beef-tea, clam-juice, coffee, and other food drinks, the valves in the supply-pipes 29 and 30 are closed and the valve in the supply-pipe 28 opened, and before mixing the drink the piston should be slightly raised to collect all the superfluous liquids into the same, and then by opening the valve 34 and depressing the piston such liquids will be forced out through the waste-pipe 33. The push-button 10 corresponding with the fruit-syrup desired is then pushed inward to permit the syrup to flow into the gage beneath the fruit-jar, after which the said push-button is released, opening the valve at the lower end of the gage to permit the syrup to flow into the discharge-pipe 13 and from there into the glass or tumbler, after which the operating-lever 19 of the pump is operated to give a supply of hot water.

Thus it will be seen that by the use of my improved apparatus hot or cold soda-water of any flavor can be quickly supplied.

Having thus described the invention, what is claimed as new is—

1. In a soda-water apparatus, the combination with an ordinary syrup-jar, of a tube or cylinder communicating therewith, valves located in the opposite ends of said tube or cylinder, and means for operating the valves; together with a vent-tube opening into the cylinder at the upper valve; and located so that the vent-tube will be closed when the valve is open, and opened when the valve is closed, substantially as shown and described.

2. In a soda-water apparatus, the combination with the discharge-pipe connected to the syrup-jars, of a pump having an outlet-pipe connected to the discharge-pipe by an interposed elbow-coupling, said outlet-pipe having a check-valve adjoining the cylinder, and a series of supply-pipes extending from tanks and communicating with the lower end of the cylinder of the pump, said supply-pipes having cut-off valves and operating-rods extending therefrom, substantially as shown and for the purpose set forth.

3. In a soda-water apparatus, the combination with the discharge-pipe connected to the several syrup-jars, a pump having an outlet-pipe connected to the discharge-pipe, said outlet-pipe having a check-valve adjoining the cylinder, a waste-pipe connected to the intermediate portion of the outlet-pipe and having a valve therein; together with a series of supply-pipes communicating with the lower end of the cylinder, valves located in the supply-pipes, and operating-rods connected with the several valves, substantially as shown and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WALTER BELLINGER SMITH.

Witnesses:
W. C. SNIDER,
EDWARD R. HALL.