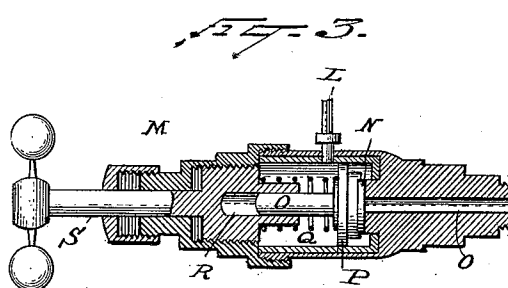
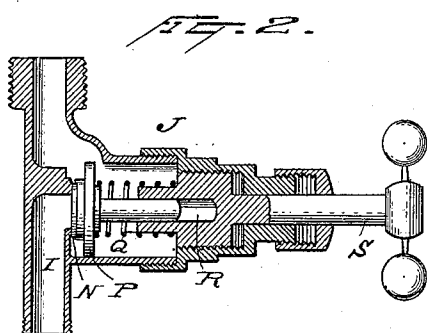
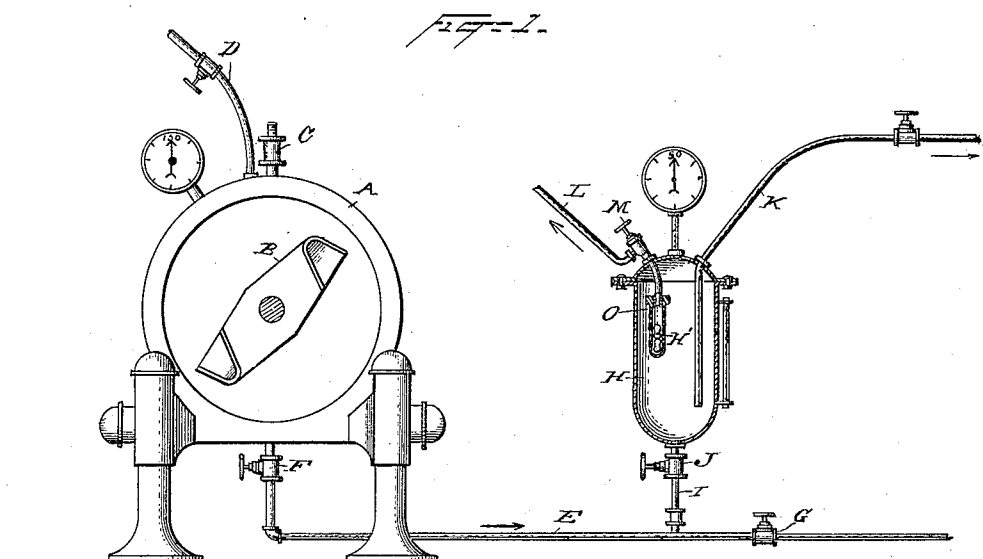


(No Model.)

J. ORMEROD.
SODA WATER APPARATUS.

No. 465,976.

Patented Dec. 29, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN ORMEROD, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN SODA FOUNTAIN COMPANY, OF NEW JERSEY.

SODA-WATER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 465,976, dated December 29, 1891.

Application filed January 17, 1891. Serial No. 378,099. (No model.)

To all whom it may concern:

Be it known that I, JOHN ORMEROD, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Apparatus for Carbonating Water and other Liquids, of which the following is a specification.

In the sale of carbonated water—such as is commonly known as “soda-water”—three general classes of vessels are provided for containing the same, and each vessel charged with the beverage at a different pressure. The portable fountains which are employed with dispensing apparatus are usually charged with the carbonated water at a pressure of about one hundred and eighty pounds to the square inch. Siphons are charged usually at a pressure of one hundred and fifty pounds to the inch, and bottles at a pressure of about seventy pounds to the inch. In filling these vessels the manufacturer of soda-water has heretofore employed a fountain for each class of vessels maintained at about the pressure which the beverage in the vessel was to have, so that when a manufacturer of soda-water charged portable fountains, siphons, and bottles, he was obliged to have one filling-fountain with the carbonated liquid at a pressure of one hundred and eighty pounds, a second filling-fountain with the carbonated beverage at a pressure of about one hundred and fifty pounds, and a third filling-fountain with a pressure of about seventy pounds to the inch, and for each of these fountains separate feed-pipes for the gas and water were necessary and a mechanical stirrer within the fountain itself to effect the mechanical mixture of the water and gas.

The object of my invention is to simplify and reduce the expense of a carbonating apparatus useful for filling either portable fountains, siphons, or bottles; and it consists, primarily, in employing a single filling-fountain in which the water and carbonic-acid gas are mechanically mixed at a pressure suitable for filling portable fountains and an auxiliary fountain or fountains which may be smaller than the main filling-fountain, to which the gas and water already mingled are admitted

from the first-mentioned fountain, suitable regulators being provided so that the carbonated liquid may be maintained in the auxiliary fountain at the required degree of pressure necessary for filling either siphons or bottles.

Other features of my invention will appear in the subjoined description, and be pointed out in the claims.

In the accompanying drawings, illustrating an apparatus embodying my invention, Figure 1 is a cross-sectional elevation of a filling-fountain and auxiliary fountain with proper connections suitable for carrying out my invention. Fig. 2 is a central longitudinal sectional view of the regulator employed to govern the entrance of the carbonated water and gas to the auxiliary reservoir. Fig. 3 is a similar section of the regulator employed to govern the passage for the accumulated gas in the top of the auxiliary reservoir.

In the drawings, A is the main filling-fountain, within which is located an agitator B, which is maintained continuously in motion by suitable mechanism (not shown) to effect the thorough mixture of the water admitted through the pipe C and the gas admitted through the pipe D. In this main filling fountain the pressure will be maintained at about one hundred and eighty pounds—the pressure desirable for the beverage in portable fountains.

E is a pipe leading from the filling-fountain A to the portable fountain-filling apparatus.

F and G are suitable controlling-cocks located therein.

H is an auxiliary fountain of smaller dimensions than the fountain A, and adapted to be put in communication therewith through the pipe I and regulator J.

K is a pipe which leads to the bottle-filling apparatus.

L is a pipe which leads back to the gasometer and extends into the fountain H for some distance, being provided in such extension with a float-valve H', which rises in the lower perforated extension of the pipe L, as the liquid in the fountain rises until the desired height is reached, when communication between the gasometer and the auxiliary

fountain H through the pipe L is closed. This pipe L is also provided with a regulator M, similar to the regulator J. The regulator J, as shown in the larger sectional view, Fig. 2, is fitted with a valve N, carried by a spindle O, which is guided in its movement in the valve-chamber by the collar P, located above the valve N of the width of the valve-chamber *n*, and held in place by the spiral spring Q. The valve N, as shown, controls communication between the pipe I and the auxiliary fountain H. The spindle O works in a recess R in the stem S. At the bottom the stem S is screw-threaded, so that by turning it the tension of the spring Q is increased or diminished, thereby regulating the point at which the valve will operate.

In Fig. 3 a sectional view is shown of the gas-regulator, and it will be seen that the same is similar in construction to regulator J. Therefore the same letters of reference have been employed. The pipe L, however, is connected somewhat differently, as shown.

The operation of my apparatus is as follows: During the operation of filling portable fountains at the high pressure, the regulators M and J may be closed, so that none of the carbonated liquid will enter the auxiliary reservoir H. When, however, it is desired to fill bottles, for instance, the regulators J and M will be turned, so as to open communication, respectively, with the main filling fountain A and the gasometer. These regulators, when the auxiliary fountain is used for filling bottles, are set so as to operate at the pressure desired—say fifty pounds—and are so regulated that when the pressure within the auxiliary reservoir H reaches fifty pounds the spring of the regulator in connection with the pressure in the auxiliary fountain will exactly balance the pressure from the main filling-fountain A. The regulator will then close and remain closed as long as the pressure in the reservoir H is at or over fifty pounds; but as soon as the pressure therein falls below that point the pressure from fountain A will open the regulator and admit the carbonated beverage until the pressure again reaches fifty pounds or over. Of course it will be understood that the pressure in the main filling-fountain A is maintained at the same point by the admission of gas from the generator by the use of a pump or by any other of the usual methods employed to maintain uniform pressure in the fountain. The automatic action of the regulator J therefore permits the continuous use of the auxiliary fountain H, for at the moment pressure therein is reduced by withdrawing a portion of its contents for filling purposes at that moment the regulator will

open and a further supply will be admitted thereto. As the charged fluid enters the auxiliary reservoir a considerable amount of gas will be disengaged therefrom on account of the reduction in pressure. This gas accumulates in the upper portion of the reservoir, and whenever it rises above fifty pounds, or at whatever point the regulator M may be set, it will open the said regulator and pass back to the gasometer, generator, or any other vessel at which the pressure is below the pressure in the auxiliary fountain.

Although I have only shown one auxiliary fountain, it is obvious that another auxiliary fountain may be employed, where it is desirable, with the same apparatus to fill siphons as well as portable fountains and bottles.

I claim—

1. In an apparatus for filling vessels with a carbonated liquid, the combination of a main filling-reservoir containing the carbonated liquid at a given pressure, an auxiliary filling-fountain in communication with said main filling-fountain, and a regulator, substantially as set forth.

2. In an apparatus for filling vessels with a carbonated liquid, the combination of a main filling-reservoir, a mechanical agitator therein adapted to effect the mechanical mixture of the carbonic acid and water admitted thereto, and an auxiliary fountain in communication with said main filling-fountain and receiving therefrom the carbonated liquid, and a regulator whereby the pressure may be maintained in the auxiliary reservoir at any given point, substantially as set forth.

3. In an apparatus for filling vessels with a carbonated liquid, the combination of a main filling-reservoir maintained at a given pressure, a mechanical agitator therein, an auxiliary filling-fountain communicating with said main filling-fountain, a regulator whereby the pressure may be maintained therein at any given point, and an additional regulator whereby freed gas may be returned to a gasometer, generator, or other vessel, substantially as set forth.

4. In an apparatus for filling vessels with a carbonated liquid, the combination of a main filling-reservoir maintained at a given pressure, a mechanical agitator therein, an auxiliary fountain communicating with said main filling-fountain, an inlet-regulator, a gas-outlet regulator, and a float-valve in the latter regulator, substantially as set forth.

This specification signed and witnessed this 3d day of January, 1891.

JOHN ORMEROD.

Witnesses:

EUGENE COURAN,
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