

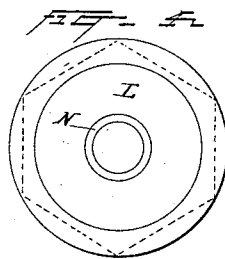
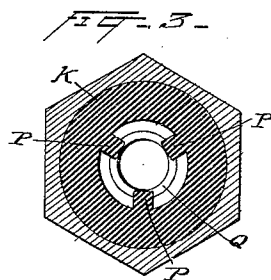
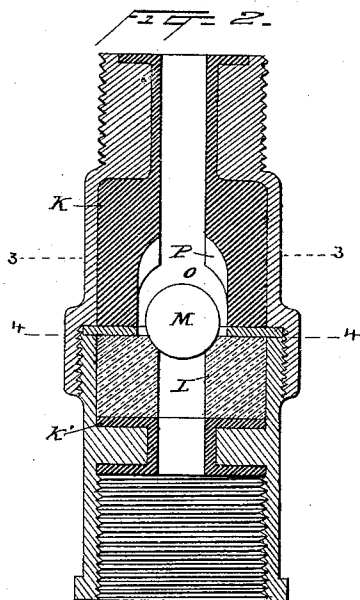
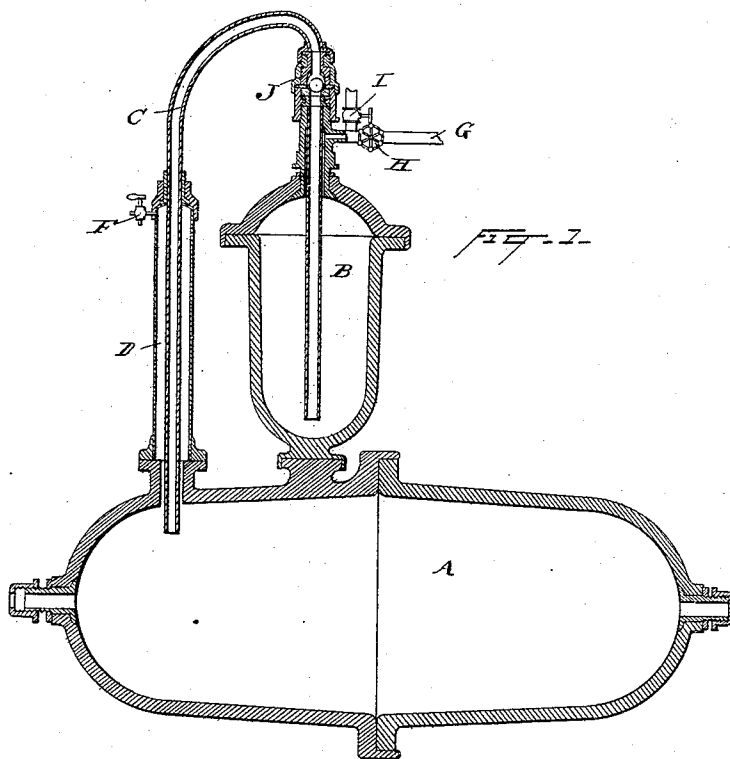
(No Model.)

J. ORMEROD.

ACID FEEDER FOR SODA WATER APPARATUS.

No. 484,604.

Patented Oct. 18, 1892.



Witnesses
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JOHN ORMEROD, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE AMERICAN
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ACID-FEEDER FOR SODA-WATER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 484,604, dated October 18, 1892.

Application filed August 5, 1891. Serial No. 401,776. (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 Acid-Feeders for Soda-Water Apparatus, of which the following is a specification.

My invention relates to an automatic acid-feeder for use in the manufacture of soda-water and similar aerated waters. It comprises a siphon arranged between an acid-chamber and a generator, which siphon is provided with a check-valve opening automatically to permit acid to flow from the acid-chamber to the generator when the pressure in the acid-chamber exceeds the pressure in the generator and closing automatically to cut off the acid-feed when the pressure in the generator equals or exceeds the pressure in the acid-chamber, the pressure in the latter being obtained when the apparatus is started to work from any suitable source of supply—as, for instance, the gas-cooler through a pipe controlled by a cock leading from such source of supply to the acid-chamber.

The object of the invention, it will be seen, is to automatically control the supply of acid from the acid-chamber to the generator, whereby a constant working-pressure is maintained in the generator, and hence excessive and irregular strains and dangers from explosion are avoided.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a sectional elevation of an apparatus embodying my invention. Fig. 2 shows an enlarged vertical section of the check-valve heretofore referred to. Fig. 3 is a cross-section of the valve, taken on the line 3 3 of Fig. 2; and Fig. 4 is a cross-section of the valve, taken on the plane of the line 4 4 of Fig. 2.

A is the generator; B, the acid-chamber, preferably mounted or supported by said generator, as shown.

C is a pipe forming a siphon connecting the acid-chamber with the generator.

D is the gas-pipe employed to convey the gas generated in A to the remaining parts of the apparatus not here necessary to be shown.

F is the outlet-valve for the gas, preferably

located in the pipe connecting the gas-pipe D with its discharge-vessel.

G is another gas-pipe leading from any convenient source of supply—as the carbonating-cylinder—controlled by a valve H and communicating, as shown, with the acid-chamber B.

I is a vent-pipe controlled by a valve, as shown, useful for a purpose hereinafter to be explained.

The check-valve is located in the siphon above the acid-chamber at J, as shown in Fig. 1.

Referring to Figs. 2, 3, and 4, K and K' are two sections of a lead lining capable of withstanding the corrosive action of the acid.

L is a glass valve-seat interposed between the sections K and K', seating a ball M, preferably of glass, in its concave portion N. The object of using glass is to obtain a smooth seat and tight fit, together with material which will withstand the corrosive action of the acid. The section K of the lead lining, as shown, is of greater diameter than the ball M for a portion of its height, so as to permit the movement of the ball-valve M to and from its seat. This enlarged portion O at its upper end is provided with inwardly-projecting ribs P, which afford a stop to the upward movement of the ball M, while at the same time permitting the flow of acid through the passages Q.

The parts of the apparatus having been described, the operation is as follows: The generator A having been charged with a proper supply of carbonate and water and the chamber B its supply of acid, the cock H is turned, permitting gas to flow into the top of the acid-chamber, which gas exerting pressure on the acid tends to cause its flow through the siphon into the generator. When a sufficient quantity of gas has been admitted to the top of the chamber B to force the ball M from its seat and cause the acid to flow through the pipe C into the generator, the valve H may be closed. The acid entering the generator A and combining chemically with the carbonate and water therein contained generates gas, as is well understood. When the gas thus generated becomes equal or greater in pressure than the gas at the top of the chamber B, the ball M will be forced to its seat and thus the supply of acid cut off. After the gas gen-

erated in A has been withdrawn in quantity sufficient to reduce its pressure below that of the gas in the chamber B the ball M will be raised from its seat and acid will flow as before, and the operation will be automatically continued until the chamber B is emptied of its acid. Should it be desired to let off any of the pressure from the acid-chamber, it can be done by means of the vent-valve I, thus permitting the acid to be retained in the acid-chamber until required.

From the foregoing description it will readily be seen that an automatic feed of the acid from the acid-chamber to the generator is obtained which is both safe and reliable, it being impossible for too great a supply of acid to be conveyed to the generator, as increased acid-supply causes increased pressure of gas

in the generator, and thereby tends to close the check-valve and prevent further acid-feeding.

I claim—

The combination, with a generator, of an acid-chamber, a siphon-shaped pipe, a leg of which proceeds from the lower part of the acid-chamber to or near its top and thence downward to the generator, a check-valve located in said pipe, and a gas-supply pipe connected with the top of the acid-chamber, substantially as described.

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

JOHN ORMEROD.

Witnesses:

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