

No. 652,810.

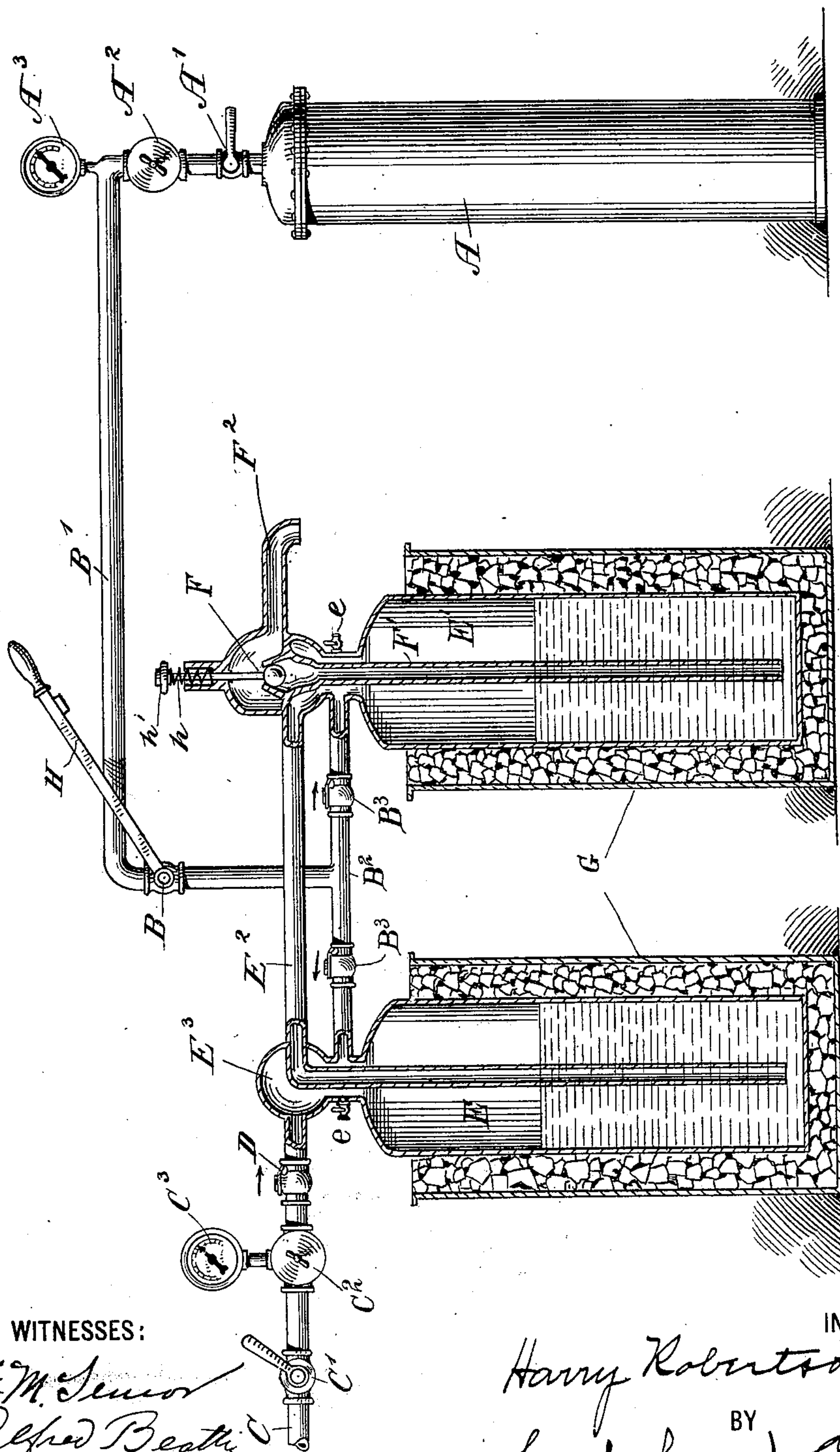
Patented July 3, 1900.

H. ROBERTSON.

APPARATUS FOR CARBONATING AND DISPENSING LIQUIDS.

(Application filed June 3, 1898.)

(No Model.)



WITNESSES:

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HARRY ROBERTSON, OF NEW YORK, N. Y., ASSIGNOR TO KOCH & ROBERTSON,
OF SAME PLACE.

APPARATUS FOR CARBONATING AND DISPENSING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 652,810, dated July 3, 1900.

Application filed June 3, 1898. Serial No. 682,513. (No model.)

To all whom it may concern:

Be it known that I, HARRY ROBERTSON, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county

5 of Kings, and State of New York, have invented certain new and useful Improvements in Apparatus for Carbonating and Dispensing Liquids, of which the following is a specification.

10 My invention relates particularly to devices for impregnating liquids to be used as beverages with carbonic-acid gas or other gas and for dispensing the said liquids into glasses, bottles, or other receptacles after the process
15 of carbonation has been completed; and its objects are, among others, to provide a device of this character which will readily and thoroughly carbonate liquid without the necessity of making any connections between
20 the different vessels and pipes in which the liquid and gas are contained or supplied or the use of a force-pump or other means for forcing the liquid into the carbonating-chamber against the pressure of gas therein when
25 the pressure of the gas-supply in the said carbonating-chamber is equal to or somewhat in excess of the water-pressure; and to this end it consists of the combination of parts and arrangement of details hereinafter described
30 and claimed, and illustrated in the accompanying drawing, which is a general perspective view of an apparatus for carbonating and dispensing liquids embodying my invention, with the mixing or carbonating vessels
35 shown in vertical cross-section.

The gas-supply tank A is provided with a valve A', controlling its outlet and communication with the pressure-regulator A² and pressure-gage A³, located adjacent thereto on
40 the pipe B'. This pipe B' leads from the gas-tank A to the mixing-chambers E E' through the branch pipes B² and has a valve B located thereon intermediate the said pressure-gage and the mixing-chamber. This valve is provided with a lever H, by which it is operated
45 and is normally in an open position. The water-supply pipe C is provided with a valve C', a pressure-regulator C², and a gage C³, and communicates with the chamber E through the check-valve D and the auxiliary chamber
50 E³ in the head of the said mixing-chamber.

These mixing chambers or tanks E' and E are preferably located in tubs G, adapted to contain ice for the purpose of refrigerating the liquid in the said tanks, and thus causing it to
55 more readily absorb the gas. The tanks, however, may be provided with other means, such as agitators or sprayers, to accelerate the absorption of gas. The mixing-tanks are connected by means of the pipe E², which extends
60 downwardly to the bottom of the tank E and communicates with the tank E' at the head thereof. The tank E' is provided with an outlet-pipe F', extending from the bottom of the same to the dispensing-valve F and
65 faucet F². This valve is provided with a spring h at the upper end of the rod and abutting against the head h' of the same, which retains the valve normally in a closed position, with the ball on the lower end of said
70 rod seated in the opening at the head of the tank, through which the pipe F' communicates with the faucet. The branch pipe B² is provided with check-valves B³, which operate to prevent liquid or gas from rising into
75 the gas-pipe B' and also to prevent communication between the chambers E and E' through the said pipe. The valve D on the water-supply pipe also operates to prevent the entrance of water or gas from the mixing-
80 tank into the said pipe.

The operation of this device is as follows: When it is desired to carbonate a given quantity of liquid, the valve C' on the supply-pipe C is first opened, allowing the liquid to pass
85 into the pressure-regulating chamber, which has been previously adjusted to the desired pressure, and then through the check-valve D into the mixing-chamber E, the atmospheric air in the said chamber displaced by the water being allowed to escape through the snifting-cock c, one of which is located for that
90 purpose at the upper part of each of the mixing-chambers. When the desired amount of liquid has been allowed to flow into the tank, the valve A' is then opened, allowing the gas
95 to pass through the pressure-regulator A², which has been previously set at a pressure preferably somewhat greater than that of the water-pressure, into the tanks E and E', where
100 it will impregnate the water in the tank E, being assisted by the refrigeration or other

means which may be provided for the purpose of assisting absorption. When the water has become thoroughly charged with the gas and it is desired to draw a quantity of the same, the lever H of the valve B is then pressed downwardly, first closing the said valve, and then coming in contact with the head of the dispensing-valve rod it will open the valve F and allow first any air which may be in the lower part of the chamber E' to escape there-through, and then the liquid, which will flow into the chamber E' as soon as the pressure therein is reduced. The pressure of gas in the mixing-chambers being reduced by drawing the liquid, the water or other liquid from the supply-pipe C will flow into the tank E of its own force as soon as the pressure in said chambers becomes less than the water-pressure, taking the place of the liquid which is drawn and also supplying sufficient pressure to force the liquid in the chamber E' through the dispensing-valve. The operation of drawing liquid may then be repeated as often as desired by simply pressing the lever H downward, closing the gas-supply pipe, and opening the dispensing-valve, the liquid from the supply-pipe C flowing in automatically and taking the place of the liquid displaced by each draft.

I have shown two carbonating-tanks, this being my preferred method of construction, as any given amount of liquid may be more readily carbonated by the use of two mixing-chambers than by one, because a greater surface of liquid is in this manner exposed to the gas; but it is obvious that the device would

operate as well with one mixing-chamber and a proportionately-small amount of liquid to be carbonated and dispensed.

What I claim is—

1. In an apparatus for carbonating and dispensing liquids, the combination of a gas-supply under pressure and a liquid-supply through valves, a mixing-chamber to which said gas and liquid are supplied, a valve for dispensing liquid from said mixing-chamber and a mechanism by the operation of which first the valve controlling the gas supply and pressure is closed and second the said dispensing-valve opened; the valve through which the liquid is supplied adapted to be closed by the gas-pressure and opened by the liquid-pressure.

2. In an apparatus for carbonating and dispensing liquids the combination of a mixing-chamber provided with a gas-supply under pressure and a liquid-supply through tubes having valves thereon and an outlet for the carbonated liquid; the valve on said liquid-supply tube admitting of influx into said mixing-chamber by the pressure of the liquid, and adapted to be closed by the gas-pressure, and means whereby the gas supply and pressure is shut off when the liquid-outlet is opened.

In witness whereof I have hereunto set my hand this 16th day of May, 1898.

HARRY ROBERTSON.

In presence of—

F. M. SEMOR,
ALFRED BEATIE.