

(No Model.)

J. H. VINTON.

METHOD OF AND APPARATUS FOR CHARGING SODA WATER.

No. 485,244.

Patented Nov. 1, 1892.

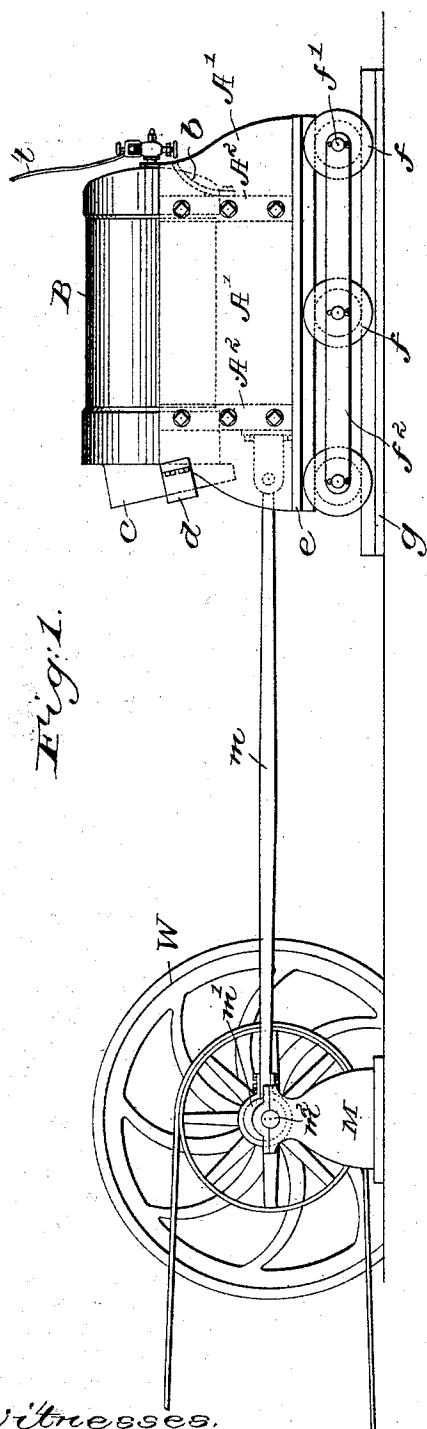
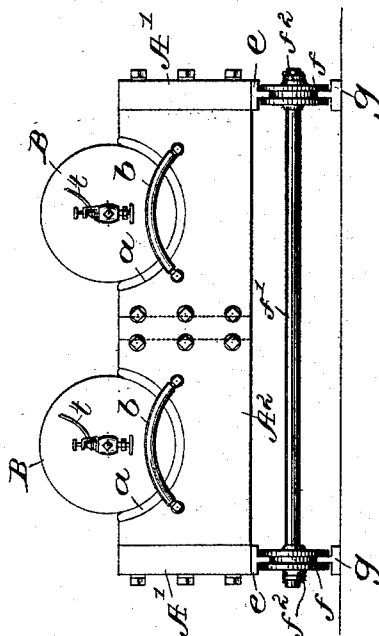


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN H. VINTON, OF BOSTON, MASSACHUSETTS.

METHOD OF AND APPARATUS FOR CHARGING SODA-WATER.

SPECIFICATION forming part of Letters Patent No. 485,244, dated November 1, 1892.

Application filed July 11, 1891. Serial No. 399,131. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. VINTON, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Methods of and Apparatus for Charging Soda-Water, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to apparatus for charging liquid with gas, more especially in the production of what is commonly known as "soda-water."

Prior to my invention it has been customary to fill the fountain or receptacle about two-thirds or three-quarters full of water and charge the same with gas, the fountain or receptacle during the operation of charging being rocked or suspended in suitable manner by a frame pivoted at some distance above the fountain and moved in the arc of a circle to thereby agitate the water within the fountain or receptacle that it may take up or absorb the gas and thus become charged therewith. It is desirable to charge the water with the gas as thoroughly as possible through and through, for if it is not thoroughly charged the gas will in a short time be exhausted before the water has been entirely utilized.

This invention has for its object to so move the fountain or receptacle during the operation of charging the water with gas that the entire quantity of water will become thoroughly charged with the gas, and thus permit the fountain to be used for a longer period than has hitherto been possible.

In accordance with this invention the fountain or receptacle instead of being rocked or moved bodily in the arc of a circle about a center located at some distance above it is reciprocated in a straight line, thereby producing a greatly-increased agitation or swash of the water contained in the fountain or receptacle to more thoroughly charge the same with the gas, as will be hereinafter described.

One part of this invention comprehends the method of charging fluid with gas, which consists in placing the fluid in a fountain or receptacle, admitting gas thereto, and subjecting the fluid in the receptacle to a horizontal reciprocating movement in a straight line to thereby agitate the entire mass of the

fluid contained therein to thoroughly charge the same with the gas.

This invention in apparatus for charging water with gas includes a horizontally-movable frame consisting of side members joined by supporting members having a seat or rest for the fountain or receptacle containing fluid to be charged, an outwardly and upwardly inclined support, against which one end of the fountain or receptacle is placed, a strap at the opposite end of the frame, and a wedge to be placed between said strap and fountain to hold the latter in place, and means to reciprocate said frame, substantially as will be described.

Other features of this invention will be hereinafter described, and pointed out in the claims at the end of this specification.

Figure 1 represents in elevation an apparatus embodying this invention, and Fig. 2 a right-hand end view of the same.

Referring to the drawings, one form of apparatus embodying this invention is shown, in which the frame A is of suitable construction to carry the fountain or receptacle containing the fluid to be charged, the said frame, as represented, consisting of the two side members A' A', joined at or near their opposite ends by supporting members A², (represented in dotted lines, Fig. 1,) the said supporting members being provided with suitable recesses or seats a, (one or more in number,) in which may rest the fountains or receptacles B, containing fluid to be charged with gas.

Retaining devices to hold the fountains or receptacles in position on the frame A are herein represented as consisting of holding irons or supports b, bolted or otherwise secured to the front supporting member A², (see Fig. 2,) against which the fountains or receptacles b are wedged or fastened by means of wedges c, driven between the rear ends of the fountains, and the strap or bar d, bolted or otherwise secured to the frame, as represented best in Fig. 1. The side members A' of the frame have fixed to their under sides T-shaped or other suitable rails or bearing-surfaces e, which, as herein represented, rest upon a series of rolls or wheels f, adapted to roll on suitable rails g, resting upon the floor or foundation. The rolls or wheels f, as here-

in represented, are mounted loosely on axles f' , connected together outside the wheels to maintain the latter at proper distances from each other by side bars f^2 .

5 In practice the frame A, carrying the fountains or receptacles containing the fluid to be charged will be reciprocated or rolled back and forth on the rolls f and track g by any suitable means to agitate the fluid, the said
10 frame being herein represented as connected by means of an eccentric-rod m , with an eccentric m' , fast on a shaft m^2 , mounted to rotate in suitable bearings N, said shaft also carrying suitable fast and loose pulleys to rotate the same, and a balance-wheel W, all as
15 represented in Fig. 1.

The operation of the apparatus is as follows, viz: The fountains or receptacles containing the clear water or fluid to be charged
20 are placed in the frame A, and secured in place by means of suitable wedges c , the fountains or receptacles being connected by tubes t , with any usual or suitable gas-generator. (Not shown.) Gas being admitted
25 to the fountain or receptacle through the tubes t , the shaft n^2 will be set in motion, and the eccentric n' through its eccentric-rod m will communicate a reciprocating movement to the frame A, causing the fluid or water
30 contained in the fountains or receptacles carried thereby to be agitated or swashed at each movement, thereby becoming thoroughly mixed or charged with the gas. This operation is continued until the usual gage indicates that gas is no longer passing to the
35 fountain or receptacle, showing that the water has taken up all the gas possible, when the apparatus may be stopped, the fountains or receptacles removed in condition for use,
40 and others substituted to be treated in like manner.

The seats for the fountains or receptacles and the holding-rods b may, and preferably will, be covered or lined with thick felt to
45 protect the fountains and give a slightly-yielding support therefor.

In apparatus of this class as heretofore constructed the fountains have been mounted
50 in a suitable frame and rocked about their centers or moved bodily in the arc of a circle about a center located at some distance above.

In subjecting the fountain and its contained fluid to such an action the agitation or swashing of the fluid as the fountain
55 changes its direction of movement is considerably offset or counteracted by the centrifugal force, which tends to hold the liquid on the bottom of the fountain, which tends to prevent its swashing, thereby lengthening the
60 time required for charging the fluid and at

the same time preventing as thorough a mixture or charging of the fluid with gas as would be the case if the centrifugal force did not enter into the operation.

In the method of charging the fluid or water presented in this present invention the fountain containing the fluid is moved in a
65 a straight line instead of in the arc of a circle. Therefore no centrifugal force whatever enters into the operation, the only force
70 tending to agitate the fluid being the momentum gathered during the movement in one direction, which as the fountain or receptacle changes its movement to the opposite direction causes the fluid to swash violently at the
75 ends of the fountain and thereby become thoroughly mixed or charged with the gas which is present in the fountain. By employing this method the water may be charged with gas in less time than formerly and much
80 more thoroughly.

I claim—

1. In an apparatus for charging fluid with gas, a horizontally-movable frame consisting of side members joined by supporting members containing a seat or rest for the fountain or receptacle containing fluid to be
85 charged, an upwardly and outwardly inclined support against which one end of the fountain or receptacle is placed, a strap attached to the opposite end of the frame, and a wedge
90 to enter between said strap and fountain to hold the fountain in place, rails on the under side of said frame, a connected series of grooved wheels or rolls on which said rails
95 rest, supporting-rails for the wheels or rolls, and means to reciprocate said frame on the series of wheels or rolls, substantially as described.

2. In an apparatus for charging fluid with
100 gas, a horizontally-movable frame consisting of side members joined by supporting members containing a seat or rest for the fountain or receptacle containing fluid to be
105 charged, an upwardly and outwardly inclined support against which one end of the fountain or receptacle is placed, a strap attached to the opposite end of the frame, and a wedge
110 to enter between said strap and fountain to hold the said fountain in place, and means to reciprocate the said frame, substantially as described.

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

JOHN H. VINTON.

Witnesses:

FREDERICK L. EMERY,
EMMA J. BENNETT.