(No Model.)

P. E. MALMSTRÖM.

APPARATUS FOR CARBONATING AND DISPENSING BEVERAGES.

No. 558,910. Patented Apr. 21, 1896.

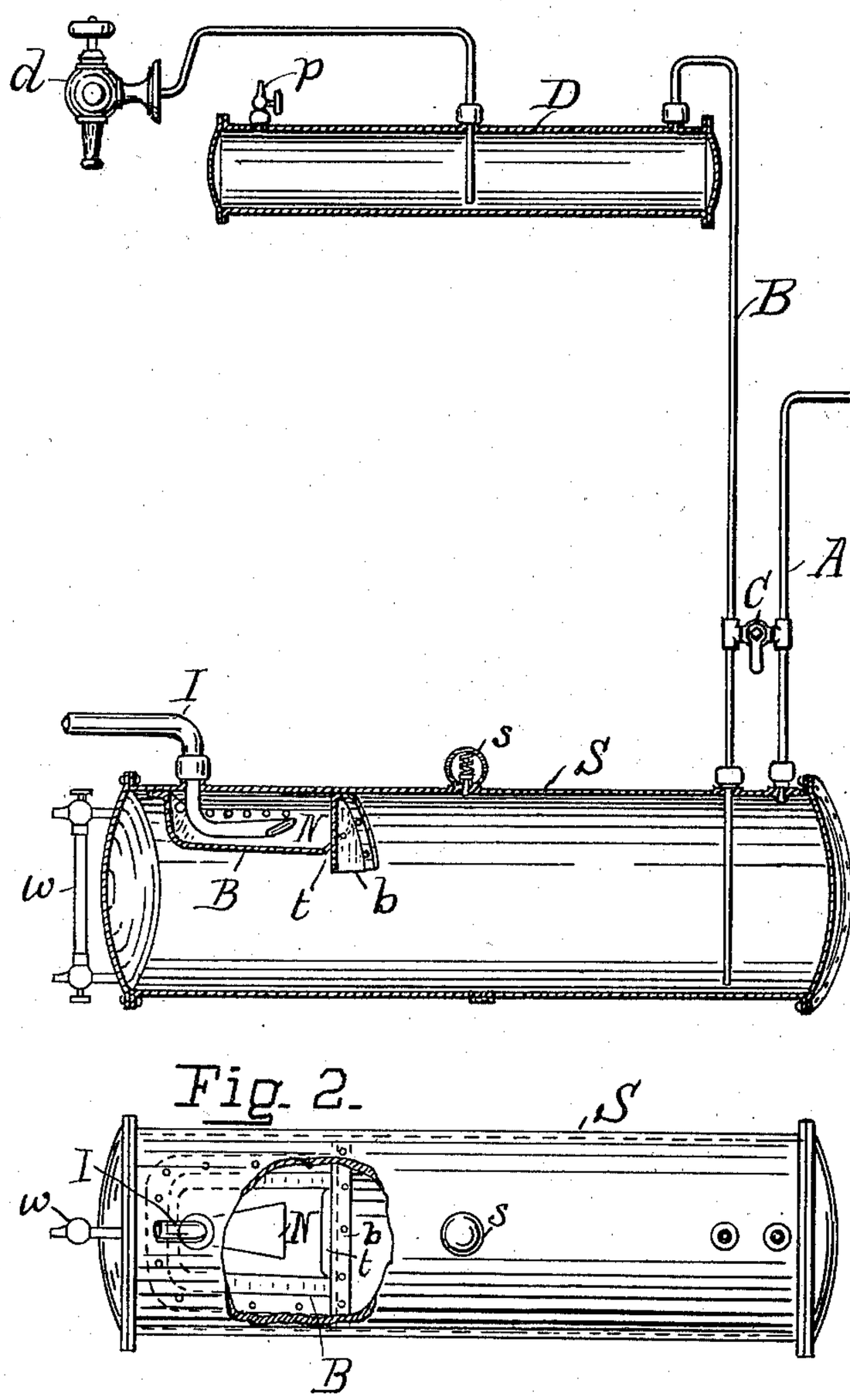
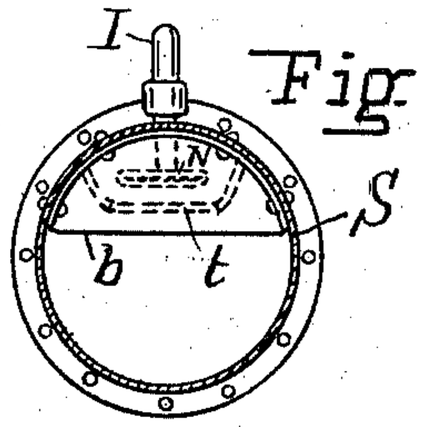


Fig. 1.

Fig. 2.

Fig. 3.



Witnesses:
Samuel W. Balch
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UNITED STATES PATENT OFFICE.

PETER E. MALMSTRÖM, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO MAX LOEWENSTEIN, OF SAME PLACE.

APPARATUS FOR CARBONATING AND DISPENSING BEVERAGES.

SPECIFICATION forming part of Letters Patent No. 558,910, dated April 21, 1896.

Application filed February 19, 1896. Serial No. 579,864. (No model.)

To all whom it may concern:

Be it known that I, PETER E. MALMSTRÖM, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Carbonating and Dispensing Beverages, of which the following is a specification.

The improvement consists in the combination of a reservoir, gas-holder, and a distributing vessel, a pipe connecting the gas-holder with the reservoir, and a pipe connecting the reservoir with the distributing vessel, and the way between the two pipes provided with a stop-cock.

In the accompanying drawings, which form a part of this specification, Figure 1 is a view of the apparatus partly in section and partly in elevation, the cylinders being shown as divided on longitudinal vertical planes and the parts seen within these cylinders being shown in elevation, with the exception of the storage-cylinder, in which the parts are in perspective. Fig. 2 is a top view of the storage-cylinder broken away to show the spraying-box, and Fig. 3 is an end section of the storage-cylinder.

The apparatus consists, broadly, of a gas cylinder or other holder G, a reservoir or storage-cylinder S, a discharging-cylinder or other vessel D, from which the liquid is drawn, a pipe A, connecting the gas-cylinder with the storage-cylinder, in which is a regulating-gage *g*, a pipe B, extending from near the bottom of the storage-cylinder into the discharging-cylinder, and a connecting pipe or way C. The gas and storage cylinder may, if desired, be at a distance from the discharging-cylinder and draft-cock—as, for example, in the cellar. The storage-cylinder may be called a "primary carbonator." The distributing-cylinder will be in the salesroom and be kept cold. It may be called a "cooler" or a "secondary carbonator."

The gas-cylinder and regulating-gage are of the usual forms. The storage-cylinder is provided with a safety-valve *s* and glass water-gage *w* of the usual form. The spraying-box B is attached to the top of and within the storage-cylinder. It is an oblong box, the top of which is or may be the wall of the storage-cylinder. One end of the box is an end sheet *b*, which extends as an apron somewhat below the bottom of the box, and the bottom falls short, so as to form a narrow slot *t*, forming an escape from the box. The bottom slopes toward this slot. A water-injector pipe I is brought from the water-supply into the spraying-box. The pipe has an elongated and narrow mouth, forming a spray nozzle or injector N, so that the water shall be ejected from it in a thin stream. The water rebounds from the walls of the spraying-box, and is thus kept constantly stirred within this box. This box, being placed at the top of the storage-reservoir and being perforated near its top, will contain gas, and the water will be partly charged with the gas in this box. It is not intended that the liquid in the storage-reservoir shall stand high enough to cover the slot at the bottom of the spraying-box. As the water drops out from this spraying-box through the slot in its bottom it falls in a thin sheet down the end sheet. Thus falling in a thin sheet it is exposed to the gas in the main chamber of the storage-cylinder and is further charged. The discharging-cylinder is provided with the usual draft-cock *d* and pet-cock *p*.

The connection between the gas-cylinder is always open when the excess of pressure in the gas-cylinder over that in the storage-cylinder is large enough to open the pressure-regulating gage and the pressure in the storage-cylinder is below that for which the gage is set. The pressure on the liquid in the storage-cylinder will force it up into the distributing-cylinder until the pressure in the two is equalized; but if the stop-cock C between the distributing-cylinder and the gas-cylinder is opened the pressure is equalized by escape of gas from the gas-cylinder directly into the discharging-cylinder. In the ordinary operation of the apparatus the stop-cock C is kept closed and both the discharging and storage cylinders are maintained partly full of liquid, the upper portion of both cylinders containing gas in contact with the liquid. The discharging-cylinder is usually kept at a low temperature and the liquid in it will absorb additional gas. The stop-cock C is therefore provided so that this gas

can be replenished. When it is opened and the liquid is drawn from the draft-cock, gas will flow directly from the gas-cylinder into the discharging-cylinder, and the level of the liquid will fall. When the level has fallen sufficiently, the stop-cock C is closed.

What I claim, and desire to secure by Letters Patent of the United States, is—

The combination of a reservoir, a gas-holder, and a distributing vessel, a pipe connecting the gas-holder with the reservoir, a pipe connecting the reservoir with the distributing vessel, and a way between the two pipes provided with a stop-cock, substantially as described.

Signed by me, in New York city, this 15th day of February, 1896.

PETER E. MALMSTRÖM.

Witnesses:
THOMAS EWING, Jr.,
MAX LOEWENSTEIN.