J. McCLOSKEY.

SODA-CARBONATING APPARATUS.

No. 186,743. Patented Jan. 30, 1877

Fig. 1.

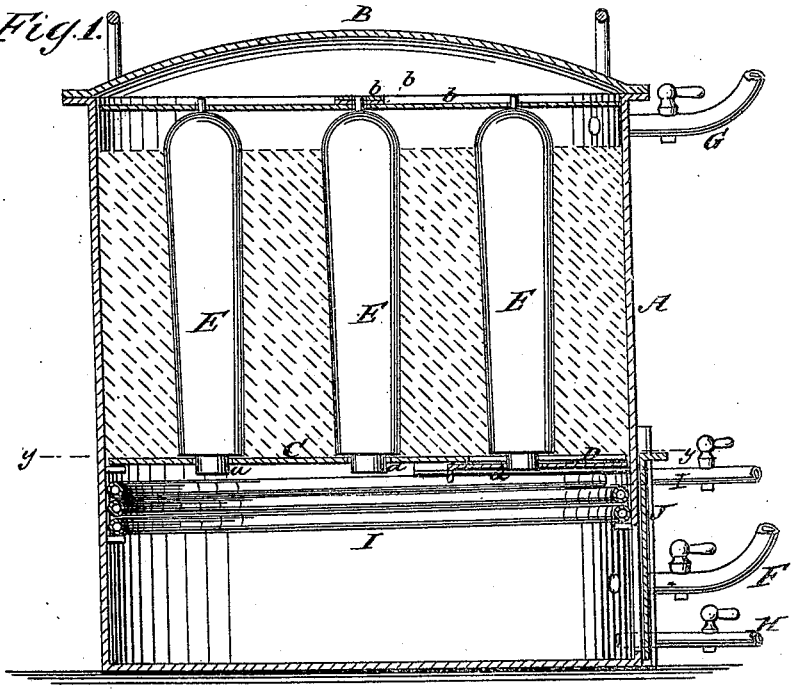
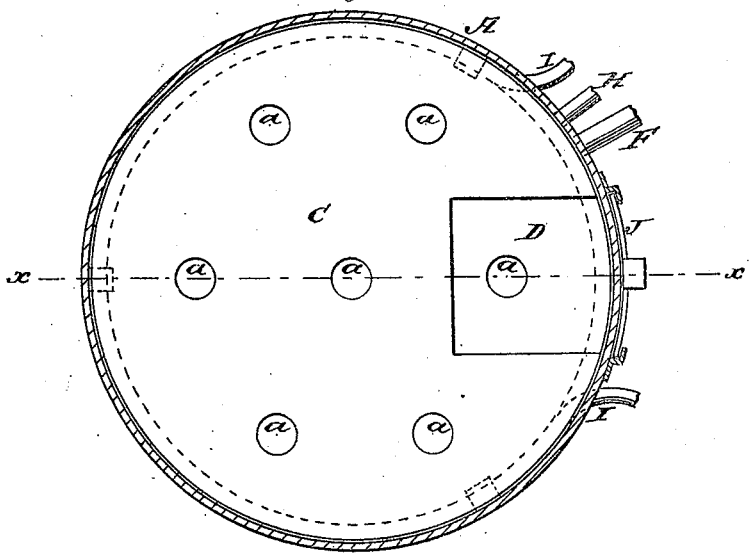


Fig. 2.



WITNESSES:

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JAMES McCLOSKEY, OF EAST CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN SODA-CARBONATING APPARATUS.

Specification forming part of Letters Patent No. **186,743**, dated January 30, 1877; application filed December 4, 1876.

To all whom it may concern:

Be it known that I, JAMES MCCLOSKEY, of East Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Apparatus for Carbonating Soda, of which the following is a specification:

Figure 1 is a vertical section on line *x x* in Fig. 2. Fig. 2 is a horizontal section on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to apparatus for carbonating soda; and it consists of a chamber having a horizontal perforated partition near its base, and a number of removable shouldered pins, that rest in the perforations of the partition, and are removed when the chamber is filled with soda-ash, leaving corresponding openings in the contents of the chamber. It also consists in an arrangement of pipes for introducing gas and steam, and in a coil of steam-pipe for drying the soda in case it should become too moist.

Referring to the drawing, A is a tank or chamber, which is provided with a removable cover, B, and a perforated horizontal partition, C. D is a sliding door in the perforated bottom, through which the contents of the chamber are removed. E E, &c., are pins of iron or other suitable material, which are shouldered at their lower ends, and rest in the perforations *a* of the horizontal partition C. These pins are made slightly tapering, being smallest at their lower ends. Their upper ends are rounded, to shed the soda-ash as it is delivered to the chamber, and steady-pins are inserted, which engage with holes in bars *b*, that extend across the upper part of the chamber. F is a gas-pipe, that opens into the space under perforated partition C, and G is a similar pipe that opens into the upper part of the chamber A. H is a steam-pipe, for introducing steam into the chamber for facilitating the process of carbonizing, and I is a coil of steam-pipe for heating and drying the soda, should it become too moist to grind. J is a door, that opens into the space under the partition C.

The chamber A may be built of brick or iron, or other material suitable for the purpose, and the pipes are provided with cocks, so that any or all of them may be used.

The manner of using my improved apparatus is as follows: The cover being removed, and the pins E being in their places, chamber A is filled up to the rounded portion of the pins E with soda-ash. The pins are then removed, leaving openings through the soda ash above the perforations in the partition. The cover B is placed and sealed, and carbonic acid is introduced through either or both of the pipes F G, and more or less steam is also admitted through the pipe H. The openings left by removing the pins E expose a great amount of surface to the action of the gas; hence the process is greatly facilitated.

If, during the operation, the soda should become too moist, steam is afterward admitted to the coil I, which heats the mass sufficiently to drive off the surplus moisture.

When the process is complete, the carbonate is removed through the door D.

The advantages of the apparatus are, that with it the process is completed in much less time than by the ordinary method, and the discoloration commonly produced by the wooden trays is entirely obviated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

An apparatus for carbonating soda, provided with the perforated horizontal partition C, tapering shouldered pins E, and perforated bars *b*, the latter having steadying-pins, all substantially as shown and described.

JAMES MCCLOSKEY.

Witnesses:

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D. MCFALL.