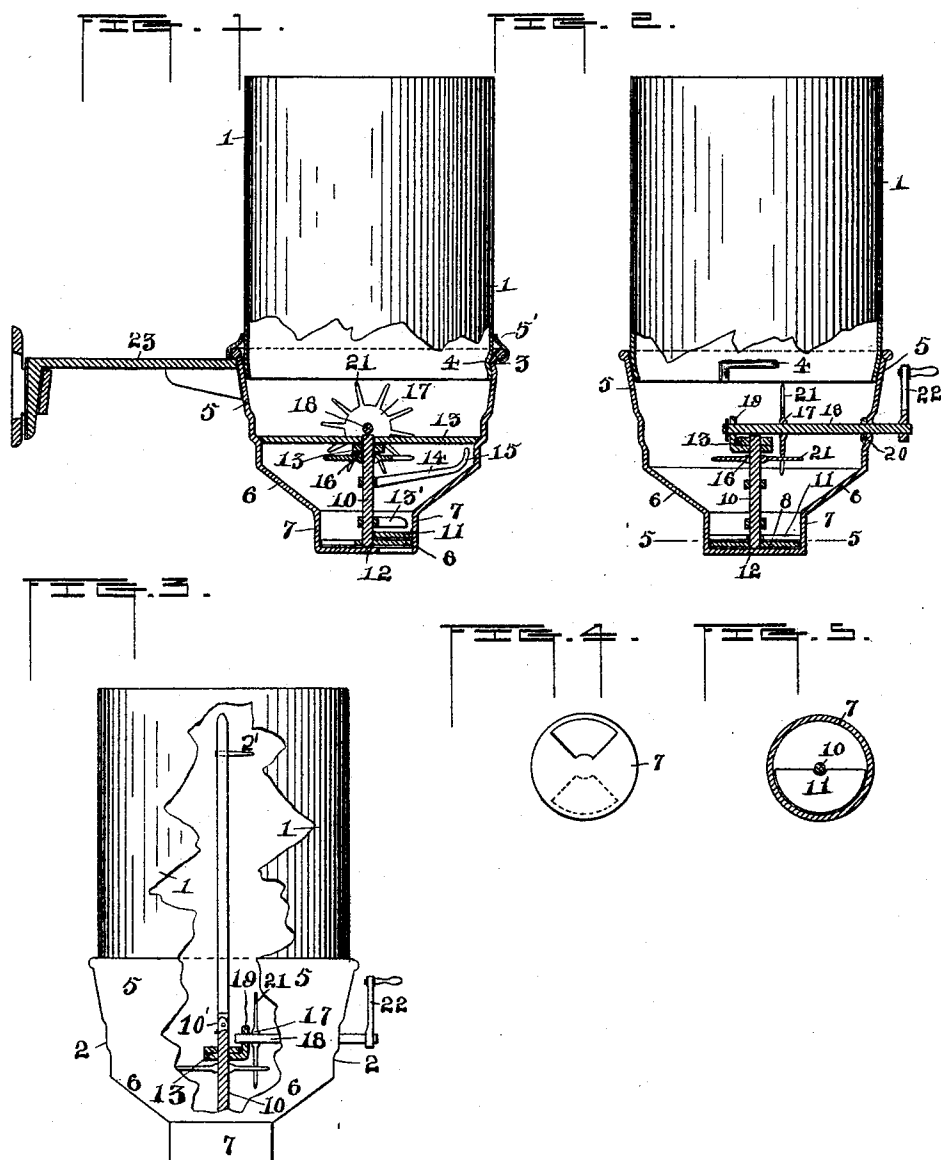


(No Model.)

W. S. FICKETT.
CAUSTIC SODA DISTRIBUTER.

No. 487,729.

Patented Dec. 13, 1892.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM S. FICKETT, OF ROCHESTER, NEW YORK, ASSIGNOR TO CALVIN L. STOWELL, OF SAME PLACE.

CAUSTIC-SODA DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 487,729, dated December 13, 1892.

Application filed February 2, 1892. Serial No. 420,093. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. FICKETT, a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Caustic-Soda Distributers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Caustic soda exposed to the atmosphere becomes deliquescent and is (more or less of it) converted into a carbonate, whereby its use and distribution become inconvenient and its efficiency as a detergent is impaired.

The object of the present invention is to provide a distributor or discharging device capable of application to and of operation in connection with a can of powdered caustic soda or like material, and which shall be adapted to discharge the contents of the can with certainty in small quantities at intervals, and which shall also thoroughly obviate the circulation of air through the distributor and can.

The invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings, Figure 1 is a partial central vertical section of the combined can and distributor. Fig. 2 is a like view in a transverse plane. Fig. 3 is a side elevation, partly broken away, showing a modification. Fig. 4 is a bottom plan, and Fig. 5 is a section on line 5 5 of Fig. 2.

Numeral 1 denotes a can such as customarily used for holding soda and the like in an inverted position and having its cover removed and the hopper-shaped distributor 2 substituted therefor.

3 denotes an inward projection, preferably formed by indenting the wall of the hopper, and 4 an L-shaped groove formed by indenting the can.

The upper part of the distributor is made slightly flaring in an upward direction, as shown at 5, so that a can may be readily entered therein and the two forced together to produce an air-tight joint. The can being forced into the distributor the projection will bend or indent its wall and aid in maintaining the connection. The joint between the can and distributor may be closed by an ex-

ternal rubber band or other air-excluding device 5', (see Fig. 1,) particularly if the projection causes the metal of the can to buckle or if an air-inlet would otherwise be left in the vicinity of the projection or if the fit between the can and distributor is for any reason defective and not practically air-tight.

If an L-shaped slot were cut in the metal of the can to receive the projection, it would serve to hold the can in fixed relation, and air could be excluded from the joint by a band or by sealing material. The combined can and distributor could be adapted, as set forth, if a special fastening were omitted. It is one of the objects of the improvement to provide for using an ordinary sheet-metal can of standard size and for excluding air from its contents, so far as practicable, until they are discharged. It is, however, not practicable to entirely exclude air, which in the present construction enters through the complex bottom having the soda-discharging orifices, which bottom, however, is made sufficiently close to prevent any considerable circulation of air.

The hopper includes an approximately-cylindrical portion 5, which receives the mouth of the can, and a portion 6, having a frusto-conical form, and a cylindrical portion 7, in which latter is arranged a revolving disk or cut-off 8, secured on a shaft 10 near its foot and between the two bottoms or floors 11 and 12. The shaft 10 has a bearing in a bar 13, extending across the hopper. Its foot rests upon floor 12 and is kept in proper position laterally by the disk 8, which has a diameter approximately equal to that of the cylinder 7. Each of the floors or bottoms 11 and 12 and the revolving cut-off 8 has a discharge-opening. The openings in the floors do not register, and the opening in the revolving cut-off, though it may register with either, cannot simultaneously register with both. The revolving shaft 10 may be provided with an arm 13', adapted to rotate a little above the floor 12 and sweep into the opening therein a portion of the contents of the distributor.

14 is a second arm arranged to revolve near the top of the hopper at the region where if an arch of powdered material were formed its foot would rest. The end of this arm is turned up at 15 to more effectually break down the support of such an arch.

16 indicates a horizontal and 17 a vertical

wheel, the first being fixed on shaft 10 and the second on a counter-shaft 18, which counter-shaft has bearings in a stud 19, fixed on the cross-bar 13, and in the boss or bracket 20, fixed on the interior of the distributor. The teeth or spokes 21 of these wheels are made to gear as represented, the spaces between the teeth being preferably wider than the teeth themselves to permit them to gear, though made quite long in order that they may act as stirrers at a region where the contents of the device would otherwise be liable to lodge and form the top of an arch. These devices are adapted to break up both the head and foot of the arch of powdered material which would otherwise be formed, resting on the inclined wall of the hopper. The counter-shaft 18 extends through the wall of the distributor and has on its exterior end a crank-arm 22.

23 denotes an exterior supporting-arm secured to the distributor or made part thereof and adapted to engage a suitable socket in a bracket or other support.

In use a can of powdered material, such as powdered caustic soda, its cover having been removed, is connected with the distributor on the inside thereof, and thus tightly closed. The can being turned uppermost its contents will settle or can be shaken down into the receiver. Upon turning the crank 22 the above-described wheels and arms will be revolved and thoroughly break up and carry down the material onto the floor 11, from which it is swept around into the opening in said floor and upon the revolving discharging-disk, where it is held until the opening in the said disk is made to register with the opening in the bottom 11, when a portion of the material is swept into said disk-opening and then carried around over the opening in the lower floor and discharged therefrom, a discharge being made at every complete revolution of the crank. The opening in floor 11 is preferably made about equal to a semicircle to insure deposit of sufficient material on the revolving disk. When desired for certain purposes, as in the case the material in the can is of such character that it does not descend freely, the shaft 10 may be extended considerably above the distributor into the can when combined therewith and act as a stirrer therein. For this purpose it is provided with a short arm 21. Preferably the extension 10' has a pivoted connection with shaft 10 to permit its upper end to describe circles of increasing size as the material just about the extension is discharged thereby when the discharging devices are rotated.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. The distributor provided with stirring and discharging devices, in combination with a can having an open end secured in the said distributor, substantially as set forth.

2. The distributor provided with stirring and discharging devices, made slightly flaring

toward its upper edge, in combination with a can having an open end secured in the said distributor, substantially as set forth.

3. The distributor provided with stirring and discharging devices, made slightly flaring toward its upper edge, in combination with a can having an open end secured in the said distributor and devices for making air-tight the joint between the can and distributor, substantially as set forth.

4. The distributor-hopper having the approximately-cylindrical and frusto-conical portions, the discharging devices situated in the lower cylinder, and the pin or indentation in the upper cylinder, whereby it is adapted to be secured to a can, substantially as set forth.

5. The distributor-hopper having a frusto-conical portion and a cylinder attached to the contracted end of said frustum, the parallel floors fixed in said cylinder and provided with non-registering openings, and the revoluble disk situated between said floors and provided with an opening, substantially as set forth.

6. A hopper provided with revoluble discharging mechanism fixed on the vertical shaft, said shaft, the counter-shaft, and the wheels fixed on said shafts, respectively, and provided with stirring-teeth, substantially as set forth.

7. The distributor-hopper embracing the upper approximately-cylindrical part and a frusto-conical part, a revolving discharging-disk situated below the frustum, and a vertical shaft secured to said disk and provided with an approximately-horizontal arm near the plane passing between the cylinder and frustum, substantially as set forth.

8. The distributor-hopper embracing the upper approximately-cylindrical part and a frusto-conical part, a revolving discharging-disk situated below the frustum, and a vertical shaft secured to said disk and provided with an approximately-horizontal arm near the plane passing between the cylinder and frustum and having its outer end turned upwardly near the foot of the cylinder, substantially as set forth.

9. The distributor-hopper embracing the upper approximately-cylindrical part and a frusto-conical part, a revolving discharging-disk situated below the frustum, a vertical shaft secured to said disk and provided with an approximately-horizontal arm near the plane passing between the cylinder and frustum and having its outer end turned upwardly near the foot of the cylinder, and a central stirring device situated in a plane above said arm, substantially as set forth.

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

WILLIAM S. FICKETT.

Witnesses:

ALBERT E. OGLEY,
H. A. MCFARLAND.