W. BURTON.

DISINFECTING APPARATUS.

APPLICATION FILED APR. 14, 1911.

1,012,981. Patented Dec. 26, 1911.

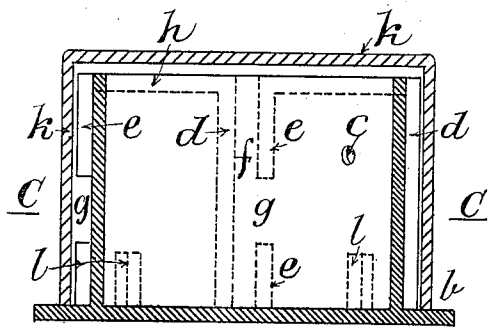

Fig 1

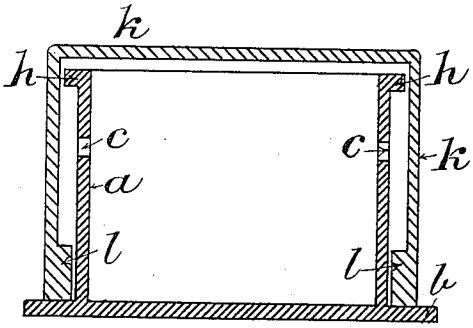

Fig 2

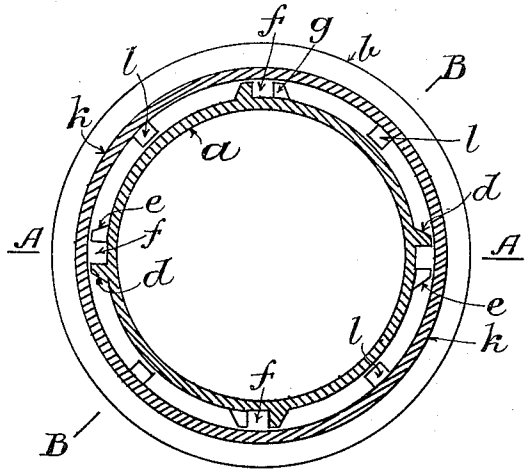

Fig 3

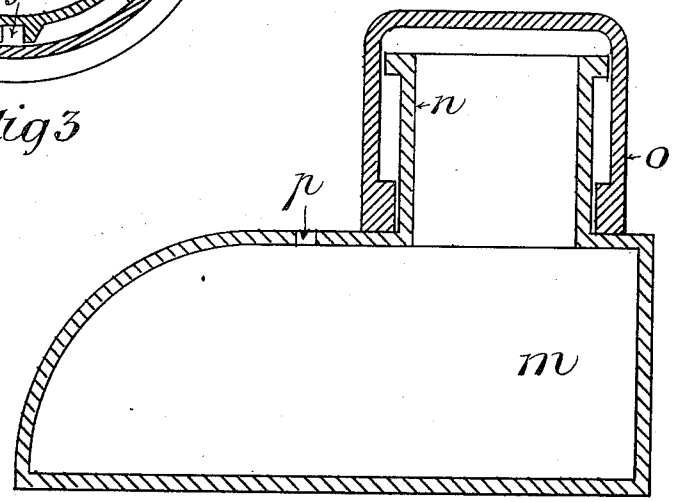

Fig 4

Witnesses:
L. C. Brady
Geo B Pitts

Inventor:
Walter Burton
By John S. Barker
Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER BURTON, OF NOTTINGHAM, ENGLAND, ASSIGNOR TO STANLEY CECIL SMITH, OF HOVERINGHAM, ENGLAND.

DISINFECTING APPARATUS.

1,012,981. Specification of Letters Patent. Patented Dec. 26, 1911.

Application filed April 14, 1911. Serial No. 621,100.

To all whom it may concern:

Be it known that I, WALTER BURTON, a subject of the King of Great Britain, and a resident of the city of Nottingham, in the county of the said city, England, have invented new and useful Improvements in Disinfecting Apparatus, of which the following is a specification.

This invention relates to improvements in disinfecting apparatus of the kind used in cisterns for water closets and other similar cisterns and which are provided with a disinfectant soluble in water, and are designed to automatically discharge a measured quantity of disinfecting solution every time the cistern is emptied, the object of the present invention being the construction of a disenfecting apparatus in which the quantity of disinfecting fluid discharged is measured and controlled by the quantity of air confined in the apparatus by the water entering the cistern, and which apparatus is without valves and any material liable to be affected by the disinfectant.

In the drawings:—Figure 1 is a sectional elevation of the improved disinfecting apparatus on the line A. A. Fig. 3. Fig. 2 is a section on the line B. B. Fig. 3. Fig. 3 is a sectional plan on the line C. C. Fig. 1, and Fig. 4 is a sectional elevation of a modified form of construction of the improved apparatus.

In the apparatus shown in Figs. 1, 2 and 3 there is a container *a* which is circular in plan and may be made of glass, earthenware or other material capable of withstanding the chemical action of the disinfectant used. This container is made with a bottom flange *b* and one or more side openings *c* for the inlet of the water and the outlet of the disinfecting solution. On the outside of the container there are a number of vertcal ribs *d*, *e*, which are arranged in pairs to form vertical grooves *f* and at any convenient position in the ribs *e* there is an opening or space *g*. At the top of the container there is a rim *h* which extends between the ribs *d* of one pair of ribs, to the rib *e* of the next pair of ribs. Each container is provided with a cap *k* which is made of material of the kind used for the container and is large enough to inclose the container. On the inside of the cap, and projecting upward from the lower edge of the same, there are some lugs or projecting pieces *l*, the number of which is less than or equal to the number of grooves *f* on the container. The width of the lugs *l* is less than the width of the grooves *f* and the depth of the lugs less than the depth of the spaces *g*, so that the lugs can slide vertically in the grooves *f* and can be passed through the spaces *g* by giving a partial turn to the cap when the lugs are opposite the spaces.

The disinfectant used with the improved apparatus must be soluble in water and may be in the form of crystals, paste, or in other suitable form, and the container is partially filled with this disinfectant to a depth which is below the side openings *c*. The cap is then placed in position with the lugs *l* in the grooves *f* and is lowered until the lugs can be passed through the spaces *g*. A partial turn is then given to the cap and it is afterward lowered until it rests upon the flange *b*, and in this position the cap can be raised and lowered vertically without being removed from the container, the upward vertical movement being limited by the rim *h*. The charged container is then placed in the cistern and as the water rises in the cistern it covers the lower edge of the cap and confines the air under the cap. As the water rises in the cistern the air under the cap is compressed until the cap is lifted and rises vertically, and eventually the water enters the container through the side openings and rises in the container. This water mixes with the disinfecting solution which collects on the top of the disinfectant after the cistern has been emptied a few times, and a measured quantity of disinfecting solution is discharged from the container every time the cistern is emptied.

The apparatus shown in Fig. 4 has a container *m* which is rectangular in plan and suitable for use in narrow cisterns. On the top of the container there is a cylindrical piece *n* with a cap *o* and these parts are constructed in exactly the same manner as the container and cap herein described with reference to Figs. 1, 2 and 3 and the container has an opening *p* for the inlet of the water and the outlet of the disinfecting fluid.

I claim.

1. In a disinfecting apparatus the combination of a vessel containing the disinfectant, having openings for the inlet of water to the disinfectant and the outlet of the dis-

infecting solution, and a cap which incloses the container and is raised by the air inclosed under such cap and compressed by the water in the cistern substantially as herein set forth.

2. In a disinfecting apparatus the combination of a container having an opening in its side, a movable cap which incloses the container, and means by which the cap is held from being floated off the container substantially as herein set forth.

3. In a disinfecting apparatus the combination of a container, having openings in its side wall, pairs of vertical ribs which form grooves on the outer surface of the container, there being a space in one of each pair of vertical ribs, a top rim between the pairs of ribs, a movable cap for inclosing the container and lugs on the inside of the cap arranged to move in the grooves in the outer surface of the container substantially as herein set forth.

4. In a disinfecting apparatus, a vessel adapted to be set into a flushing tank or cistern and to contain a disinfectant, it being open at the top and having below the top an opening for the inflow of water to the disinfectant and the outflow of the disinfecting solution, and a cap closing the opening at the top of the vessel and communicating at its lower end with the interior thereof, and free to have a limited up and down movement relative thereto, the cap being closed in its upper parts whereby a body of air will be inclosed and held thereby so as to be compressed by the water when it fills the cistern, the cap being raised thereby when the cistern fills and falling when it empties.

WALTER BURTON.

Witnesses:
WILLIAM H. POTLER,
JOHN GRUNDY.