

F. CARMAN.
DISINFECTING APPARATUS.

Patented Jan. 25, 1898.

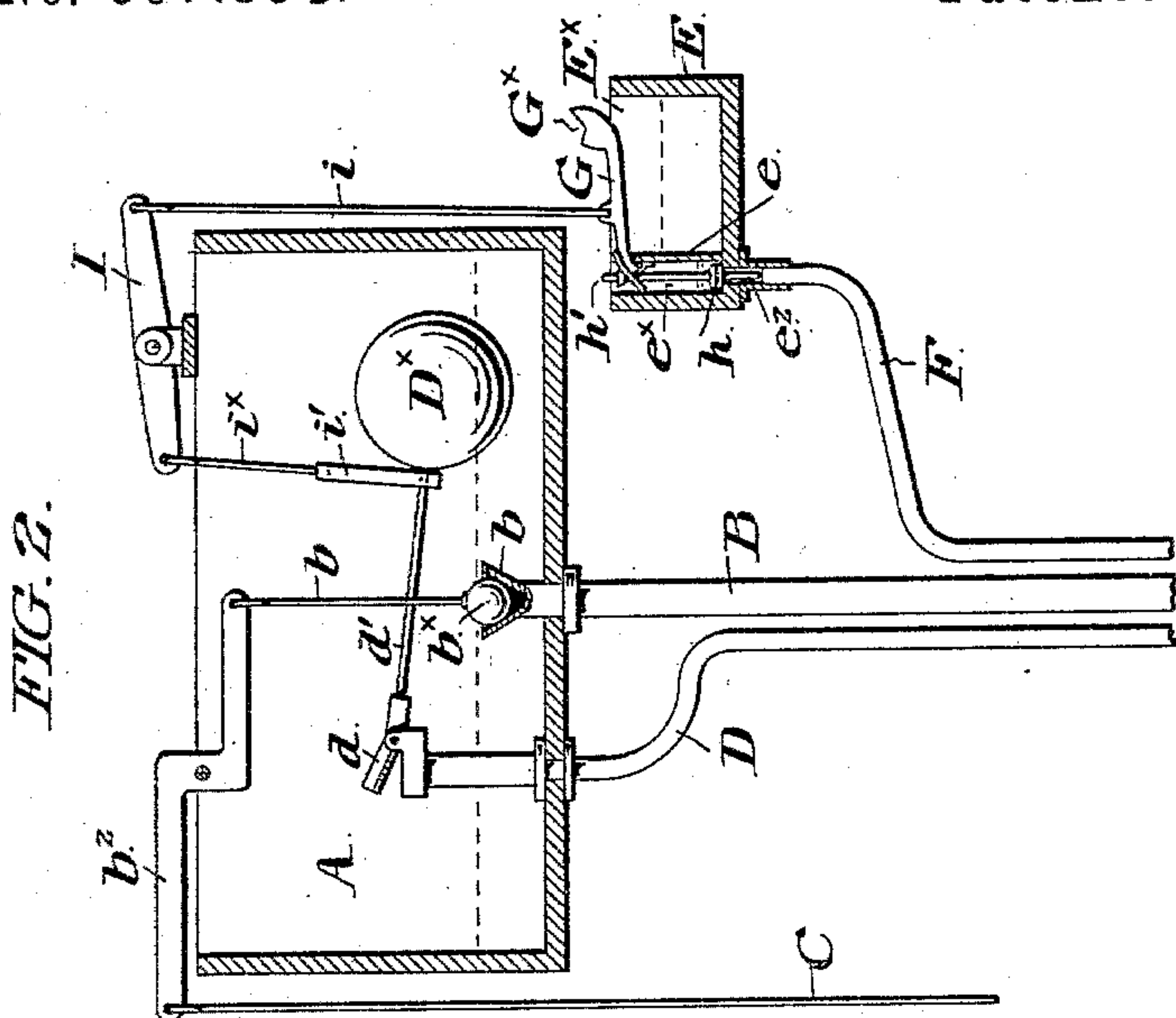


FIG. 2.

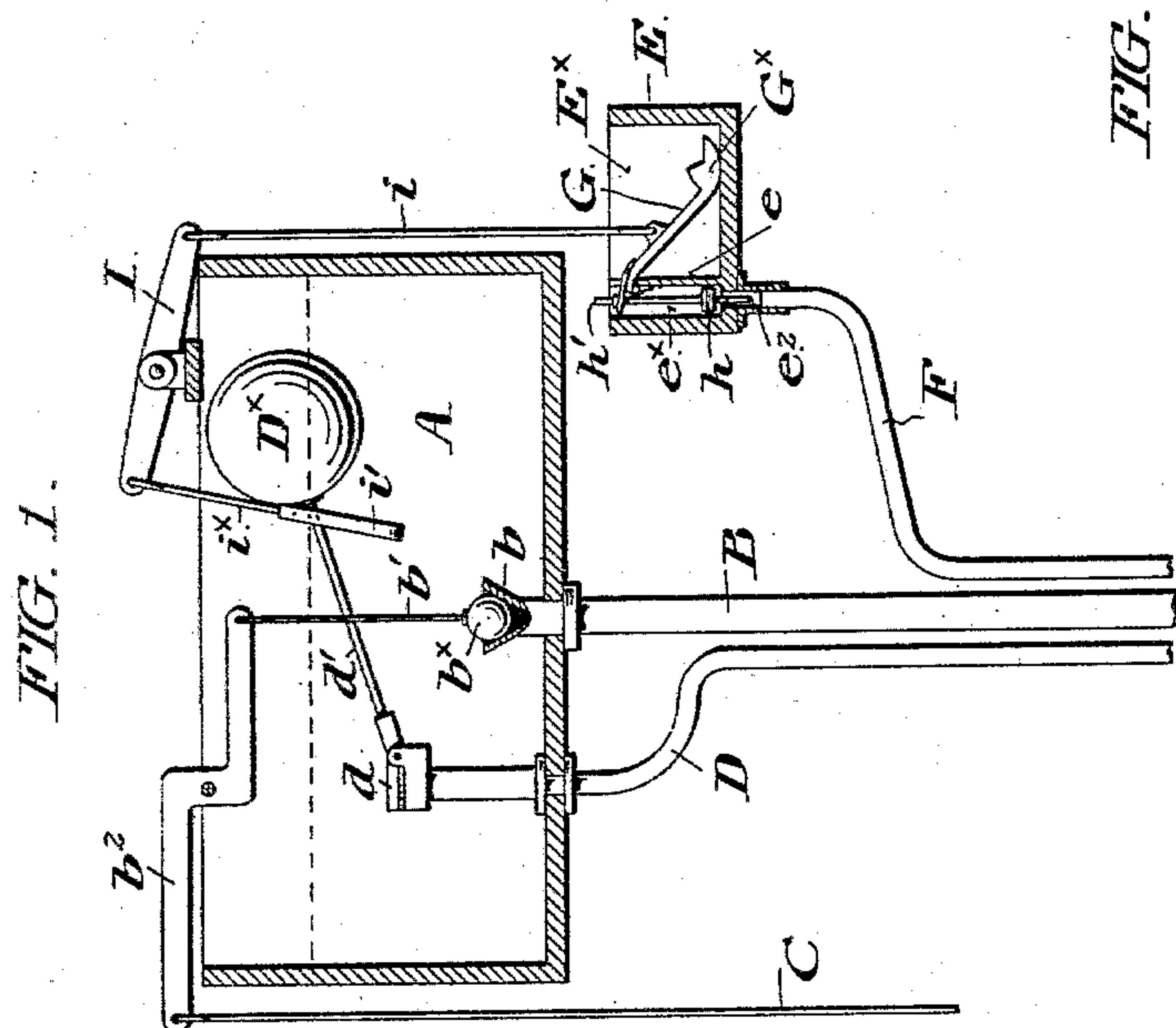


FIG. 1.

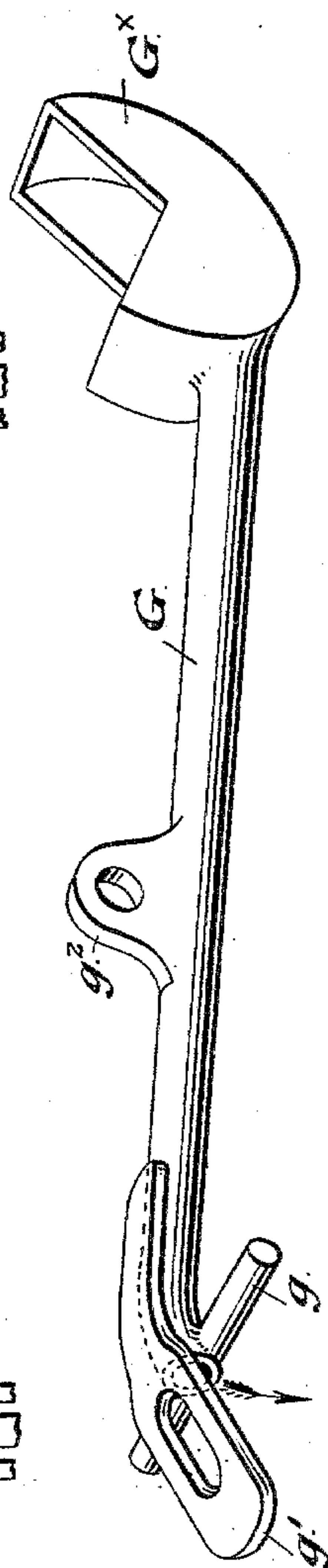
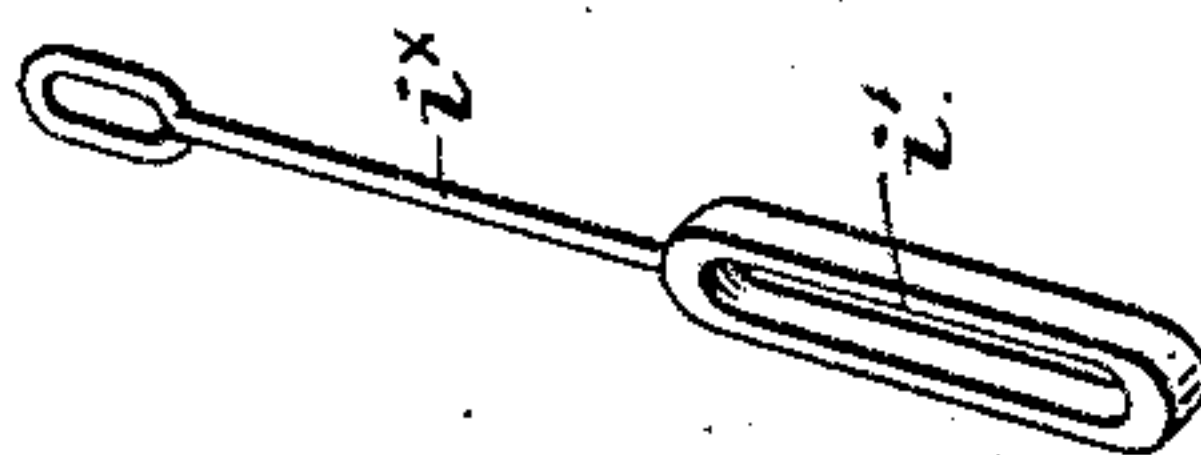


FIG. 3.

WITNESSES:

A. E. Paigz. W.F.
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FIG. 4.



Florence Garman

INVENTOR:

By his Attorneys,
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UNITED STATES PATENT OFFICE.

FLORENCE CARMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-THIRD TO FRANK MEADE, OF SAME PLACE.

DISINFECTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 597,894, dated January 25, 1898.

Application filed October 26, 1897. Serial No. 656,389. (No model.)

To all whom it may concern:

Be it known that I, FLORENCE CARMAN, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Disinfecting Apparatus, of which the following is a specification.

My invention relates to disinfecting apparatus and its use in connection with water closets, and it is the object of my invention to provide a valved reservoir of disinfecting material supported in the vicinity of a closet and so connected with a moving part of the ordinary flush tank apparatus of said closet that the operation of said apparatus will automatically occasion the discharge of a given quantity of disinfecting material from said reservoir into a pipe leading to the closet bowl.

In the accompanying drawings I show, and herein I describe a good form of a convenient embodiment of my invention, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the drawings,

Figure 1 is a central, vertical, sectional, elevation of an ordinary form of flush tank provided with the usual valves and fittings, and of a valve-provided disinfectant reservoir mounted in the vicinity of said tank, all the parts being shown in their normal position.

Figure 2 is a view similar to Figure 1, illustrating the parts in the position they occupy at the moment when the outlet of the flush tank has been closed, after having been opened and the water level lowered.

Figure 3 is a view in perspective of the tilting conveyer.

Figure 4 is a view in perspective of the connecting link.

Similar letters of reference indicate corresponding parts.

In the drawings,

A is a flush tank of any ordinary construction and arrangement, provided with a flush pipe B which is supposed to lead to a closet container or bowl, not shown.

The mouth *b* of the flush pipe, within said tank, is slightly flaring, as shown in Figures 1 and 2, to form a seat for the ball-valve *b*^x which controls said outlet.

The ball-valve *b*^x depends, through any suitable connection *b*['], from a tilting lever *b*² pivotally connected to the framework of the tank, and to the outer end of which is connected a depending pull cord C.

Traction exerted upon the cord C will, as is understood, tilt the lever *b*², unseat the ball-valve, and allow the escape of the water contained in the tank A through the flush pipe B.

Upon the release of the cord C, the ball-valve will return by gravity to the valve seat *b* in the mouth of the flush pipe and close the outlet.

D is a water inlet or supply pipe, the mouth of which, within the tank A, is controlled by a pivoted valve *d*, to which is connected, by a rod *d*['], a float D^x, which, rising and falling with the water level in the tank, will tilt the tilting valve *d* and alternately open and close said inlet.

The parts so far described are of the usual character and well known in the art,—and it may at this point be stated that my improvements may be employed in connection with any of the ordinary forms of flush tanks and flush tank-operating devices.

E, Figures 1 and 2, is a tank or reservoir for containing a disinfecting fluid, the same being an ordinary receptacle of any preferred character, divided by a diaphragm *e* into a containing chamber E^x and a discharge chamber *e*^x,—said diaphragm being conveniently provided with a recess *e*['] in its upper edge for the reception of the tilting conveyer, as hereinafter explained.

*e*² is an escape or outlet port, formed conveniently in the bottom of the discharge chamber, and opening into a disinfectant pipe F, which leads to and discharges within the bowl or trap of the closet at such point as the construction of said bowl and trap may render desirable.

h is a discharge valve of any preferred construction, which controls said outlet port, and which is shown as an ordinary form of puppet valve, provided with a vertically-extending head-provided stem *h*['].

G is what I term a tilting conveyer, the same being a pipe mounted in the disinfectant reservoir and terminating as to one end within the containing chamber, and as to its other

end within the discharge chamber, while the intermediate portion rests in a vertical slot or recess e' in the diaphragm e , which serves to guide its movement to some extent and to assist in retaining it in its operative position.

That end of the tilting conveyer which exists within the containing chamber is enlarged to form a bowl G^x , the interior of which is continuous of the bore of the tilting conveyer and has walls of such height as to be capable of containing with the adjacent part of the bore of the body of the device a quantity of the disinfecting liquid.

That end of the tilting conveyer which extends within the discharge chamber, being the discharge end of said conveyer, is conveniently provided with a transverse bar g which is entered in suitable brackets or bearings mounted upon the diaphragm e and constitutes a pivot upon which the conveyer G has a tilting movement.

That end of the tilting conveyer which extends within the discharge chamber is further provided with a yoke g' which embraces the valve stem h' of the valve h , and in the tilting movement of the conveyer alternately raises and lowers said valve.

I, Figures 1 and 2, is a tilting lever pivotally supported conveniently upon the body of the tank A , and provided as to one end with a link i the lower end of which is engaged with the tilting conveyer, as, for instance, by means of the eye g^2 ,—and the other end of which is provided with a link i^x the lower end of which is connected with the rod d' of the float D^x in any suitable manner.

In the construction shown in the drawings, the rod d' extends through an elongated eye i' formed in the lower end of the link i^x .

The operation of my apparatus will be readily understood:—

In Figure 1 the parts of the apparatus are shown in their ordinary positions,—the valves of the inlet and flush pipes of the flush tank being closed, and the water in said tank being at its usual level.

In this position of the parts the tilting conveyer of the disinfectant reservoir rests in such position that its bowl G^x is submerged and upon the floor of the containing chamber, while the yoke mounted on its discharge end supports the valve h in open position.

In this position, moreover, the containing chamber of the disinfector tank is nearly full of disinfecting material, while the discharge chamber, which is normally open, is entirely empty.

When, then, the outlet valve which controls the flush pipe B has been opened, and, by escape of the water, the liquid level in the tank A has been lowered,—the descent of the float D^x will operate, through the link i^x and lever I , to lift the link i and tilt the tilting conveyer into the position shown in Figure 2, in which position said conveyer will permit of the lowering of the valve h to close the outlet port e^2 , and will discharge the disinfect-

ing fluid theretofore contained within its own bowl and bore into the discharge chamber e^x .

As, thereafter, the outlet valve b^x having closed, the water level within the flush tank gradually rises as the water enters through the inlet pipe D , the ascent of the float D^x will operate, through the links $i i^x$ and tilting lever I , to occasion the gradual lowering of the body of the tilting conveyer and consequently the gradual opening of the outlet port e^2 of the discharge chamber, with the result that the disinfecting material contained within said discharge chamber will escape through the disinfector pipe F , to the bowl or trap of the closet.

By reason of the special form of connection between the link i^x and the rod of the float D^x ,—said float in the first portion of its descent is without effect upon said link and consequently upon the tilting conveyer and puppet valve.

The sequence of these operations is novel and important. Should the disinfectant material pass down contemporaneously with the water in the pipe B it would pass out of the bowl with the water and be of little or no service.

By the apparatus described, however, the disinfectant only begins to descend after the water has ceased to run through the flush pipe, and consequently the disinfecting material remains within and about the closet bowl until the closet is again used.

By my apparatus, moreover, a measured quantity of the disinfecting material is supplied to the closet bowl at each operation, which renders waste or extravagance in the use of the material impossible.

Manifestly my invention may be embodied in many different mechanical forms, and a great variety of mechanical modifications of the several parts described may be resorted to, without departure from the spirit and essence of my invention.

Having thus described my invention, I claim—

1. In combination, a water closet flush tank provided with an inlet and an outlet, mechanism controlling said inlet and outlet, a disinfectant reservoir provided with an outlet apparatus for discharging a quantity of disinfectant from said reservoir, and devices connecting said mechanism and said apparatus whereby the movement of said mechanism is transmitted to and occasions the operation of said apparatus, to effect a discharge from the disinfectant reservoir after the discharge from the flush tank, substantially as set forth.

2. In combination, a water closet flush tank provided with an inlet and an outlet, mechanism controlling said inlet and outlet, a disinfectant reservoir formed with two chambers one of which is provided with a valve-provided escape opening leading to an escape pipe, a tilting conveyer having one end in each of said chambers, a connection between said tilting conveyer and the valve, and a de-

vice adapted to transmit movement from a moving member of the flush tank mechanism to said tilting conveyer to occasion its tilting and the manipulation of the valve of the escape opening, substantially as set forth.

3. A disinfectant reservoir provided with a containing chamber and a discharge chamber, an opening in said discharge chamber leading to an escape pipe, a valve mounted in said opening, a tilting conveyer having one end within the disinfectant chamber and the other end within the discharge chamber, and connected with said valve, and means for occasioning the tilting of said tilting conveyer, substantially as set forth.

4. A disinfectant reservoir provided with a containing chamber and a discharge chamber, an escape opening in said discharge chamber leading to an escape pipe, a valve mounted in said opening, a tilting conveyer having one end within the disinfectant chamber and the other end within the discharge chamber, and connected with said valve, a water closet flush tank and a connection between a moving part of the tank controlling apparatus and said tilting conveyer, substantially as set forth.

5. In combination, the disinfectant reservoir having a discharge chamber and a containing chamber, a tilting conveyer so disposed that one of its ends is in one and the other end in the other of said chambers, an escape opening in said discharge chamber, a valve in said escape opening, a connection

between said tilting conveyer and said valve, a water closet flush tank having an inlet pipe and an outlet pipe, a valve for said outlet pipe, means for controlling the same, a valve for the inlet pipe, a float connected to said valve, and a connection between said float and the tilting conveyer, substantially as set forth.

6. In combination, the disinfectant reservoir having a discharge chamber and a containing chamber, a tilting conveyer so disposed that one of its ends is in one and the other end in the other of said chambers, an escape opening in said discharge chamber, a valve in said escape opening, a connection between said tilting conveyer and said valve, a water closet flush tank having an inlet pipe and an outlet pipe, a valve for said outlet pipe, means for controlling the same, a valve for the inlet pipe, a float connected to said valve, and a connection between said float and the tilting conveyer which consists of a tilting lever having two links one of which is secured to the float or its connections and the other to the tilting conveyer, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 25th day of October, A. D. 1897.

FLORENCE CARMAN.

In presence of—

ALBERT ANDREWS,
ISAAC C. YOCUM.