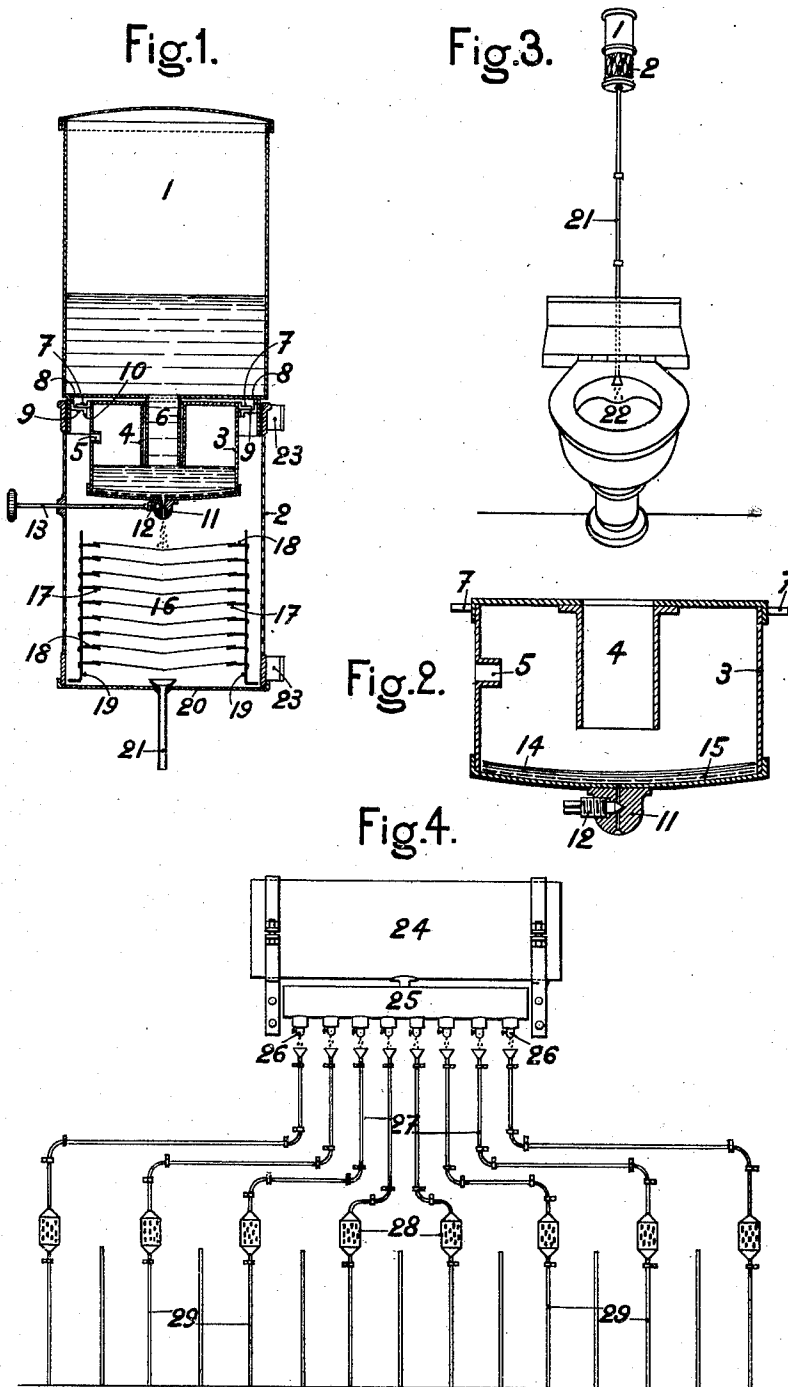


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 DISINFECTING APPARATUS.
 APPLICATION FILED DEC. 2, 1908.

976,992.

Patented Nov. 29, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

PIERRE CLAUDE FRANCOIS EFFANTIN AND CLEMENT STANISLAS EFFANTIN, OF
PARIS, FRANCE.

DISINFECTING APPARATUS.

976,992.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed December 2, 1908. Serial No. 465,694.

To all whom it may concern:

Be it known that we, PIERRE CLAUDE FRANCOIS EFFANTIN and CLEMENT STANISLAS EFFANTIN, citizens of the French Republic, and residents of Paris, France, have invented certain new and useful Improvements in Disinfecting Apparatus, of which the following is a specification.

This invention relates to an apparatus for disinfecting by means of evaporation and dispersion of the disinfecting liquid drop by drop.

The apparatus essentially comprises the reservoir for the disinfecting liquid, evaporating surfaces upon which the liquid is dropped from the reservoir and pipes which connect the evaporating cylinder with the water-closet or urinals.

In the accompanying drawings the apparatus is shown by way of example.

Figure 1 represents a disinfecting apparatus in its simplest form in vertical section. Fig. 2 is a vertical section representing, on a larger scale, the hydraulic seal for the outflow of the reservoir. Fig. 3 shows the apparatus combined with a water-closet and Fig. 4 shows it combined with a set of urinals.

The disinfector essentially comprises the reservoir 1 which contains the disinfecting liquid, the perforated cylinder 2 with the evaporating surfaces and the hydraulic seal for the outflow of the reservoir which distributes the disinfecting liquid in drops upon the upper evaporating surface.

The reservoir 1 is mounted upon the perforated cylinder 2 and has in its bottom plate an outflow pipe 6 of comparatively large diameter which penetrates into box 3 and terminates at some distance above the bottom of said box. Box 3, which is fixed at the lower surface of the bottom plate of the reservoir 1 in a manner which will hereinafter be particularly described, is closed at its upper end and has a tube 4 which penetrates into the box and terminates at the same distance above the bottom of the box as the outflow pipe 6 of the reservoir which it surrounds. Owing to this arrangement and in consequence of a well known physical principle the liquid flowing from reservoir 1 into box 3 will fill said box constantly up to a level which is determined by the lower end of outflow pipe 6. Air is admitted into box 3 through the hole 5

which is situated somewhat above the level of the disinfecting liquid in box 3. On the bottom of box 3 a nipple 11 is fixed which serves for the distribution of the disinfecting liquid upon the evaporating surfaces of perforated cylinder 2. The orifice of said nozzle 11 is adapted to be regulated by means of a regulating screw 12 which can be turned by means of a rod 13 from outside the apparatus. Two or three sheets 14 of filtering material are placed upon the bottom of box 3 where they are maintained by any suitable means. Said sheets of filtering material 14 are separated from the bottom of the box 3 by a metal grate 15.

The perforated evaporating cylinder 2 contains a suitable number of superposed evaporating plates 16 which are slightly curved and made of blotting paper or any other suitable material adapted to absorb the disinfecting liquid which is distributed in drops by the nozzle 11 of box 3.

Each of said paper disks 16 through which the disinfecting liquid filters from the one upon the other is fixed upon a wire ring 17 which has lateral arms 18 by means of which it is attached to vertical supports 19 which rest upon the bottom 20 of cylinder 2. The outer air which enters through the perforations of the cylinder wall freely circulates through and in the cylinder and flowing over said paper disks 16 evaporates the disinfecting liquid.

The liquid which has not been evaporated collects upon bottom plate 20 of cylinder 2 and is conducted by tube 21 to the basin of the water-closet where it accumulates in a small cup provided at the back of the basin until it flows over and spreads over the surface of the basin, which is thus coated with disinfectant which forms a layer on the water contained in the siphon and is drawn along into the canalization.

Box 3 can be fixed to the lower surface of the bottom plate of reservoir 1 in any suitable manner for example by means of a bayonet-joint as shown. For this purpose the box 3 has two studs 7 at its upper end adapted to grip behind an annular projection 8 of the reservoir after they have been inserted into slots 9 of said projection, whereupon the box 3 is turned and maintained in its position by the studs which now rest upon the ring-shaped projection 8. The inner end of ringshaped projection 8 can

have a turned down flange 10 which embraces the box 3.

Fig. 3 shows, by way of example, how the disinfector is used with a water-closet; the disinfecting liquid which is contained in reservoir 1 acts upon the ambient air of the water-closet owing to the antiseptic emanations produced by the evaporating surfaces of the perforated cylinder 2 and the disinfecting liquid which is not evaporated is conducted through tube 21 into the basin 22 of the water-closet where it kills the microbes and bacteria developed and insulates and absorbs the various putrid emanations.

The apparatus can have flaps 23 by means of which it can be fixed to the wall. According to its application the apparatus described may be modified. For example, if there are several urinals or water-closets to be disinfected, one common reservoir for the several evaporators can be provided. As shown in Fig. 4, the reservoir 24 is of larger dimensions and connected with the box 25 in the manner described, said box having an oblong form so that a great number of distributing-nozzles 26 can be provided which by means of the pipes 27 are connected with the evaporators 28. The reservoir, the box and the evaporating device are otherwise of the same general structure as the sections of the apparatus shown in Fig. 1. One evaporator is provided for each urinal or water-closet and connected with the same by tube 29.

We claim:—

An improved apparatus for disinfecting by evaporation and by dropping the disinfecting liquid slowly and drop by drop into the devices to be disinfected, comprising in combination, a reservoir for the disinfecting liquid, an outflow tube in the bottom-plate of said reservoir, a box fixed to the lower surface of the bottom plate of said reservoir, a tube serving as envelop for the outflow pipe of the reservoir which penetrates into said box terminating a short distance above the bottom of the same, so that the level of the liquid in said box is determined and remains constant, an outflow nozzle of said box, means for regulating the orifice of said nozzle, a perforated cylinder connected with the reservoir, evaporating disks of suitable absorbing material superposed in said perforated cylinder and below the outflow nozzle of the box, so that the disinfecting liquid dropping out of said nozzle filters through said disks in being simultaneously evaporated, and a pipe from the bottom of said evaporating cylinder for discharging the disinfecting liquid which collects upon the bottom of said cylinder, substantially as described and for the purpose set forth.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

PIERRE CLAUDE FRANCOIS EFFANTIN.

CLEMENT STANISLAS EFFANTIN.

Witnesses:

CHARLES PETITJEAN,
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