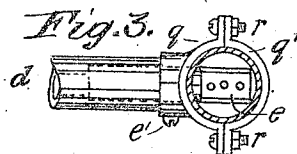
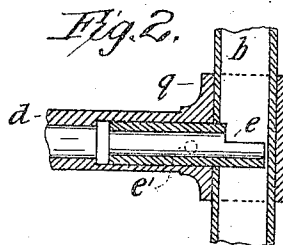
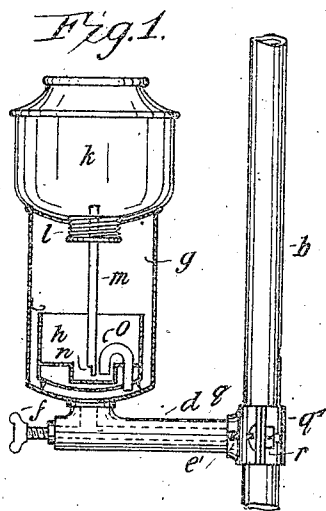


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DISINFECTING AND DEODORIZING DEVICE FOR SANITARY FLUSH APPARATUS.
APPLICATION FILED JULY 29, 1915.

1,178,912.

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DISINFECTING AND DEODORIZING DEVICE FOR SANITARY FLUSH APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CLAUDE VICTOR FULTON, subject of the King of Great Britain, residing at 29 Esmond street, Hyde Park, in the State of South Australia, Commonwealth of Australia, electrical engineer, have invented certain new and useful Improvements in Disinfecting and Deodorizing Devices for Sanitary Flush Apparatus, of which the following is a specification.

My invention relates to an improved disinfecting and deodorizing device for sanitary flush apparatus, and has for its object to provide means whereby the last portion of the flush for sanitary pans and the like may contain disinfecting and deodorizing material or chemicals, the application of such appliance being entirely automatic.

Hitherto it has been customary to use disinfectants in connection with sanitary pans, but the greater part of such disinfectants when contained in the flush reservoir are carried away with the stream, and very little remains in the pan and water seal after the flush has been completed. Now, my invention aims at providing a device which will leave the greater part of the disinfecting material in the pan after the bulk of flush water has been carried away.

For the purpose of achieving this object I provide an auxiliary receptacle of comparatively small size which is connected with the main down pipe of the flushing system, and is so arranged that disinfecting or deodorizing material contained in the auxiliary chamber is diluted by the first flush water under pressure, and by siphon action is discharged into the pan at the end of the flushing operation.

In order that my invention may be the better understood I will now proceed to describe the same by aid of the accompanying illustrative drawings wherein:—

Figure 1 is a front elevational view, partly in section, of my improved device; Fig. 2 is a vertical sectional view of means for attaching the same to a flush pipe; and Fig. 3 is a plan view thereof, partly in section.

Referring to the drawing, *b* is the flush pipe leading from the cistern to the places to be flushed. Leading from this flush pipe I arrange a smaller pipe *d*, which may be termed the inlet pipe. One end of this pipe may be either upturned or cut away at *e* so as to catch a portion of the downwardly flowing flush water, the quantity of which

may be regulated by a stopcock such as *f*, such cock if so desired being graduated so that it may easily be set to suit the capacity of the overhead cistern. The opposite end of the inlet pipe leads into an auxiliary receptacle in the form of a drum or reservoir *g*, which is preferably made of metal, and may be provided at its lower end with an internally arranged cup *h*.

Upon the upper portion of the drum or reservoir I place a storage vessel *k* which contains liquid disinfectant. This storage vessel is arranged upon what is known as the bird fountain principle, and is preferably made of glass, and may vary in size and shape. For operation it may be convenient to supply a screw neck or stopper *l*, through which a discharge pipe *m* for the disinfectant passes, and conveys the disinfectant from the storage vessel to the cup shaped portion of the drum or reservoir, the device being like an inverted bottle, as will be well understood.

To more completely embody the bird fountain principle a small portion of the discharge pipe *m* is cut away at *n* so as to allow the disinfectant to discharge up to the level of the cut away portion, after which it becomes automatically sealed by the quantity of disinfectant that has been allowed to flow into the cup shaped portion up to such level.

In Fig. 1 the cup *h* is shown as being mounted inside of the auxiliary receptacle *g*, and has a sunken portion which receives the end of the discharge pipe *m* and seals it when a very small quantity of disinfectant has passed from the storage vessel into the cup. The inflow of flush water passes into the auxiliary chamber through the pipe *d*. The flow enters through the bottom of the chamber *g*, spreads out under the inserted cup, and up the sides until it flows into the cup, the quantity being regulated by the tap *f*. When the inflow has reached a sufficient height it sets a small siphon pipe *o* arranged in cup *h* in operation, and the diluted disinfectant passes back through the pipe *d*, and into the flush pipe *b*. This arrangement enables the said pipe *d* to serve both for inflow and outlet purposes.

Figs. 2 and 3 illustrate a method of mounting the device upon existing flush pipes. By such arrangement a socket end is formed at *q* for attaching the device to the flush pipe, and is held in position by the clamp

piece q^1 , and is further secured by the screws and nuts r . With this arrangement it is only necessary to pierce the flush pipe for the passage of the inlet end e , and as the flush pipes may vary in diameter the inlet piece is made separately and slidably socketed in the inlet pipe d , and when properly adjusted is held by the grub screw e^1 . The trough-shaped inlet e may be perforated as shown in Fig. 3, and a leather liner or washer is used to make a watertight joint between the socket and flush pipe.

The sequence of events and the operation of my invention may be briefly summarized as follows:—The flush of water from the cistern in flowing down the pipe b enters the inlet pipe d through the opening e , and mixes with the last remaining drop of disinfectant in the cup shaped portion h . The siphonic action does not commence in the outlet pipe o until diluted disinfectant is well above the highest point of such pipe, and this level is not reached until nearly the whole of the flush water has been discharged into the sanitary pan beneath, the speed of inlet being governed by the setting of the stopcock f . Consequently the disinfecting liquid only passes into the pan after practically the whole of the flush has been exhausted, thus preventing waste of the disinfectant, but at the same time insuring the presence of disinfectant in the pan after the flush flow has ceased.

After the drum or reservoir g has been emptied by means of the siphon pipe o fresh disinfectant is supplied automatically to the cup shaped portion h by gravitation from the vessel above until its flow is automatically stopped by the sealing of the pipe at a predetermined level, as will be well understood.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In a disinfecting device for a flush apparatus, the combination of a storage vessel adapted to contain a disinfectant, a reservoir therebelow, a receptacle in said reservoir, means projecting from the storage vessel into the receptacle for discharging disinfectant into the latter, said means being sealed when liquid rises in said receptacle to a predetermined level, a siphon tube having one end communicating with said receptacle and its opposite end communicating with said reservoir, a flush pipe, and a branch pipe connecting said flush pipe with said reservoir, said branch pipe being adapted for the flow of liquid in both directions between said flush pipe and reservoir.

2. In a disinfecting device for a flush ap-

paratus, the combination of a gravity-feed storage vessel adapted to contain a disinfectant, a reservoir therebelow, a receptacle in said reservoir having a constricted portion therein, means projecting from the storage vessel into said constricted receptacle portion for discharging disinfectant into the latter, said means being sealed when liquid rises in said receptacle to a predetermined level, a siphon tube having one end communicating with said receptacle and its opposite end communicating with said reservoir, a flush pipe, and means connecting said reservoir and said flush pipe, said means being adapted for the flow of liquid in both directions between the flush pipe and reservoir.

3. In a disinfecting device for a flush apparatus, the combination of a storage vessel adapted to contain a disinfectant, a reservoir below said vessel and having an opening therein, a cup in said reservoir, a discharge pipe depending from said vessel into said cup, the outlet of said discharge pipe being in position to be sealed when liquid rises in said cup to a predetermined level, a siphon tube having one end communicating with the interior of said cup and its opposite end communicating with the interior of said reservoir, a flush pipe, and a branch pipe having one end communicating with said flush pipe and its other end communicating with the opening in said reservoir, whereby liquid is adapted to flow in either direction through said branch pipe between the flush pipe and the reservoir.

4. In a disinfecting device for a flush apparatus, the combination of a storage vessel adapted to contain a disinfectant, a reservoir therebelow, a receptacle in said reservoir, means projecting from the storage vessel into the receptacle for discharging disinfectant into the latter, said means being sealed when liquid rises in said receptacle to a predetermined level, a siphon tube having one end communicating with said receptacle and its opposite end communicating with said reservoir, a flush pipe, a branch pipe connecting said flush pipe with said reservoir, said branch pipe being adapted for the flow of liquid in both directions between said flush pipe and reservoir, a slidably adjustable end in said branch pipe, and means for clamping the latter to the flush pipe.

In testimony whereof I affix my signature in presence of two witnesses.

CLAUDE VICTOR FULTON.

Witnesses:

JOHN HUBERT COOKE,
JAMES YINGEY.