

June 24, 1941.

E. CECCATO

2,247,287

DEVICE FOR THE SUCTION OF FOUL AIR FROM WATER-CLOSET BASINS

Filed Aug. 24, 1938

2 Sheets-Sheet 1

FIG. 1

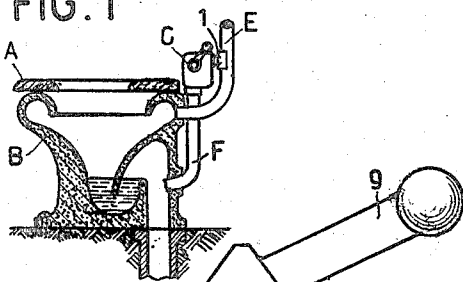


FIG. 2.

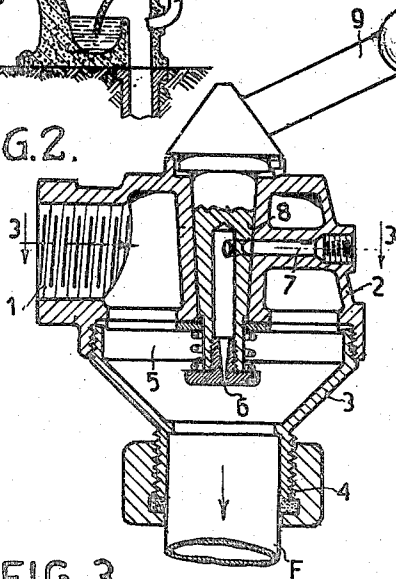


FIG. 3

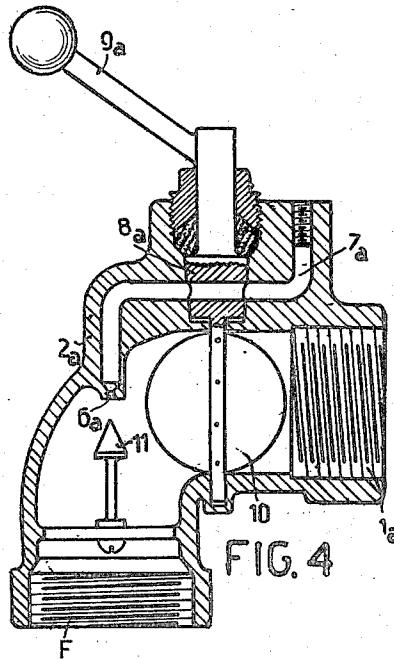
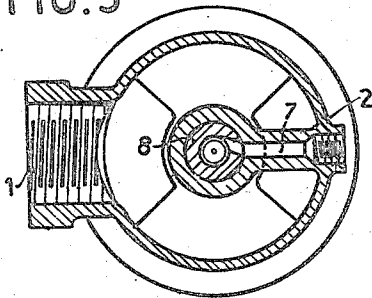


FIG. 4

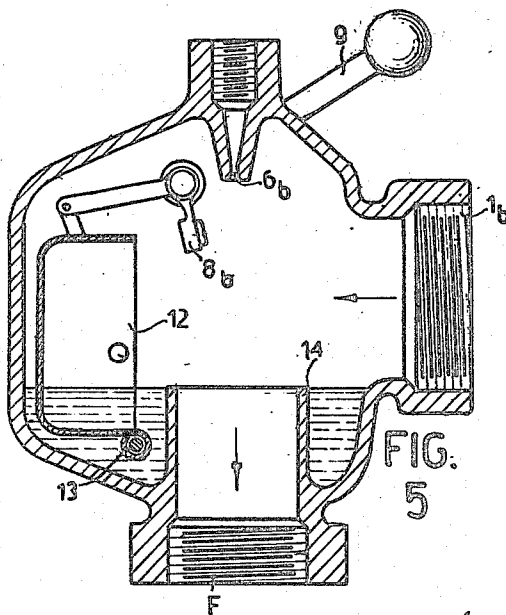


FIG. 5

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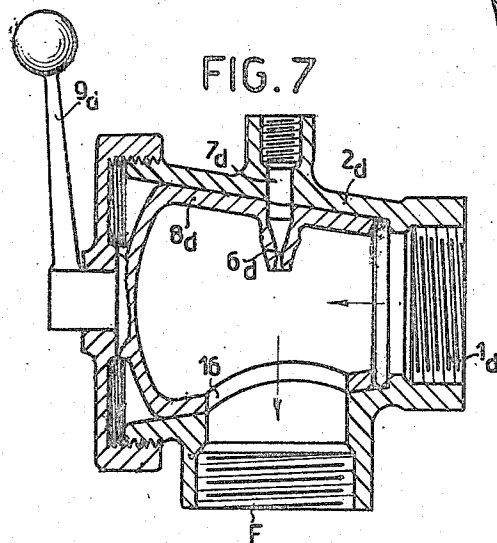
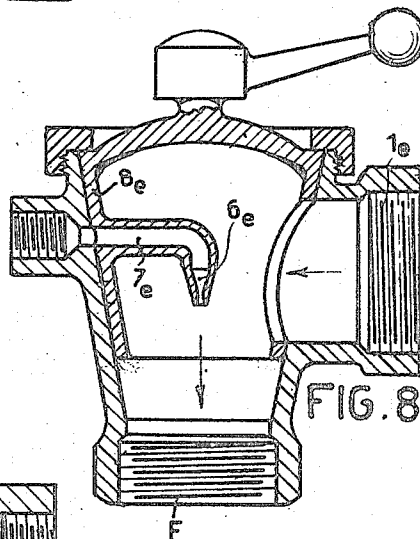
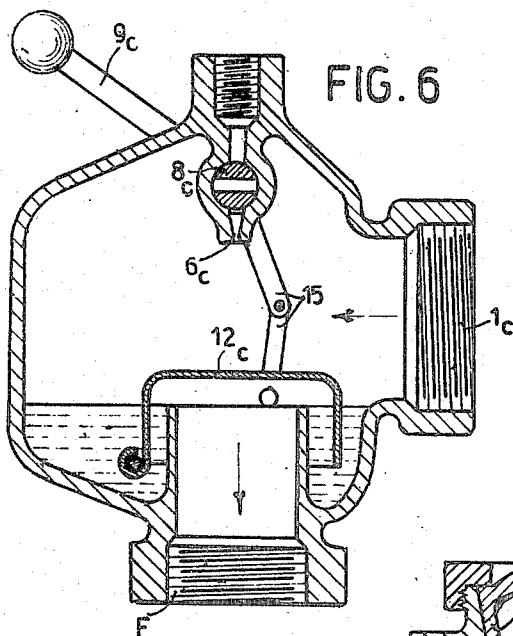
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DEVICE FOR THE SUCTION OF FOUL AIR FROM WATER-CLOSET BASINS

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,247,287

DEVICE FOR THE SUCTION OF FOUL AIR  
FROM WATER-CLOSET BASINSEzio Ceccato, Milan, Italy, assignor to Luigi  
Biancelli, Milan, ItalyApplication August 24, 1938, Serial No. 226,545  
In Italy September 29, 1937

1 Claim. (Cl. 4—215)

The object of the present invention is a device for the suction of foul gases from water-closets, in which means are provided for the suction and subsequent carrying off of foul gases from a water-closet basin or a number thereof, said means being preferably associated with the discharge and wash-down pipes of the closet.

According to the invention, the mechanical means for impressing a discharging motion to the foul gases are of the ejector type. Preferably the operation of said ejecting means uses a dragging water-jet tapped from the main water line.

The invention will be now disclosed with reference to the attached drawings, showing only as examples, in no way limiting the range of the invention, some embodiments of the device.

Fig. 1 is a diagram of a water-closet basin provided with the device inserted between the wash-down pipe and the cavity of the siphon.

Figs. 2 and 3 show respectively, in longitudinal and in cross section, a first embodiment of the invention;

Figs. 4 to 8 show in longitudinal section different alternatives.

With reference to Fig. 1, A is the cover and B the basin of the closet, C the apparatus for driving off the foul gases, E is the wash-down pipe. The apparatus C has its suction opening 1 connected to the wash-down pipe E.

In the embodiment according to Figs. 2 and 3, 2 is the upper part of the body of the apparatus provided with a fitting 1 for connection to the wash-down pipe; this upper part 2 of the body is connected to the lower part 3 carrying a fitting 4 to the discharge pipe F of said foul gases.

According to the invention, the suction of the foul gases in the cavity 5 is caused by a water-jet ejected from 6 and tapped in 7 to a water line. A cock 8 controls the jet covering or uncovering a canal 9: the cock 8 is provided with a handle 9a so that the user, after having used the closet, may open the cock, closing it after a certain time. The entrance of the water in the cock is tangential, so as to obtain a turbulence effect. Eventually, to avoid the mishap that the user may forget to close the cock, means may be provided to obtain a self-closure or a delayed closure.

In the embodiment according to Fig. 4, the body 2a of the apparatus is substantially in one piece. The conduit 1a carrying the water to the nozzle, to obtain a Giffard effect, is controlled by a cock 8a with a handle 9a associated with a valve 10, controlling the section of the pipe 1a. Preferably a conical point 11 is placed in front of said nozzle 6a to give a conical or substantially hollow shape

to the jet, thus improving the action of the ejector.

In the alternative according to Fig. 5, the ejecting nozzle 6b is associated with a small valve 8b, whose motion, controlled by handle 9b, is interdependent with that of a valve 12 fulcrumed in 13, normally closing the inner mouth 14 of the carry-off conduit F, said valve 12 forming a water-seal. On opening valve 8b, valve 12 is opened in such a way as to allow the operation of the ejecting means.

Fig. 6 shows an alternative of the type according to Fig. 5. The valve controlling the ejecting nozzle 6c is made as a male cock 8c, said cock being associated by means of the linkage 15 to valve 13c forming a water seal.

In the embodiment according to Fig. 7, the ejecting nozzle 6d is solid with the male of the hollow cock 8d, rotatably mounted in the body 2d and coaxial with the suction mouth 1d. The wall of cock 8d has an aperture 16 diametrically opposite to the nozzle 6d, which corresponds to the carry-off conduit F when the nozzle corresponds with the conduit 1d of adduction of the water.

Fig. 8 shows an alternative in the shape according to Fig. 7, wherein the hollow cock 8e is coaxial to the carry-off conduit F, the nozzle 6e being then curved.

It should be understood that other embodiments may be designed according to the principles disclosed above. Besides the device may be planned in more or less partial association with a fluxometer for the washing away or with means for washing away other patterns of basins. Moreover a single control may be designed for the wash down and for the carry-off of foul gases. In general the details in design and in application may vary in any way. Also the mechanical means for carrying-off and for ejection can be achieved in an apparatus operating simultaneously two or more basins. All this remains within the limits of the invention without exceeding the domain of the patent.

What I claim and desire to secure by United States Letters Patent is:

In water-closets including a basin, a wash-down pipe and a discharge pipe for said basin, means in communication with said wash-down pipe and said discharge pipe for carrying off foul gases from said basin through said wash-down pipe, comprising a casing, an inlet leading from said wash-down pipe, an outlet in said casing leading to said discharge pipe, a jet nozzle for creating a suction in said casing, a conduit for

introducing water to said nozzle, valve-means for controlling the water discharge from said nozzle and for controlling the passage of water through the casing including a chamber within the casing, a cock rotatably mounted into the chamber and carrying the nozzle, the chamber being provided with at least one aperture through which liquid passes from the inlet to the outlet,

and means carried by and operable with the cock for regulating the passage of liquid through the chamber, the cock also acting to control the passage of fluid through the jet, the arrangement being such that when the jet is closed passage of the liquid through the chamber is also prevented.

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