No. 646,535. Patented Apr. 3, 1900.

G. CODY.

SELF CLEANING FRESH AIR BOX.

(Application filed Mar. 16, 1899.)

(No Model.)

Fig. 1.

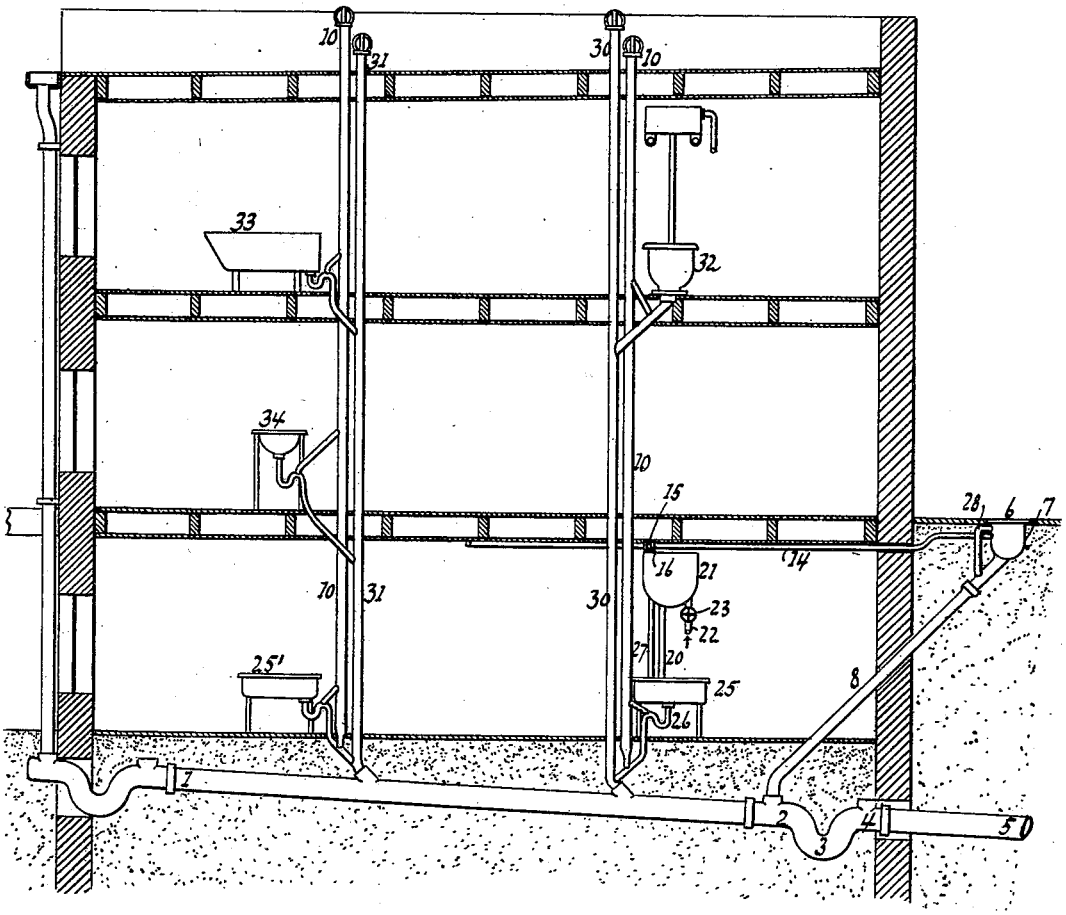


Fig. 4.

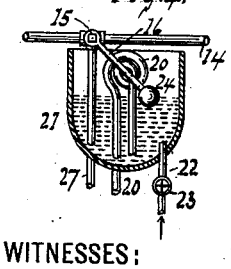


Fig. 5.

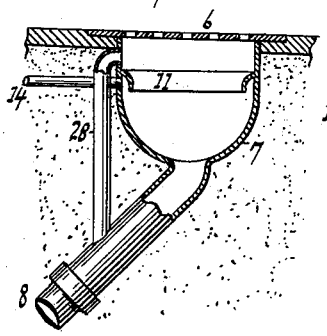


Fig. 2.

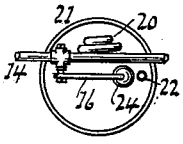
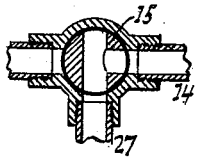


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE CODY, OF NEW YORK, N. Y., ASSIGNOR TO BARTHOLOMEW DUNN AND ELIZABETH T. CODY, OF SAME PLACE.

SELF-CLEANING FRESH-AIR BOX.

SPECIFICATION forming part of Letters Patent No. 646,535, dated April 3, 1900.

Application filed March 16, 1899. Serial No. 709,355. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CODY, a citizen of the United States, residing at New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Self-Cleaning Fresh-Air Boxes, of which the following is a specification.

This invention relates to a fresh-air box and grate made automatically or self-cleaning, so that stoppage or plugging or interruption of the required current of air is avoided, as set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 shows a side elevation of the fresh-air box. Fig. 2 is a plan view of the tank with siphon. Fig. 3 shows a sectional view of a three-way cock. Fig. 4 is a sectional side elevation of a tank. Fig. 5 is a sectional view of a fresh-air box on larger scale than in Fig. 1.

A drain and sewer of a house or building is shown at 1 2 3 4 5, having the trap 3 and leading from the house, as known. The part 1 to 2 is known as the "house-drain" and the part 4 to 5 as the "house-sewer," the part 3 being called the "house-trap." The grate 6 of a fresh-air box 7 is let into the sidewalk outside the house, and from the box 7 leads pipe 8 to the house-drain. This pipe 8 is known as the "fresh-air" inlet-pipe. A vent-pipe 10 or several such pipes lead up through the roof, as usual, these vent-pipes connecting with the traps of the several fixtures. In the example shown the vent-pipe or vent-line 10 at the front of the house or nearer the fresh-air box 7 is shown connecting with the outlet of a water-closet 32, said water-closet outlet leading into the so-called "soil-pipe" or "soil-line" 30. The vent-pipe 10, located farther back, connects with the traps in the outflows of a bath-tub 33, washbasin 34, and sink 25'. The outflows of the bath-tub, washbasin, and sink connect with the so-called "waste-pipe" or "waste-line" 31. The air entering at 6 and passing off through vent or vents 10 will insure the required ventilation or cause circulation from grate 6 through pipe 8, drain 2, and vent or vents 10. Of course it is understood that in the drainage system of a house there are as many soil, waste, and vent lines as may be required for the number of plumbing fixtures of the house.

The box 7 or its grate has a flushing-rim 11, and the flush or supply pipe 14 on the opening of valve 15 will cause the box 7 and pipe 8 to be cleansed or freed from obstruction or objectionable matter. The valve 15 is normally closed, the arm or lever 16 being so arranged or actuated by a float or other device 24 as to normally hold the valve shut.

A siphon 20 leads from tank 21, suitably fed by pipe 22, whose valve 23 is opened to a required extent, so as to fill the tank 21 at suitable intervals—say, for example, once a day. As soon as the tank 21 is filled to a certain height the float 24 is actuated to open valve 15 and allow pipe 14 to flush box 7. As the siphon 20 empties the tank the float 24 is allowed to drop, so as to reclose valve 15. The discharge from tank 21 can be suitably carried to sink 25, having connection or outflow 26 to drain 2.

The valve 15, when made as a three-way cock, can be arranged so that when the supply or flush through pipe 14 is stopped the waste-outlet pipe or escape 27 is open, so that no water will be left standing in pipe 14 or above valve 15, which might freeze or cause derangement.

The box 7 may have a relief 28 at the side above the flush, so that on the rush of water into pipe 8 the air or pressure can escape or be relieved at 28, and in case of stoppage of outflow 8 the escape 28 can act as an outflow. The automatically-actuated valve 15 periodically flushing box 7 will prevent stoppage, the float 24 serving as an actuator to open this valve at suitable intervals.

The flushing of box 7 at suitable intervals prevents stoppage of the box by sweepings, dust, or other foreign matter from the sidewalk, so that circulation or ventilation to the sewerage or drainage system of the house is always insured.

The tank 21 is shown below the level of grate 6 or box 7. In case the tank 21 is placed above the level of this box 7 the siphon 20 could discharge into box 7 instead of sink 25, in which case the three-way cock can be dispensed with.

The leader-pipe from the roof or gutter can

empty into the house-drain, as seen at the rear of the house. (Shown in Fig. 1.)

What I claim as new, and desire to secure by Letters Patent, is—

1. A drainage-pipe 1 located within a house or building, a fresh-air box located without the house or building and provided with a flushing-rim, an outflow or fresh-air pipe and a relief, said fresh-air pipe being extended into the house to connect with the drainage-pipe for admitting external air from the air-box through the fresh-air pipe into the drainage-pipe, substantially as described.

2. A drainage system comprising a trapped sewer-pipe with soil, waste and vent pipes, all said pipes being located inside a building and being extended up through the roof, a fresh-air box located outside the building and provided with an automatic flushing apparatus, a flushing-rim, an outflow or fresh-air pipe and a relief, said fresh-air pipe being extended into the house and made to connect with said drainage system inside the trap of the sewer-pipe to insure circulation of air through said system, substantially as described.

3. A drainage-pipe 1 located within a house or building, a fresh-air box located without the house or building and provided with a flushing-rim, an outflow or fresh-air pipe and a relief, and said fresh-air pipe being straight or free from traps to allow continuous or uninterrupted circulation from the fresh-air box to and through the sewerage system of the building, substantially as described.

4. A fresh-air box, a fresh-air pipe 8 made to communicate with the box, a flush for the box, a relief 28 extended from above the flush to the fresh-air pipe and a pipe made to communicate with the flush for automatically flushing the box at suitable intervals, said pipe being provided with a valve, and mechanism substantially as described, for automatically opening and closing said valve, substantially as described.

5. A fresh-air box, a flush or supply pipe for the box, a valve, a float connected to the valve to cause the same to open, a tank for the float and a siphon for periodically emptying the tank and allowing the valve to close substantially as described.

6. A fresh-air box, a flush or supply pipe for the box, a house-drainage pipe, and a fresh-air vent-pipe 8 between the box and house-drain pipe, substantially as described.

7. A fresh-air box, a fresh-air vent-pipe 8 having a mouth made to communicate with the box, a flush for the box, and a relief-pipe above the flush and made to enter the fresh-air pipe at a distance from the mouth of said fresh-air vent-pipe so that such relief will act in case such mouth is stopped, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE CODY.

Witnesses:
W. C. HAUFF,
CHAS. E. POENSGEN.