

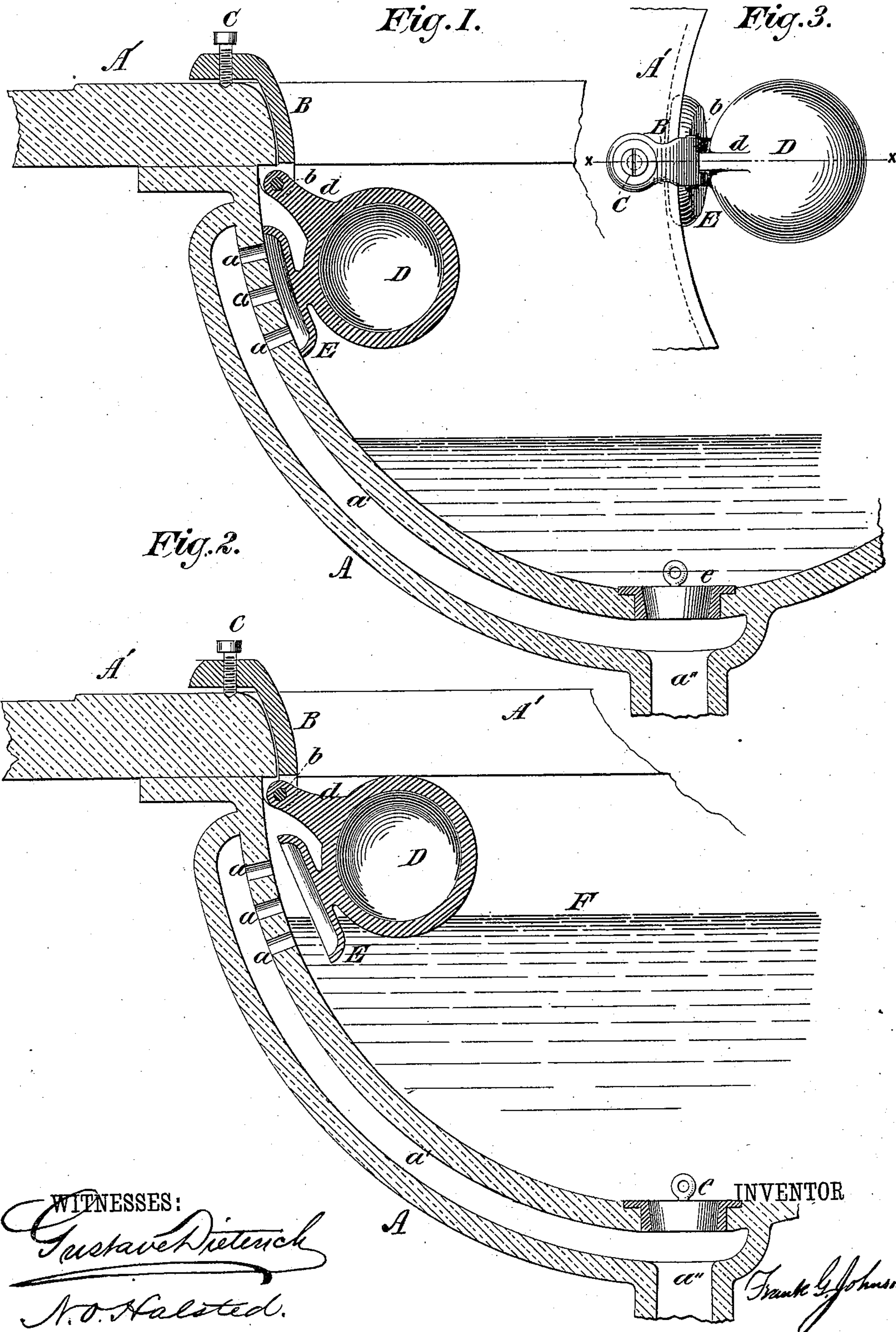
(No Model.)

F. G. JOHNSON.

AUTOMATIC SEWER GAS VALVE.

No. 306,929.

Patented Oct. 21, 1884.





# UNITED STATES PATENT OFFICE.

FRANK G. JOHNSON, OF NEW YORK, N. Y.

## AUTOMATIC SEWER-GAS VALVE.

SPECIFICATION forming part of Letters Patent No. 306,929, dated October 21, 1884.

Application filed December 11, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK G. JOHNSON, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Automatic Sewer-Gas Valve, of which the following is a specification.

In the use of public water it is found necessary to provide wash-basins, wash-tubs, bath-tubs, &c., near the top of the same, with a series of escape-openings connected with the sewer-pipe to allow the water to flow out, for the purpose of preventing an overflow of water at the top of the basin, tub, &c., in the event of its being allowed, accidentally or otherwise, to continuously run from the faucet. These escape-openings, as they communicate directly with the sewer-pipe, permit the sewer-gas to flow through them into the apartments of dwellings and other rooms where the basins, tubs, &c., are located.

The object of my invention is to provide a gas-valve for these escape-openings, which, though it will prevent the escape of the sewer-gas, will allow the overflow-water to pass off through the escape-openings whenever the supply-faucets happen to be left open.

The following is a full and exact description of the construction and operation of my invention, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section, seen through the line *xx* of Fig. 3, showing the valve closed. Fig. 2 is also a vertical section, seen through the line *xx* of Fig. 3, showing the valve open. Fig. 3 is a top view.

Similar letters refer to similar parts in all the illustrations.

A is an ordinary stationary wash-basin, and A' the slab to which the basin is fastened. *a* are the escape-openings near the top of the basin, through which the overflow-water passes, to prevent the basin from being overflowed at the top.

*a'* is the passage-way on the outside of the basin, connecting with the sewer-pipe *a''*.

*e* is the plug of the basin. The slab A' projects a little over the edge of the basin A.

By reference to Fig. 3 it will be seen that the construction of the basin is such that,

though the plug *e* closes the bottom or outlet of the basin, the sewer-gas can pass up through the waste-passage *a'*, and thence through the escape-openings *a a* into the room where the basin is located.

D is a floating ball, provided with a shank, *d*. To this floating ball D is attached a flexible rubber and suitably-shaped concave disk, E, sufficiently large to cover all the escape-openings *a a*, as seen in Fig. 1. The object of the flexibility of the disk E (which we will designate the "valve") is to allow its edges to fit at all their points the irregular surface of the basin.

B is a bracket of a hooked shape at the bottom, to pass under the projection of the slab A' over the edge of the basin. The upper end of the bracket B passes over the top of the slab A'.

C is a set-screw in the upper end of the bracket, by means of which it (the bracket) is securely fastened to the slab A'. The floating ball D is hinged in its proper position by means of a pin, *b*, uniting the upper end of the shank *d* to the lower end of the bracket C.

Having enumerated and described the several parts of my invention and their relation to each other, I will now explain its operation.

By reference to Fig. 1 it will be seen that the basin is only partially filled with water, and the valve E is pressed down by the weight of the float-ball D, covering all the escape-openings *a a*, thus preventing the gas from passing into the room where the basin is located.

By reference to Fig. 2 it will be seen that the basin is filled with water up to above the level of the lower escape-opening, *a a*, which causes the ball D to float and rise, so as to remove the valve E from the surface of the basin and allow the water to flow out through the escape-openings *a a*, which, as the water flows out, allows the float-ball again to fall and press the valve E over the openings *a a*.

As there is no practical use in drawing any more water into the basin than up to the level of the lowest escape-opening *a a*, at which level the float-ball D will not rise, the valve E may be always kept closed, except when, by accident or otherwise, the water is left running



from the faucet; when this happens, the valve E will open and save the general flooding of the house.

I do not limit myself to the material of which to make the float D, as it may be made hollow, and of rubber or any suitable thin metal, or it may be made solid, of cork, or wood, or other suitable solid substance; nor do I limit myself to any particular form of the float, as it may be cylindrical, spherical, cubical, oval, or any other form.

While the chief, if not only, use of my invention is limited to its application to wash-basins, wash-tub, and bath-tubs, yet I do not strictly limit myself to those uses, as it might prove applicable to other uses.

I am aware that float-valves are in use in which the valves proper or cut-offs are placed at the center of motion of the float; but my invention is essentially different from and accomplishes what these cannot, in that the valve proper, E, consists of a disk placed upon the side of the float and moves bodily with the float, both (the float and valve) being hinged at a common center of motion, namely—at the point *b*—by which means the valve E is made to act as a cut-off to a series of holes, *a a a*, which could not be accomplished by other float-valves now in use.

I am also aware of the Patent No. 221,031,

granted to John S. Campbell, October 28, 1879, for device for watering stock, and of the Patent No. 259,843, granted to Frank Funk, June 20, 1882, for device for watering stock; and I am aware that the purpose of these two inventions is quite different from the purpose of my invention; and therefore I do not claim, broadly, that the object of my invention is simply to regulate the flow of water or other liquids, but primarily to cut off the escape of sewer-gas from sewers into stationary wash-basins; neither do I claim, broadly, a float-valve in which the valve (or cut-off) and the floats are so attached to each other as to move from a common center, irrespective of their special arrangement with each other and irrespective of their particular use; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

In a device for cutting off the flow of sewer-gas from sewers into stationary wash-basins, the valve composed of the float D and shank *d*, and valve proper, E, in combination with the bracket B, substantially in the manner and for the purposes set forth.

FRANK G. JOHNSON.

Witnesses:

N. O. HALSTED,  
JOHN J. MAHNAR.