J. DIKEMAN.
Sewer-Valve.

No. 199,696. Patented Jan. 29, 1878.

Figure 1.

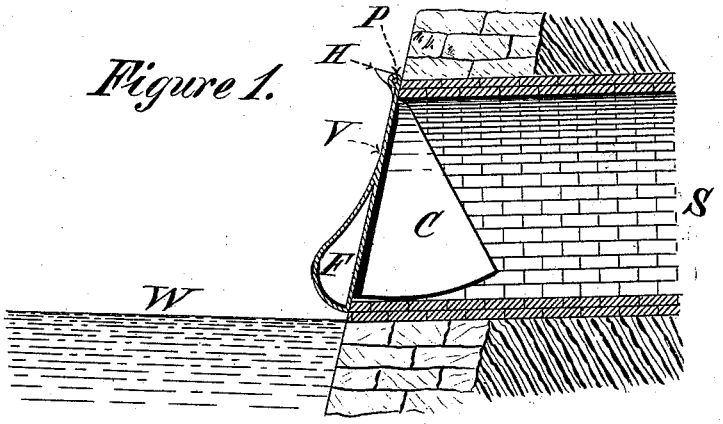



Figure 2.

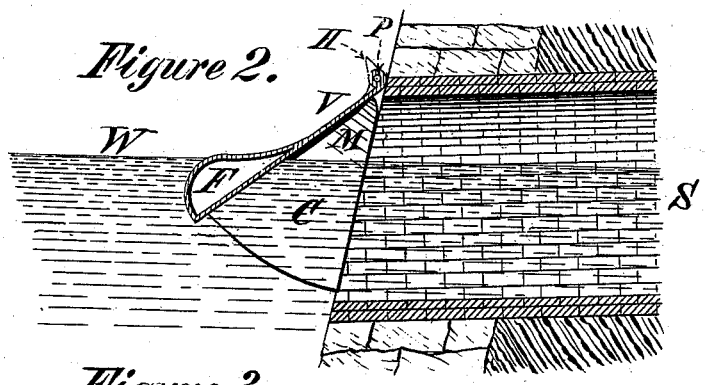
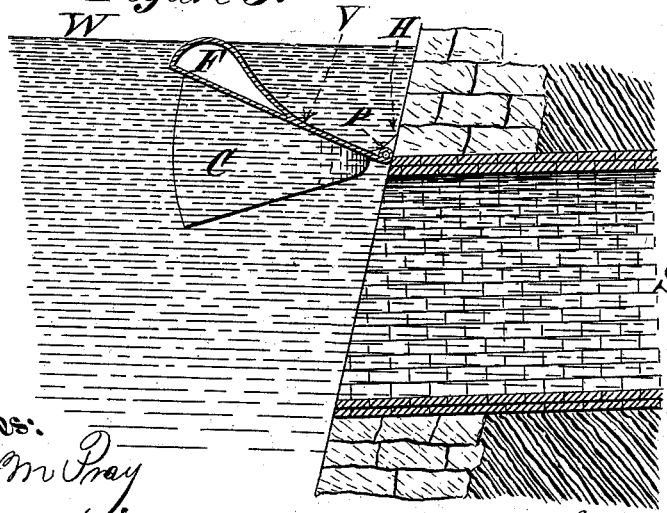



Figure 3.

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# UNITED STATES PATENT OFFICE.

JOHN DIKEMAN, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN SEWER-VALVES.

Specification forming part of Letters Patent No. **199,696,** dated January 29, 1878; application filed November 24, 1877.

*To all whom it may concern:*

Be it known that I, JOHN DIKEMAN, of the city of Brooklyn and State of New York, have invented a new and useful Improvement in Sewer-Valves, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

It is a fact well known that many diseases are produced and propagated by the noxious gases produced in sewers, which, entering the houses connected with such sewers, thereby poison the inhabitants.

Many attempts have before now been made to remedy this trouble, and especially it has been customary to insert traps or elbows between the sewer and the inlet in the house; but, as a matter of fact, such traps are not operative for the purposes desired, since they do not retain the water poured into them, but are emptied by what is known as "siphon action," so that as a general thing there is an unobstructed passage between the sewer and the dwelling-house. The gas in the sewer is forced back by two causes, namely, the rising of the water within the sewer due to the rising tide, and also the forcing back of the air in such sewer by entering currents or drafts of air. As a usual thing sewers delivering into the rivers enter between high and low water mark, so that at times their outlets are closed by water, and at times they are open to the air.

The object of my invention is to prevent the entrance of the wind into the mouth of the sewer during the period when its outlet is uncovered by the water, for I have observed that whenever the wind is in such a direction it enters the exposed mouth of the sewer the noxious gases in the city and houses are particularly perceptible.

In my drawings similar letters refer to similar parts.

Figure 1 represents a view of the mouth of the sewer, and my sewer-valve at low water. Fig. 2 represents the same at half-tide. Fig. 3 represents the same at high water.

My invention consists, generally, in a valve falling across the mouth of the sewer, and thereby closing it. In my drawings it is represented by V. At low tide, as shown in Fig. 1, the wind blowing into the sewer S would force back the sewer-gas into the town. My invention is designed to close the mouth of this sewer, excepting when it is sealed by the rising tide.

Attached to my valve is the float F, which may consist in an air-chamber at the lower extremity of such valve. This valve is also provided with flaps or guards C, adapted to enter into the sewer, for a purpose hereinafter to be explained. The sewer S is represented as an arched or semi-cylindrical sewer, and the valve should be correspondingly shaped. This valve is pivoted at P, and has a shoulder, H.

In Fig. 1 the water W is below the valve V, and such valve closes the mouth of the sewer. It is evident, however, that the escaping sewage would readily raise such valve and escape into the river.

In Fig. 2 the water W is at half-tide, and has somewhat raised the valve V by means of its float F. The purpose of the flaps C is now apparent. Such flaps now close the space between the mouth of the sewer S and the valve V, and thereby prevent the entrance of any air into the sewer through the space M, which would otherwise be open. These flaps are here shown as entering the sewer; but they might be arranged to surround the same.

In Fig. 3 the valve is shown clear of the sewer, and therefore offering no obstruction to the escaping sewage. The object of this float is to open the valve whenever the sewer is sealed by the water, so as to offer no increased resistance to the escaping sewage.

In Fig. 3 the upward movement of the valve is arrested by the shoulder H, the purpose of which is simply to prevent the valve from falling over backward, and might not be necessary, except under certain circumstances.

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

1. In combination with a sewer-mouth opening freely to the air and exposed to entering currents of air, a valve closing by gravity, for the purpose of closing the mouth of said sewer against entering currents of air, but allowing the escape of the sewage, substantially as described.

2. In combination with a sewer having its

mouth-opening between high and low water, a valve closing by gravity and opening by means of a float attached to said valve, whereby the mouth of the sewer is constantly sealed, while the weight of the valve is taken from the escaping sewage when the mouth of the sewer is sealed by the water, substantially as described.

3. My improved sewer-valve having a float, F, and the entrance-closing flaps C, substantially as described.

4. My improved sewer-valve V, having a float, F, flaps C, and shoulder H, substantially as described.

5. My improved sewer-valve V, provided with the entrance-closing flaps C, adapted to exclude currents of air from the mouths of sewers exposed thereto, substantially as described.

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