

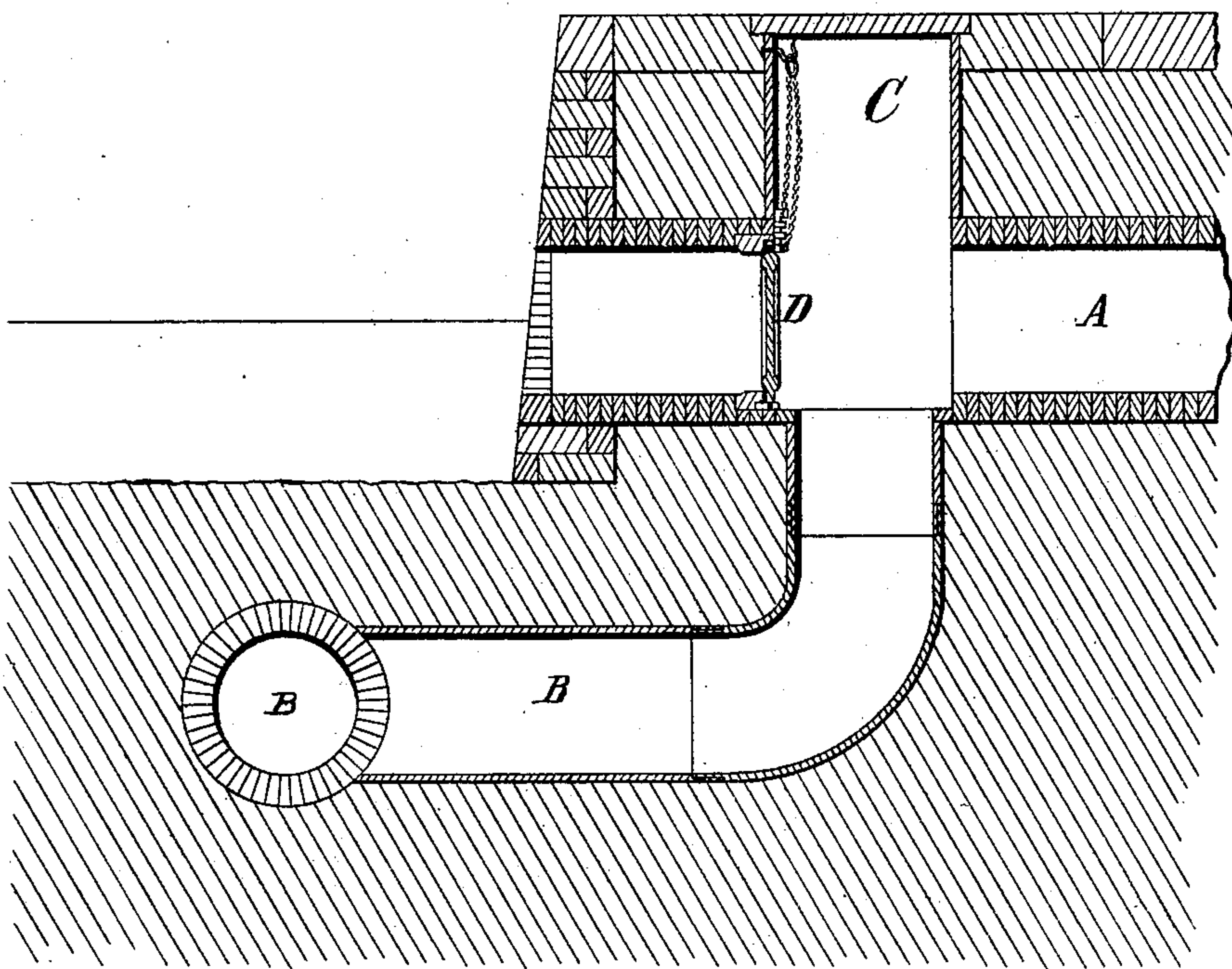
W. S. WEST.

Improvement in Sewage.

No. 127,533.

Patented June 4, 1872.

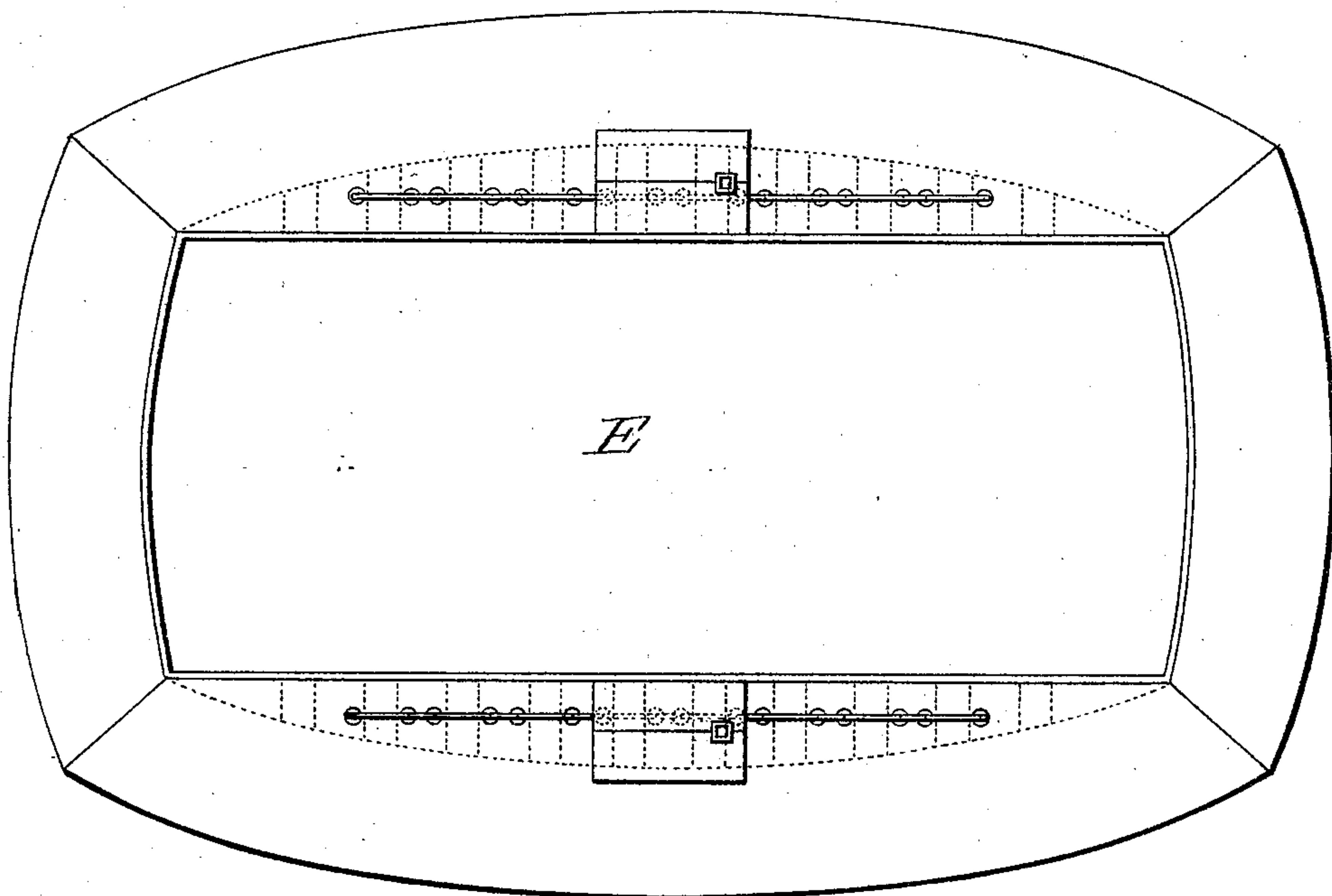
*Fig. 1.*



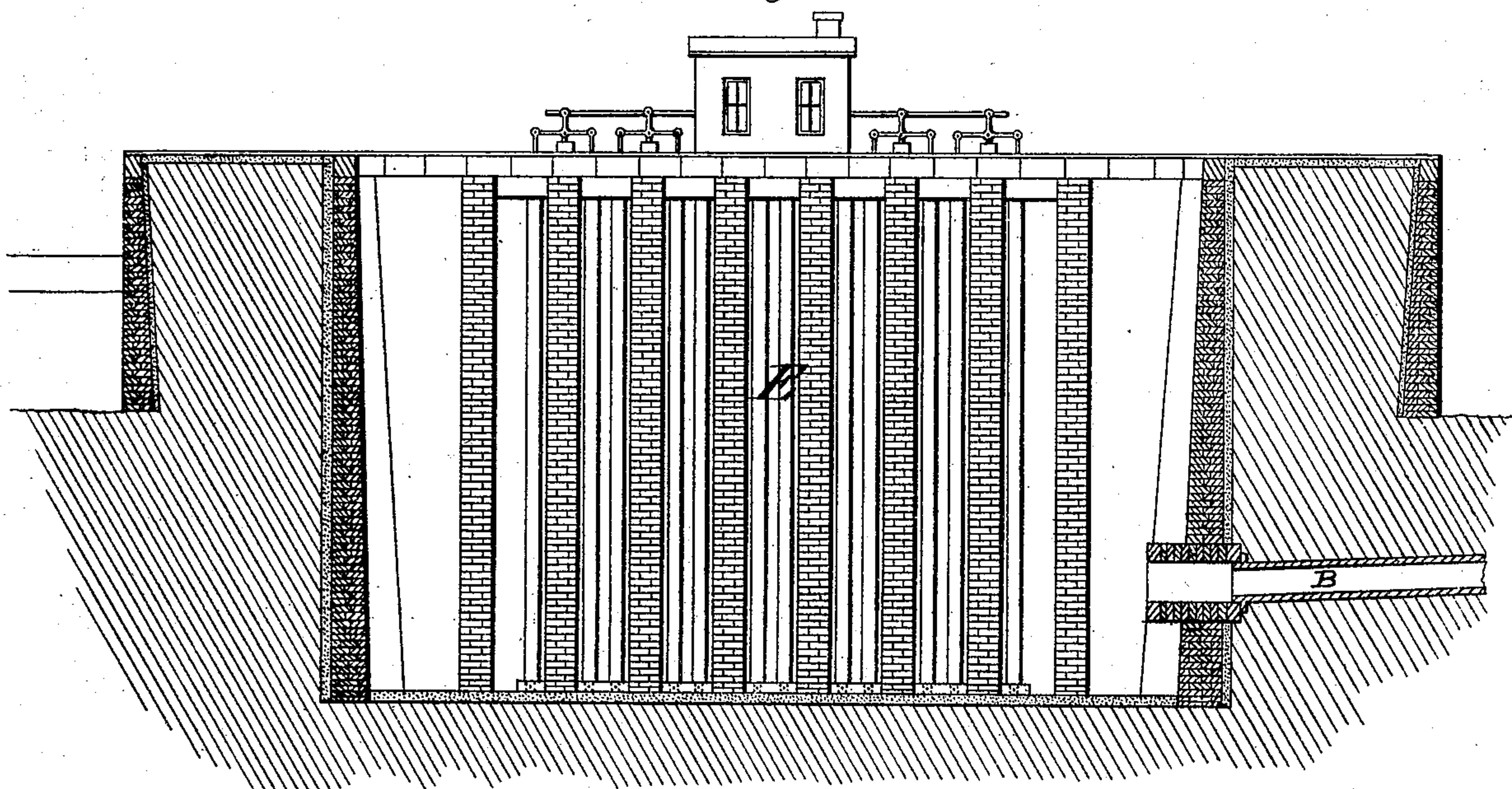
Witnesses.  
*Villette Anderson.*  
*E. H. Bates*

Inventor.  
*W. S. West,*  
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*Attys.*

*Fig 2*



*Fig 3*



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# UNITED STATES PATENT OFFICE.

WALTER SCOTT WEST, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN SEWERAGE.

Specification forming part of Letters Patent No. 127,533, dated June 4, 1872; antedated May 21, 1872.

*To all whom it may concern:*

Be it known that I, WALTER SCOTT WEST, architect, of Washington city, in the county of Washington and District of Columbia, have invented a new and valuable Improvement in System of Sewerage; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical section, showing the connection of the pipes. Fig. 2 is a top view of the reservoir. Fig. 3 is a vertical section of the reservoir.

This invention has relation to an improved system of sewerage, especially adapted for cities and towns situated on or near the ocean or a river; and it consists in the establishment of a terminal deodorizing reservoir and manufactory in the channel of the river at a distance from the city, and in the arrangement of the deep-laid pipes under the bed of the river, which convey the sewage to the island-reservoir.

This system may, with advantage, be combined with the tide-water system of drain-pipes now in general use, by arranging the deep-laid pipes in such a manner that they shall intercept the main drains of the old system near the river front.

In the drawing, the letter A designates a main outlet-pipe of the old tide-water system, it being preferred in the illustration to show the combination. B designates a pipe of my system, intercepting the main drain at a point near its outlet, as indicated. In the drawing this intercepting pipe is shown crossing the main drain A vertically at right angles, a man-hole, C, being sunk from the surface of the ground to the point of intersection, for purposes of inspection and repair. D represents a valve-plate hinged to the lower side of the main drain at the intersection, and adapted to be seated either upon the inlet of the deep pipe B, or raised against the inner end of the short section of the main drain A, which connects directly with the river-wall, as may be expedient. The position of this valve is regulated by means of chains, which are ar-

ranged to be reached through the man-hole C. From the point of intersection the deep pipes B pass on a gentle gradient at or below the river bottom out in the direction of its channel, or some other distant part of the river easily accessible by vessels, connecting with the reservoir there situated. The natural grade of the bed of the river may be generally used, and the pipes laid with little or no excavation. E represents the reservoir, wherein the sewage of the city is designed to be received. This reservoir is made much deeper than the bed of the river, its depth being determined by the character of the grade and the distance of the reservoir from the city. The reservoir is designed to be built after the most approved system of marine architecture, and should be of sufficient size to contain the sewage of the city, to deodorize and manufacture the same, and to provide wharfage around which vessels may lie to receive the fertilizing material produced.

The object of this invention is sufficiently manifest. The foul waters about the river fronts of our cities will be rendered pure. The noisome odors and emanations will be conveyed away to such a distance that they cannot offend. The sewage, instead of being wasted, will be all utilized to meet the agricultural demand. Vessels can be moored on all sides of the island-reservoir for convenience of loading.

For the purpose of operating the sewage, and drawing it up from the great depths of the reservoir, gang-pumps, operated by steam, are designed to be employed, or such other approved means as may seem most desirable.

Whenever it may be required for repairs or other purposes, the valve-plate may be lowered to close the deep pipe B, and the sewage may be run for a limited time into the river direct through the main drain A. If the volume of sewage be increased by flushing or otherwise, the same thing may be done. When there is a flood in the river, the valve-plate is arranged to close the outer section of the main drain, thus preventing the in-flow of the flood-water, which would otherwise interfere with the working of the sewage-drain. This is a very important result, and one which is designed to prove of great benefit in rolling localities, where flooding is apt to take place. On such

occasions the sewage will pass off as evenly and completely as at any other time.

In building new sewage systems in a city yet unprovided with drain-pipes, there need be no outlet to the river front, and the drain-pipes may be laid deeper through the streets, which arrangement will favor dry cellars.

I do not desire to confine myself to a reservoir surrounded by water, for the position of the reservoir may sometimes be properly inland, the pipes leading to it being below the level of the river-bed.

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

1. The system of sewage, consisting of the island-reservoir E and of the drain-pipes B, lying at or below the river-bottom, substantially as specified.

2. The combination, with the tide-water drains A and the intercepting drains B, of the valves D, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WALTER S. WEST.

Witnesses:

R. H. STEELE,  
W. L. ANTRIM.