C. B. ROSSELL.

SEWER.

No. 172,780. Patented Jan. 25, 1876.

FIG. 1.

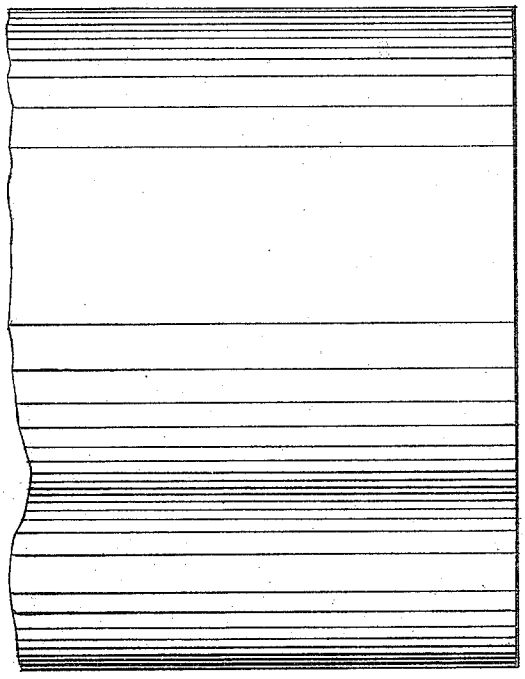
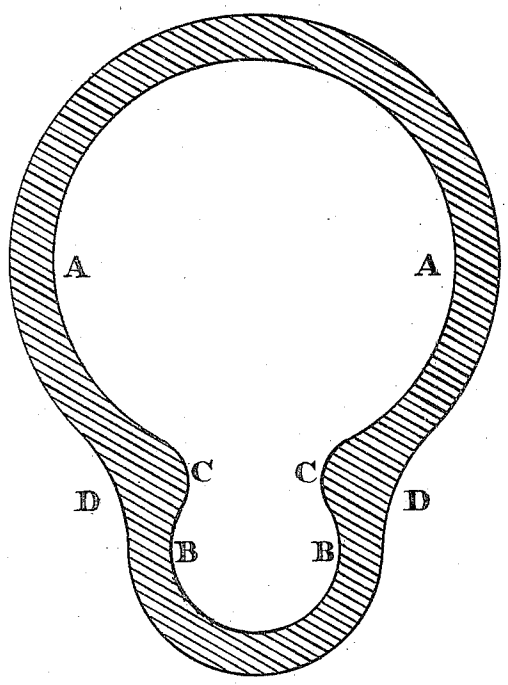


FIG. 2.



WITNESSES.

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CLIFFORD B. ROSSELL, OF TRENTON, NEW JERSEY.

IMPROVEMENT IN SEWERS.

Specification forming part of Letters Patent No. **172,780**, dated January 25, 1876; application filed January 3, 1876.

To all whom it may concern:

Be it known that I, CLIFFORD B. ROSSELL, of Trenton, in the county of Mercer and State of New Jersey, have invented a new and useful Improvement in Sewers or Drains, of which the following is a specification:

This invention relates to the construction of sewers or drains, with reference to their shape in cross-section.

The invention consists in an improved sewer or drain of peculiar shape, in which provision is made for accommodating the minimum as well as the maximum flow in superior manner.

The primary object of the new shape is to prevent any accumulation of deposit during the minimum and ordinary use of the sewer or drain, or, in other words, to render the sewer or drain self-cleansing. The improved sewer or drain will thus, as is believed, remain practically free and unobstructed under all ordinary circumstances, and will not require flushing except in special localities.

Another object of the new shape is to afford facility for constructing sewers or drains for special localities with any required degree of relative capacity for minimum, ordinary, and maximum flows.

Figure 1 is a side view of a small portion of a sewer or drain illustrating this invention. Fig. 2 is a transverse section of the same.

The shape of this improved sewer or drain in cross-section is clearly illustrated in Fig. 2. This shape in the illustration consists of a larger circle above and a smaller circle below, the one tangent to the other, with the spaces between the two circles to a short distance in each direction from the point of contact. The circles where they adjoin may be merged in some instances, and segments be thus formed.

A relatively large circular conduit, A A, and a subjacent smaller conduit, B B, of like shape, with a connecting-throat, C C, are thus formed.

The object of this construction and arrangement is that, when the quantity of fluid matter flowing through the sewer or drain is small, it shall run in the smaller conduit B B, and when from any cause it is too large for the smaller, the increase shall be taken by the throat C C and larger conduit A A.

The joint capacity of the two conduits is intended to be sufficient to accommodate the maximum flow through the sewer or drain. The smaller conduit B B is intended to be made of sufficiently little diameter to concentrate the minimum flow, so that the tendency shall not be to form deposits, and at the same time to accommodate the ordinary flow within it. Should any deposit be formed there will be a corresponding rise of the fluid matter, and, owing to the circular shape of the smaller conduit and the contracted open throat, the force of the flow will be thus increased to a sufficient extent to insure the displacement of the obstruction. The shoulders formed below the throat will also tend to direct the force of the flow downward upon the deposit, so as to increase the washing effect of the flow.

The absolute sizes of circles or segments for a given sewer or drain, and their relative sizes as well, should depend upon the work they will be required to do, and the distance between their centers be determined by circumstances.

The peculiar shape of the improved sewer or drain renders this adjustment of its proportions to suit special localities perfectly simple and easy.

The internals walls of the throat C C and the corresponding external shoulders D D may be of any preferred shape.

The improved sewer or drain can be constructed of any suitable material or combination of materials.

The following is claimed as new and of this invention, namely:

A sewer or drain whose section consists of a larger circle or a segment of a larger circle above, and of a smaller circle or a segment of a smaller circle below, with a connecting-throat, substantially as herein illustrated and described, for the purposes set forth.

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Witnesses:

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