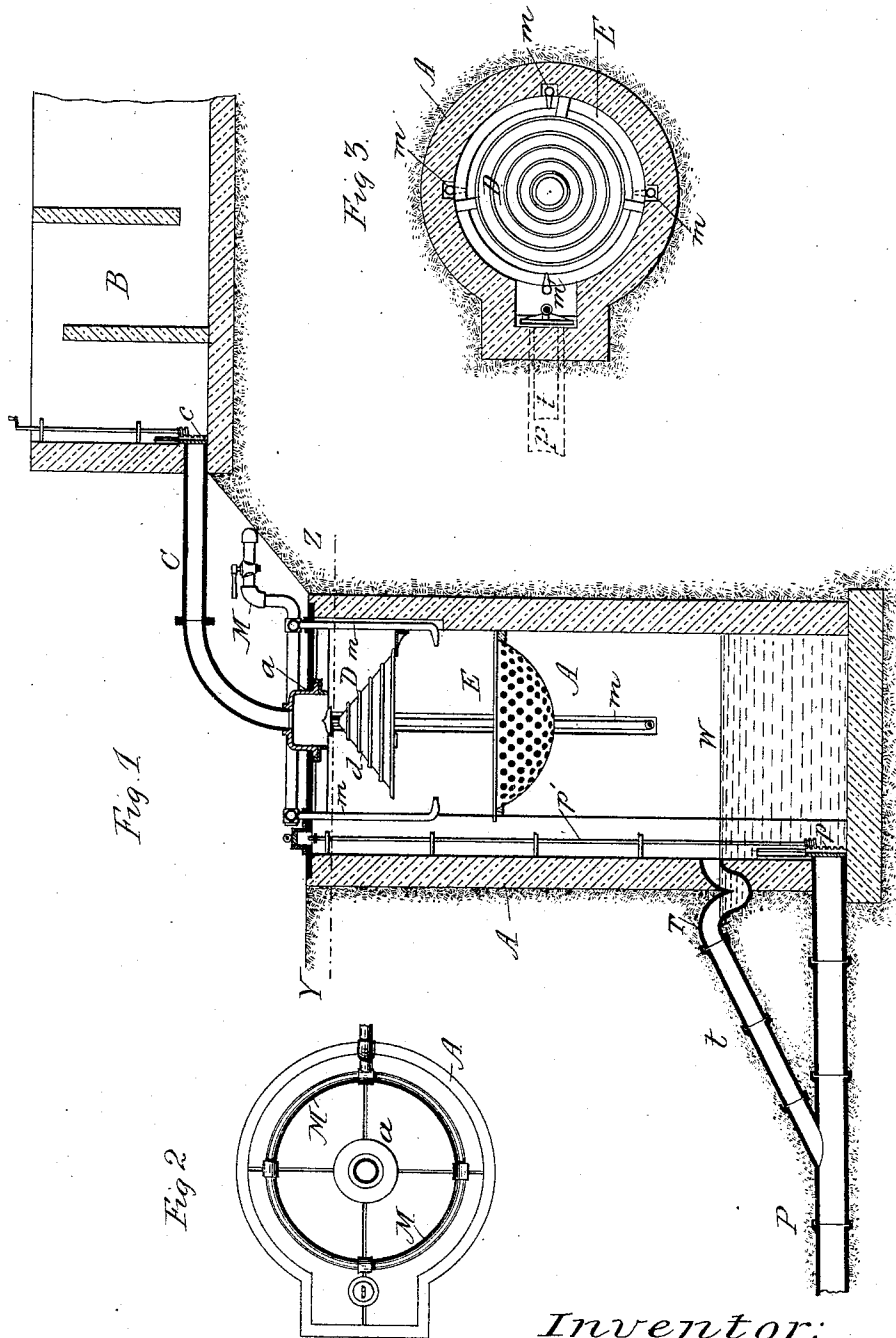


(No Model.)

E. E. SCRUBY.
APPARATUS FOR PURIFYING SEWAGE.

No. 484,823.

Patented Oct. 25, 1892.



Inventor:

Ernest Edgar Scruby

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his Attorneys.

Witnesses:

E. B. Bolton

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By

UNITED STATES PATENT OFFICE.

ERNEST EDGAR SCRUBY, OF EPPING, ENGLAND.

APPARATUS FOR PURIFYING SEWAGE.

SPECIFICATION forming part of Letters Patent No. 484,823, dated October 25, 1892.

Application filed August 7, 1891. Serial No. 402,027. (No model.)

To all whom it may concern:

Be it known that I, ERNEST EDGAR SCRUBY, a subject of the Queen of Great Britain, residing at High Street, Epping, in the county of Essex, England, have invented a certain new and useful Improved Apparatus for Purifying Sewage-Effluents, and other Impure Liquids; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a certain improved apparatus for purifying sewage-effluents and other impure liquids, and has for its object to render same inoffensive.

The apparatus I employ includes a gas-tight receiver, into the upper part of which the impure liquid is led and then showered or broken up into spray as much as possible. Oxygen branch pipes are introduced in convenient positions, so that the shower in its descent is brought into contact and thoroughly impregnated with oxygen. Overflow-traps, pipes, and valves are provided. Such an apparatus may obviously be designed in various ways. It may be a chamber or column of iron or suitable material, and the liquid may be introduced by gravity or by pumping. Therefore I do not limit myself to any particular details of construction.

I have in the annexed drawings illustrated one apparatus applicable in ordinary cases which I will now describe.

Figure 1 is a sectional elevation thereof; Fig. 2, a plan; Fig. 3, a section on line Y Z of Fig. 1.

A is the gas-tight receiver, shown built in the ground below the level of the usual filters B, so as to secure gravitation of the liquid.

C is a pipe leading the effluent to the top or cover *a* of the receiver, all joints being made gas tight.

c is a valve controlling the flow in the pipe C.

A suitable distance below cover *a* I sling or otherwise fix a showering-plate D, which may be coned, as illustrated, or semispherical, or of other suitable form and provided with ribs or roughs *d*. At a suitable distance below this in the receiver I fix a per-

forated basin E for further showering the liquid and intercepting any solids which may pass down, and more than one such basin may be employed, if necessary.

M is the oxygen-main, and *m m* represent any required number of branch blow-pipes with suitable nozzles led from it and introduced into the receiver between the shower-plate D and the basin or basins E, and they may also be extended and introduced below the basin or basins E, as illustrated, so that a more complete oxygenation is effected.

W is the normal water-level, and T a trap for preventing escape of oxygen and leading to overflow *t*, which joins a discharge-pipe P, leading to the sewer or destination.

p is a valve controlling the pipe P with operating-spindle *p'* for flushing and cleaning purposes.

The receiver should be strongly charged with oxygen before the liquid is introduced, and the process is then continuous.

Any number of such apparatus may be arranged as required by the volume of impure liquid to be treated, and the cover *a* and all operating parts are removable for cleaning, inspection, and the like.

I claim—

1. In combination, the receiver, the showering-plate D at the upper end thereof, the pipe C, opening centrally over said plate, the annular oxygen-main M about the upper part of the receiver, and a series of nozzle-pipes *m*, depending therefrom and opening below the edge of the showering-plate, the said receiver having an outlet at its lower end and a conduit leading therefrom, substantially as described.

2. In an apparatus for purifying sewage, &c., a gas-tight receiver, a pipe connecting the same with the supply for such material, a showering device in the upper part of the receiver, a perforated bowl below the same, an oxygen-supply pipe, branch pipes for conducting oxygen to the interior of the receiver, an overflow-trap, a discharge-pipe, and a valve controlling the same, substantially as set forth.

3. In combination, the receiver, the showering-plate D at the upper end thereof, the pipe C, opening centrally over said plate, the oxy-

gen-main extending about the upper end of the receiver, the series of nozzle-pipes *m*, depending from said annular main, and the perforated bowl below the showering-plate, some
5 of the nozzles extending to a point intermediate of the showering-plate and bowl and the remainder extending below the bowl, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ERNEST EDGAR SCRUBY.

Witnesses:

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