

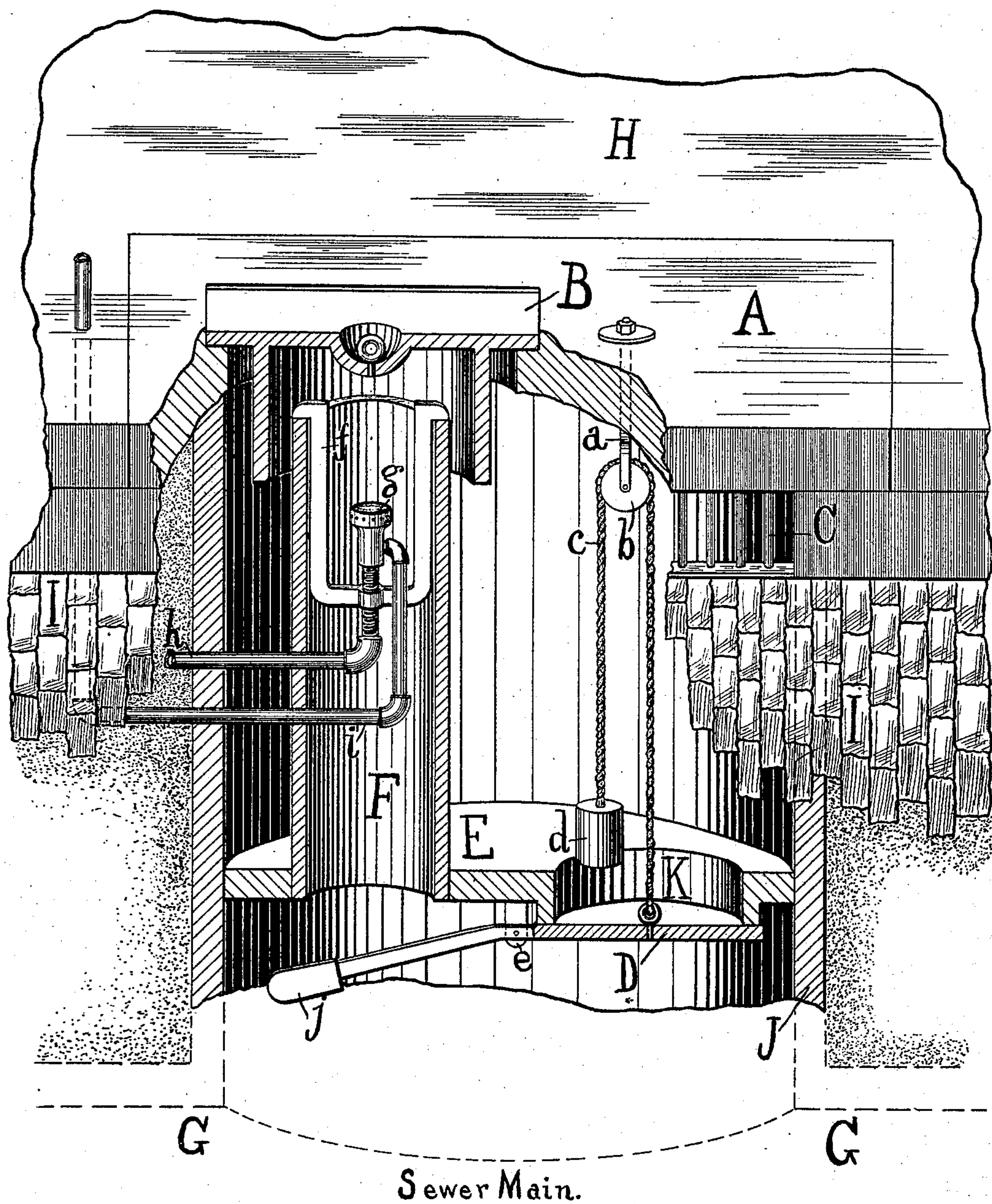
(No Model.)

H. PERRY.

APPARATUS FOR RENDERING SEWER GAS INNOCUOUS.

No. 577,206.

Patented Feb. 16, 1897.



WITNESSES:

Albert C. Bell.
Howard L. Wilson.

INVENTOR

Harvey Perry.
by his Atty W. H. Corley.

UNITED STATES PATENT OFFICE.

HARVEY PERRY, OF ROCHESTER, NEW YORK, ASSIGNOR OF TWO-FIFTHS
TO HARRIET E. PERRY, OF SAME PLACE.

APPARATUS FOR RENDERING SEWER-GAS INNOCUOUS.

SPECIFICATION forming part of Letters Patent No. 577,206, dated February 16, 1897.

Application filed January 15, 1896. Serial No. 575,547. (No model.)

To all whom it may concern:

Be it known that I, HARVEY PERRY, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented an Improved Apparatus for Rendering Sewer-Gas Innocuous, of which the following is a specification.

The object of my invention is to provide an effective ventilation for a sewer and at the same time means for destroying any of the evils resident in the gas escaping from the sewer.

My invention is equally applicable to soil-pipes and to surface drains leading into sewers and also to ventilating-flues for sewers, and while I have in the drawing illustrated a case where it is applied to a surface drain leading to a sewer-main it will at once be seen and understood that substantially the same construction is applicable to soil-pipes and other ventilating-flues for sewers.

In carrying out my invention I prefer to close the surface drain leading to the sewers by means of a horizontal diaphragm or chair, through which I pass a combustion-pipe in which is located a gas-jet or series of jets for subjecting the escaping gas to sufficient heat to destroy any disease germs contained therein. In this diaphragm or chair also I locate a valve, so arranged that it will admit any surface water therethrough and into the sewer beneath, but also arranged to automatically close when not subjected to the pressure of a column of water thereon.

When my invention is applied to a ventilating-flue only or to a soil-pipe, such a soil-pipe or ventilating-flue may constitute in and of itself the combustion chamber or pipe in which the gas-jet may be located.

I do not limit myself to the use of gas, however, for producing the requisite temperature in the combustion-chamber for destroying the disease germs in the gas escaping from the sewer, as any other means may be employed for securing the desired temperature or other germ-destroying agencies employed to accomplish the result.

The accompanying figure of the drawing illustrating my invention shows in isometric perspective a surface drain leading to a sewer

and supplied with a combustion-pipe and a diaphragm and a valve located therein arranged and operating in accordance with my invention. In this figure part of the capstone of the surface drain is shown as removed, and the surface drain-pipe itself shown mostly in vertical central section. A part of the grating across the entrance to the drain from the street is also removed.

Referring to the drawing, G represents a sewer-main to which the drain J leads from the street-line, the opening thereto being protected by the grating C, coming just under the capstone A to such drain. Within this drain J there is secured the horizontal diaphragm or chair E, having an opening K therethrough closed by the valve D, pivoted at or near its center on lugs e, formed on the diaphragm E, and projecting downward from the under side thereof. A counterweight j serves to balance the valve D, closing this orifice K in the diaphragm E. Extending upward from this valve D is a rope or cord c, secured to an eye-rivet in the center of the valve D at its lower end and passing over the pulley b, working freely in a bearing at the lower end of a Y-bolt a, secured in capstone A. At the other end of this rope c is secured a weight d, tending to securely close the valve D against the downwardly-projecting flange surrounding the opening K in the diaphragm E; but the weight of a column of water upon the valve D is sufficient to open the same, while at the same time tending to counterbalance the weight d by an amount equal to the weight of the water displaced thereby. The counterpoise j and the weight d are so adjusted that the valve D will be certain to close when there is no water resting thereon. Projecting upward from this diaphragm E is seen, also in vertical section, the combustion-pipe F, into which and through the side thereof passes the gas-pipe h, terminating in the gas-burner g, supported by the U-shaped casting f, resting at its upper end upon the upper end of the pipe F. Into this burner g there is also supplied air from the air-supply pipe i, connected with the external air at any convenient point, as indicated partially in dotted lines.

The gas-pipe *h* may be connected to the gas-main at any accessible and convenient point.

In the capstone A there is cut a circular orifice or opening rabbeted out square at the top of the capstone A for receiving the square top plate of the cast-iron cap B to the combustion-pipe F. This cap B is so formed, as seen, as to provide an opportunity for a constant and uninterrupted exit of the gas from the sewer up and through the pipe F.

In the operation of my invention the gas is turned on in the pipe *h* by means of any suitable gage or valve (not shown) and lighted at the burner *g*. This burner *g*, it will at once be understood, produces a circular sheet or diaphragm of flame of intense heat, through which and to which all the gas passing upward through the pipe F must pass and be subjected. This heat is sufficient to destroy any and all disease germs contained in the gas escaping from the pipe F, while the action of this burner *g* at the same time, as will at once be understood, is such as to create a continuous draft upward through the pipe F and from the sewer-main G. One of these pipes F and its connections and appurtenances may be located at each one of the surface drains entering the sewer or at any convenient point, constituting in effect ventilating-flues or soil-pipes. H represents the walk, of which the capstone A may constitute a part, while I represents the street-paving. It will at once be understood that the top of the pipe F should be carried up and also the lower edge of cap B located above the highest level ever reached by the water entering from the street-grade I into the drain J through the grating C, that is, when such pipes F are located in surface drains leading to the sewer-main, but when these pipes F constitute soil-pipes or

ventilating-flues not located in such surface drains they may be carried up to any convenient height.

It will of course be understood that at suitable points in the sewer-main there may be located openings for the ingress of air to supply the system of ventilation.

What I claim is—

1. In a sewage system, a flue extending upward from the sewer and arranged to deliver surface drainage to such sewer, in such flue a diaphragm, in such diaphragm a valve arranged to close automatically when not acted upon by the pressure of a column of water or surface drainage in such flue, in such diaphragm a tube extending upward therefrom and through which the gas escaping from such sewer must pass, and in such tube germ-destroying agencies for rendering innocuous the gas escaping from such sewer.

2. In a sewage system, a flue arranged to deliver surface drainage to a sewer, in such flue a diaphragm, in such diaphragm a valve arranged to open only under the pressure of a column of surface water or drainage and through which all of such surface water or drainage must pass in going to such sewer, means for closing such valve automatically except when operated upon by such a column of surface water or drainage, in such diaphragm also a tube extending upward therefrom, and through which the gas escaping from such sewer must pass, in such tube means for subjecting the gas escaping upward therethrough to a temperature sufficient to destroy the disease germs resident in such sewer-gas.

HARVEY PERRY.

Witnesses:

HOWARD L. WILSON,
ALBERT C. BELL.