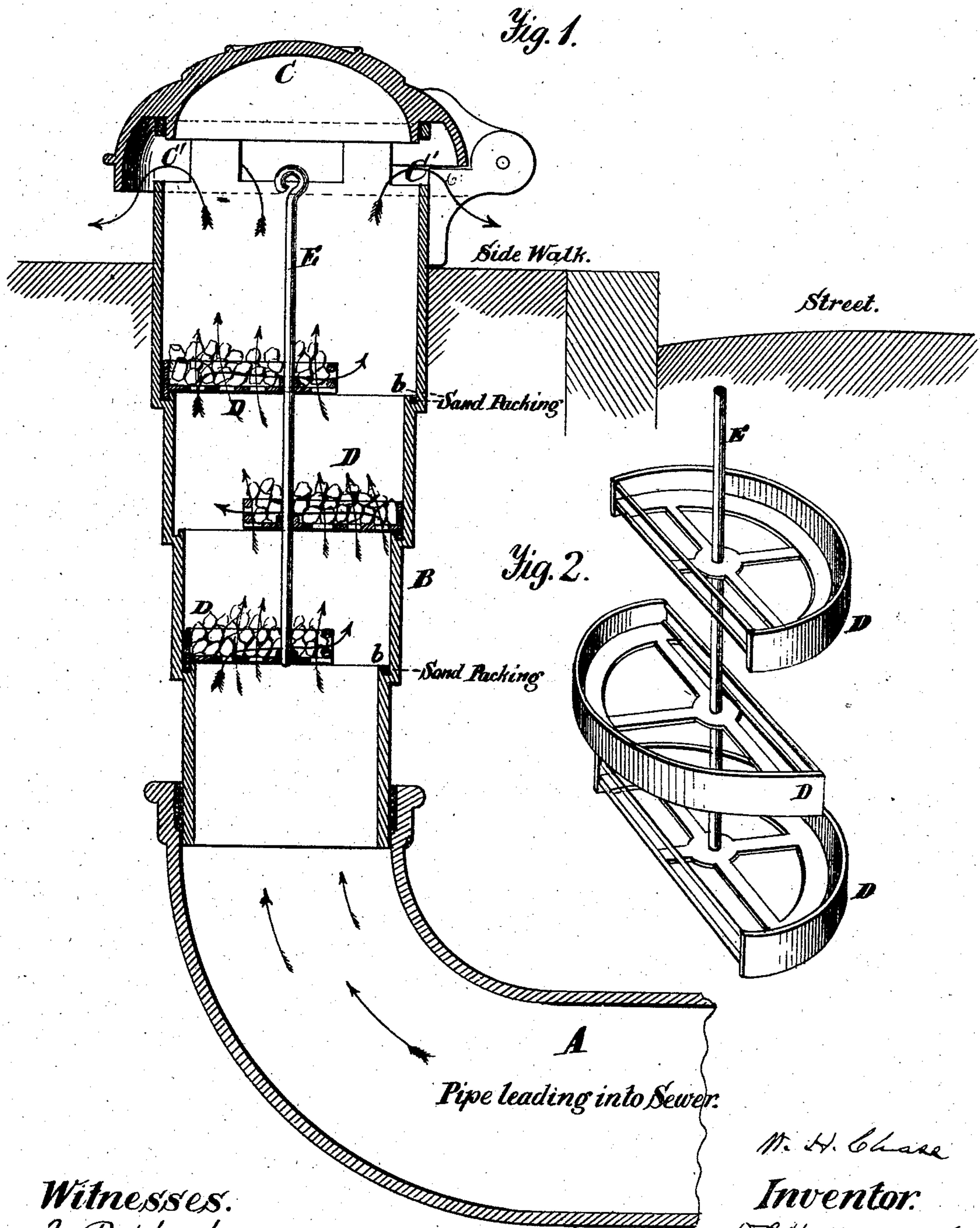


W. H. CHASE.  
Ventilators for Sewers.

No. 154,645.

Patented Sept. 1, 1874.





# UNITED STATES PATENT OFFICE.

WILLIAM H. CHASE, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN VENTILATORS FOR SEWERS.

Specification forming part of Letters Patent No. 154,645, dated September 1, 1874; application filed August 18, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM H. CHASE, of Washington, in the District of Columbia, have invented a new and useful Improvement in Sewer-Ventilators; and I do hereby declare that the following is a specification thereof.

Many kinds of apparatus have been suggested for purifying the noxious gases escaping from sewers. In the best of these the gases are purified by contact with charcoal. It is essential that the charcoal should be kept comparatively dry, as, when saturated with water it ceases to be efficacious.

It is essential, also, that the gases be not required to flow through masses of charcoal, for thereby the resistance to their escape will be such that, failing to find exit through the ventilators, they will be forced to escape through the connections leading out of houses, filling them with their noxious exhalations.

It has been proposed to build the ventilators with caps, to exclude the water, and also with diverse forms of receivers, to hold the water which would enter through the side orifices provided for the escape of the gases, when, as has been the case, the ventilators were placed in the roadway, where they are liable to be flooded. They have been constructed with many kinds of receptacles for the charcoal; among others, with those whose pans are disposed on each side of the ventilator-tube alternately, such pans containing a thin layer of charcoal, and having about half the area of the tube open, so that no back pressure can be obtained in the sewer.

This construction has been highly esteemed, but it is subject to one serious objection: That spaces were left between the edges of the pans and the wall of the ventilator, through which the gas could escape without purification by contact with the charcoal.

It is to remedy this defect that my invention is intended; and, to this end, my invention consists in packing the joint where the pan rests on the ventilator, so that no gas may escape between the pipe and the pan

except through the open spaces left for the purpose.

In the annexed drawings, Figure 1 is a vertical section of the ventilator complete. Fig. 2 is a perspective view, showing the construction and arrangement of the pans.

The same letters are employed in both figures to indicate identical parts.

A is a branch pipe leading to the sewer, and extending from it so far that the ventilator-pipe B may be carried up through the sidewalk, and located as hydrants are. By this location I exclude the dirt and water from the ventilator; whereas those placed in the roadway must be sunken, and then are liable to be flooded.

The ventilator, instead of being a cylindrical tube of uniform diameter, I prefer to make of a series of sections of constantly-increasing diameter; and, on the upper end of each section, which forms a ledge, I form an annular recess, to receive fine dry sand, water, or other equivalent material capable of preventing the passage of the ascending gases. This recess is shown at *b*.

The charcoal-pans D are formed, as shown in Fig. 2, of frames, each a little more than a semicircle, and attached to a rod, E, by which they may be lifted in and out when the charcoal requires to be replenished or replaced by fresh coal. The bottom of each pan is placed a little above the lower edge of the ring, so as to leave a downwardly-projecting edge to set into the dry-sand packing in the recess *b*.

The cap C covers the tube B, projecting so as to exclude the rain from the opening C' in the top of the tube, which should be raised above the flagging of the sidewalk far enough to prevent the wash-water from entering.

By being thus enabled to keep the charcoal dry, it has been estimated by writers on the subject that it would only be necessary to renew the charcoal yearly instead of monthly, as is necessary in ventilators where the charcoal is exposed to the wash from the streets.

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

1. In combination with the ventilator-pipe and pans for charcoal, recesses filled with a packing material to receive the edge of the pan,

and prevent the escape of the ascending gases through the space between the side of the pan and the surface of the pipe, substantially as set forth.

2. In combination with a sewer-ventilator, a cap formed with projecting edges, to extend beyond the gas - escaping openings raised above the flagging, and a connecting-pipe extending from the ventilator to the sewer, whereby I am enabled to locate the ventilator on the sidewalk instead of in the roadway,

and thus protect the charcoal used for disinfecting the gases against dirt and saturation by wash-water, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. H. CHASE.

Witnesses:

D. P. HOLLOWAY,  
H. E. QUEEN.