

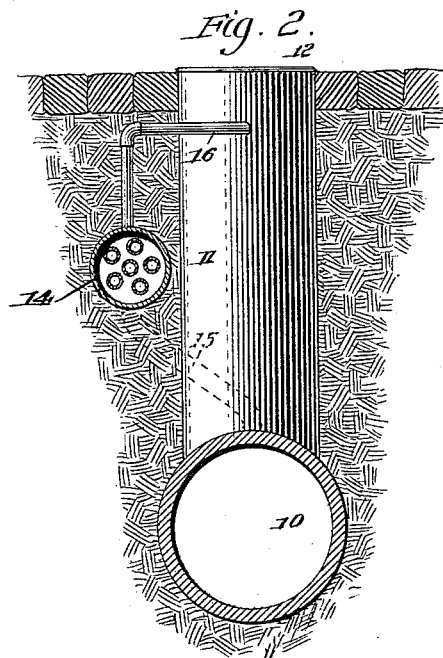
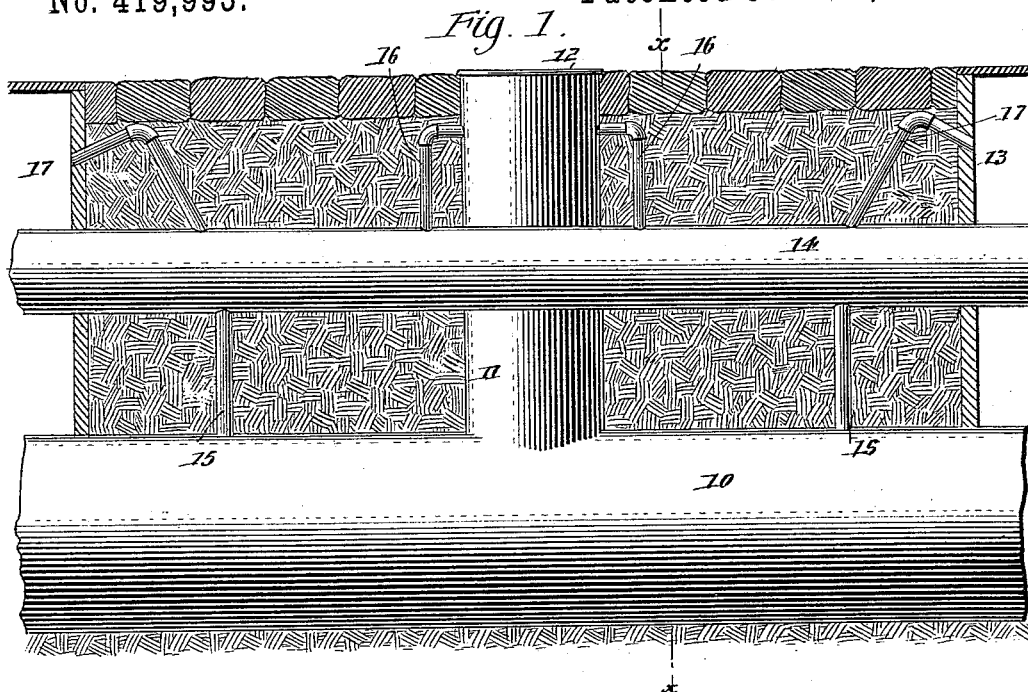
(No Model.)

2 Sheets—Sheet 1.

J. H. HILLIKER.
VENTILATING CONDUITS.

No. 419,993.

Patented Jan. 21, 1890.



WITNESSES:

H. Clark.
C. Sedgwick

INVENTOR:

J. H. Hilliker
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Fig. 3.

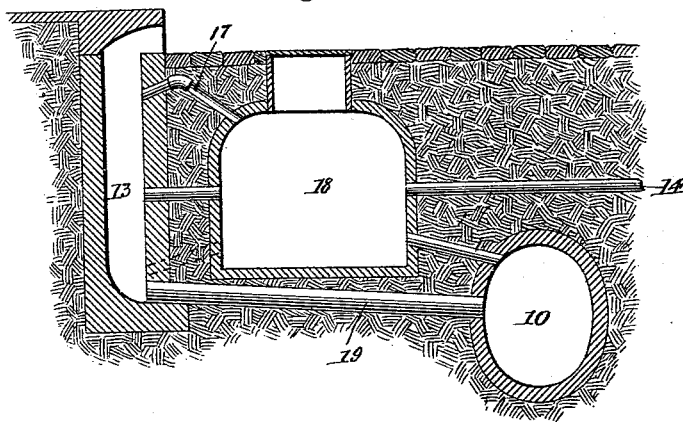
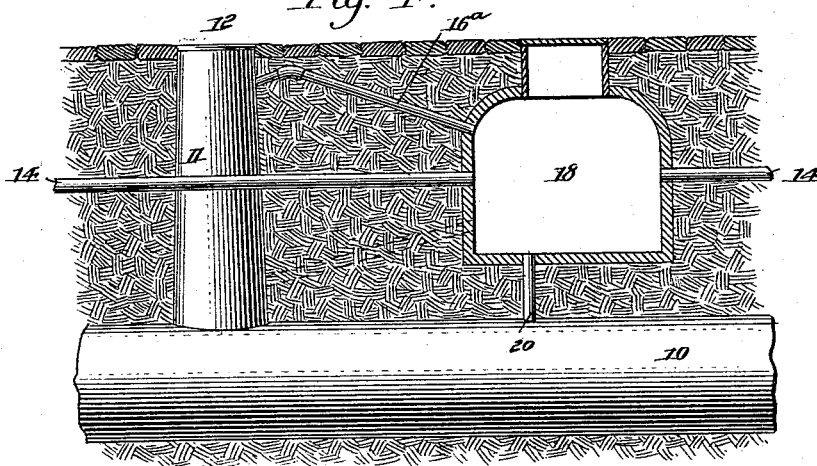


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN H. HILLIKER, OF NEW YORK, N. Y.

VENTILATING CONDUITS.

SPECIFICATION forming part of Letters Patent No. 419,993, dated January 21, 1890.

Application filed April 9, 1889. Renewed December 17, 1889. Serial No. 334,009. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HILLIKER, of New York city, in the county and State of New York, have invented a new and useful Improvement in Ventilating Conduits, of which the following is a full, clear, and exact description.

My invention relates to an improvement in means for ventilating conduits, and has for its object to establish a communication between the conduit, the sewer, and the culvert and man-holes of the sewer, whereby any gases generated in the conduit or escaping from the pipes laid therein may find a speedy and convenient exit into the open air. By thus providing for the effective escape of the gases generated or stored in the conduits all danger from explosions and consequent upheavals of the road-bed or pavement is avoided.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section through a portion of a street, illustrating the relative position of the sewer and conduit, the culverts and man-holes, and also the several connections. Fig. 2 is a transverse section on line x of Fig. 1. Fig. 3 is a longitudinal section illustrating the connection as effected between the sewer, the culvert, and the man-hole of the conduit; and Fig. 4 is a similar section illustrating a connection between the sewer and sewer man-hole and the man-hole of the conduit.

In laying the sewers it is well known that one or more man-holes 11 are projected therefrom in the length of a block or square, each provided with an apertured cover 12, and that the culvert 13 is located at the end of each block or square communicating with the sewer, as illustrated in Figs. 1 and 3. The conduit 14 is usually laid between the sewer and the surface of the ground at one side of the former, and the conduit is adapted to contain pipes of various descriptions, among oth-

ers gas-pipes, and as such pipes invariably leak it is absolutely necessary for safety to relieve the conduit from the pressure exerted by said gases. This I accomplish by connecting the bottom of the conduit with the upper surface of the sewer-pipe by tubes 15 and the upper surface of the conduit with the man-holes 11 of the sewer by, preferably, angle-tubes 16. The conduit is also connected with the culverts, at or near the top of the latter, by angle-tubes 17, the upper member whereof is given a downward inclination, as best shown in Figs. 1 and 3, to prevent any water flowing into the culvert from backing up the tube into the conduit.

It will be observed that by reason of the foregoing construction a circulation of air is established between the sewer and the man-holes and culverts through the conduits, whereby if the pressure is greater in the sewer than in the conduit the gases in the latter will be forced upward, and if the pressure in the sewer is less than that in the conduit the gases may escape up through the man-holes or culverts or down into the sewer.

In Figs. 1 and 2 I have illustrated the connection between the conduit and the sewer man-holes and culverts as being effected directly with the conduit proper.

In Figs. 3 and 4 I have illustrated one form of man-hole 18 usually employed in connection with a conduit, the tube constituting the conduit projecting within the said man-hole being uncovered at said projecting end.

In Fig. 3 it will be observed that the tubular connection 17 is located between the upper surface of the conduit man-hole and the upper portion of the culvert, and a straight connection 19 is established between the lower portion of the said culvert man-hole upon the opposite side and the sewer.

In Fig. 4 the connection between the conduit man-hole and the sewer is made by a tube 20, passing from the top of the sewer into the bottom of the man-hole, and an angle-tube 16, essentially the same as the tube 16 illustrated in Fig. 1, is made to connect the upper portion of the conduit man-hole with the upper portion of the sewer man-hole.

From the foregoing description it will be

readily observed that the connections between the sewer man-holes, the culverts, and the conduit may be made directly with the said conduit or with the man-holes located in the
5 length thereof.

In the event that the sewer is too far below the surface to be conveniently reached additional connections may be made between the culverts, the conduit man-holes, and the sewer,
10 and between the man-holes of the conduit and sewer, or both, as shown in full and dotted lines in Fig. 3 and in dotted lines in Fig. 4.

Having thus described my invention, I claim as new and desire to secure by Letters
15 Patent—

1. The combination, with a sewer, a conduit, and man-holes projected from the sewer, of a tubular connection between the conduit, the sewer, and man-holes, substantially as shown
20 and described.

2. The combination, with a sewer, a conduit, man-holes projected from the sewer, and culverts connected with the latter, of a tubular connection between the conduit, the man-holes, the sewer, and culverts, substantially
25 as shown and described.

3. The combination, with a sewer, a conduit, man-holes projected from the sewer, and culverts connected with the latter, of a tubular connection between the conduit and the sewer
30 and man-holes and an angle-tube connecting the said conduit and the culverts at or near the top of the latter, the member of the tube extending in the culvert being given a downward inclination, as and for the purpose specified.
35

JOHN H. HILLIKER.

Witnesses:

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C. SEDGWICK.