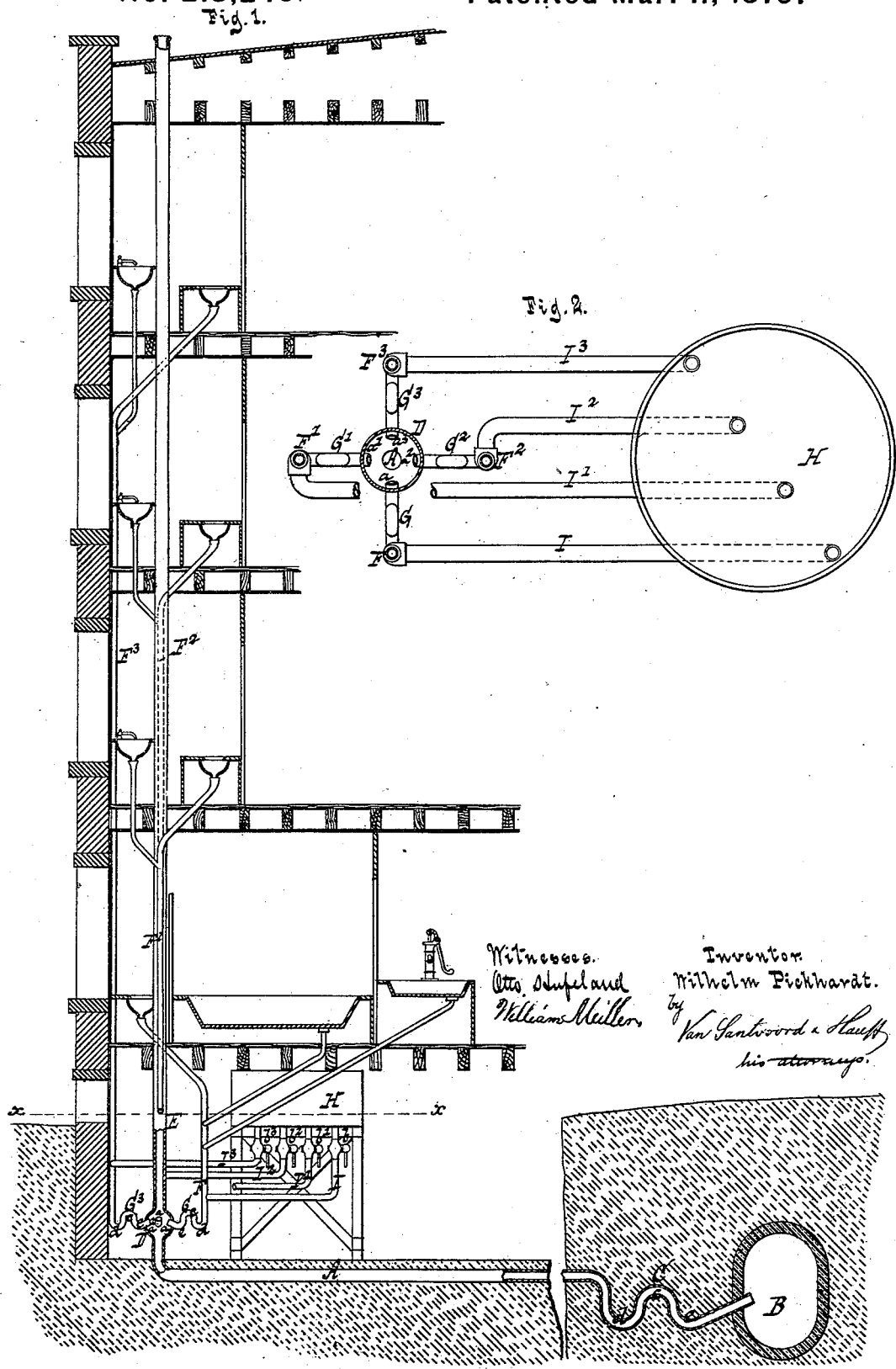


W. PICKHARDT.
 Ventilating and Sewer Connections for Houses.

No. 213,245.

Patented Mar. 11, 1879.



Witnesses.
 Otto Sumpf and
 Williams Muller

Inventor
 Wilhelm Pickhardt.
 by
 Van Gantvoord & Stauff
 his attorneys.

UNITED STATES PATENT OFFICE.

WILHELM PICKHARDT, OF NEW YORK, N. Y.

IMPROVEMENT IN VENTILATING AND SEWER CONNECTIONS FOR HOUSES.

Specification forming part of Letters Patent No. **213,245**, dated March 11, 1879; application filed January 30, 1879.

To all whom it may concern:

Be it known that I, WILHELM PICKHARDT, of the city, county, and State of New York, have invented a new and useful Improvement in Ventilating and Sewer Connections for Houses, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical section. Fig. 2 is a horizontal section in the plane xx , Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the combination, with the waste-pipe leading from a house to the sewer, of a chamber formed on or firmly connected to said waste-pipe, a pipe extending from said chamber through the roof of the house, one or more secondary waste-pipes, each of which connects with the waste-pipe of the water-closet, the sink, the wash-basins, the bathing-tub, the wash-tubs, or other devices of this nature, either or all, situated in one and the same story of the house, upwardly-inclined spouts extending from said secondary waste-pipes into the chamber of the main waste-pipe, suitable traps formed in the secondary waste-pipes and in the main waste-pipe, and a water-tank situated above the level of the chamber in the main waste-pipe and connected to each of the secondary waste-pipes, so that the gases which may pass from the sewer into the main waste-pipe escape through the pipe extending through the roof of the house, and that a volume of clean water can be brought to bear upon each of the traps of the secondary waste-pipes and also upon the trap of the main waste-pipe under such a head, that all the impurities which may have collected in said traps are effectually washed out.

The traps which I use have an upward bend, situated between two downward bends and an upwardly-inclined spout, whereby the danger of having the traps siphoned out is materially reduced.

In the drawings, the letter A designates the main waste-pipe, which leads from a house or building into the sewer B, and which is provided with a trap, C. Said waste-pipe connects with a chamber, D, of a spherical or other suitable shape, which may be cast solid with the waste-pipe or firmly connected to the

same, and from this chamber rises a pipe, E, which extends up through the roof of the house. The chamber D is provided with suitable openings to receive the discharge-spouts $a^1 a^2 a^3$ of the secondary waste-pipes $F^1 F^2 F^3$, and these spouts have an upwardly-inclined position, as shown in Fig. 1, so that the gases which may find their way from the sewer through the main waste-pipe into the chamber D will have no opportunity to enter the secondary waste-pipes, but will pass up through the pipe E and escape into the open air at the top of the house.

Each of the secondary waste-pipes $F^1 F^2 F^3$ is provided with its own trap, $G^1 G^2 G^3$, and connects by suitable branch pipes with the water-closets, wash-basins, bathing-tub, wash-tubs, sink, or other devices of a similar nature, which are situated on one and the same story, and at a level several feet above the traps $G^1 G^2 G^3$ is placed a water-tank, H, from the bottom part of which extend pipes $I^1 I^2 I^3$, which connect, respectively, with the secondary waste-pipes, and each of which is provided with a suitable gate or stop-cock, $b^1 b^2 b^3$, so that the flow of water from the tank to the secondary waste-pipe can be controlled.

The traps C and G which I use in my sewer-connection are constructed each with an upward bend, e , situated between two downward bends, $d e$, and from the downward bend e extend the upwardly-inclined spouts either into the sewer or into the chamber D.

Traps as usually constructed have only two bends, one down and the other up, and their spouts extend downward either in an inclined or in a vertical direction, and they are liable to be siphoned out by the suction in the waste-pipe. This disadvantage I have succeeded in overcoming by providing my trap with one upward and two downward bends and with an upwardly-inclined spout.

In all traps of the construction above described, however, the impurities which pass down through the waste-pipes are liable to lodge in the downward bends, and provision must be made to dislodge and wash out these impurities; otherwise a bad odor will rise from the same up into the house. For the purpose of effecting this object I have found it is nec-

essary to employ a column of water which will act on the impurities collected in the trap under such a head, and that it is able to force out such impurities by its pressure. For supplying such columns of water for each trap I have provided the water-tank H; and the diameters of the pipes I, which connect this tank with the secondary waste-pipes, are so selected that whenever one of these pipes is opened a column of water will accumulate in the corresponding waste-pipe, and the impurities collected in the corresponding trap will be expelled by the pressure of such column. Furthermore, the combined areas of the cross-section of the several pipes I I¹ I² I³ must be at least equal to the area of the cross-section of the main waste-pipe, so that when all the pipes I I¹ I² I³ are opened a column of water with sufficient head is brought to bear upon the impurities in the trap C to force the same out and to fill the trap with clean water.

By opening the pipes I I¹ I² I³ at proper intervals, therefore, I am enabled to keep all the traps in the house perfectly clean, and the air in the house will not be contaminated by bad odors produced by impurities in the traps or by gases rising from the sewer into the house.

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

1. The combination, with the main waste-pipe leading from a house to the sewer, of a

chamber formed on or firmly connected to said waste-pipe, a pipe extending from said chamber through the roof of the house, one or more secondary waste-pipes, each of which connects with the waste-pipe of the water-closet, the sink, the wash-basins, the bathing-tub, the wash-tubs, or other devices of this nature, either or all, situated in one and the same story of the house, upwardly-inclined spouts extending from said secondary waste-pipes into the chamber of the main waste-pipe, suitable traps formed in the secondary waste-pipes and in the main waste-pipe, and a water-tank situated above the level of the chamber in the main waste-pipe and connected to each of the secondary waste-pipes, all constructed and adapted to operate substantially in the manner and for the purpose herein shown and described.

2. A trap for sewer-connections provided with an upward bend situated between two downward bends, and with an upwardly-inclined spout, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 28th day of January, 1879.

WM. PICKHARDT. [L. s.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.