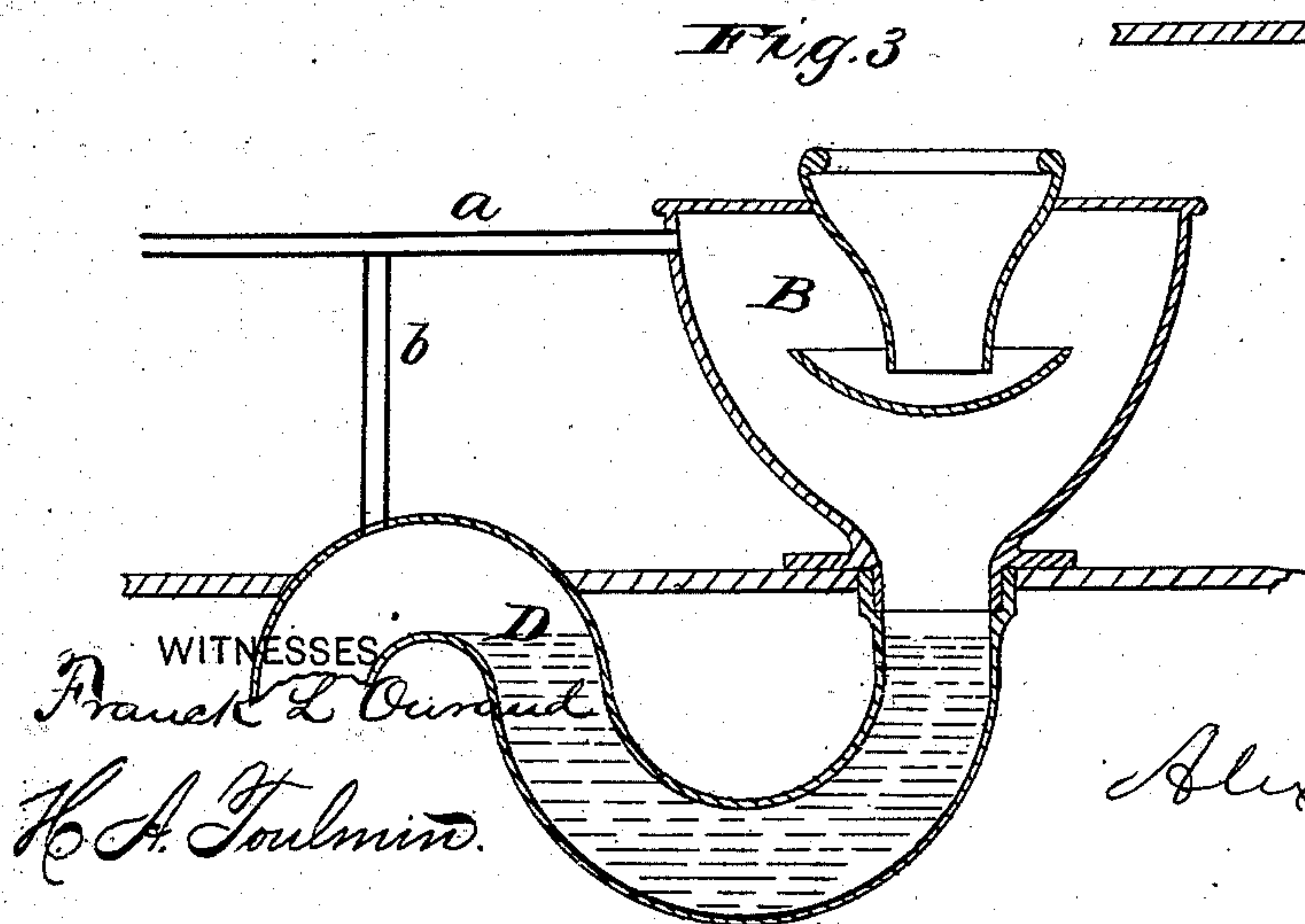
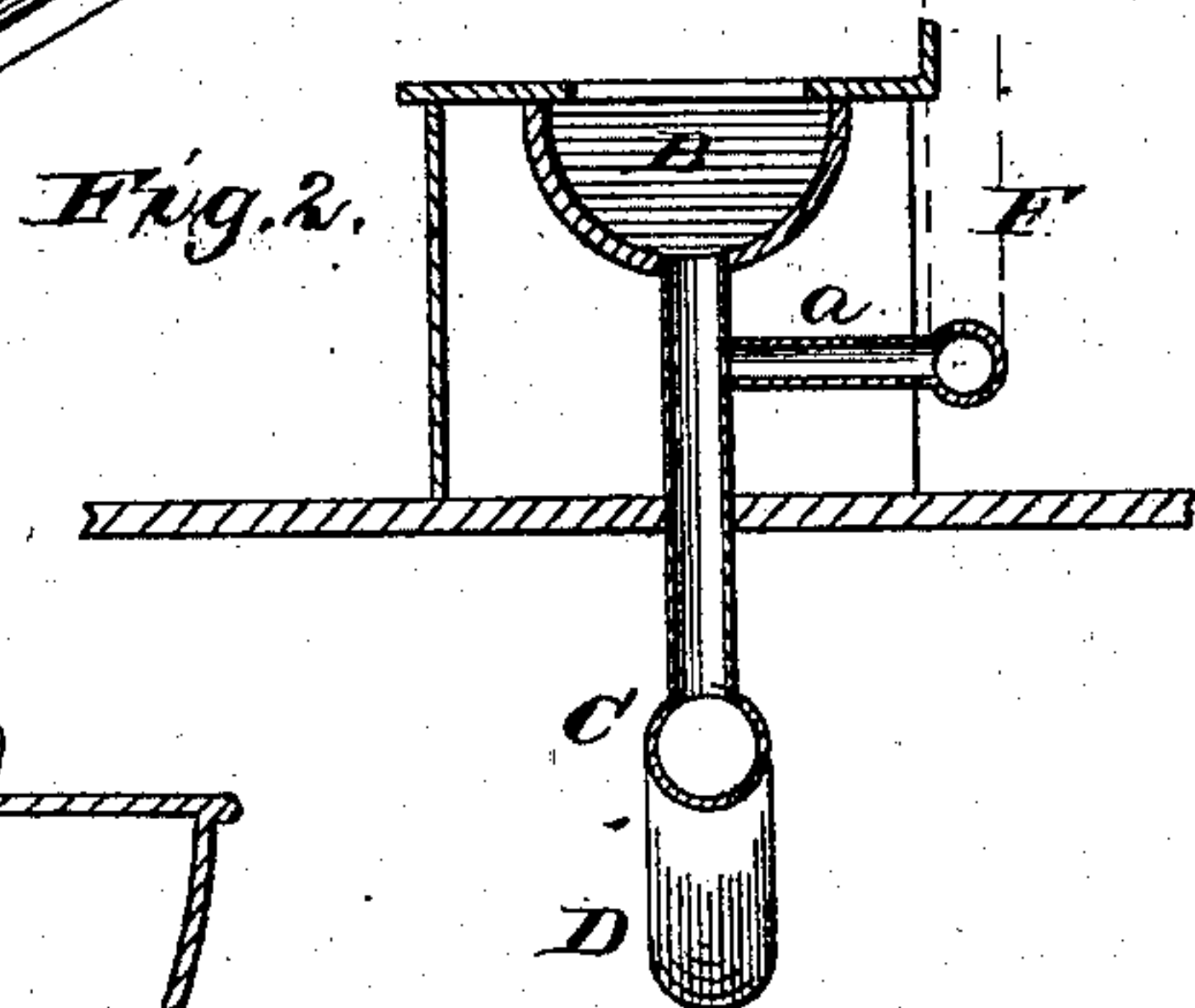
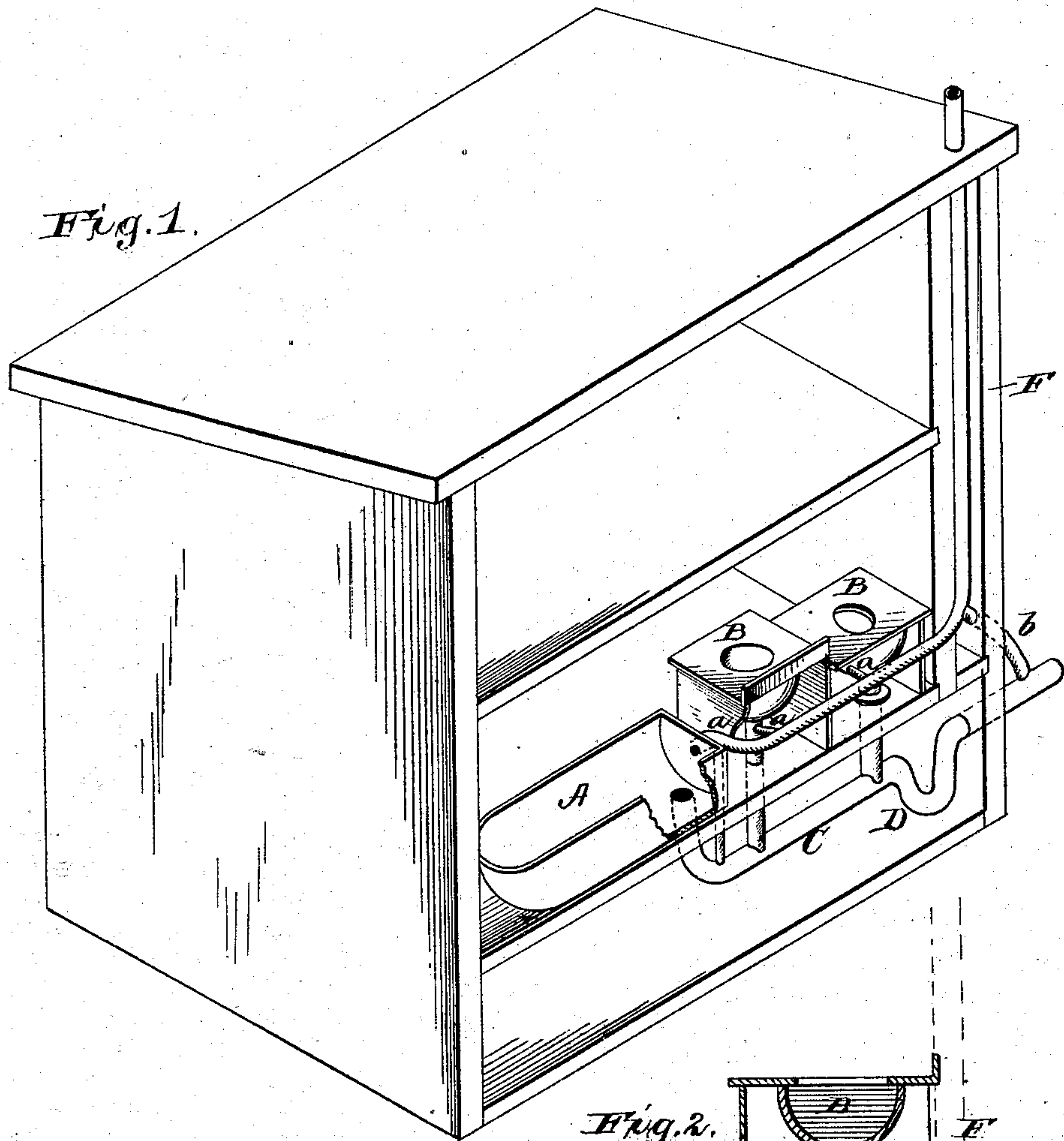


M. MULLIGAN.
 Ventilating Waste-Pipes in Houses.
 No. 219,499. Patented Sept. 9, 1879.



INVENTOR
Martin Mulligan
Alexander Mason
 ATTORNEYS

UNITED STATES PATENT OFFICE.

MARTIN MULLIGAN, OF TROY, NEW YORK.

IMPROVEMENT IN VENTILATING WASTE-PIPES IN HOUSES.

Specification forming part of Letters Patent No. **219,499**, dated September 9, 1879; application filed April 15, 1879.

To all whom it may concern:

Be it known that I, MARTIN MULLIGAN, of Troy, in the county of Rensselaer, and in the State of New York, have invented certain new and useful Improvements in House-Ventilation; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to relieving houses from sewer-gas; and it consists in the combination, with the waste-pipe, of a vertical ventilating-pipe having branches connecting with the various water-closets, sinks, tubs, &c., above the traps therein, and another branch connecting with the waste-pipe below its trap, as will be more fully hereinafter set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a detailed section of a part thereof. Fig. 3 is an enlarged section of water-closet.

A represents a bath-tub, and B B two water-closets, all connected with the waste-pipe C, to lead to the sewer in any of the known and usual ways. In the waste-pipe C is a trap, D, as shown. F is a pipe running up through the house, and intended to extend a suitable distance above the roof. This pipe is, by branches *a a*, connected with each water-closet and with the bath-tub, as shown, and it is also, by a pipe, *b*, connected with the waste-pipe C at a point beyond the trap D.

Where stationary wash-stands and wash-tubs are used, as well as kitchen and pantry sinks, they should also be connected with the pipe F.

The various branch pipes are run level, so that the condensed hot air or moisture will

run back into the waste-pipes, and the pipes connecting with the sinks, closets, &c., should be arranged at the highest points possible in the sinks, closets, &c., and in all cases above all traps, whereby I obtain a current of air from the room, through the wastes, to the top of the house, so that any foul air formed in the pipes which would otherwise come into the room will be carried with the current to the open air.

It will readily be understood that all sewer-gas will pass from the waste-pipe, through the branch *b*, into and out through the ventilating pipe or column F in a steady current, and will not pass through the traps into the house. This current of sewer-gas creates a suction through the upper portion of the waste-pipe and the various branches *a a*, so that a series of currents are established from within the house through the branches *a*, thereby carrying off any foul air that may be generated or collected in said pipes, and prevent the same from entering the house.

In Fig. 3 I have shown the same system of ventilation applied to one water-closet of ordinary construction—that is, having the usual S-trap.

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

In a system for relieving houses from sewer-gas, the combination, with the waste-pipe C, of the vertical ventilating-pipe F, branches *a a*, connecting the pipe F with the water-closets, sinks, tubs, &c., above the traps, and another branch, *b*, connecting said pipe F with the waste-pipe below its trap, substantially as herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 29th day of March, 1879.

MARTIN MULLIGAN. [L. S.]

Witnesses:

EDMUND T. COLE,
C. H. PARSONS.