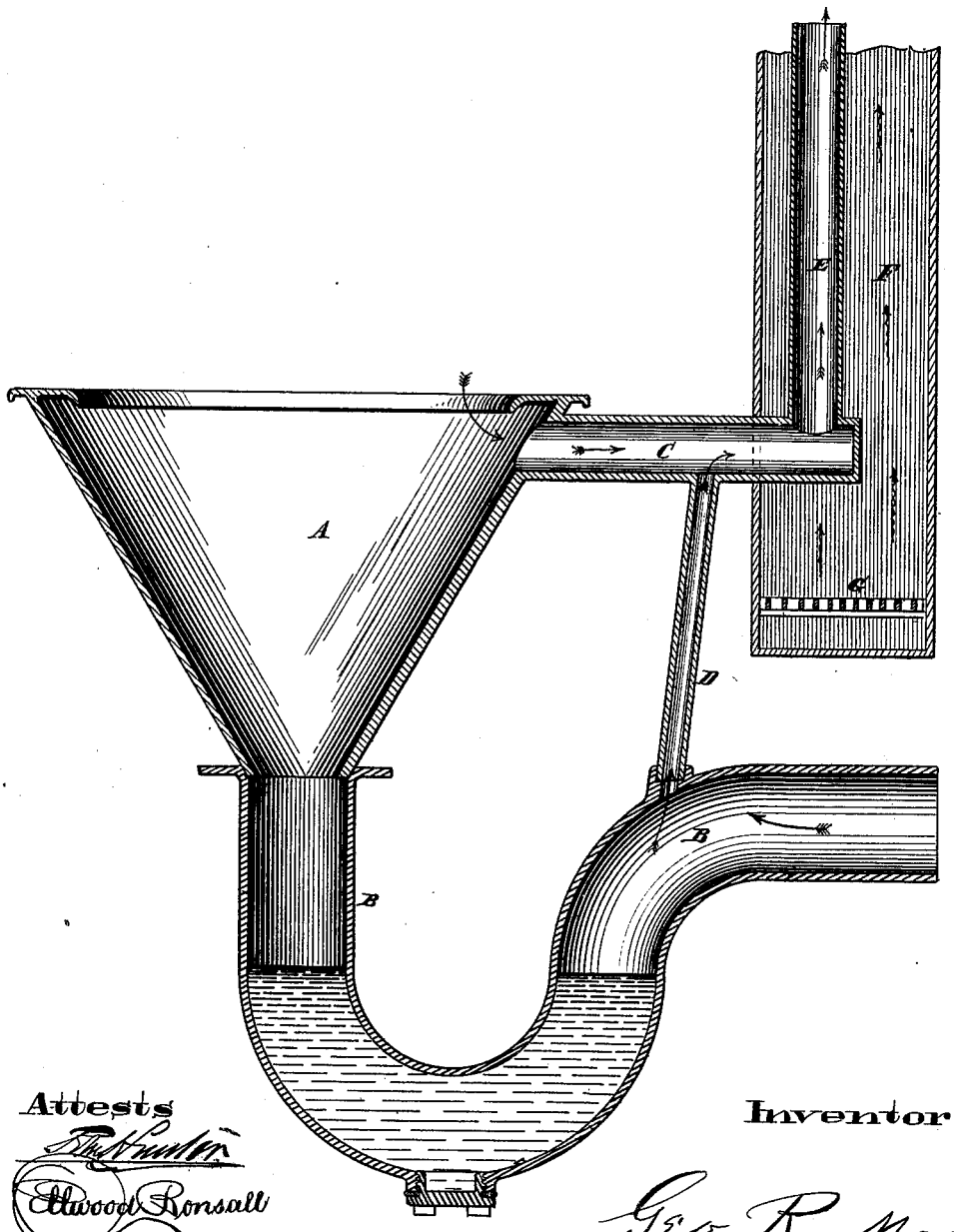
G. R. MOORE.

Ventilating Water-Closets.

No. 214,304. Patented April 15, 1879.



Attests

Edwood Ronsall

Inventor

Geo. R. Moore

UNITED STATES PATENT OFFICE.

GEORGE R. MOORE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN VENTILATING WATER-CLOSETS.

Specification forming part of Letters Patent No. **214,304**, dated April 15, 1879; application filed March 14, 1879.

To all whom it may concern:

Be it known that I, GEO. R. MOORE, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Ventilating Water-Closets, and other structures connecting with soil-pipes and sewers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawing.

The object of my invention is to provide improved facilities for keeping pure the air in dwellings provided with modern improvements, by preventing the passage of sewer-gas or air of any kind by the way of the waste and soil pipes into the same, and for carrying off all foul air from water-closets, urinals, stationary wash-stands, bath-tubs, and other structures of similar need, by thorough and effective ventilation.

It is well known that the varying air-pressure in sewers and soil-pipes, occasioned by winds, tides, temperature, and numerous other causes, is more than an equivalent in force to all the resistance that can be obtained by the ordinary liquid trap. My invention provides against any evil from all this varying pressure by a suitable vent-pipe, combined with a thorough and effectual method of ventilation for the said closets and structures.

The drawing represents a vertical transverse section of an ordinary water-closet with soil-pipe and trap, with my vent-pipe and ventilating-pipe, and a flue or chimney, all combined in one view.

A is the water-closet proper; B B, the soil-pipe, shaped to form a liquid trap, and designed to be extended usually to a sewer. C is a ventilating-pipe from the closet into the flue or chimney. D is a small vent-pipe from the soil-pipe to the ventilating-pipe; E, vertical extension of the ventilating-pipe up the flue, to prevent foul air in the chimney itself, and to secure a better draft. F is the chimney. G represents fire-grate for use, if desired.

The conditions requisite to a successful operation of this complete device include heat or some other reliable force to keep up an air-current through the ventilating-pipes C and E from the closet constantly.

It will be seen that the vent-pipe D is much smaller than the ventilating-pipe C. This is an important feature, for if the two were of equal capacity, air from the soil-pipe might at times come in such quantity as to fill the ventilating-pipe and stop circulation from the closet.

The purpose of the vent-pipe D is twofold—to take off all air-pressure from the soil-pipe trap and to prevent siphonage of the same. Thus protected and aided by the vent D, the liquid trap in the soil-pipe between the vent and the closet is relied upon to prevent a circulation of foul air from the soil-pipe into the closet from that side, and the ventilating-pipe C E, aided by the heat of a fire in the chimney, or by some other force, is relied upon to carry off all foul air that may be generated in the closet itself.

I claim—

1. In combination, a water-closet or other structure surmounting an outlet-pipe, which has a liquid trap near the closet and a vent-pipe upon its opposite side from the closet, combined with a ventilating-pipe from the said closet or structure, substantially as and for the purpose herein set forth.

2. In combination, the closet A, ventilating-pipe C, vent-pipe D, soil-pipe B, and flue F, substantially as shown.

3. In combination, the closet A, soil-pipe B, ventilating-pipe C, vent D, pipe E, and flue F, substantially as shown.

GEO. R. MOORE.

Witnesses:

ELLWOOD BONSALL,

C. J. GILMAN.