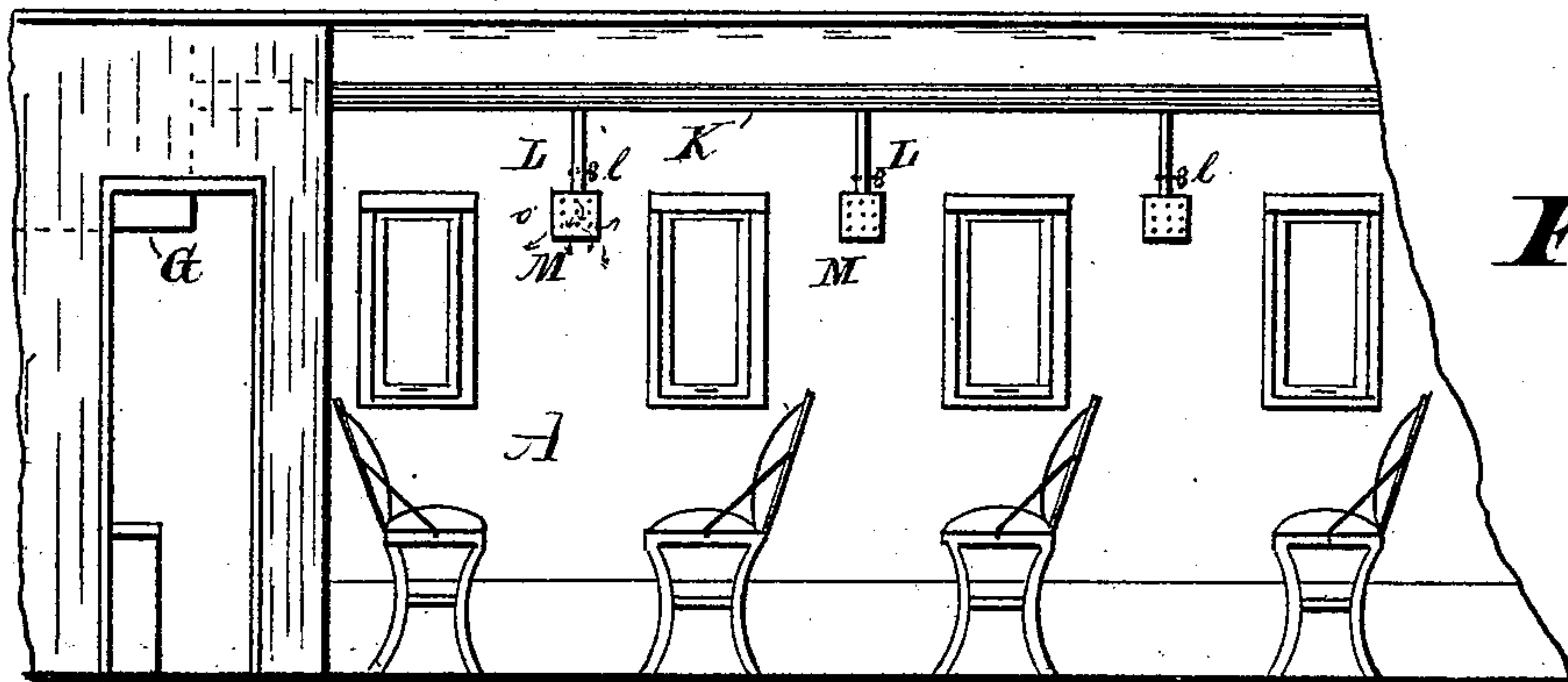
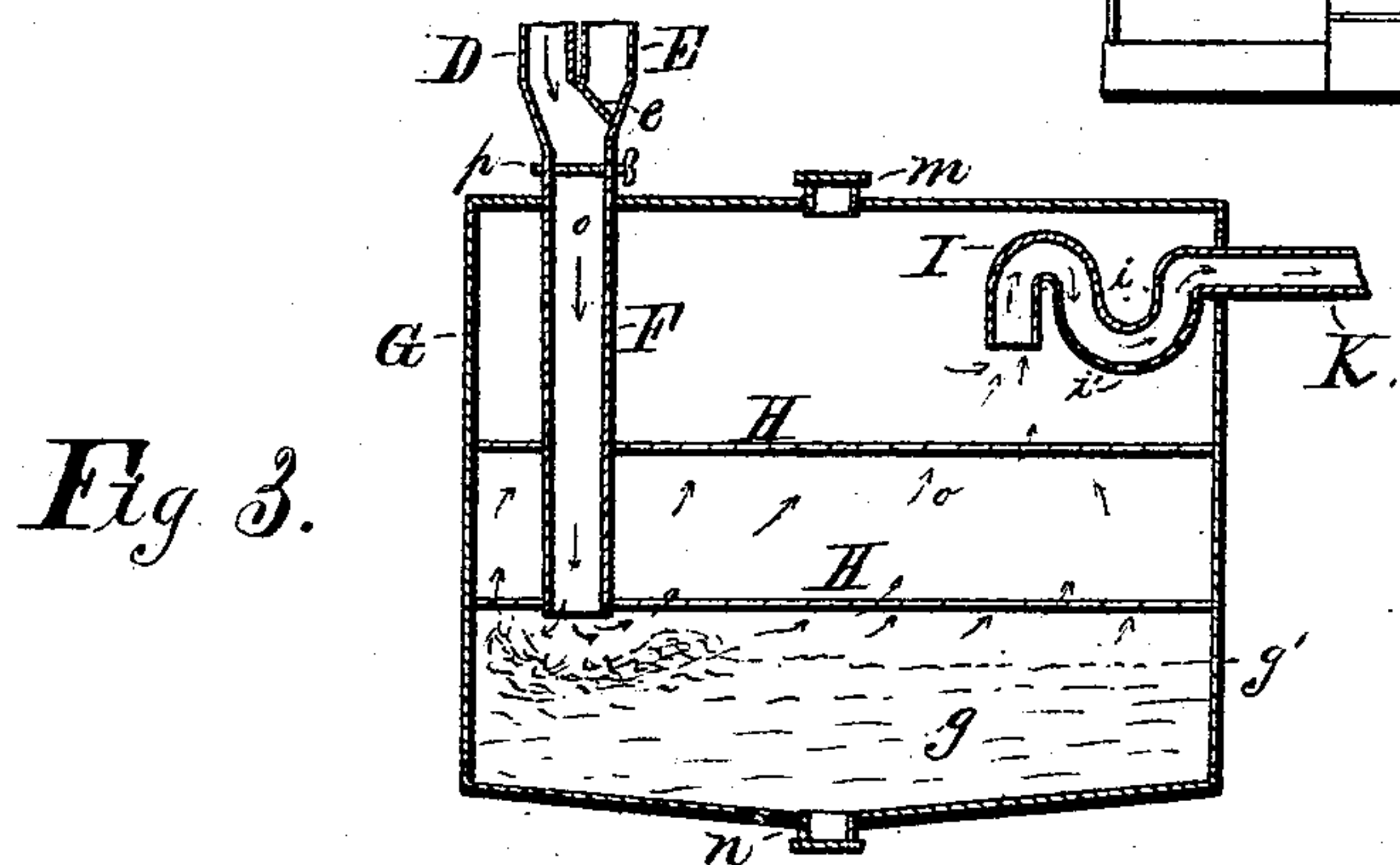
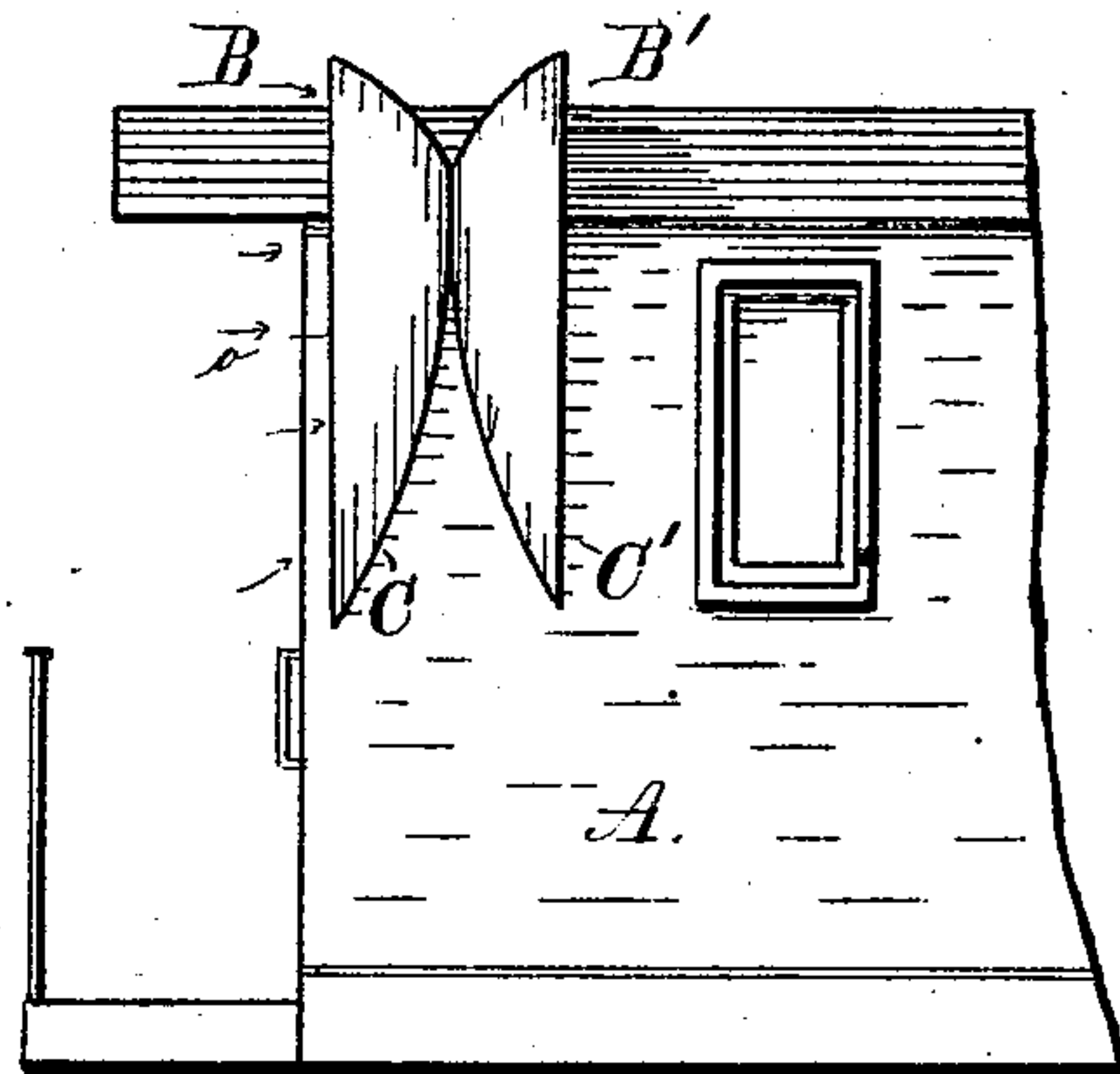
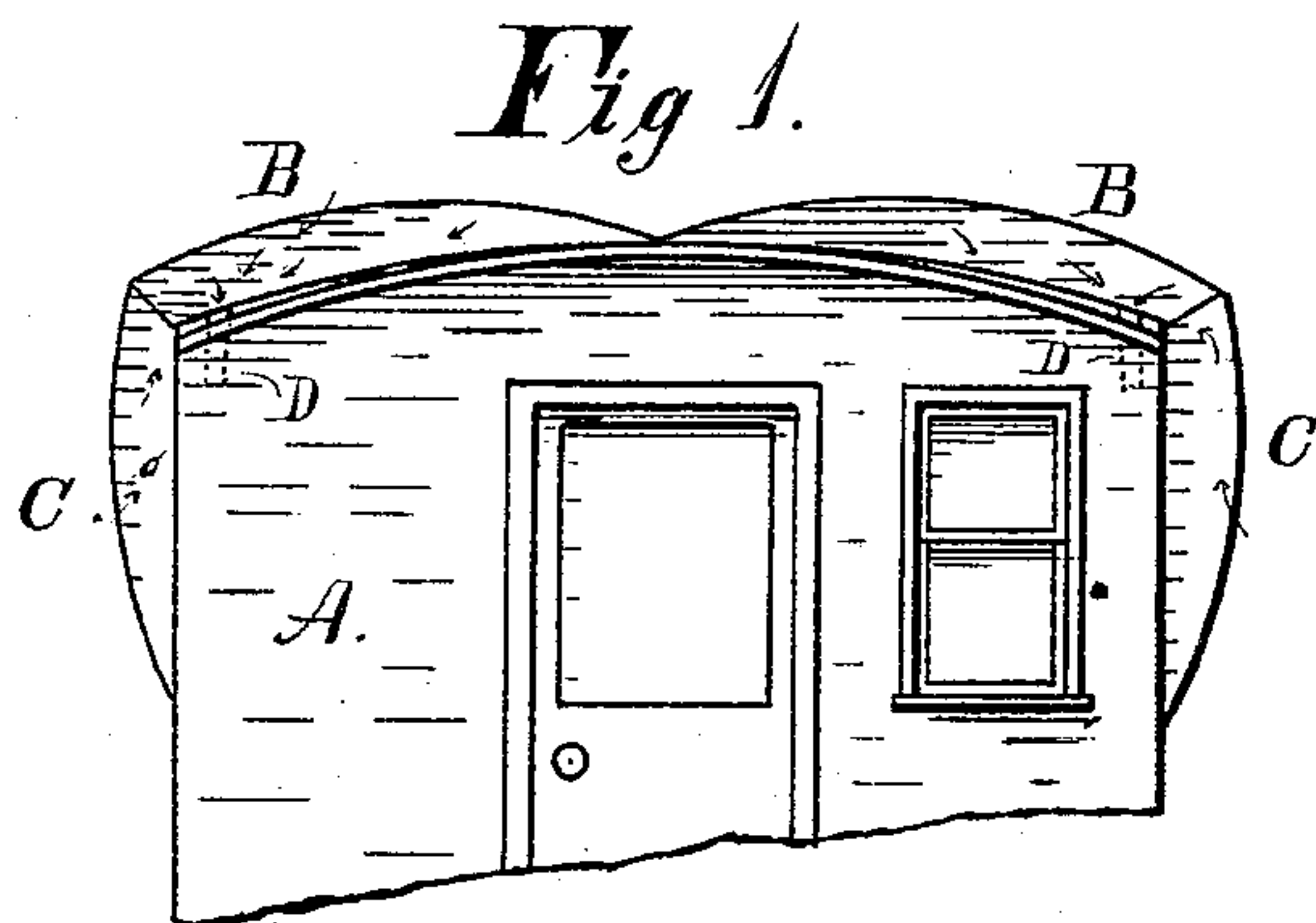


(No Model.)

S. C. HILL, S. D. WEBB & R. M. ODELL.
CAR VENTILATOR.

No. 282,889.

Patented Aug. 7, 1883.



Witnesses;

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Geo. F. Graham

Inventors:

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Attorney.

UNITED STATES PATENT OFFICE.

SAMUEL C. HILL, SAMUEL D. WEBB, AND RISDON M. ODELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 282,889, dated August 7, 1883.

Application filed July 7, 1883. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL C. HILL, SAMUEL D. WEBB, and RISDON M. ODELL, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Car-Ventilators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to ventilators for railway-cars, houses, ships, and other apartments requiring pure air. It is especially adapted for use on railway-cars, and in this application this particular use of it is explained and shown in the drawings. Slight modifications are necessary when using our ventilator on stationary apartments, a larger hood adapted to always open toward the wind being there used. The means for purifying the air are the same, however, in all cases.

The accompanying drawings fully represent the nature of the invention, to the various parts of which reference is made by letters, similar letters indicating corresponding parts in the several views.

In the drawings, Figure 1 is an end elevation, in part, of a railway passenger-car. Fig. 2 is a side elevation of the same. These two views exhibit that portion of our invention which is on the outside of the car. Fig. 3 is a sectional elevation, in detail, of the air-purifier; and Fig. 4 is an elevation of one side of the interior of the car.

The letter A indicates a railway-car. B C are flattened hoods, opening toward the nearest end of the car, which, for convenience, we will call the "front end." B' C' are also hoods of similar shape and dimensions as B and C, but opening toward the opposite or rear end of the car. B and B' extend from near the middle of the car-roof to the eaves, and C C', which are but continuations of B B', extend down the side of the car. Each car, as shown in Fig. 1, is provided with two sets of these hoods, one set on each side, and when found sufficient we use only the hoods B B' or the hoods C C', as preferred. The air caught by the hoods B C

enters the pipe D, (see Fig. 3,) and by its pressure closes the pipe E with the swinging valve *e*, and passes through the pipe F into the tank G. When the car moves in the opposite direction, the air from the hoods B' C' enters the pipe E, closes the pipe D with the valve *e*, and passes down the pipe F into the tank G. This tank G is of any desired shape. We prefer to make it as shown in Fig. 3. *m* is an aperture furnished with a tight screw-cap, by which water is introduced into the tank. *n* is an opening through the bottom of the tank, by which the water, cinders, &c., caught from the air are removed from the tank. A tight screw-covering is provided also for this opening. The bottom of the tank inclines downward toward the opening *n*. The pipe F extends into the tank to a point just below the perforated partition H. This partition H is mainly intended to prevent undue agitation of the water *g* in the tank, and if one partition is not sufficient we use one or more placed horizontally between the water and the exit-pipe I. Water reaching to the point *g'* we have found sufficient for the object intended. The exit-pipe I has the goose-neck shape as shown in the drawings, with its mouth opening downward. At the bottom of the curve *i* of the pipe I is a small dripping hole or vent, *i'*, through which any water which might find its way into the pipe I may drop back into the tank.

K is an extension of the pipe I, and reaches the entire length of the car. It may pass through any desired part of the car. When located as in Fig. 4, we attach distributing-pipes L, to conduct the air from the pipe K to the perforated boxes M, whence the air passes into the car. The volume of air is regulated by the stops *l l*, placed within reach of the passengers. The arrows *o o* indicate the direction of the air through the ventilator.

One tank G is generally found sufficient to ventilate a single car, and while it may be located as desired, we prefer to place it in the water-closet near the top and against the side of the car. If two tanks are required, another is placed opposite the first at the same end of the car. The twin pipes D and E extend from

the tank G through the roof of the car, and are soldered or riveted to the hoods B B'.

We do not wish to limit ourselves to the devices herein represented for distributing the air through the car, as any preferred means may be employed instead of the tubes L L, the stops *l l*, and boxes M. If the pressure of air should at any time be found too great, a valve or damper, *p*, is put in the pipe F, as indicated in Fig. 3.

We are aware that the use of water as a means of purifying the air is not new, and do not broadly claim it as our invention; but

What we do claim, and desire to secure by Letters Patent of the United States, is—

1. In an air-purifier and ventilator, the combination, with a water-tank, G, having one or more foraminated partitions, H, and the apertures *m* and *n*, provided with suitable coverings, of an air-entrance pipe, F, opening into the tank G at a point below the lowest partition H and above the surface of the water *g*, and an exit-pipe, I, having the goose-neck *i*, with the dripping-vent *i'*, and the extension-pipe K, provided with distributing-con-

tions, and suitable means for directing the air without the car into the said entrance-pipe F, substantially as set forth.

2. In a car-ventilator, the hoods B C on the exterior top and sides of the car, opening in one direction and communicating by the pipe D with the pipe F, and the hoods B' C', opening in the opposite direction and communicating by the pipe E with the pipe F, valve *p*, the swinging automatic valve *e*, and the pipe F, in combination with a tank, G, having a supply of water, *g*, the perforated partitions H, the exit-pipe I, provided with vent *i'*, extension-pipe K, the distributing-pipes L L, the stops *l l*, and the perforated boxes M M, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL C. HILL.
SAMUEL D. WEBB.
RISDON M. ODELL.

Witnesses:

WM. HELMICK,
J. J. WATERS.