

(No Model.)

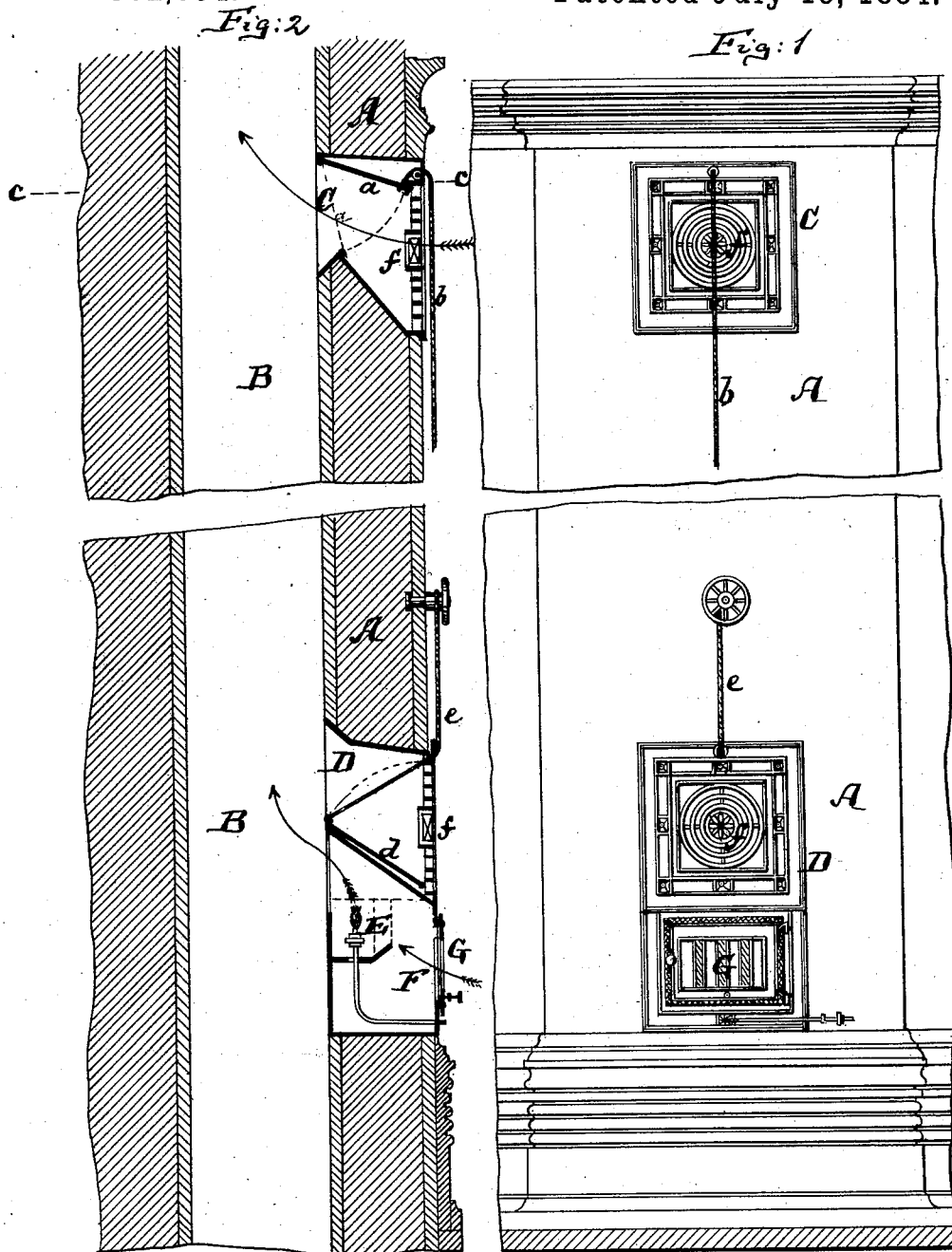
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H. VOLLWEILER.

VENTILATION FOR BUILDINGS.

No. 302,064.

Patented July 15, 1884.



Witnesses:

John M. Spear.
Gustav Schnepf.

Inventor:

Henry Vollweiler
by his attorney
Briesen & Steele

(No Model.)

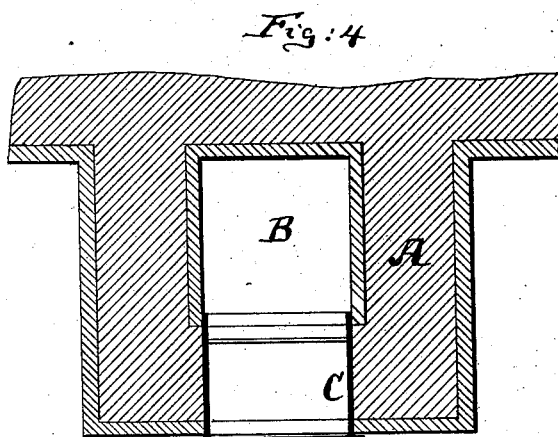
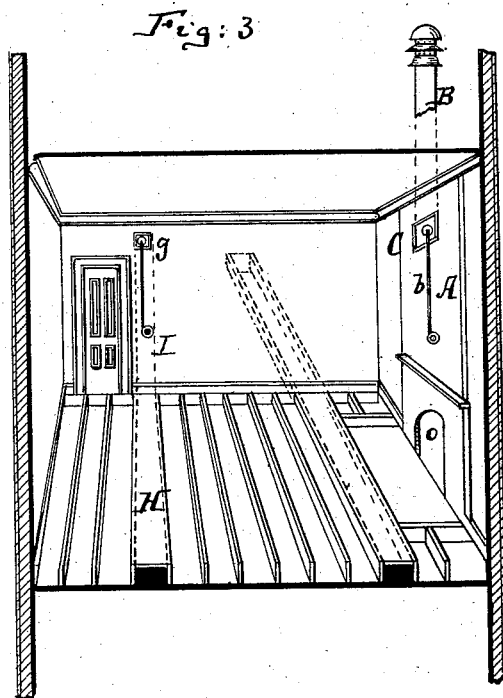
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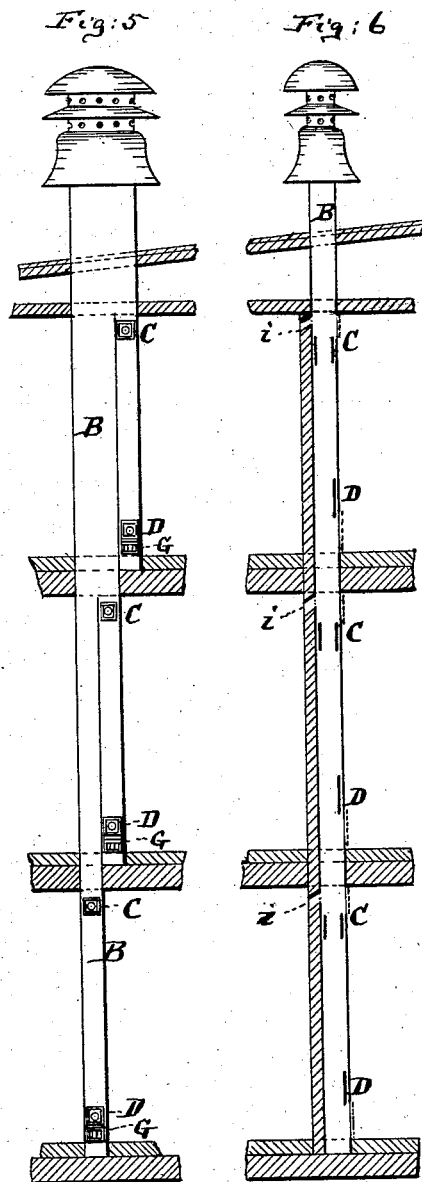
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UNITED STATES PATENT OFFICE.

HENRY VOLLWEILER, OF BROOKLYN, NEW YORK.

VENTILATION FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 302,064, dated July 15, 1884.

Application filed February 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY VOLLWEILER, a resident of Brooklyn, in the county of Kings and State of New York, have invented an Improved System of Ventilation for Buildings, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, in which—

Figure 1 is a face view or inner side view of a wall in a building having my improved system of ventilation. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a perspective view of a room which contains my system of ventilation. Fig. 4 is a horizontal section on the plane of the line *cc*, Fig. 2. Figs. 5 and 6 are detail face and side views of ventilator-shafts, which I propose to place in buildings already erected.

This invention has for its object to produce a rational system of ventilation for rooms, whereby the foul air will be carried away with absolute certainty.

The invention consists, principally, in connecting each room, by apertures in its upper and lower parts, with a flue, which is intended to carry off the impure air, and with a small heating apparatus—such as a gas-light—that is placed in the lower aperture to create a draft in said flue, all as hereinafter more fully described.

In the drawings, the letter A represents the wall of a room. B is a suitable flue adjoining the wall of said room. C and D are two metallic boxes, which are set into the said wall A, to line apertures which cause the interior of said room to communicate with the flue B. The upper box, C, which is near the ceiling of the room, slopes slightly upward, and is narrower where it joins the flue than where it joins the room. The lower box, D, is also made to slant upward, and is wider nearest the room. The box C contains a gate, *a*, which is shown elevated by full lines in Fig. 2, but which can be swung down into the position indicated by dotted lines when ventilation is not required. The gate *a* is controlled by a suitable cord, *b*, which passes over a friction-roller or other support in the front of the box C. The box D is likewise provided with a swinging gate, *d*, which is shown lowered by

full lines in Fig. 2, and which can be raised to close the box D by a suitable cord, *c*, with which it is connected. Each of these boxes has a rotating ventilator-wheel, *f*, in front, which is of suitable construction, and which, when the air passes through the boxes into the flue, will be revolved, and will thereby indicate the fact that the ventilator is operative.

The tapering form of the boxes C and D has for its object to cause the air which passes through them to move more rapidly than it would through a box not tapered, and also to prevent, in connection with the ascending position of said boxes, any air, smoke, or the like from the flue B entering the room, for the flue B may be a smoke-flue. The gates *a* and *d* can be set or adjusted in such manner as to regulate the amount of air that passes into the flue B through either of said boxes, and either gate may be shut wholly, if desired. Another advantage obtained by my arrangement is that if it is fitted into a smoke-flue above the place where the same connects with a stove, grate, or the like, the admission of the air into the same flue will retard the combustion in the heating apparatus, and will cause considerable economy in fuel and more perfect combustion; but if the flue B does not connect with the heating apparatus, it will be desirable to assist the air in its motion to and through the flue by a special air-heater. To this effect I place directly beneath the metallic bottom of the box D a burner, E, for burning gas or other substance for heating the bottom of the box D. This burner E is located in an aperture, F, of the wall A, which aperture can be regulated by a suitable register, G, in front. Through this register G the air enters the aperture F, and is heated by the flame of the burner E, and then passes with the products of combustion into the flue B, warming the air therein to such an extent as to insure its ascent and the consequent current, which is desired to be produced in order to make the ventilating apparatus operative; but this little heater E is only to be used in case the disks *ff* indicate that a current of air does not pass from the room into the flue, or that it does not pass with the proper speed, in which case by lighting the burner E, such assistance will be given

to the other part of the mechanism as will insure the production of the proper air-currents in the requisite direction.

It will be perceived that when my apparatus is provided with this heater E a room can be ventilated with certainty and thoroughness, without producing disagreeable drafts, without overheating the room, and in a noiseless manner. An additional advantage is that regulation of the air-currents can at all times be effected. The system can be placed in frame buildings as well as in those made of brick or stone. The flue B may be built up of sheet-metal pipes, or it may be wholly built up of brick or stone.

Of course to buildings yet to be erected this invention is most conveniently applicable.

Fig. 3 shows also a means of introducing fresh air into a room thus ventilated. For this purpose I place a box, H, of sheet metal or the like, between the floor-beams of the room, and lead this box into a vertical flue, I, which communicates with the room through a suitable register. Fresh air is supplied to the box H from the outside by suitable connection. The register *g* of the air-flue I should preferably be near the ceiling of the room, so that the fresh air which enters through this register *g* will be mixed with the heated upper stratum of air in the room, entering the latter in the

same ratio and to the same extent as the foul air disappears through the flue B.

Figs. 5 and 6 show face and side views of flues that can be set into buildings already constructed, for the purpose of introducing therein my improved system of ventilation. In Fig. 6 it is shown that these flues may be used to even ventilate adjoining rooms on the same floor—that is to say, apertures, *i*, leading into the backs of these flues will carry away foul air from rooms that adjoin those which communicate with the fronts of said flues.

I claim—

1. The combination of the wall A and flue B with the boxes C D, the boxes being constructed to incline upward, and being narrower on the inner than on the outer sides, substantially as herein shown and described.

2. The combination of the wall A, box C, and flue B with the gate *a* and indicator-wheel *f*, substantially as herein shown and described.

3. The combination of the wall A and flue B, said wall having one or more passages that lead into said flue, with the air-heater E and indicator-wheels *f f*, substantially as and for the purpose herein shown and described.

HENRY VOLLWEILER.

Witnesses:

HARRY M. TURK,

WILLY G. E. SCHULTZ.