G. R. BARKER.

Ventilators for Buildings.

No. 155,406. Patented Sept. 29, 1874.

Fig. 1.

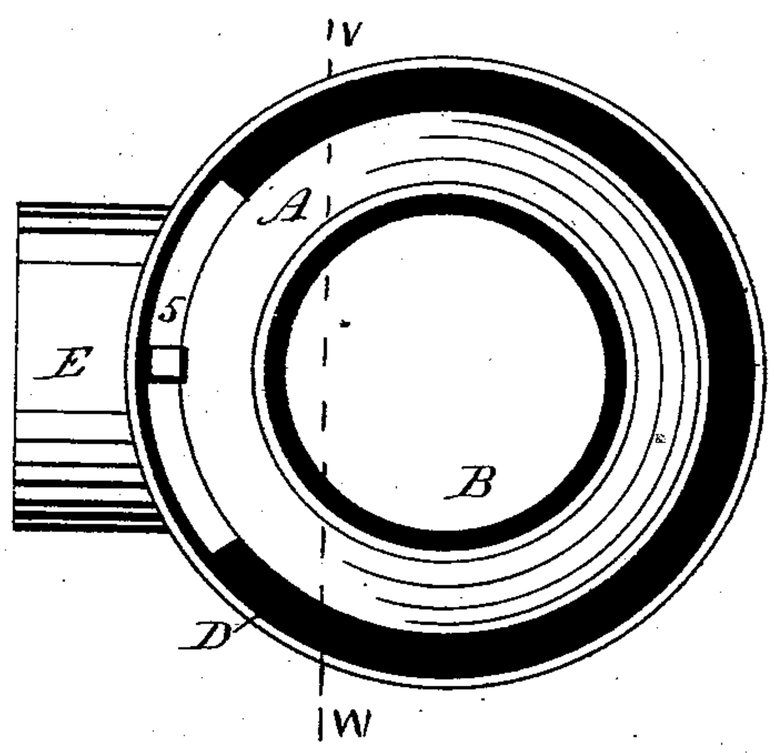


Fig. 2.

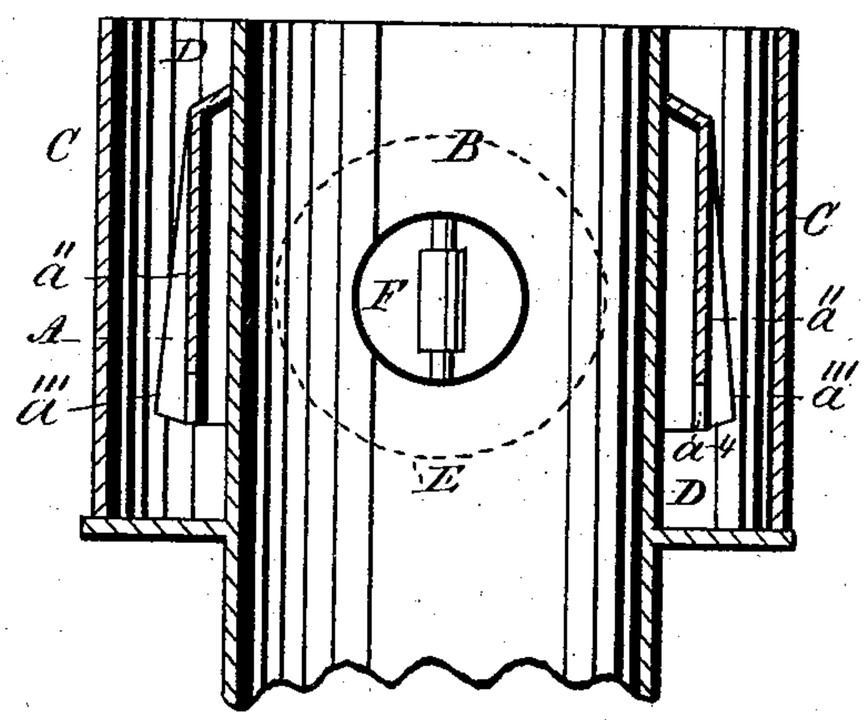


Fig. 3.

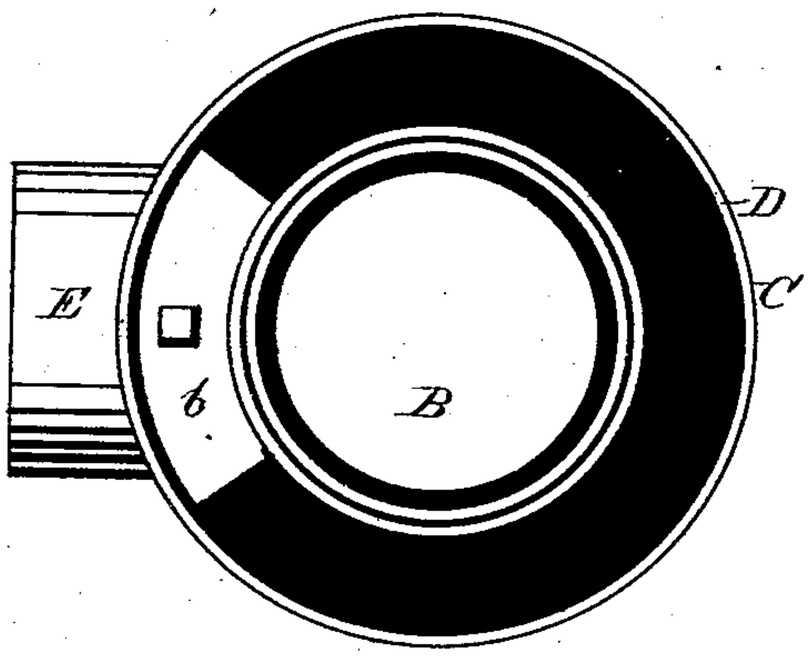
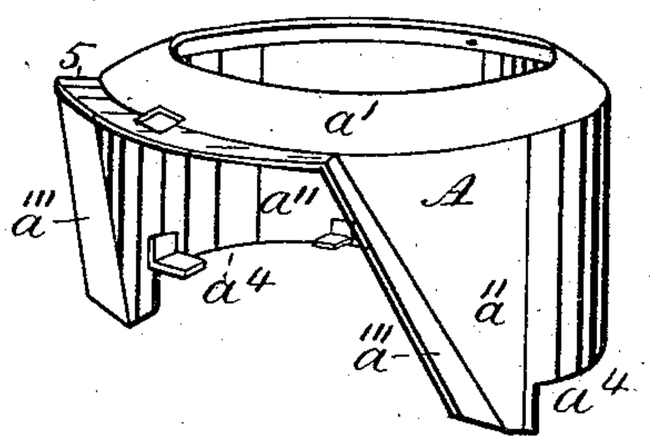


Fig. 4.



Witnesses:

Wm H. Morison.

George Noble, Jr.

Inventor:

George R. Barker;

per Benj Morison, atty.

UNITED STATES PATENT OFFICE.

GEORGE R. BARKER, OF GERMANTOWN, PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN VENTILATORS FOR BUILDINGS.

Specification forming part of Letters Patent No. **155,406**, dated September 29, 1874; application filed March 28, 1874.

To all whom it may concern:

Be it known that I, GEORGE R. BARKER, of Germantown, in the city of Philadelphia and State of Pennsylvania, have invented an Improvement in Ventilators for Buildings, of which the following is a specification:

My improvement relates more especially to the combined hot-air floor register and ventilator for which Letters Patent of the United States, No. 143,868, dated October 21, 1873, were granted to me.

The object of my present invention is to render the said combination more effective for the purpose of ventilation by protecting the hot-air-discharging pipe from immediate contact of the cold vitiated air as it (the latter) enters the annular or surrounding space, through which it passes to the outlet-flue under the floor, and at the same time afford a warming annular space around, or nearly around, the hot-air-discharging pipe, which will warm and consequently increase the exit-draft of the vitiated air; and this I accomplish by the construction and arrangement of an annular partition between the hot-air-discharging pipe and the surrounding casing, whereby the vitiated air is caused to descend to the bottom of the said partition before it can rise in contact with the hot-air pipe and pass to the outlet-flue under the floor on its way to the stack or any suitable ventilating-flue warmed by the smoke-flue of escape.

Referring to the accompanying drawings, Figure 1 is a plan or top view of my improved ventilating-register, the perforated covering-plates being removed for the purpose of exposing the interior. Fig. 2 is a vertical section of Fig. 1, showing the interior of the part on the left-hand side of the dotted line *v w* of the latter figure. Fig. 3 is a plan view corresponding with Fig. 1 without the annular partition shown in the said Fig. 1. Fig. 4 is a perspective view of the annular partition detached.

All the parts shown in the Figs. 1, 2, and 3 are the same as those shown and described in my said patent of October 21, 1873, excepting the partition A, B being the hot-air pipe, C, its inclosing-case; D, the annular space; E, the exit-pipe for the vitiated air; and F, the valve for turning the hot-air in B into the flue E when the register over the mouth of B is closed. In the absence of the annular partition A, (see Fig. 4,) and as applied, (see Figs. 1 and 2,) it will be seen that the vitiated air, being generally cool, would, on its entrance into the annular space D, impinge directly against the hot-air pipe B and escape through the exit-pipe E without becoming sufficiently warmed by the hot-air pipe B to materially increase the draft through the said annular space D, which becomes a matter of importance to be provided against in buildings in which there is not a ventilating-flue within, or warmed by, the chimney of the furnace; and this provision is the object of my present invention, which consists, substantially, of an annular or partly annular partition shown in Fig. 4 detached and in Figs. 1 and 2 attached. It consists of a downward-sloping annular top plate, *a'*, which fits closely around the outer side of the hot-air pipe B at a point an inch or two below the open mouth of the hot-air pipe, with its perimeter or outer edge extending outward over about half the width of the annular space D. (See Fig. 1.) The sides *a''* of this partition form part of a hollow cylinder, which has its upper end secured, in an air-tight manner, to the outer edge of the top plate *a'*, so as to leave an opening at one side of sufficient width and height to clear the opening in C, which allows the vitiated air to escape into E, and also an open space, a^4, of about an inch or more, between its bottom edge and the bottom of C. Between the two edges at the sides of the said opening in A and the corresponding open space in the side of C, two sloping partitions, *a''' a'''*, are secured, respectively, so as to cut off direct communication at the parts between the space formed between *a''* and C, except at the extreme lower ends of *a'''*. The upper ends of the sloping partitions *a''' a'''* are connected together by a flange, 5, which fits down accurately upon the plate 6, through which the stem of valve F passes, the said stem of the valve passing up through the flange 5 also. (See Figs. 1, 3, and 2.)

It will be seen that the said partition A forms an annular or nearly annular division-plate in the space D, which compels the vitiated

air that enters the said space to descend to the bottom edge of said division-plate before it comes into contact with the hot-air pipe B, and being warmed thereby in the space between it and the partition-plate A an increased draft will be produced toward the exit-flue pipe E.

I claim as my invention—

The combination, in the floor-ventilator and hot-air register, substantially as described, of the partition A, for the purpose of increasing the exit-draft of the vitiated air through the ventilator.

GEORGE R. BARKER.

Witnesses:

BENJ. MORISON,

WM. H. MORISON.