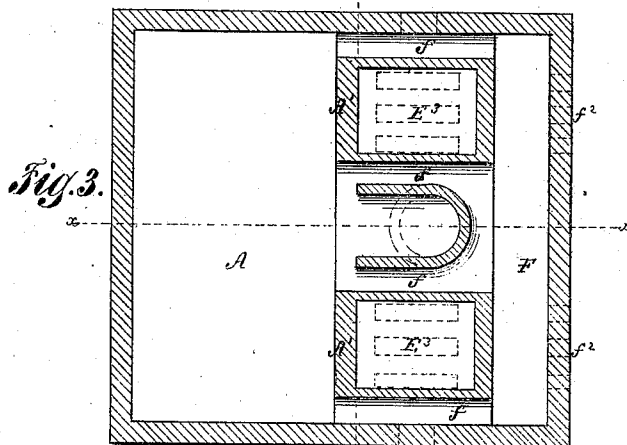
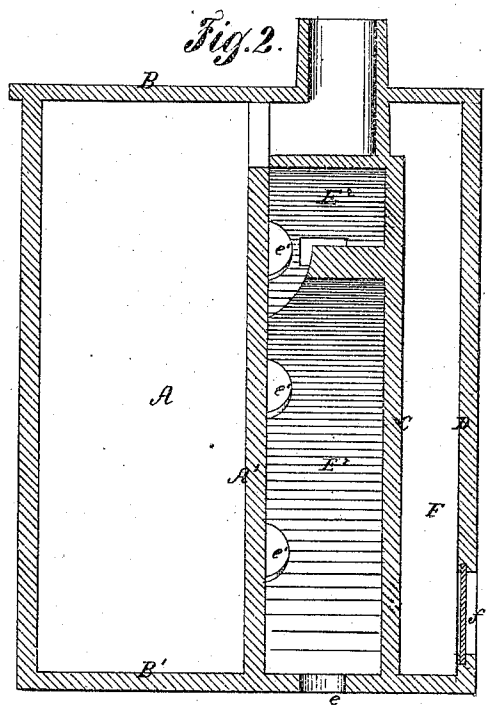
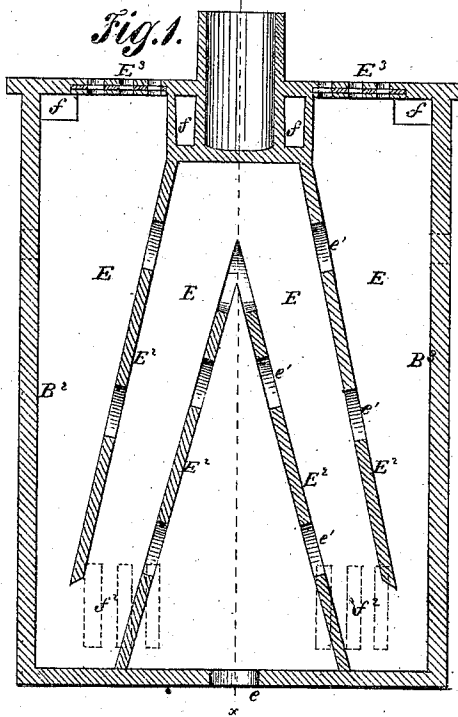


W. M. EAMES.

Stove Ventilating Attachment.

No. 104,286.

Patented June 14, 1870.



Witnesses:
Thos. Artos.
Geo. Kitten

Inventor:
Wm M Eames
per Edson Prot.
Atty.

United States Patent Office.

WILLIAM M. EAMES, OF ASHTABULA, OHIO.

Letters Patent No. 104,286, dated June 14, 1870.

VENTILATING ATTACHMENT FOR STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM M. EAMES, M. D., of Ashtabula, in the county of Ashtabula and State of Ohio, have invented a new and improved Ventilating Attachment for Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Drawing.

Figure 1 is a vertical sectional elevation, taken through the fresh-air chamber on the line *zz* of fig. 3; Figure 2 is a central vertical section, taken on the line *xx* of fig. 3; and

Figure 3 is a plan view with the top of the stove removed.

This invention relates to an improved ventilating-attachment, to be applied to stoves, and has for its object to provide the means for carrying foul and impure air off through the stove-pipe or chimney, and also to supply the room with fresh external air; and to this end

My invention consists in certain peculiarities of construction, whereby fresh cold air may be brought into a chamber adjoining or connected with the stove through a pipe connected with said chamber, and laid under the floor and through the wall or walls of the building, to a point connecting with the external air, the air, when received in said chamber, being heated, and thence admitted to the room or apartment through automatic or stationary registers, as the case may be, at the top of said chamber; and

It also consists in a second chamber, having a register for the admission of vitiated air, which, rising to the top of the chamber, is admitted through flues into the fire-box of the stove, and is then carried off up the stove-pipe or chimney with the products of combustion, all of which will be hereinafter more fully explained in its construction and mode of operation, in the following specification and claim.

Similar letters of reference indicate identical parts in each of the figures.

In the annexed drawing forming a part of this specification—

A represents the body of a stove.

A', the posterior side, back of which my ventilating-attachment should be attached, as well for its convenience as for the healthfulness of the air.

B refers to the top, and B' to the bottom, while B² and B³ refer to its sides.

Where the castings of a stove are made with the view of attaching my improved ventilating-apparatus thereto, the top, bottom, and sides, as also the partitions C and D, in fact, all the parts, may be cast

with the other parts of the stove, but they may be constructed separately, in order that they may be attached to stoves already manufactured, in which case they can be made of cast or sheet iron, or any other material capable of withstanding the required heat.

Two apartments or chambers E F are formed back of the stove proper by the partitions C D.

The chamber E has an aperture, *e*, that connects with a pipe which serves as a conduit for cold or fresh air, it being laid under the floor and through the partitions or walls of the house, and connecting with the external air.

This supply-pipe should have an elevation of three or four feet at its outer end, in order to obtain air of the proper humidity.

For economy and the more effectual heating of the air, I arrange a series of partitions E² E³ within the chamber E, above the fresh-air-inducting tube, as clearly shown in the drawing; the first in the form of a cone, and extending upward about two-thirds the height of the chamber immediately over the air-inducting tube, and having air-escapes *e' e'*. The second series is precisely like the first, except that the upper ends join the stove at the lower terminus of the stove-pipe, and extend downward to a point about even with the top of the registers.

ff represents the flues, which lead from the vitiated-air chamber F to the fire-box.

The register E³ E³ may be made to have a lateral motion, by which to govern the admission of freshly-tempered air to the apartment, or it may be made to open upward by the mere action of the heated air, or any form of register may be employed.

The chamber F, for the reception of vitiated air made unwholesome by the respiration of the individuals occupying the apartment, and from numerous other causes, is received through the register *f*², which, coming in contact with heated portions of the stove, rises, passing through the tubes *ff* into the fire-chamber of the stove, and thence up the chimney, its ascent being greatly accelerated by the immediate draught from the fire-box to the chimney.

The most recent demonstrations of scientific men, who have been giving their attention particularly to the subject of heating and ventilating dwellings, concert-halls, and the like, have shown that the greatest amount of power exerted upon the air should be at the point of discharge rather than at the point of induction, for it is said that is easier to force air from an apartment than it is to force it in.

The impure air being forced out on one side, will cause the fresh air to flow in on the other side of its own motion. With this view I have so arranged that the greatest force shall be exerted to discharge the impure air.

A thorough system of ventilation requires not only that the vitiated air should be completely removed, but that it should be removed as fast as it is vitiated, that the inlet and outlet should always be kept open, especially where large audiences are gathered.

By my improvements a continuous circulation of air is secured, viz., the egress of vitiated air and the ingress of external air.

The advantage of having a chamber for warming the air is, "that, by admitting cold air directly into an overheated room, not only are the occupants suddenly rendered uncomfortable, and their health endangered, but the moisture in the air will, by being suddenly cooled, be deposited on the furniture and ornaments of the apartment, to the injury of property."

With my arrangement the air is properly warmed, and its relative humidity is not impaired, as it is when it passes over a red-hot surface, in which event the air is "burned," as shown by recent experiments; "hence it is that the increased temperature should be derived from a moderately-heated surface."

I do not claim the application of heat to vitiated or

impure air, by means of which motion is imparted to it and its discharge effected; neither do I claim passing external air over a heated surface, to warm it before its admission into an apartment for use; but,

Having thus described my invention,

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

The means herein described for introducing external air into an apartment or room, through an air-tube connecting with a drum or chamber, with the partitions E² E², for the distribution of the air over its heated surface, attached to the body of a stove, and having registers or outlets, substantially as shown and described, and for the purpose specified.

In testimony whereof I have signed my name to this specification, in the presence of two attesting witnesses, this 26th day of March, 1870, at Ashtabula, Ohio.

WM. M. EAMES.

Witnesses:

THEODORE HALL,
EDGAR HALL.