(No Model.)

W. M. BRINKERHOFF.

VENTILATING ATTACHMENT FOR STOVES.

No. 346,717. Patented Aug. 3, 1886.

Fig. 1.

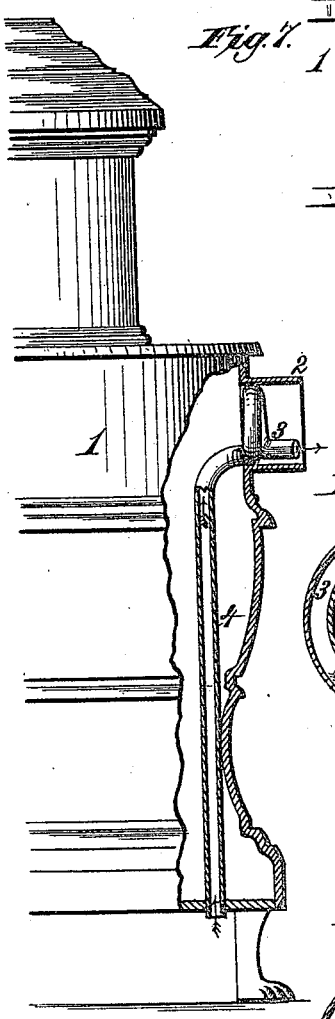


Fig. 7.

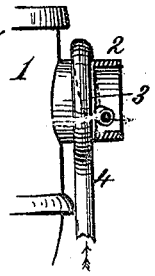


Fig. 2.

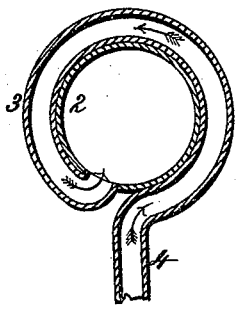


Fig. 3.

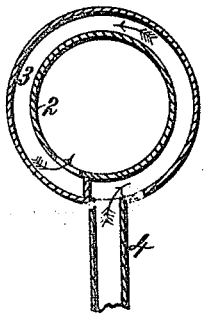


Fig. 4.

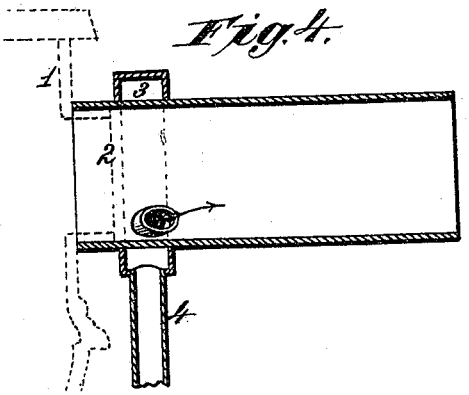


Fig. 5.

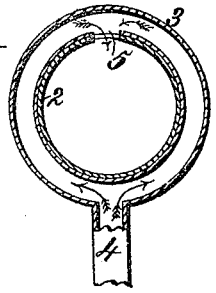
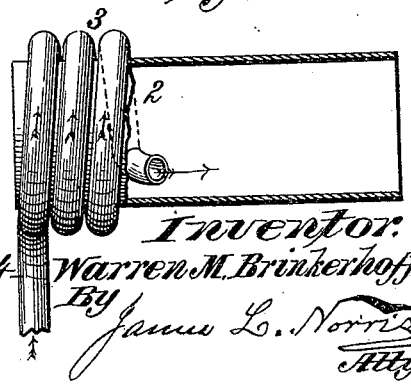


Fig. 6.



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Dennis Sunby.

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UNITED STATES PATENT OFFICE.

WARREN M. BRINKERHOFF, OF AUBURN, NEW YORK.

VENTILATING ATTACHMENT FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 346,717, dated August 3, 1886.

Application filed March 25, 1886. Serial No 196,560. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. BRINKERHOFF, of Auburn, in the county of Cayuga, in the State of New York, have invented certain new and useful Improvements in Ventilating Attachments for Stoves, of which the following is a specification.

My invention relates to ventilating attachments for stoves, and the purpose thereof is to provide a construction whereby the required length of air-duct may be exposed to the heat to generate a strong ascending current in the ventilating-passage without carrying the heating portion of said duct beyond or any great distance beyond the wall of the stove. It is also my purpose to provide an air duct or passage so arranged as to receive throughout a portion thereof the heat developed by the stove, whereby an ascending current is generated when the portion exposed is arranged within a limited area comparatively to the length of said duct, the arrangement being such as to avoid obstruction of the draft-space within the same. It is my further purpose to combine an air duct or passage with the section of smoke-pipe which is adjacent to the stove in such manner that said duct may receive the heat imparted by the products of combustion passing through said pipe at a point near the stove where the temperature is highest, the relative arrangement of the parts being such that the length of duct necessary for the generation of a ventilating-current is combined within a comparatively limited space, said duct being advantageously exposed to the heat, and its weight being sustained by the smoke-pipe or its connections at or near the point where the latter unites with the stove.

My invention consists in the several novel features of construction and combinations of parts hereinafter fully described, and definitely pointed out in the claims annexed to this specification.

Referring to the drawings forming part of this application, Figure 1 is a view, partially in elevation and partly in vertical section, illustrating the application of my invention in one form to a stove. Fig. 2 is a transverse section showing the air-passage and that portion of the pipe next to the stove and illustrating one method of uniting or combining the two. Fig. 3 is a similar section upon the line X X, Fig. 4. Fig. 4 is a central vertical section taken longitudinally of the section of pipe next to the stove, showing one manner of combining my invention therewith. Fig. 5 is a transverse section showing a modification of the construction illustrated in Figs. 2, 3, and 4. Fig. 6 is a central vertical longitudinal section of the section of smoke-pipe next to the stove, showing a modification in the manner of attaching or combining the air-passage. Fig. 7 is a view, partly in elevation and partly in section, of a part of the stove, together with a portion of the section of pipe engaging therewith, showing a modified arrangement of the parts shown in Fig. 1.

My present invention is an improvement upon that shown, described, and claimed by me in Letters Patent of the United States No. 339,966, dated April 13, 1886, wherein I have covered the combination with the stove for heating apartments of an elbow having an air duct or passage which follows the wall of said elbow, and lies adjacent thereto and discharges into the elbow or smoke-pipe at one end, and at the other extremity receives the air taken from a point near the floor and having comparatively low temperature, besides being mingled with carbonic-acid gas and other injurious or poisonous vapors, whereby the cold lower strata of air and the intermingled gases are carried off and the temperature of the apartment equalized.

In the annexed drawings, the reference numeral 1 designates the stove, which may be of any known or convenient construction. The products of combustion are conveyed from the stove by a section of smoke-outlet, 2, of any suitable form or construction, a straight pipe being illustrated in the present case, though I do not limit my invention to the employment of such a form. Combined with the outlet 2 is a continuation of the ventilator-passage 4, (designated in the drawings 3,) which follows the wall of said outlet, and may form either a complete or a partial annulus, or a complete or a partial spiral, as the case may be; or, when the ventilator-passage is arranged within or attached to the stove, it may be so placed as to derive sufficient heat from the fire-pot or

stove-plates to generate an ascending air-current. One end of this passage discharges into the smoke-outlet, and the other end receives air taken from a point outside the stove and near the floor by the lower part of the ventilator-passage, which may be placed inside or outside the wall of the stove. The air-passage may be arranged either inside or outside the smoke-outlet 2, and this portion thereof may, as already stated, consist of a simple annulus, either complete or incomplete, as shown in Figs. 1, 2, 3, 4, 5, and 7, of a spiral, as in Fig. 6. It may also consist of a separate duct or pipe attached to or upon the wall of the smoke-outlet in any manner, or it may simply lie or be held adjacent to the outlet, or it may be formed integral with the wall of the smoke-outlet. Again, the discharge end of the air-passage may simply open into or through the wall of the smoke-outlet, or it may be slightly projected within the same, and may be turned in the direction of the draft-currents, as shown in Fig. 6. Where the annulus form of air-passage is used, it may in some cases be found desirable to construct it as shown in Fig. 5, wherein the ascending air-current passes on both sides of the outlet 2 and unites at a common discharge-opening, 5, where the air enters the smoke-outlet. This form of construction, as well as that shown in Figs. 3 and 4, may be applied to an internally-arranged passage without substantial char.

As already stated, I may apply the portion 3 of the air-passage inside or outside of the smoke-outlet, and in any of the forms shown or in any equivalent thereof. The form shown in Fig. 1 is deemed very effective, and in many cases preferable to other constructions, as the turn of air-passage near the entrance to the smoke-outlet is surrounded by the escaping hot products of combustion, and the air within the passage is quickly and highly heated at that point, thus insuring a constant and effective draft. By my arrangement the weight is sustained at or near the point where the smoke-outlet receives its strongest support, and by giving the air passing the annular or spiral form described a sufficient length thereof is exposed to the heat of the stove, so that an ascending current is not only generated, but is maintained under all circumstances without materially diminishing the draft. At the same time that portion of the air-passage exposed to the heat is located within a comparatively limited area or section of pipe, in place of being materially extended longitudinally through the same. In this manner the construction is simplified, the air-passage receives the same or nearly the same degree of heat at each point, and the draft-space is not necessarily obstructed. It is unnecessary to specify that the air-passage may be circular in cross-section, or of any other form. By extending the same laterally—that is to say, making that diameter which is parallel with the axis of the stove or outlet very great comparatively to the other diameter—the same effects may be obtained as if an extended spiral were employed.

Having thus described my invention, what I claim is—

1. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the outer air at its lower end and discharging into the smoke-outlet of the stove at its upper end, the said passage diverging out of a direct course and traversing a greater distance than the length of the parts of the stove or its connections adjacent thereto, the whole of the diverging portion of said passage lying in close proximity to the wall of the stove or its outlet, substantially as described.

2. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating at its lower end with the outer air and discharging into the smoke-outlet within a short distance of the stove, said ventilating-passage being provided intermediate its end with an annular portion, substantially as described.

3. The combination, with a stove, of an annular passage lying adjacent to the walls of the smoke-outlet, and a ventilating-passage communicating with the outer air at its lower end, and with the said annular passage at its upper end, the said annular passage also communicating with the smoke-outlet within a short distance of the stove, substantially as described.

4. The combination, with a stove, of an annular passage lying adjacent to the walls of the smoke-outlet, and a ventilating-passage communicating with the outer air at its lower end, and with the said annular passage at its upper end, the said annular passage communicating with the smoke-outlet on the side opposite the entrance of the ventilating-passage, substantially as described.

5. The combination, with a stove, of a ventilating-passage separate from the flues of the stove, communicating with the air at its lower end, and rising therefrom and discharging into the smoke-outlet of the stove, the said passage being provided intermediate its ends with a return portion, the direct and return portion lying adjacent to the wall of the stove or smoke-outlet, substantially as described.

6. The combination, with a stove, of a ventilating-passage communicating with the open air at its lower end, the said passage at its upper end being provided with an annular or coiled portion lying adjacent to the walls of the smoke-outlet of the stove and discharging into the same, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

WARREN M. BRINKERHOFF.

Witnesses:
DEXTER A. SMITH,
G. C. PEARSON.