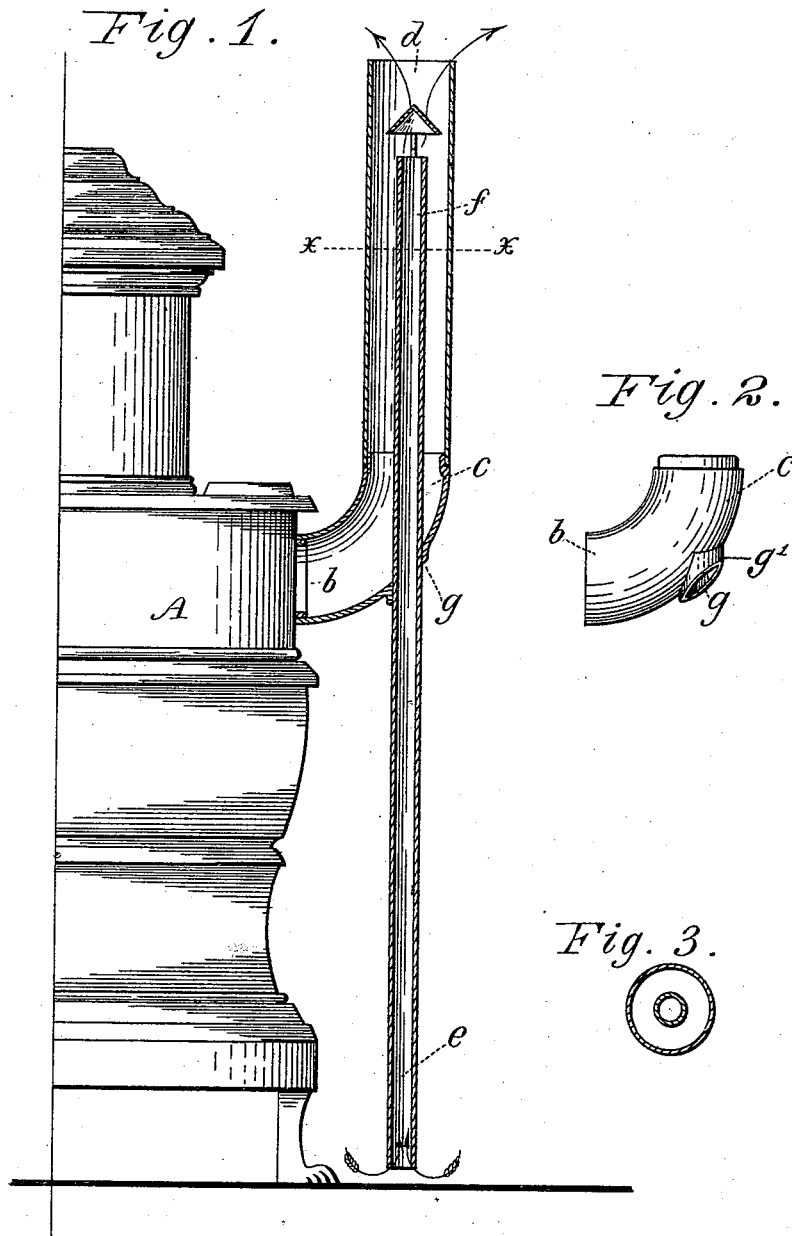


(No Model.)

W. M. BRINKERHOFF.
VENTILATOR.

No. 345,107.

Patented July 6, 1886.



Witnesses:

Frank R. Bachman
W. Richardson

Inventor:

Wm M. Brinkerhoff
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UNITED STATES PATENT OFFICE.

WARREN M. BRINKERHOFF, OF AUBURN, NEW YORK.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 345,107, dated July 6, 1886.

Application filed December 26, 1885. Serial No. 186,709. (No model.)

To all whom it may concern:

Be it known that I, WARREN M. BRINKERHOFF, of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Ventilators, of which the following is a full and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of a stove or heater, with a view in section of my invention attached thereto. Fig. 2 is a detached elbow, showing the aperture for insertion of the air-pipe; and Fig. 3 is a cross section on line *x x* of Fig. 1.

My invention relates to means for withdrawing air from an apartment by means of the draft of a stove; and it consists in a certain new construction and combination of parts, whereby that result is accomplished, the same being an improvement upon the invention shown in an application for Letters Patent filed of even date herewith, and numbered in serial 186,708.

In the said drawings, the reference-letter A designates a stove of any ordinary or desirable construction, the same having a smoke flue or passage of any ordinary construction, and requiring no description, save as herein-after set forth.

In the wall of the smoke flue or passage is formed an aperture, *g*, of such form and size as to permit the insertion of a pipe, *e f*, which will extend into said passage far enough to derive sufficient heat from the stove to generate an ascending air-current in the pipe *e f*, the latter being extended down below the point of intersection with the smoke flue or passage far enough to draw off the lower cold strata of air and gases which usually lie next the floor. A damper may be used, if desired, whereby the volume of the ascending current may be controlled. The pipe *e f* is preferably rigidly connected to the wall of the smoke flue or passage at the point of intersection therewith.

When fire is in the stove, the heated products of combustion are swept by the draft directly against the pipe within the draft-passage, and the heat is also applied thereto by the ascending current at all points beyond the point where the air-pipe enters the wall of the

draft-passage. An upward current is thus generated, whereby the cold air and deleterious gases are drawn up through the pipe and carried off by the chimney without checking materially the draft of the stove.

It is also the purpose of my invention to so combine the air duct or pipe with the smoke flue or passage that the air conveyed by the former shall not be materially raised in temperature until it passes the point where the smoke flue or passage intersects with the air-pipe. The moment, however, that the air enters that portion of the air-duct which lies within the smoke flue or passage it is exposed to a high degree of heat, whereby a sudden expansion is caused, which creates a strong and rapid draft in both smoke-flue and air-pipe, thus materially increasing the action of each. At the same time, however, the ascending current of cool air tends to retain the two pipes at the point of their intersection and union at a comparatively low temperature, thereby lessening the liability of the pipe to burn out and destroy the close joint between the two.

In my former patent, No. 339,966, dated April 13, 1886, I have shown and described an elbow provided with an air-flue to be used with a pipe either inside or outside of the stove to carry off the foul air of a room. I am also aware that a construction has been patented in which a T-pipe is attached to the collar of stove, and a foul-air pipe of substantially the same size is connected to one arm of the T-pipe, having a reduced extension carried upward and discharging within the smoke-flue; but these constructions I do not claim herein. By this construction and arrangement, also, I avoid the constant expansion and contraction of the metal, by which the joint would speedily be rendered imperfect and liable to crack, and also prevent the pipe from becoming loose at its point of contact with the wall of the smoke-flue. My invention also contemplates the separate construction of the ventilator-pipe. I effect this point by constructing the section of smoke-flue to which the air-duct or ventilator-pipe is connected with an aperture, *g*, having a strengthening projecting shoulder or collar, *g'*, which receives or supports the pipe *e f*.

The shoulder or collar *g'* may extend inwardly or outwardly, or in both directions, and materially aids in strengthening the pipe at the point of connection with the wall of the smoke-flue.

5 What I claim as my invention is—

1. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, and an air pipe or duct rising from a point near the floor, and passing directly through the wall of the elbow, forming a close joint therewith, and communicating with the air at its lower end, and opening at its other within the elbow or smoke-pipe above the point of junction of the air-pipe and elbow, substantially as described.

2. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, and an air pipe or duct of less size than the elbow or smoke-pipe, rising from a point near the floor, and opening within the elbow or pipe above the junction of the elbow therewith, the elbow being provided at the point of junction with an extension or sleeve of about the same size as the air-pipe, and the said air-pipe engaging said extension or sleeve, substantially as described.

WARREN M. BRINKERHOFF.

Witnesses:

FREDERICK I. ALLEN,
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