(No Model.)

B. SUFFRON.

FIRE PROOF VENTILATOR AND HEATER.

No. 457,233. Patented Aug. 4, 1891.

Fig. 1.

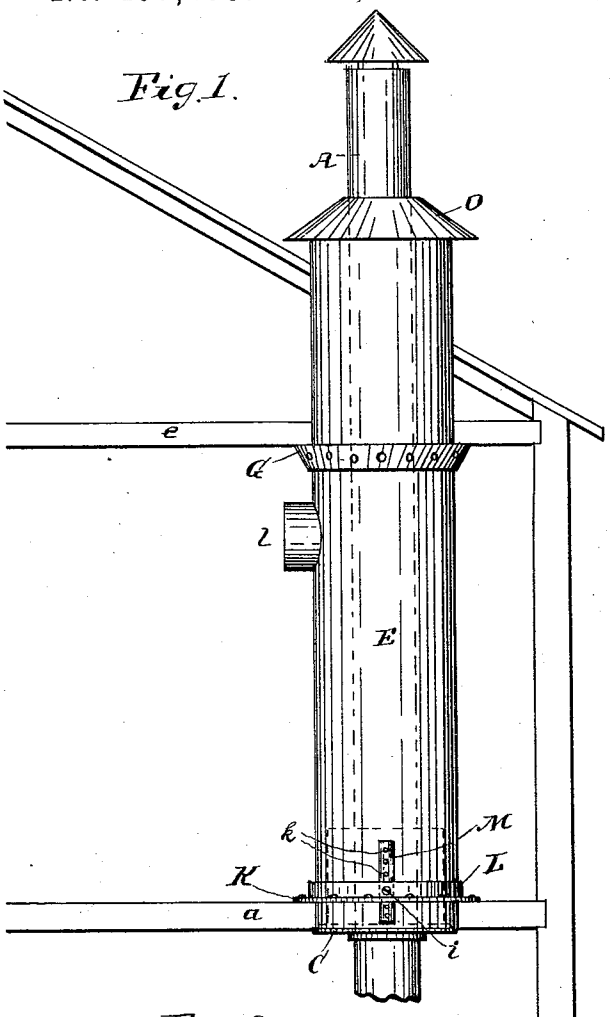


Fig. 2.

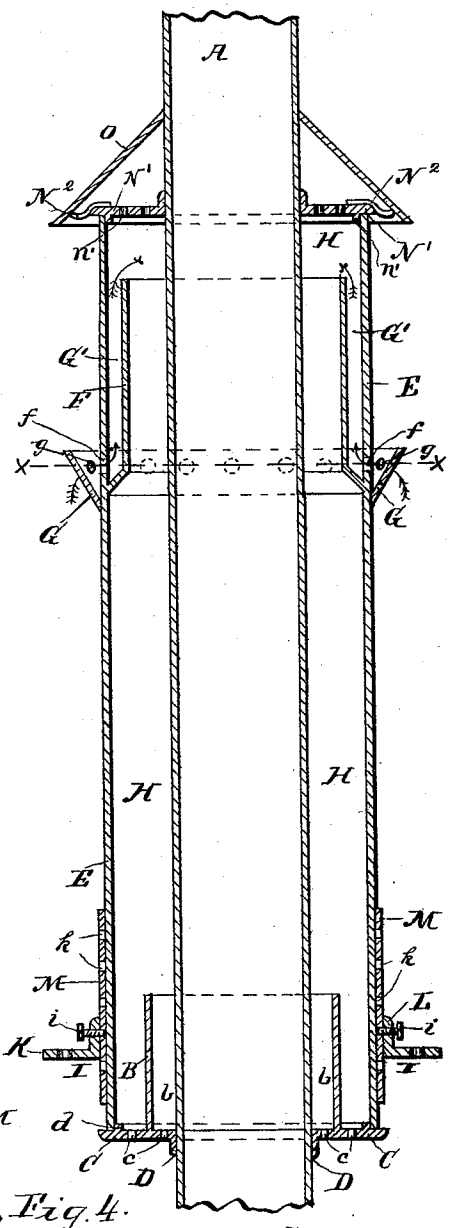


Fig. 3.

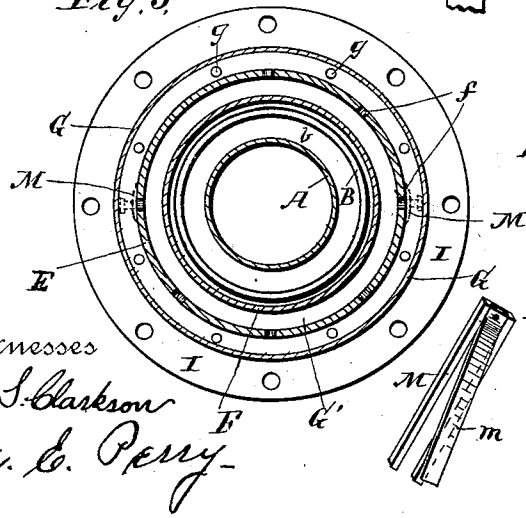


Fig. 4.

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UNITED STATES PATENT OFFICE.

BENJAMIN SUFFRON, OF PEEBLES, OHIO.

FIRE-PROOF VENTILATOR AND HEATER.

SPECIFICATION forming part of Letters Patent No. 457,233, dated August 4, 1891.

Application filed April 9, 1891. Serial No. 388,199. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN SUFFRON, a citizen of the United States, residing at Peebles, in the county of Adams and State of Ohio, have invented certain new and useful Improvements in Fire-Proof Ventilators and Heaters, of which the following is a specification.

This invention relates to stoves and furnaces, and particularly to the class of pipes and flues.

The object of the invention is to provide a metal flue or chimney for house or other buildings to take the place of brick or stone flues or chimneys so commonly used.

A further object of the invention is to provide a combined smoke-stack or chimney, a heating-flue, and ventilator for houses and other buildings which will heat and ventilate each floor separately, and means for adjusting the same therein.

A still further object of the invention is to construct a ventilating-flue and heater with an air passage or chamber between the outer casing and inner lining, and to furnish a continuous heating-flue and chimney from one floor to the other.

The invention consists in the novel construction and arrangement of parts, as will be hereinafter fully described, and set out in the claims.

In the accompanying drawings, forming part of this application, Figure 1 represents two stories of a house with my improved device in position. Fig. 2 is a vertical section of such device. Fig. 3 is a cross-section thereof, taken on the plane indicated by the dotted line *x x*, Fig. 2. Fig. 4 is a modification of my adjusting-plate.

The same letters of reference denote the same parts throughout the figures.

A denotes the smoke-stack or chimney formed all in one piece and extending from the stove or furnace, providing heat to the outside of the roof of a building. Where the smoke-stack A passes through the first floor *a* it is surrounded by a thimble B, leaving a space *b* between. The lower end of this thimble B is provided with a flange C, having perforation *c* and a central aperture D, through which the smoke-stack A closely fits.

The flange C has a shoulder *d*, over which fits the lower end of an outer casing E, which is thereby supported. This thimble B is of sufficient length to extend clear through the ceiling or joist, and the stack is thereby made entirely fire-proof.

The casing E extends from the flange C at the first floor *a* throughout the entire building, and at all the floors above the first floor a middle wall F is secured on the inside of the casing C, just below the ceiling, and extends upward between the casing and smoke-stack beyond the floors *e*. At the juncture of the wall F and the casing E are formed in said casing a series of perforations *f*, which are covered by a conical rim or protector G, also having perforations *g*, so as to protect the perforations *f*, and hence the chamber G′, from dirt, &c., and at the same time render the foul air from within the room free exit to the ventilating-chamber G′, and thence to the chamber or flue H. While the interval between the first and second floors is composed of one heating chamber or flue H, formed by the smoke-stack A and casing C, it will be observed that this chamber H acts as a ventilating-chamber as well as a heating-flue, and the apertures being located not in direct contact with such flue, but opening into the ventilating-chamber G′, the impure air from the room is conducted to the outside of the building through the flue H.

I denotes a metal ring having flanges K L, formed integral to each other. The flange K is intended to rest upon the first floor, and the flange L, which surrounds the casing C, has two set-screws *i*, which engage apertures *k*, formed in a plate M, secured on the outside of the casing C opposite each other. These plates are curved in cross-section, so as to conform as near as possible to the circular curvature of the casing C and ring I. By this arrangement the ventilator and heater can be readily secured to floors of different thicknesses by simply loosening the set-screws *i* and adjusting the ring I.

A branch heating-pipe *l* is shown in Fig. 1, extending from the main flue or casing C, by means of which a separate room or hall may be heated.

Referring to the modification shown in Fig. 4, the plate M is slotted throughout its length, and in such slot is located a plate-spring *m*,

secured at one end and the other end left free to be operated upon by the ring I and set-screws *i*. Should the set-screws become loose or lost, the springs will tend to hold the ring in proper position. The smoke-stack A is held in proper place at its top by being passed through a perforated flanged cover N′, having a shoulder *n*′, which rests on top of the casing C. This cover N′ is provided with a series of projections N^2, secured or cast thereon for the purpose of supporting the hood O, which is closely fitted around the smoke-stack A, over the said perforated cover N′, so as to leave an interval or air-passage between the cover and the hood.

I do not wish to be understood as limiting myself to any particular metal for the construction of my device, nor to the exact location of the apertures in the casing, but reserve the right to use any metal found most desirable and to change the location of said apertures so as to effect the best ventilating results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a fire-proof smoke-stack and ventilator, of a casing surrounding the stack and having a middle wall extending inward and upward therefrom so as to form a ventilating-chamber between the casing and the wall, substantially as shown and described.

2. The combination, with the smoke-stack, of the casing surrounding the same and provided with the ventilating-apertures *f*, the casing-cover N′, and the wall F, joined to the casing below the apertures and extending inward and upward so as to form a ventilating-chamber, substantially as shown and described.

3. In a fire-proof smoke-stack and heater, the combination of the casing surrounding the stack throughout its length and provided with ventilating-apertures, a thimble having a perforated flange and a shoulder whereby the casing is supported at its bottom, and a cover provided with a series of projections and resting upon the top of the casing with a hood through which the smoke-stack passes, said hood being adapted to shield the cover and to be supported upon the said projections so as to leave an interval between the hood and cover, substantially as shown and described, and for the purpose set forth.

4. In a combined smoke-stack, adjustable heater, and ventilator, the combination, with the outer casing and the curved plates secured thereto, of a ring having integral flanges surrounding the casing and plates and provided with set-screws, whereby the heater and ventilator is adjustably secured to the stack, substantially as specified.

In witness whereof I hereunto set my hand in the presence of two witnesses.

BENJAMIN SUFFRON.

Witnesses:
J. D. PLATTER,
FRED PLATTER.