

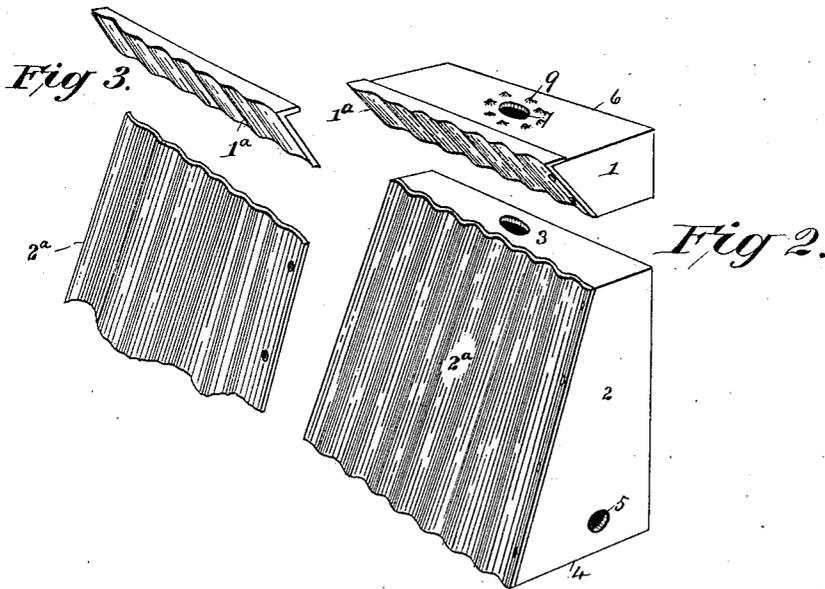
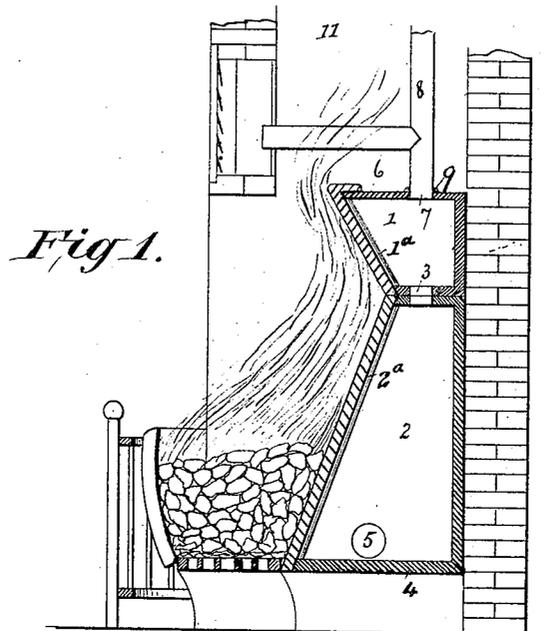
(No Model.)

J. S. DEARDORFF.

HOT AIR GENERATOR FOR FIRE PLACES.

No. 266,613.

Patented Oct. 31, 1882.



*Attest:*

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# UNITED STATES PATENT OFFICE.

JESSE S. DEARDORFF, OF CANAL DOVER, OHIO.

## HOT-AIR GENERATOR FOR FIRE-PLACES.

SPECIFICATION forming part of Letters Patent No. 266,613, dated October 31, 1882.

Application filed May 5, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE S. DEARDORFF, a citizen of the United States, residing at Canal Dover, in the county of Tuscarawas and State of Ohio, have invented a new and useful Improvement in Hot-Air Generators for Fire-Places, of which the following is a specification.

My improvement relates to the class of hot-air generators in which chambers of metal or other material are placed at the rear and upper part of a fire-place for receiving the heat from the fuel and flame and from the products of combustion escaping up the flue.

My invention consists in the arrangement of two chambers of metal or other suitable material, placed one above the other in the back of fire-place, the upper chamber being smaller than the lower, each of said chambers, which are of irregular quadrilateral shape in vertical cross-section, being provided with a removably-attached corrugated front plate, the upper plate having an overlapping upper edge, and the lower edge of the upper plate and the upper edge of the lower plate being beveled, so as to form a tight joint, the said chambers being also provided with suitable openings for the ingress, egress, and passage of air.

My invention further consists in the combination of the two chambers constructed as above stated, the upper chamber being provided with a series of raised projections surrounding the egress opening or openings in its top, for a purpose hereinafter set forth.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of a fire-place with my improvements applied. Fig. 2 is a perspective view of the two chambers detached from their relative positions. Fig. 3 is a similar view, showing the front plates detached from their relative positions.

In the said drawings, 1 and 2 represent chambers, which may be made of wrought or cast iron, or terra-cotta, or other suitable material, but preferably of cast-iron, and rest one upon the other, as shown in Fig. 1, the lower side of the upper and the upper side of the lower chamber being united by one or more

vertical pipes or passages, 3, for passing air from one to the other chamber. Near the broad base 4 of the lower chamber, 2, are one or more inlets, 5, for the inward passage of fresh air.

In or near the broad top of the upper chamber; 1, are any desirable number of openings, 7, from which a corresponding number of flues or pipes, 8, extend upward through the chimney for conducting the heated air to the several apartments of the building, the upper ends of said pipes or flues opening into registers of customary form. For the purpose of keeping the lower ends of these pipes in position the holes 7 are surrounded each with a series of projections, 9, formed in the casting.

Each of the chambers 1 and 2 is of irregular quadrilateral shape, the fronts of which slant in opposite directions from their meeting line. The upper chamber, 1, is smaller than the lower chamber, 2, as shown, and they are provided with the removably-attached front plates, 1<sup>a</sup> 2<sup>a</sup>, respectively. At their meeting edges these plates are beveled, so as to fit closely when the chambers are in position. The upper edge of plate 1<sup>a</sup> is cast with a lapped portion, as shown, which forms a tight joint. The said plates are secured in position by bolts 1<sup>b</sup> passing through holes in the plates and into the body of the chamber, suitable nuts being screwed onto their threaded ends.

The lower chamber is set on a level with the bottom of the grate, as shown, so as to leave a space beneath it for the reception of an ash-pan. The upper chamber rests on top of the lower chamber, as shown in the drawings. The oppositely-slanting positions of the front plates, 1<sup>a</sup> 2<sup>a</sup>, is productive of the most thorough action of the heat from the grate, inasmuch as the fuel rests against the lower plate 2<sup>a</sup> and the upper plate 1<sup>a</sup> projecting out over the fire receives the impact of the ascending currents of air and gases. These plates are corrugated, as shown, to increase their efficiency. The flue or flues 8 are placed in the flue in such manner that the hot air ascending through them does not lose any of its heat, but is kept hot by the gases in the chimney.

It will be seen that my front plates are easily detached and replaced by new ones when they become burned out. The castings of the cham-

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bers are not exposed to the action the fire, as they are incased in the masonry-work of the fire-back.

I am aware that fire-places have been heretofore provided with air-heating chambers set in masonry-work or otherwise, and that it is not new to provide such chambers with removable fronts. Hence I do not claim such features, broadly; but,

Having thus described my invention, what I claim as new therein, is—

1. The chamber 1 of irregular quadrilateral shape in vertical cross-section, and provided with the inlets 3, outlets 7, and the removable corrugated front plate 1<sup>a</sup>, with its overlapping upper edge and beveled lower edge, in combination with the lower chamber, 2, of similar shape to chamber 1, but larger, and provided with inlets 5, outlets 3, and removable corru-

gated front 2<sup>a</sup>, with a beveled upper edge, as shown.

2. The chamber 1, of irregular quadrilateral shape in vertical cross-section, with its removably-attached corrugated front plate 1<sup>a</sup>, having an overlapping upper edge and a beveled lower edge, said chamber being provided with inlets 3 and outlets 7 surrounded by raised projections 9, in combination with the lower chamber, 2, of similar shape to chamber 1, but larger, and provided with inlets 5, outlets 3, and removable corrugated front plate 2<sup>a</sup>, with a beveled upper edge, as and for the purposes set forth.

JESSE S. DEARDORFF.

Witnesses:

JOHN A. HOSTETLER,  
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