

E. A. WOOD.
Apparatus for Heating Buildings.
No. 238,469. Patented March 1, 1881.

Fig. 1.

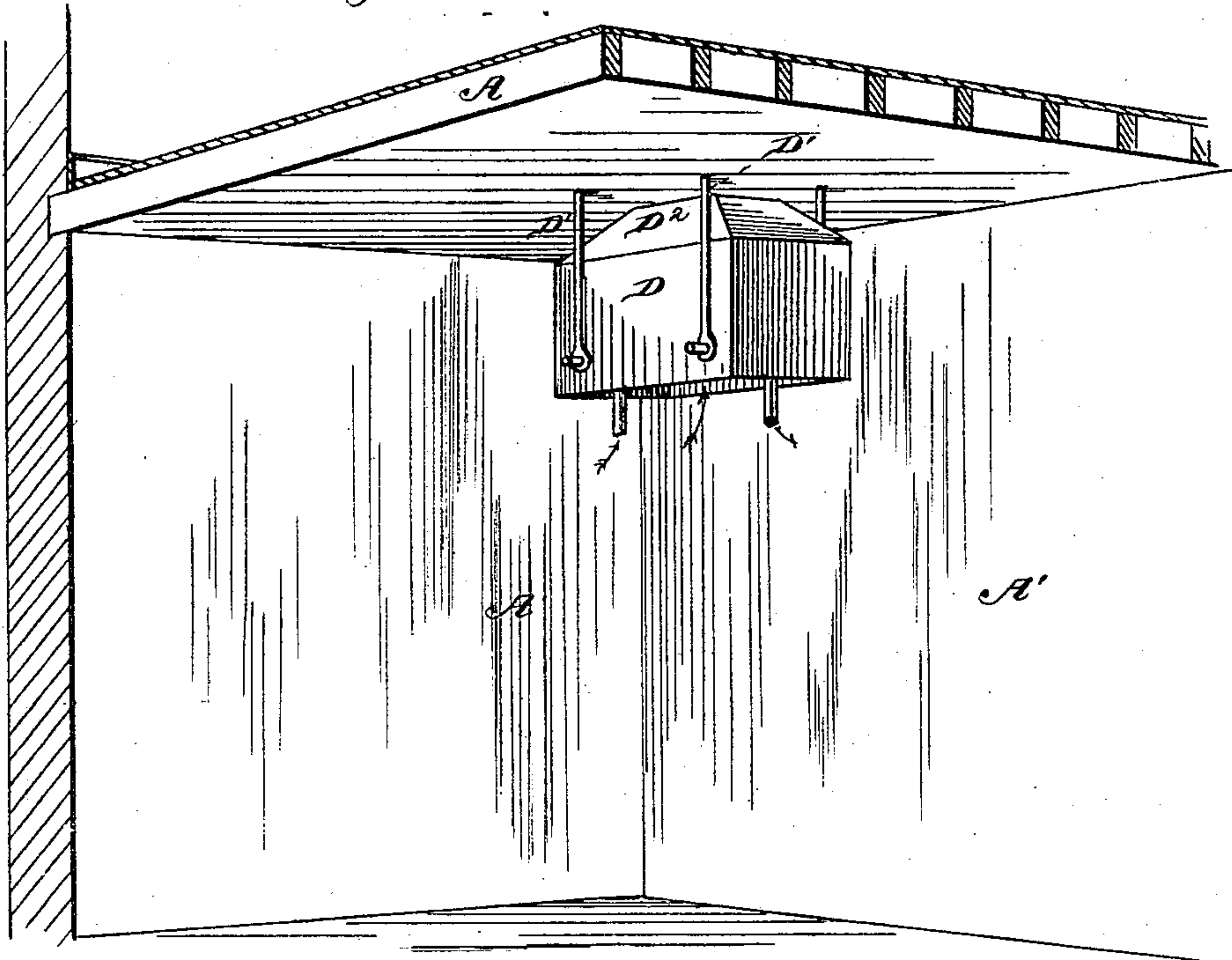
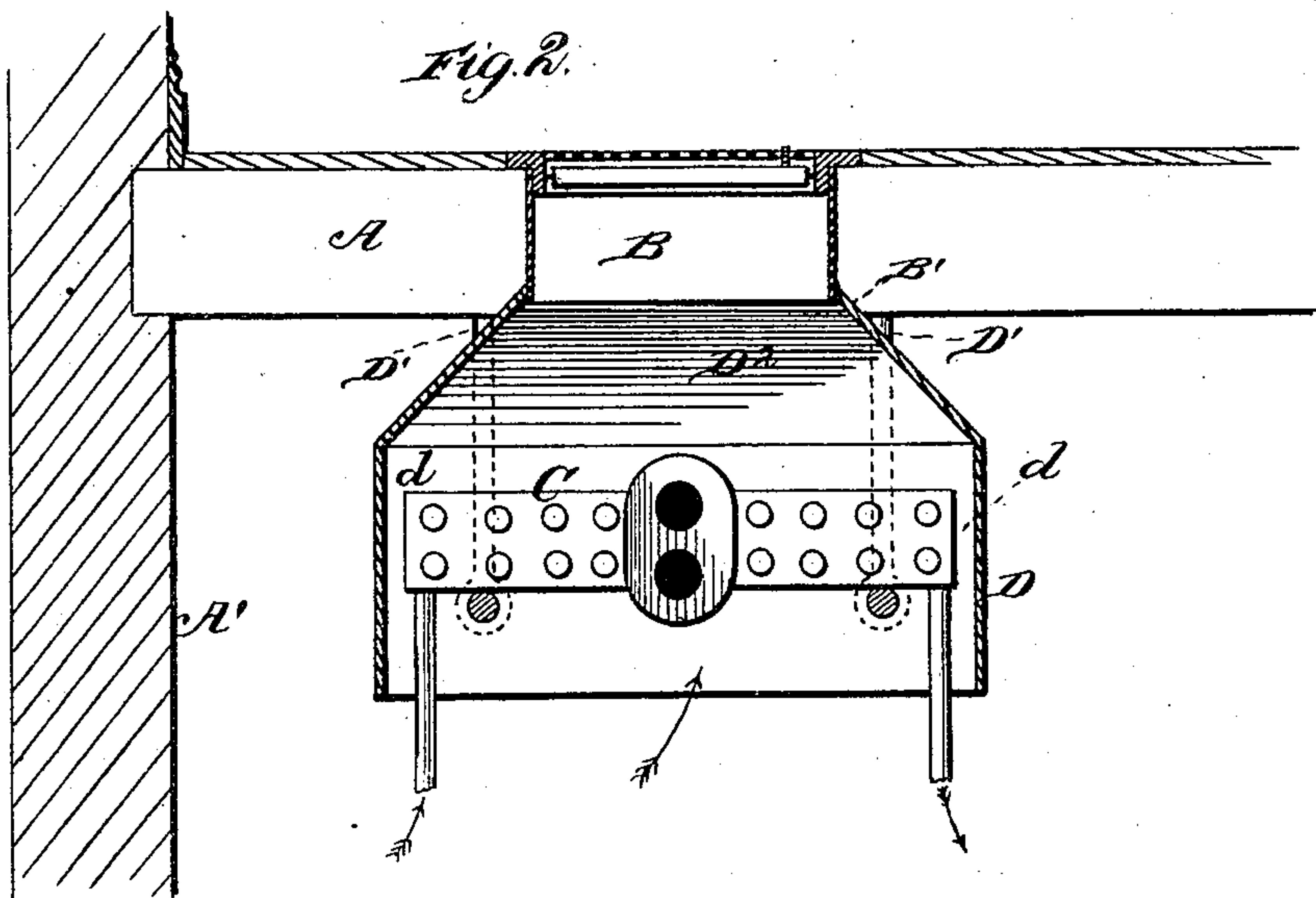


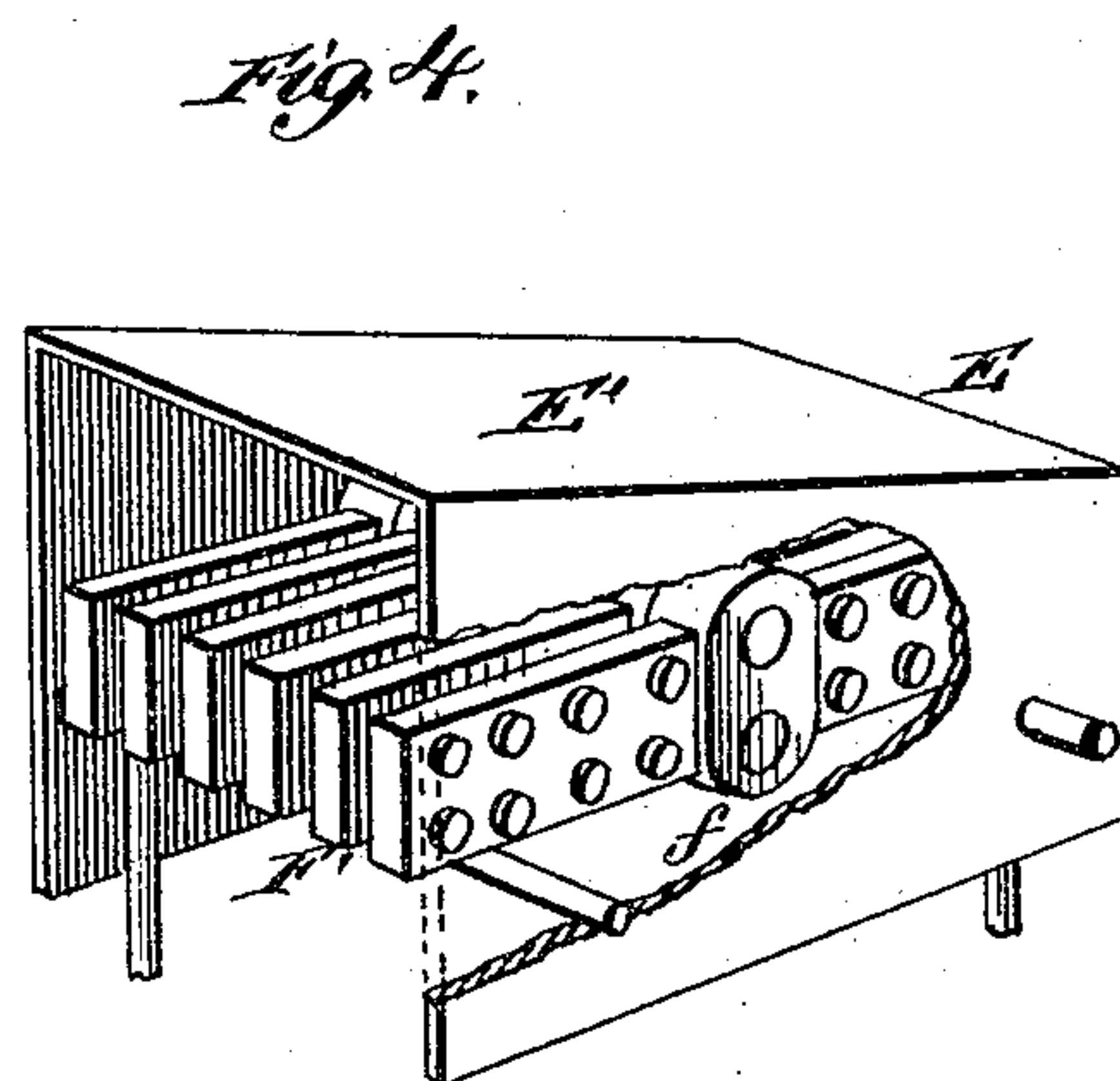
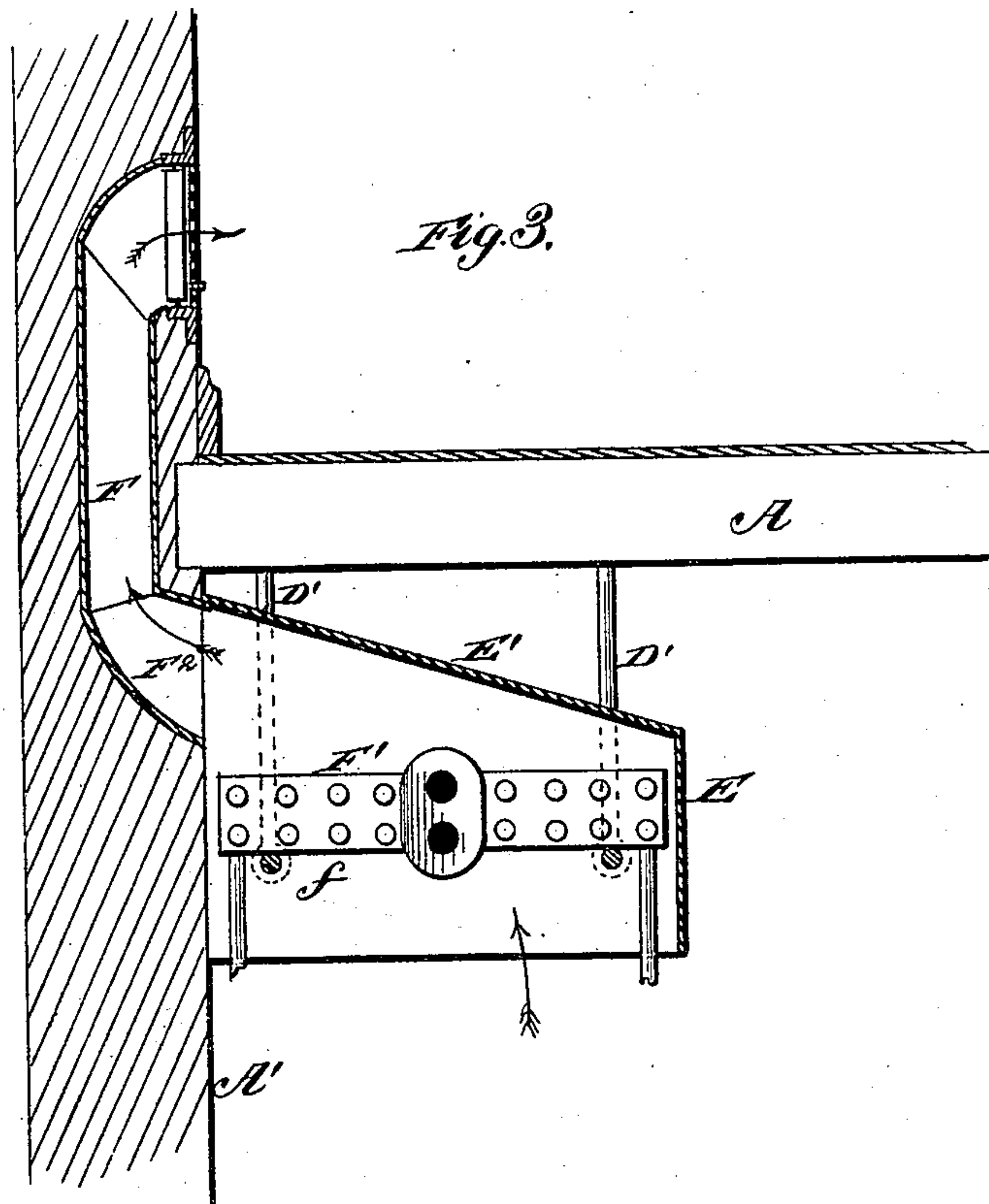
Fig. 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

EDWIN A. WOOD, OF UTICA, NEW YORK.

APPARATUS FOR HEATING BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 238,469, dated March 1, 1881.

Application filed February 9, 1880.

To all whom it may concern:

Be it known that I, EDWIN A. WOOD, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have
5 invented certain new and useful Improvements in Apparatus for Heating Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which
10 it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention has relation to what is known
15 as the indirect method of heating buildings by steam or hot water, and to the apparatus employed therefor. In accordance with that method the radiating coils through which the steam passes are located in a cellar or other
20 convenient place, and surrounded by an air-space inclosed by a casing or box. The air in passing through this space is heated by the steam coils or radiators, and it is subsequently conducted, by a suitable flue or flues and their
25 branch connections, to the various rooms which are to be warmed.

My invention consists in certain improvements in the details of construction in that class of steam or hot-water radiators which
30 are arranged in an air chamber or passage and elevated above the floor of an apartment, and adjacent to the ceiling thereof.

Hitherto such apparatus has been placed almost entirely within an air-flue in a wall, and
35 has been provided with an air-inlet opening at one side, a steam or water chamber being placed at the bottom thereof. Such chamber has had the effect of obstructing, in some degree, the passage of air, and has thus diminished the usefulness of the apparatus.
40

In the construction of my device the casing in which the heat-radiating apparatus is placed is a combination of the register-flue, and is placed at the opening in the wall or ceiling.
45 The casing is made open at the bottom, so that a free, rapid, and unobstructed inflow of air from all sides and from below is assured, and, besides, the top of the casing converges toward the point of discharge, thereby facilitating the passage of the heating-currents of
50 air.

It is obvious that the flue may either pass vertically up through the ceiling of the cellar or into and up through a portion of one of the walls.

In the accompanying drawings, Figure 1
55 represents a perspective view of one of my boxes communicating with a flue which passes vertically through the ceiling, the walls and roof of the cellar being shown in section. Fig. 60
2 represents a vertical section through the middle of said box and the flue. Fig. 3 represents a vertical section through a box connecting with a flue which passes into and up through a part of one of the walls of the cellar. Fig. 65
4 represents a perspective view of the box in detail, showing, where broken away, the inclosed air-space and radiator.

A designates the ceiling or roof of a cellar, and A' the walls thereof.

B designates (Fig. 2) a flue passing vertically up through said ceiling or roof, and supplying heated air to the rooms of a building.

C designates the radiators (Fig. 2) whereby the air for said flue is heated. These radiators consist of coiled tubes or hollow bars in any known and suitable form, which are supplied with heated steam or hot water from a source not shown. Around said radiators, at a distance sufficient to provide an air-space, *d*,
80 is arranged a box or casing, D, which may be suspended from the ceiling A by rods D', or may be upheld by any suitable supports. This box is, as usual, supplied at the bottom with fresh air, and communicates at the top with
85 flue B. The air passing from said bottom through space *d* to the flue above said box is heated by the radiators C. In the construction as hereinbefore described there is nothing new; but the air-boxes hitherto in use have
90 been of rectangular form, just large enough to surround the radiator, and with a flat top, whose angles greatly impede the draft. To insure a more rapid draft, and thereby a greater supply of heated air to the rooms above, I
95 cause the upper part of my box to taper or incline inward and upward at D², whereby the air is directed, without impediment, into the mouth of the flue. This mouth is made to flare correspondingly, as shown at B', for the
100 same purpose.

E designates an air-box (Fig. 3) embody-

ing the same principle as D, but adapted to be used with a flue, F, which passes through the wall instead of the ceiling of the cellar. It incloses air-space f and radiators F' , and
5 its top E' is inclined so as to direct the heated air into the said flue F without impediment. The mouth F^2 of this flue is of a flaring shape, and the course of said flue is first laterally into the wall, then vertically through a portion of
10 the same, and finally back into one of the apartments above. Of course its direction may be varied at will.

I am aware that it is not broadly new to construct hot-air flues with sides converging
15 in the direction in which the air is conveyed. I am also aware that pipes for steam or water have been arranged in an air-flue, the rear wall of which, opposite the hot-air register which is applied to the same, is inclined to-
20 ward such register. I am also aware that a steam-radiator has before been inclosed within an air-chamber, one side and the top of which inclined toward the point of discharge, which was through a vertical wall, and I therefore
25 lay no claim, broadly, to these constructions; but,

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

1. In an air-heating device, the combination 30 of an outstanding radiator, elevated as described, with an inclosing register-flue, said flue being enlarged in an outwardly and downwardly inclined direction, so as to embrace said radiator therein, the supply of air to be 35 heated being admitted to the radiator at the bottom of the same and conducted to the apartment to be heated without being obstructed by rectangular corners, as set forth.

2. The combination, in a steam or hot-water 40 apparatus, of the casing D, elevated as described, having inclined top D^2 D^2 , discharge-passage B, and an open bottom, and the heater C, having inlet and outlet pipes, all constructed as described, and for the purpose set forth. 45

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

EDWIN A. WOOD.

Witnesses:

FRANCIS G. WOOD,
MORRIS H. AYLSWORTH.