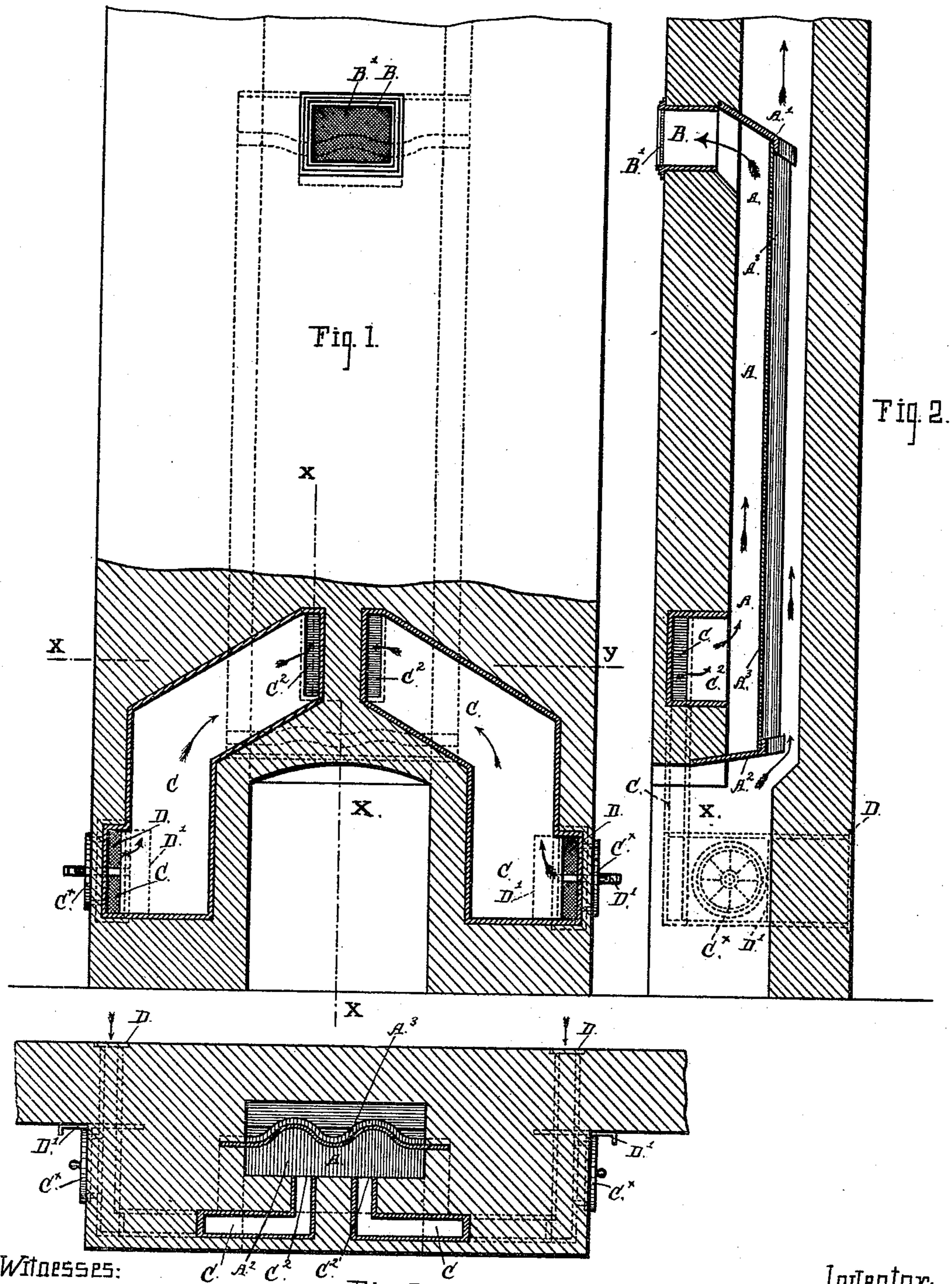


(No Model.)

W. TARP.
APPARATUS FOR HEATING AND VENTILATING ROOMS.
No. 464,698. Patented Dec. 8, 1891.



Witnesses:

W. Mayer

R. M. Charlton

Fig. 3.

Inventor:

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UNITED STATES PATENT OFFICE.

WALDEMAR TARP, OF SAN FRANCISCO, CALIFORNIA.

APPARATUS FOR HEATING AND VENTILATING ROOMS.

SPECIFICATION forming part of Letters Patent No. 464,698, dated December 8, 1891.

Application filed January 14, 1891. Serial No. 377,759. (No model.)

To all whom it may concern:

Be it known that I, WALDEMAR TARP, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Apparatus for Heating and Ventilating Rooms, of which the following is a specification.

My invention relates to improvements in heating and ventilating apparatus for houses; and it consists in the construction and arrangement of passages and dampers, hereinafter described, and pointed out in the claims.

The following description explains the nature of my said invention and the manner in which I proceed to construct and carry out the same, the accompanying drawings, that form part of this specification, being referred to by letters.

Figure 1 represents the front of a chimney projecting into the room of a building from the floor-line up to or nearly to the ceiling, and with the front face on each side of the fire-place broken away to show the arrangement of the air-passages. Fig. 2 is a vertical section through Fig. 1 at about the line xx . Fig. 3 is a horizontal cross-section taken through Fig. 1 at the line xy .

It will be seen that the heating-chamber A and the cold-air flues or passages are best formed at the time of building the chimney; but the apparatus can be applied for operation in chimneys already built by taking down the front wall and rebuilding it.

The chamber A is constructed, preferably of sheet metal, by fixing a partition or back plate across a flue back of the chimney-breast, and a corrugated plate is used to increase the amount of heating-surface. Suitable space is left between this corrugated back and the back wall of the flue for free passage of the smoke and gases from the fire below.

X is the breast of the chimney, A' A² the top and bottom plates of the chamber, and A³ the back plate, while A indicates the inclosed air-heating space.

B is a passage through the front wall opening into the room, and B' is a damper or register to reduce the opening or to close it at pleasure.

C C are air flues or passages formed in the brick-work on either side of the chimney, with

mouths c^x at the bottom opening into the room, and openings c^2 at the top communicating with the heating-chamber. One of these passages may be arranged on each side of the fire-place, as shown in Figs. 1 and 3, and where the chimney sets forward into the room the lower ends of the passages are carried out at the sides. In cases where the construction will permit this to be done, however, the outlets can be placed at the front. A single passage at one side of the fire-place can also be used instead of the two passages represented in the drawings.

D is a fresh-air flue or passage running from the outside through the back of the chimney into the passage C, and provided with a slide valve or damper D'; arranged to be worked from the inside of the room. Through this passage fresh air is supplied in quantity as required from time to time, or an outlet from the room to the outer atmosphere for the vitiated air is furnished.

By the arrangement of double passages represented in the drawings a circulation of warmed air from the heater can be maintained by opening both or either of the dampers D' and C* on both sides of the chimney-breast, and by suitable adjustment of the dampers an outward flow of vitiated air from the room through the passages to the outer air can be produced, fresh air entering through one passage D and the warm air discharging to the outside through the opposite passage D, in which case the dampers C* and D' on one side are closed while those on the other side are open.

As thus constructed and arranged my improved apparatus will heat and ventilate a room with considerable economy of fuel, as it can be arranged to utilize the waste heat from one fire for warming the air of a separate apartment.

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

1. The combination, with a chimney, of horizontal passages D, extending to the outside atmosphere and having dampers D', operated from the interior of the room, and dampers C* inside the dampers D', opening into the room, passages C, extending upward from the passages D, and an inclosed box A in the chim-

ney communicating with the passages C and with opening B into the room, as set forth.

2. In a heating and ventilating apparatus, the combination, with a chimney, of the corrugated plate A³ set therein, having the inclined end plates A² at bottom and top for making a closed chamber against the wall of the chimney, and passages for conducting air

into said chamber and an opening therefrom into the room, as set forth. 10

In testimony that I claim the foregoing I have hereunto set my hand and seal.

WALDEMAR TARP. [L. S.]

Witnesses:

C. W. M. SMITH,
CHAS. E. KELLY.