

(No Model.)

F. A. JONES.
FURNACE.

No. 528,944.

Patented Nov. 13, 1894.

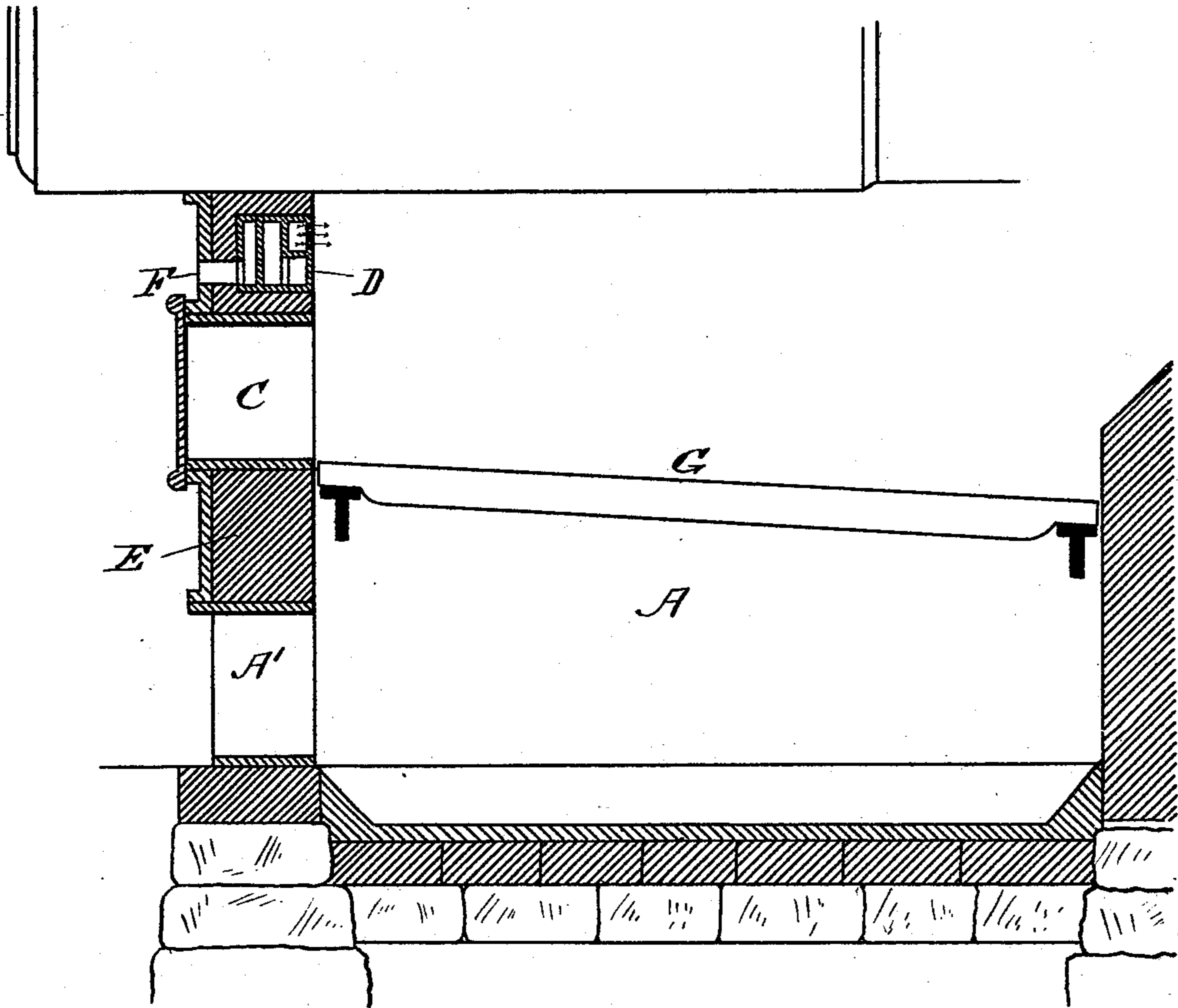


Fig. 1 -

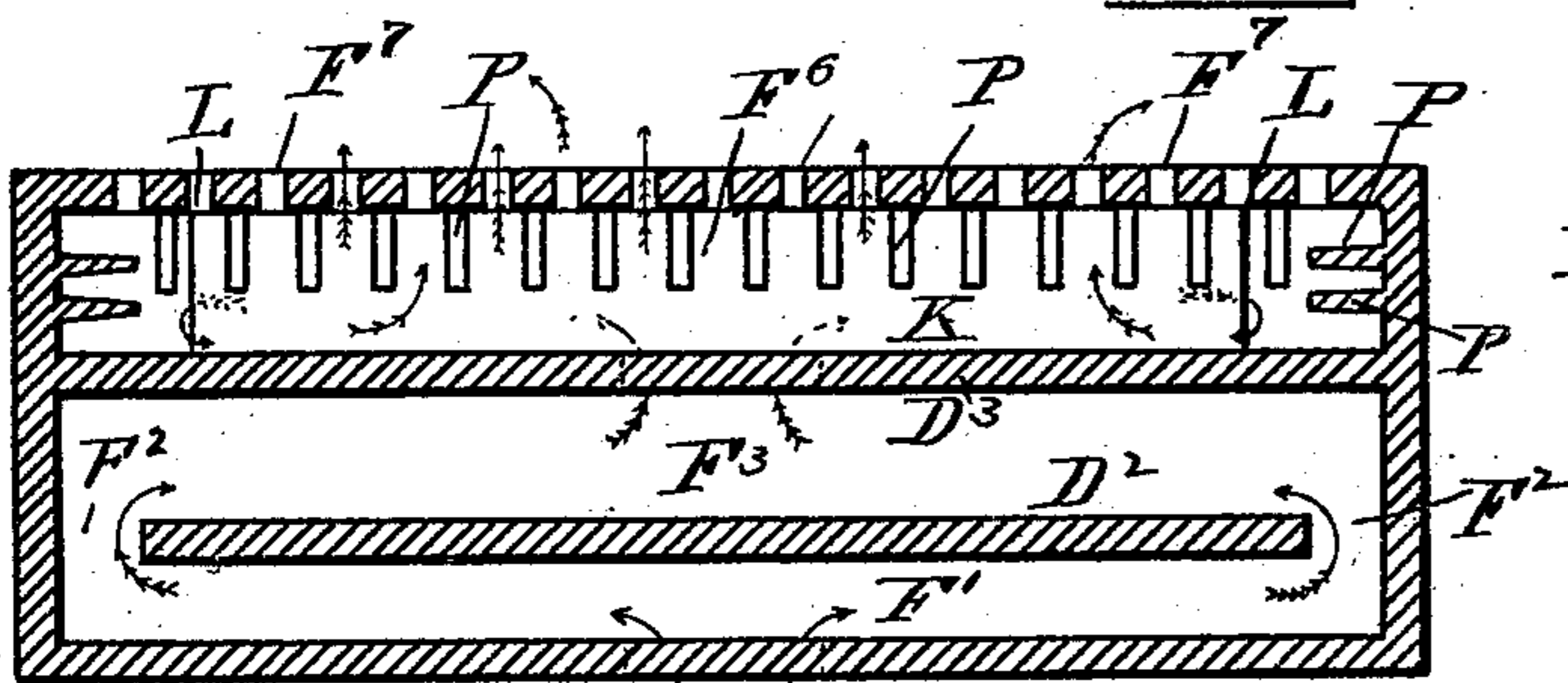


Fig. 2.

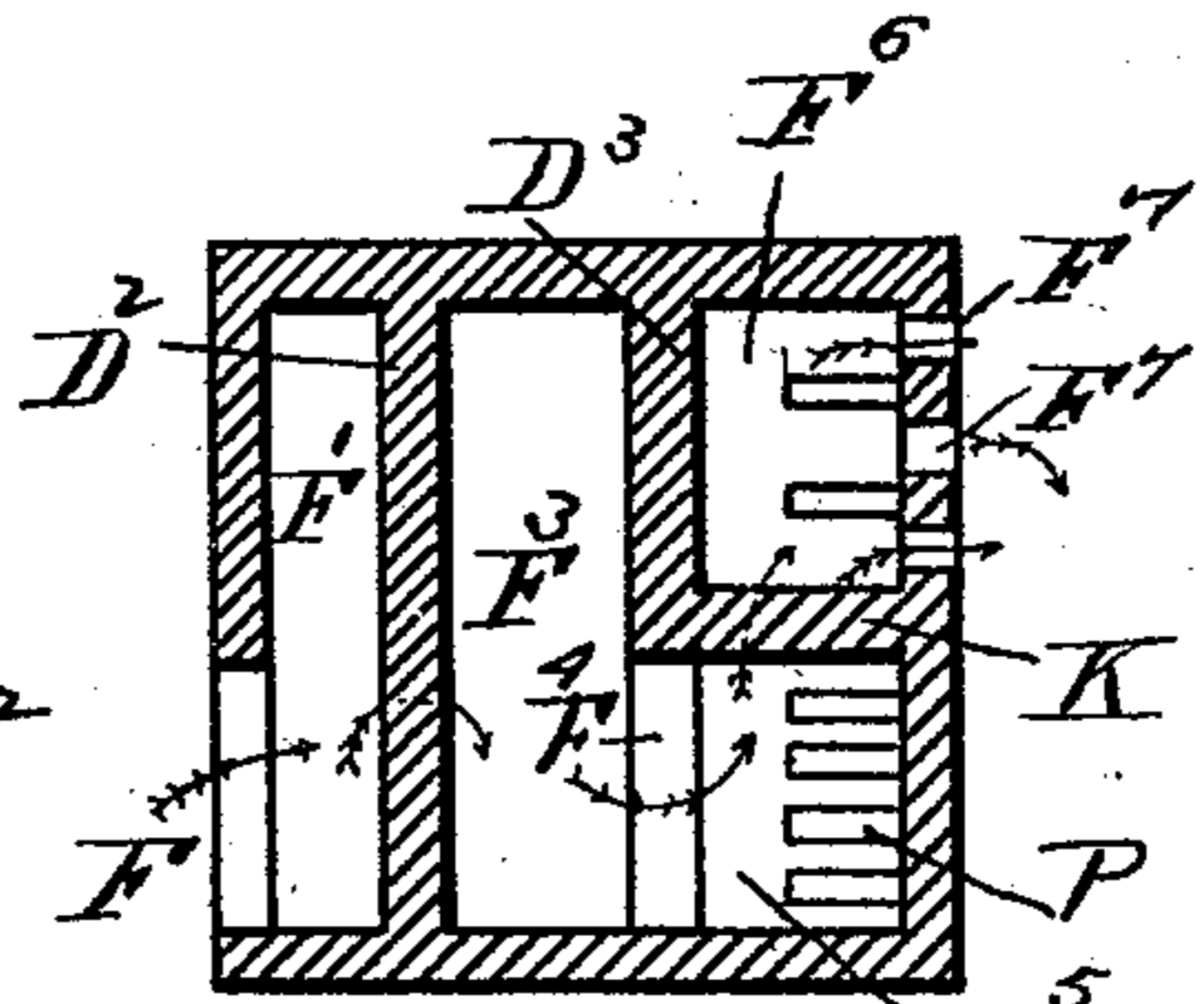


Fig. 3.

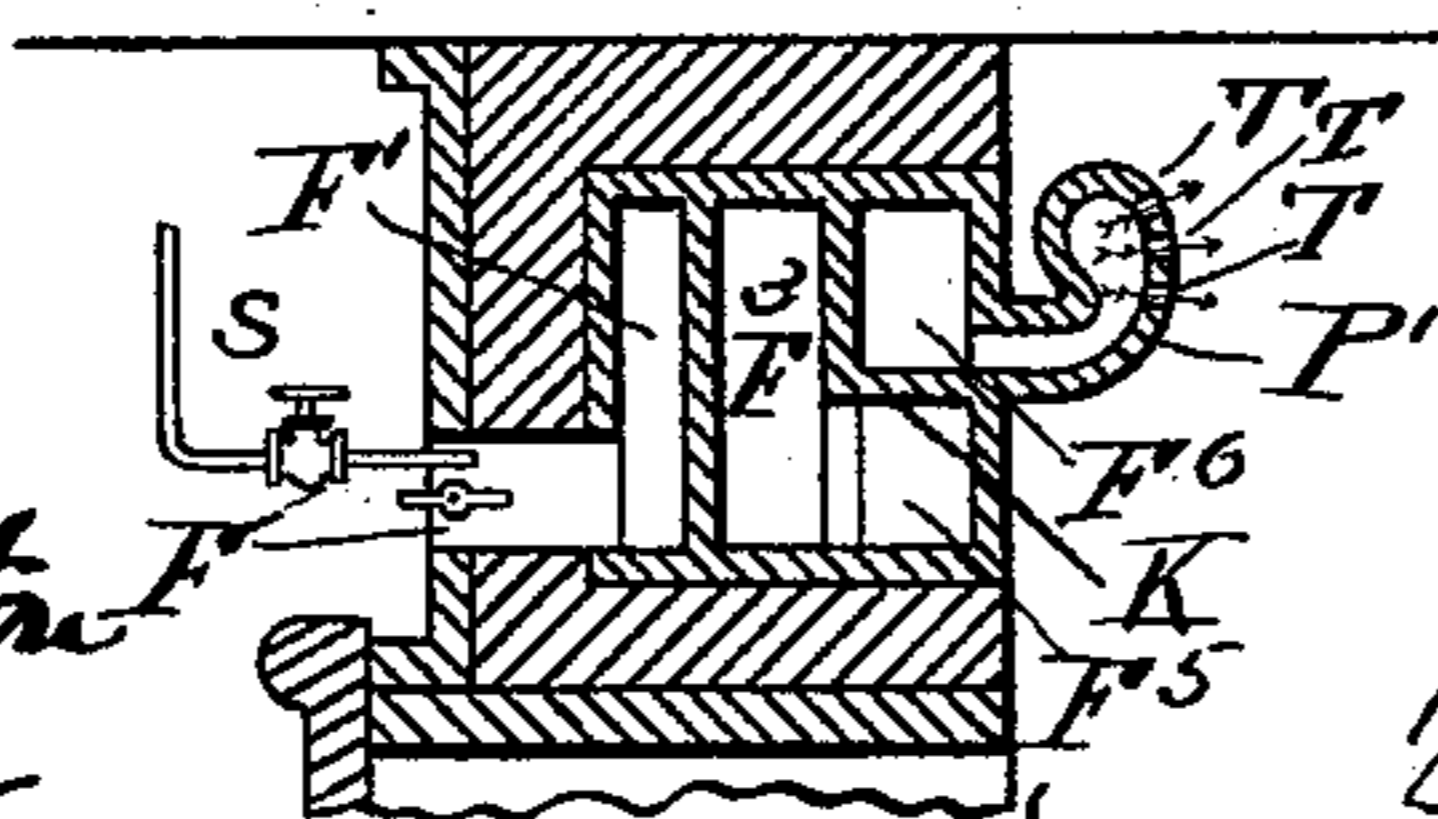


Fig. 4 -

WITNESSES
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FLORENTINE A. JONES, OF BOSTON, MASSACHUSETTS.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 528,944, dated November 13, 1894.

Application filed January 30, 1894. Serial No. 498,529. (No model.)

To all whom it may concern:

Be it known that I, FLORENTINE A. JONES, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Furnaces, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a device for admitting heated air to that part of a furnace fire chamber that is above the top of the fire door, and consists in the construction and arrangement of an air appliance adapted to admit, and heat during its passage through it, air to the fire chamber from the front wall above the fire door, the object being to furnish a supply of heated air, or air and steam, to that part of the fire chamber in which the combustibles are in greatest need thereof. This object I attain by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a section of a boiler furnace of ordinary construction, showing my air supplier located over the fire door. Fig. 2 is a longitudinal vertical section of my air supplier. Fig. 3 is a cross vertical section of the air supplier. Fig. 4 is a cross section showing a modification of my air supplier.

In Fig. 1, I have shown in section some parts of an ordinary boiler furnace in which A represents the ash pit; A', the ash door, and E the front wall supporting the front end of the grate-bars G, and having an ordinary fire door C.

The furnace outlines above referred to, are used for the purpose of more clearly indicating the location of my air supplying device, and not to suggest any particular kind of furnace, as my appliance may be used in connection with a great variety of furnaces.

My air supplying device is located as indicated by D Fig. 1, that is wholly within the front wall of the furnace or partly within the wall as indicated in Fig. 4, in which case it extends beyond the face of the wall into the fire chamber as illustrated at P'.

The construction of my air supply box is illustrated in Figs. 1, 2, and 3. The outer opening F leading from the outside of the front wall, is adapted to receive air, and, if desired, a jet of steam. The air entering at F passes first into the narrow chamber F', thence around the ends of the division wall D²,

through the passages F² F² to the chamber F³; thence through the opening F⁴ at or near the center of the partition D³ to the chamber F⁵ Fig. 3, which extends the whole length of the lower part of the box.

K Figs. 2 and 3 is a horizontal partition over the chamber F⁵ from the points indicated by L and L Fig. 2, leaving a free space at each end so that air may flow from the chamber F⁵ up into the chamber F⁶. From the chamber F⁶ the air or other supporter of combustion may flow through the small openings F⁷ F⁷, into the fire chamber and assist the combustion therein going on. The projections indicated by P P act as radiators to receive heat from the walls of the box and transmit it to the air as it flows past and about them.

In Fig. 4, the supply box has added to its front wall a member P' extending along its front and adapted to receive air from the chamber F⁶ and discharge it through the openings T T into the fire chamber.

If desirable, steam may be admitted through the pipe S Fig. 4.

I claim—

1. In combination with the front wall of a furnace, and located partly or wholly therein, an air supplying and air heating box, having a vertical division wall D³ and a horizontal division wall K, whereby two chambers F⁵ and F⁶ are formed, the lower chamber F⁵ being directly exposed to the heat of the fire and serving as a passage through which air flows into the outlet chamber F⁶ said chamber being provided with openings F⁷ F⁷, substantially as and for the purpose set forth.

2. In combination with the front wall of a furnace, and located partly or wholly therein, an air supplying and an air heating box having a vertical division wall and a horizontal division wall, whereby two chambers F⁵ and F⁶ are formed within the box as described, and radiating projections P P, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FLORENTINE A. JONES.

Witnesses:

EDWARD B. MANATON,
PETER S. MAHER.