

C. A. SMITH.
RANGE HEATER.

No. 180,385.

Patented July 25, 1876.

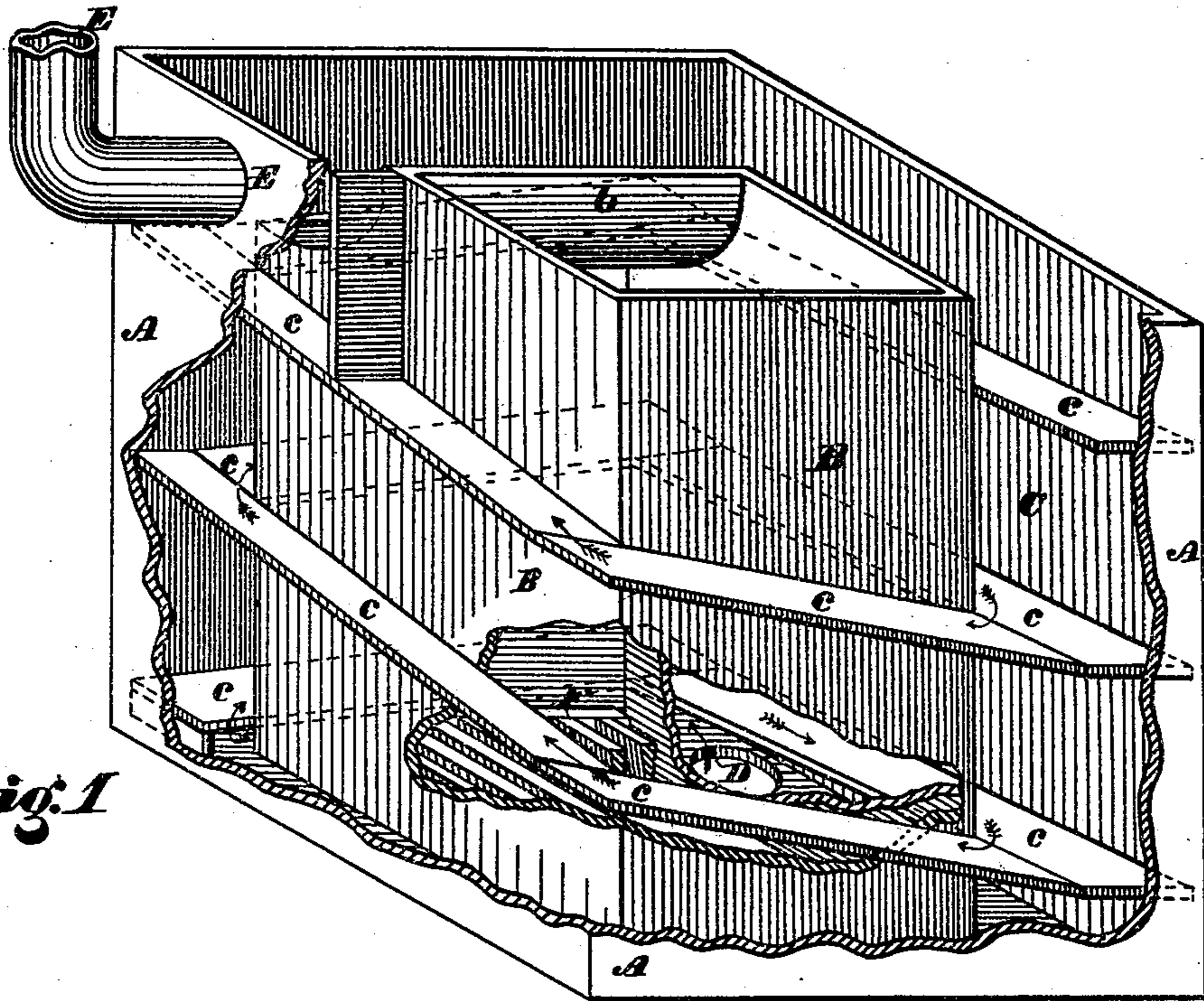


Fig. 1

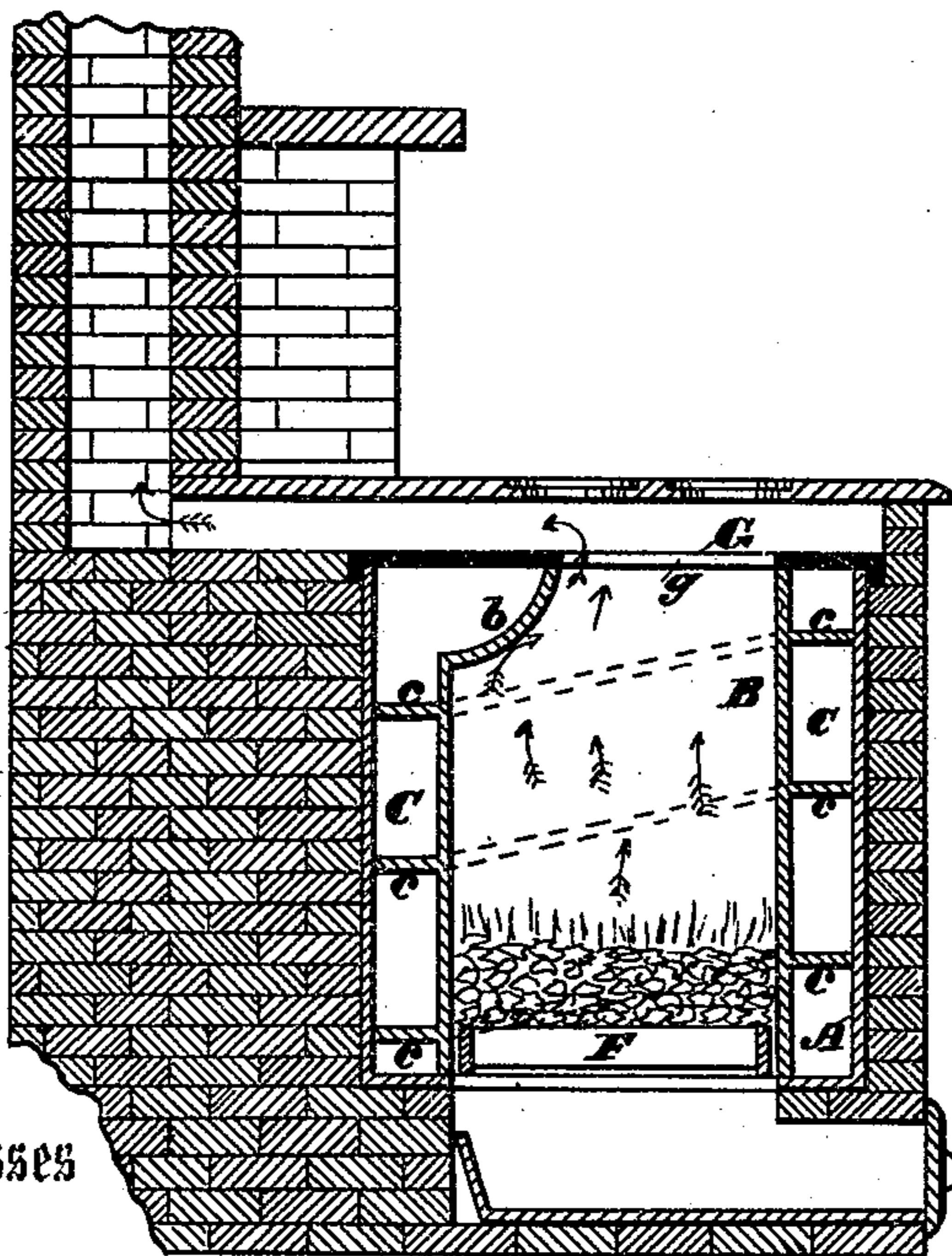


Fig. 2

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES A. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF HIS RIGHT TO ROBERT H. DRIVER, OF SAME PLACE.

IMPROVEMENT IN RANGE-HEATERS.

Specification forming part of Letters Patent No. **180,385**, dated July 25, 1876; application filed
June 10, 1876.

To all whom it may concern:

Be it known that I, CHARLES A. SMITH, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Range-Heaters; 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 it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a broken perspective of my invention with the lid removed. Fig. 2 is a transverse vertical section of a range with my improvement.

My invention has for its object to utilize the heat which is usually thrown off and wasted from the fire of a kitchen-range for the purpose of warming other apartments.

My invention consists in the peculiar construction and combination of parts hereinafter more fully set forth, having reference particularly to forming the fire box or pot with a chamber in the form of a sinuous or winding flue, in which fresh air from out of doors is admitted, and, after encircling the fire a couple of times, is carried off to heat up-stair rooms or apartments in other parts of the house.

Referring to the accompanying drawing, A designates a box or case, of cast metal or fire-brick, set in the place usually occupied by the fire-box or fire-pot of a kitchen-range, being "bricked in" in any suitable manner. B is another somewhat similarly-shaped box, placed inside the case A; leaving a chamber, C, between them. Said chamber is divided into sinuous or winding flues, which wrap the box B, by means of inclined diaphragms *c c*, which are attached to said box. D represents an opening by which fresh air

is admitted from the cellar or out of doors to the chamber C, and E is a similar opening through which it finds its exit, passing by a drum or pipe to the room above, or to an apartment in another part of the house.

One of the walls of the box B is bent out of a vertical line, as shown at *b*, to form part of an arch or ceiling, against which the flame from the fire, resting on the grate F, will strike, giving an enlarged heat-surface to the hot-air flue just before reaching the exit-opening E, and affording room for the rarefied atmosphere.

The box B is intended to be made of cast-iron, or other metal which will rapidly conduct heat from the fire within to the air in the chamber C.

I do not confine myself to making said case B square, as it, as well as the case A, may be cylindrical in form, and either plane or corrugated.

G represents a top fitting over both cases, A and B, and forming a tight cover for the chamber C, having a central opening, *g*, for the passage of the products of combustion to the chimney. Above said top G will be the usual lid, with pot-holes, &c. These improvements may be applied to stoves as well as ranges.

What I claim as my invention is—

In combination with the chamber C, the deflected wall *b*, enlarging the capacity of the hot-air flue, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of June, 1876.

CHARLES A. SMITH.

Witnesses:

JOHN N. HAGEY,
M. DANL. CONNOLLY.