T. WHITE.

HEATING-STOVE.

No. 191,499. Patented May 29, 1877.

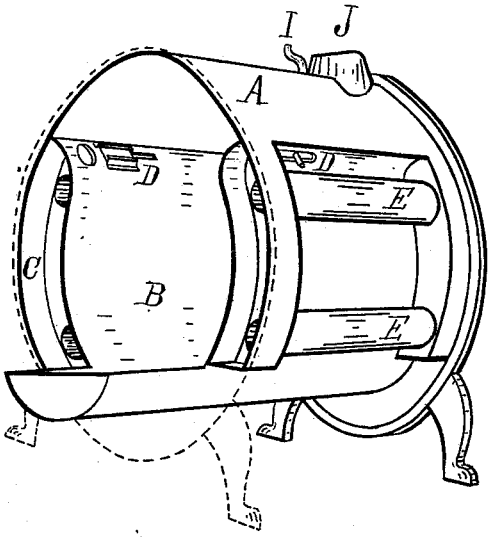

Fig. 1.

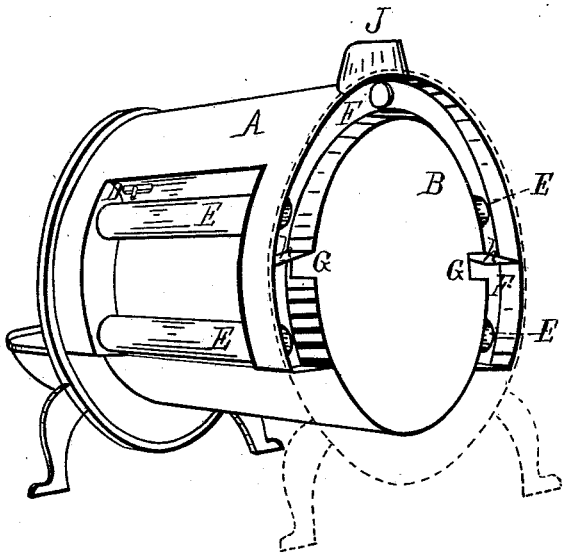

Fig. 2.

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UNITED STATES PATENT OFFICE.

THOMAS WHITE, OF QUINCY, ILLINOIS.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **191,499**, dated May 29, 1877; application filed March 15, 1877.

To all whom it may concern:

Be it known that I, THOMAS WHITE, of Quincy, in the county of Adams and State of Illinois, have invented an Improvement in Heating-Stoves and Furnaces, of which the following is a specification:

The nature of my invention relates to certain new and useful improvements in the construction of stoves and furnaces, as more fully hereinafter described.

The object of the invention is to so construct a stove or furnace that all or nearly all the heat will be radiated usefully before the products of combustion reach the chimney, doing away with the necessity of drums or coils of pipe, such as are usually employed.

Figure 1 is a perspective view, from the front, of a wood-burning stove, showing my improved construction, and with the stove-front shown in dotted lines, so that the internal construction may be seen. Fig. 2 is a like view from the rear side with the back plate removed.

Like letters refer to like parts in each figure.

In the drawing, A represents the shell of the stove, and B the fire-box or combustion-chamber proper. C C are two chambers, one on each side of the combustion-chamber at the front end of the stove, and with no communication with the fire-box except through openings in the top of the respective chambers, and which are disclosed or covered at will by the slide-dampers D D, which are operated from outside the stove. Horizontal flues E E open into these chambers C C, and afford communication between them and other chambers F F at the rear end of the stove.

It will be noticed that the chambers C C, F F, and flues E E are all situated on the outside of the fire-box, and are so arranged as not to interrupt the directly outward radiation therefrom. The rear chambers F F communicate with the combustion-chamber by means of the openings G G, immediately above which, and below the plane of the upper horizontal flues, are placed diaphragms or plates *h h*, which prevent any communication between the upper and the lower horizontal flues through these chambers at the rear. I is a damper, operated from the outside of the stove, by means of which direct draft is had from the combustion-chamber to the exit-pipe J.

In starting a fire in the fire-box, the direct draft should be disclosed by opening the damper I. When the fuel is well ignited this damper should be closed, when the products of combustion will pass into the chambers F F through the openings G G, and thence through the lower horizontal flues to the chambers C C and back through the upper horizontal flues to the exit J, nearly if not quite radiating all the heat before reaching the latter-named point.

At any time that not so much heat is required in the apartment, and still more be required than can be had by direct radiation from the fire-box or combustion-chamber, the damper I should be closed and the dampers D D opened, when the products of combustion will escape from the fire-box through said dampers into the upper horizontal flues, and thence to the rear and the exit.

It will readily be perceived that the arrangement of outside flues connecting outside radiating chambers may be applied in various ways to many forms of heating devices without detracting from the direct radiation of the stove or furnace, and that dampers may be so arranged as to control the direction of the currents of the products of combustion without departing from the spirit of my invention; and that this arrangement of flues, chambers, and dampers may be materially changed without such departure. Consequently I do not desire to confine myself to the form or arrangement shown, but may vary them as different styles of stoves or furnaces may require, so long as I preserve the distinctive features of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a heating-stove or furnace, and in combination therewith, and with the fire-box or combustion-chamber and radiating cham-

bers and flues outside said combustion chamber, the system of dampers and openings described, for affording communication between said combustion-chamber and said radiating-chambers and flues, either at the front or rear of the combustion-chamber, substantially as and for the purposes specified.

2. In a heating-stove or furnace and in combination therewith, the shell A, fire-box B, outside chambers C C F F, dampers D D I, openings G G, outside flues E E, and plates *h h*, arranged to operate substantially as and for the purposes described.

THOMAS WHITE.

Witnesses:
EBENEZER B. BARKER,
JAMES H. WALLIN.