(No Model.)

C. J. RIDGWAY.

HEATING APPARATUS.

No. 563,984. Patented July 14, 1896.

Fig. 1.

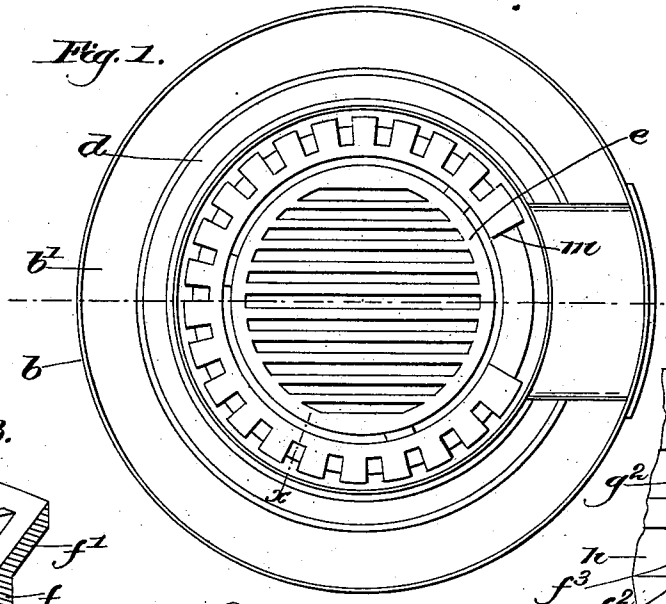


Fig. 3.

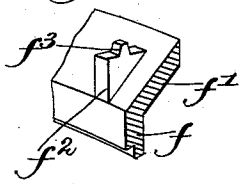


Fig. 4.

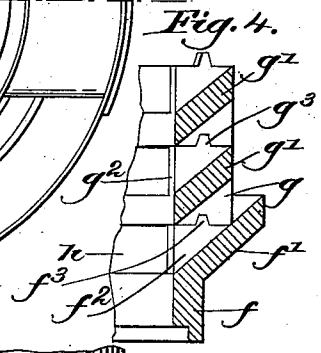
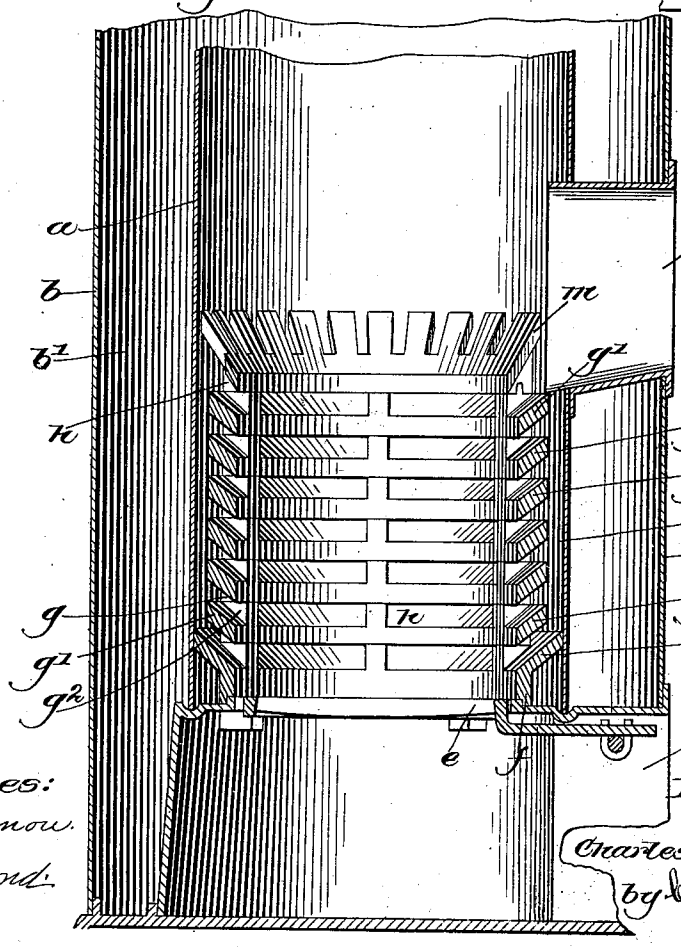


Fig. 2.



Witnesses:
A. C. Harmon.
W. J. Drummond.

Inventor:
Charles J. Ridgway.
by Duby & Gregory,
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES J. RIDGWAY, OF EVERETT, MASSACHUSETTS.

HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 563,984, dated July 14, 1896.

Application filed January 4, 1896. Serial No. 574,322. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. RIDGWAY, of Everett, county of Middlesex, State of Massachusetts, have invented an Improvement in Heating Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve heating apparatus, my invention being applicable more especially to the fire-box, or the part of the heater directly holding the coal, my aim being to provide a fire-box in which the coal will be thoroughly consumed and give out the maximum of heat.

My improved fire-box is composed of a series of inwardly and downwardly inclined plates, each supported at intervals above another, with ample air-space between, a usual grate forming the bottom of the fire-box.

Figure 1 is a top or plan view of the body part of a heater with the top removed to show the fire-box and grate. Fig. 2 is a vertical section. Fig. 3 shows part of the undermost plate of the series entering into the fire-box, and Fig. 4 a partial section in the line x.

The metallic body a of the heater, be it a stove or furnace, the surrounding casing b to leave an air-space b', the feed-door c, the ash-pit d, and the grate e are and may be all as usual, and the grate, supported in usual manner, may have a projection extended therefrom to be engaged by a suitable handle or shaker, all as usual, to shake the grate when desired.

As herein shown, the top plate of the ash-pit receives on it the flange f of a plate f', shown as inclined inwardly and downwardly toward the center of the grate or fire-box, and the plate has at suitable points on its upper side rests f^2, having studs f^3 to enter a hole (see Fig. 4) in a rest g, projecting from the under side of a plate g', also inwardly and downwardly inclined, the said plate g' having at its upper side a rest g^2 with a stud g^3.

In practice I make up a fire-box of any desired height, size, or shape in cross-section by superimposing a series of these plates g' one on the other, leaving large air-spaces h, through which passes more or less of the air to sustain combustion after rising through the grate, the said spaces affording escape for the gases eliminated from the fuel, the said gases rising in the space between the outside of the fire-box and the interior of the body a and going into flame at the top of the fire-box. The top of the fire-box is completed by a wider plate m, notched externally and lying on the rests of the uppermost ring g', the notched edge substantially touching the interior of the body a, so as to prevent coal from descending in the space between the body a and fire-box. The outermost edges of the plates g' are higher than their innermost edges, and as a result any coal or fuel in the fire-box which may lodge on the said plates will readily follow down by gravity with the coal in the fire-box as the same is consumed. The plates may be more or less inclined and may be made as entire rings, or as segments, and the shape of the fire-box may be either round, square, or otherwise by merely changing the outline of the plates, the gist of this invention being the use of a series of inwardly and downwardly inclined plates suitably supported one above the other with air-spaces between. The lugs on the rests constitute locking devices to keep the plates in place.

It will be noticed that the space m' between the outer edges of the superimposed plates forming the fire-box and the interior of the body a is closed at its lower end by the top of the ash-pit, so that all the air to sustain combustion must first pass through the grate. The wider bottom plate f' may also act to close this space m' and prevent the entrance of air therein which does not first come through the grate. The lower plate f' is, however, made wider than those marked g' above, in order that any ashes, soot, &c., falling into the space m' may be readily directed into the fire-box and the ash-pit.

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

1. A fire-box composed of a series of plates having inclined faces and lowest at their inner edges, the said plates having projecting rests at their upper and lower sides, to thus

separate the plates, and locking devices to hold the said rests together, substantially as described.

2. A heater having a body, a grate, and a fire-box composed of a series of superimposed inwardly and downwardly inclined plates having air-spaces between them, and having their outer edges removed from the inner side of the body to leave an air-space m' about the fire-box, combined with a wider bottom plate f', closing said space m', to prevent the entrance of air into said space except from the grate and to direct back to the grate any ashes, soot, &c., entering said space, substantially as described.

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

CHARLES J. RIDGWAY.

Witnesses:

GEO. W. GREGORY,

LAURA S. MANIX.