

JOHN W. O. WEBB.

Improvement in Heating Stoves.

No. 120,803.

Fig. 1.

Patented Nov. 7, 1871.

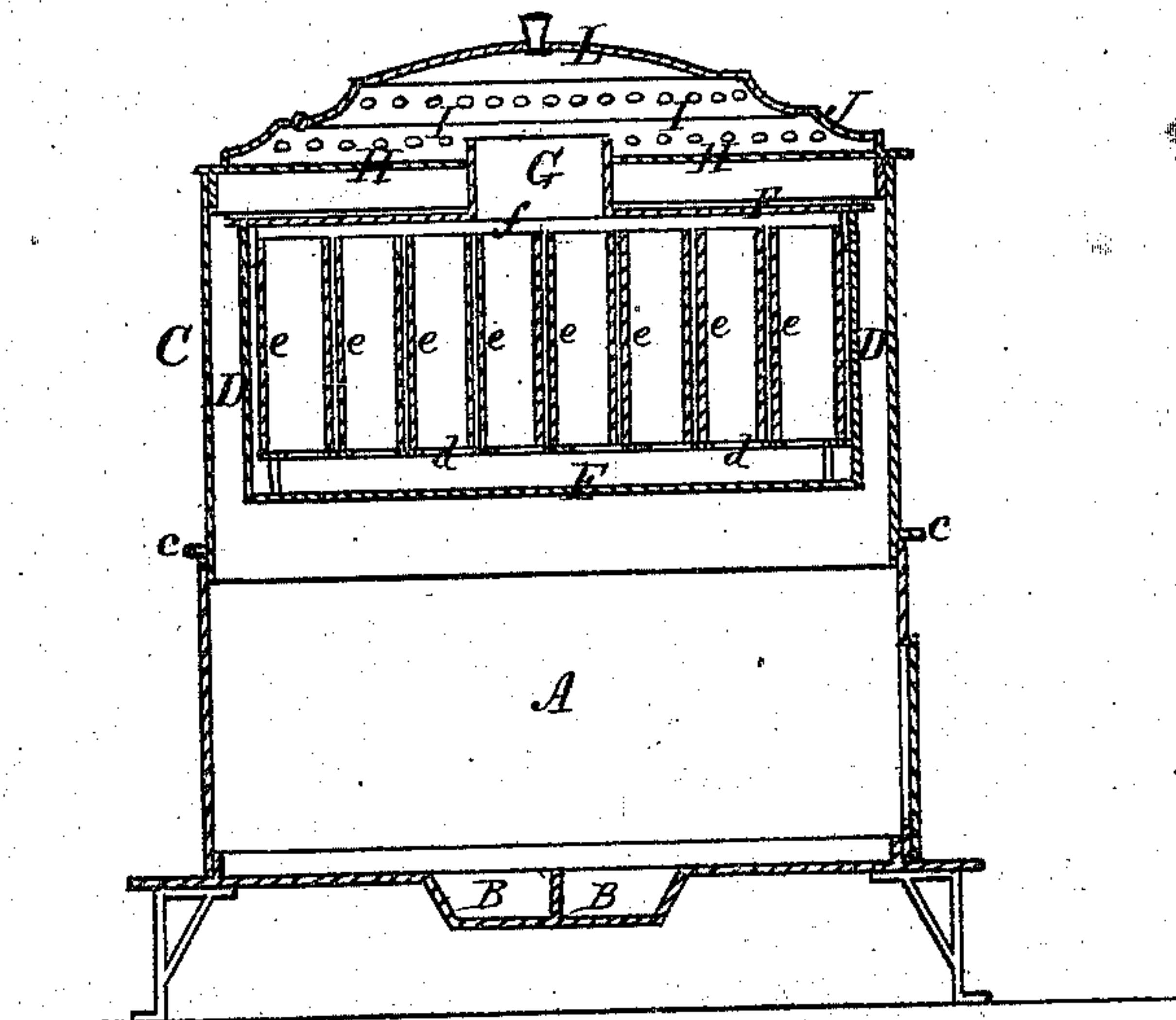


Fig. 2.

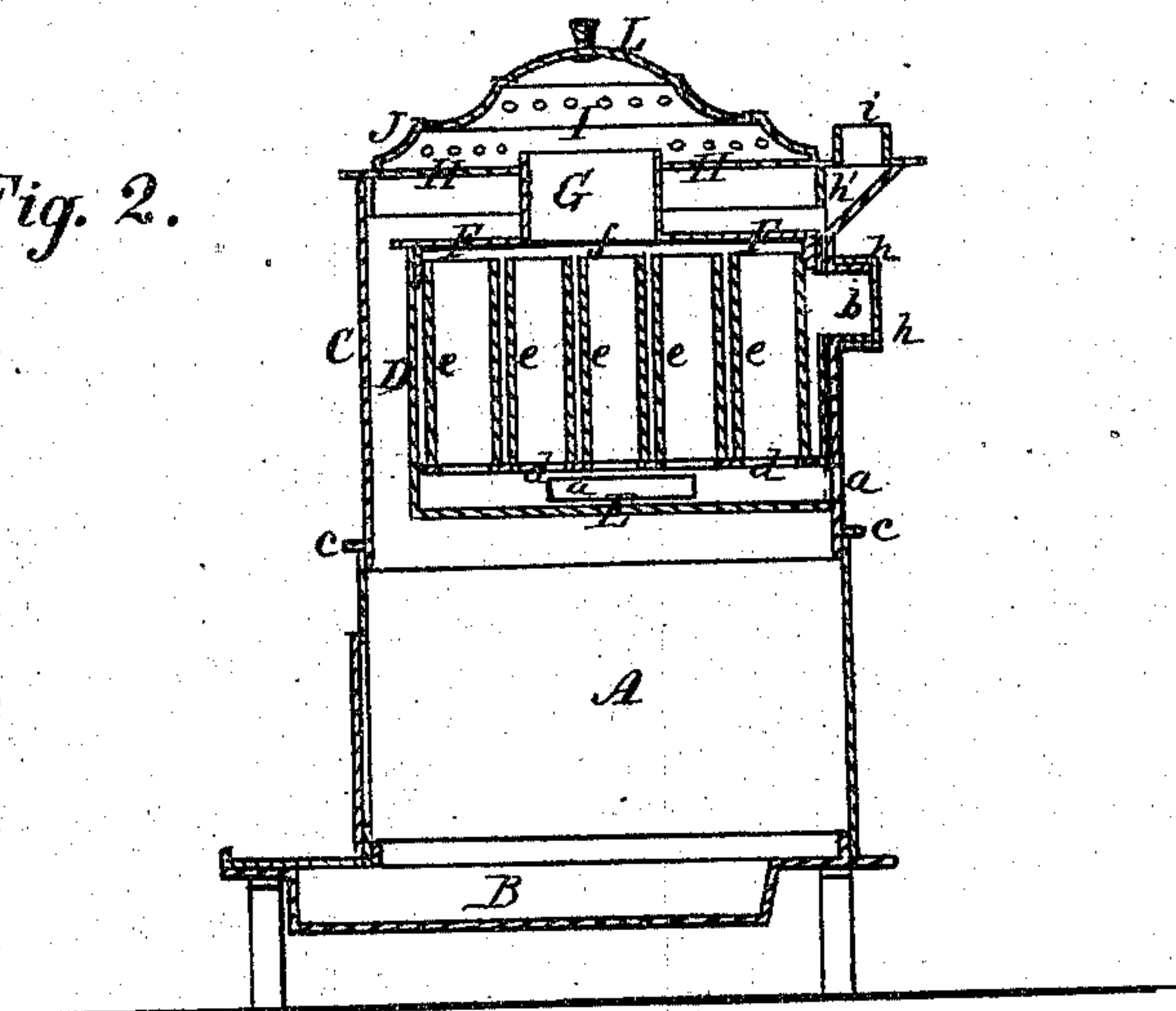
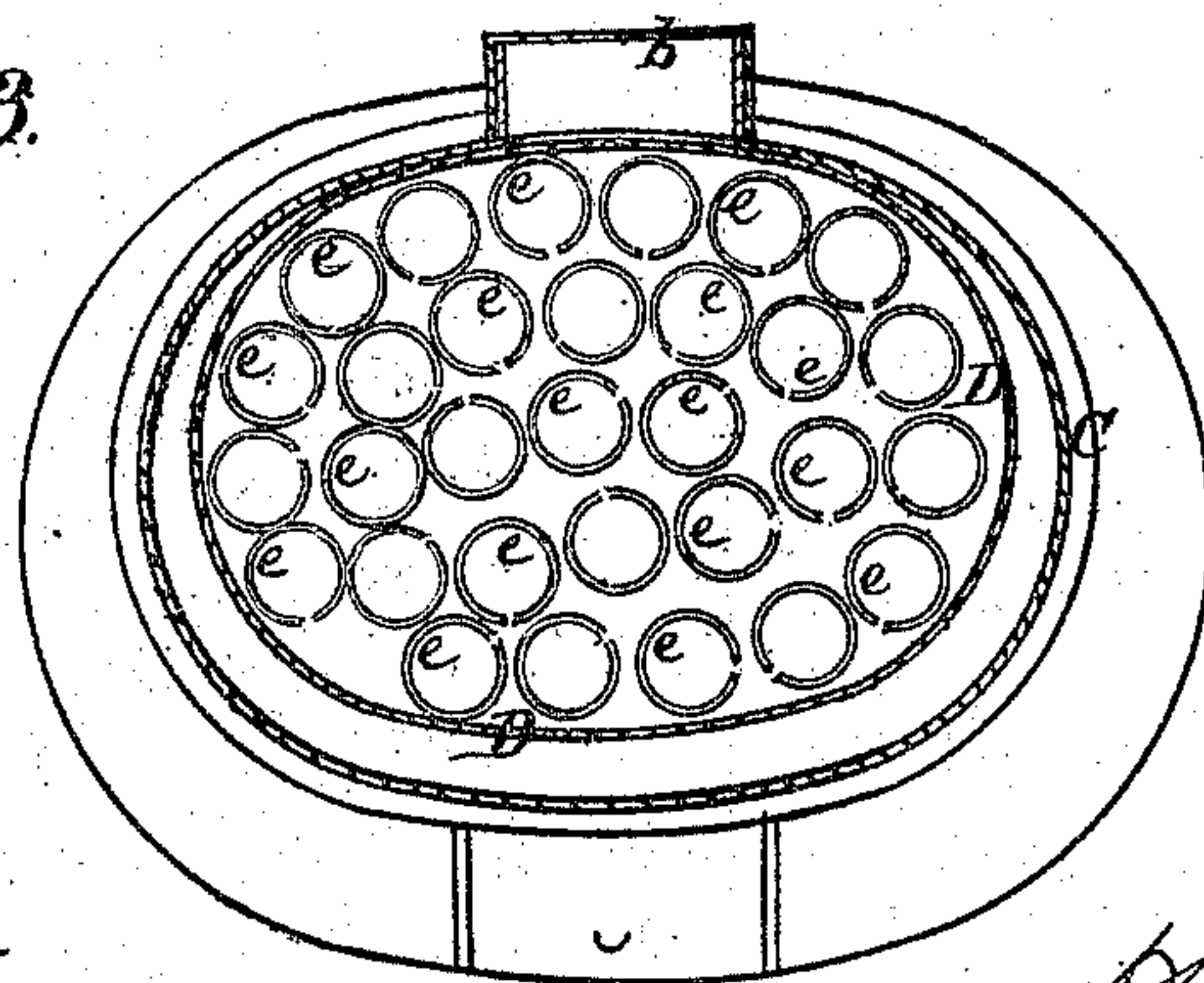


Fig. 3.



WITNESSES:

Lewis B. Wynne, Jr.
West Wagner.

INVENTOR:

John W. O. Webb

by Horatio King
his attorney.

UNITED STATES PATENT OFFICE.

JOHN W. O. WEBB, OF VINTON, IOWA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 120,803, dated November 7, 1871.

To all whom it may concern:

Be it known that I, JOHN W. O. WEBB, of Vinton, in the county of Benton and State of Iowa, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification:

My invention relates to heating-stoves; and the said invention consists in the arrangement, within an interior drum, of a series of sheet-metal tubes, *e*, resting loosely upon a perforated bottom with their upper ends opening into the chamber which incloses said tubes for the purpose of utilizing said inner chamber, as well as the tubes therein, to increase the heating surface and render the stove more compact. My invention also consists in the employment, within an inclosing-drum, of a series of split sheet-metal tubes arranged loosely against each other, so that one will support the other and each have the capacity to expand and contract by reason of their open sides, and thus obviate the necessity of fastening the tubes to the top or bottom of the inclosing-drum. My invention also consists in arranging and securing the interior heating-drum to the rear wall of the stove, as shown in Figs. 2 and 3 of the drawing, so as to support it above the fire-chamber from one side only, and thus form convenient means of attachment for the drum-tube holder, and throw the heat all to the front and sides of the stove.

In the accompanying drawing, Figure 1 is a longitudinal vertical section of my improved stove. Fig. 2 is a vertical cross-section of the same; and Fig. 3 is a horizontal section through the center of the air-heating chamber.

The lower part A of the stove is made of cast-iron, and contains or serves for the fire-place, whether wood or coal is burned, being provided with the ash-pan B. Into this part A fits the lower end of the upper portion C of the stove, which may be constructed of sheet-iron, and is supported on the part A by means of a flange, *g*. To the rear part of this section C, on its inside, is suitably secured a sheet-iron drum, D, having a cast-iron bottom, E, and a sheet-iron top, F, in the center of which latter is an opening, *f*, from which a pipe, G, passing through the top H of part C, extends into the chamber I formed above part C, by means of perforated flanged rim J let into and resting on part C, having a hinged or removable cover or lid, L. A short distance

above the bottom E, and suitably supported from rim D, is a perforated plate, *d*, on which rests loosely a sufficient number of hollow sheet-metal tubes *e*, placed vertically side by side, to fill the space within the drum D. These tubes are formed by bending suitable pieces of sheet-iron until their long edges meet and are of sufficient height to allow a small free space between their upper ends and the top F. The edges of these tubes may be soldered or otherwise secured to each other, or they may be left open, as may best suit the purpose; and the tubes are so arranged that air can freely pass all around and through them within the chamber formed by the drum D. This latter being of less size than the part C, there is a free space all around it, except where it is attached to the same. In the rear portion of part C are two openings, one a longitudinal opening, *a*, corresponding in position and extent to the space between the bottom E of the drum D and the perforated plate *d*, and the other a circular opening, *b*, connecting with the space within the drum D, and ordinarily closed by means of a cap, *h*. The chamber above the heating-drum communicates with the fire-chamber, and is provided with an opening, *h'*, at its rear, from which extends a short pipe, *i*, to which the stove-pipe may be attached, and through which the products of combustion escape.

It will be observed that the tubes are fitted loosely within the drum and are supported by and against each other, and, by being split, each tube of the whole nest is thereby allowed to open and close against each other and accommodate themselves to their expansion and contraction; and that the tubes thus arranged require no fastening whatever within the drum, while their upper ends open within the same chamber which incloses them, so that each tube communicates with the chamber which incloses it, and in this way increases the radiating surface and holds the heat for a longer period than if it was allowed to pass out through said tubes from one chamber to another.

The securing of the inner drum to the rear of the stove is advantageous in the construction of the stove, and especially in throwing the heat from the fire-chamber to the front and sides of the stove through the space which surrounds the sides and front of the drum D, as shown in Fig. 3.

Fire being made in the lower portion of the

stove, the products of combustion strike against the bottom E, and passing all around the chamber formed by the drum D and filled with tubes *e* pass off through opening *h'* into the stove-pipe. The drum D is thus heated, and the air contained in it, which ascends through the opening *f* and pipe G into chambers I, and thence through the perforations in heating the atmosphere. As the heated air ascends fresh air is admitted through the opening *a* and circulates all around the tubes and passes off through the opening *f* into the room. The tubes afford a very great heat-absorbing and radiating surface, and thus materially aid in the thorough heating of the air. If it is desired to heat another room by the same fire the cap *g* may be removed and the opening *b* connected to a drum in the next room by means of suitable pipe, when the hot air will pass out through this opening *b* into drum and adjoining chamber, the pipe *g* having been properly closed. The chamber formed by the drum D must, of course, conform to whatever-shaped stove it is

applied, for my improvement is applicable to all kinds of heating-stoves. In some cases the pipe *g* may be dispensed with, and in others the opening *a* may be arranged differently, to suit the convenience of each case.

Having described my invention, I claim—

1. The arrangement, within the interior drum D, of a series of loose sheet-metal tubes, *e*, with their upper ends opening into the chamber which incloses them, and supported in position by contact with each other, requiring no fastenings and serving to retain the heat of the drum, as shown and described.

2. The sheet-metal tubes *e* of the drum D, made open or split from end to end to allow them to be fitted one against the other in a nest, and admit of their expansion and contraction, as described.

JOHN W. O. WEBB.

Witnesses:

W. F. WILLIAMS,
GEO. W. STERLING

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