

B. T. BABBITT.
Hot-Air Furnace Attachments.

No. 152,820.

Patented July 7, 1874.

Fig. 1.

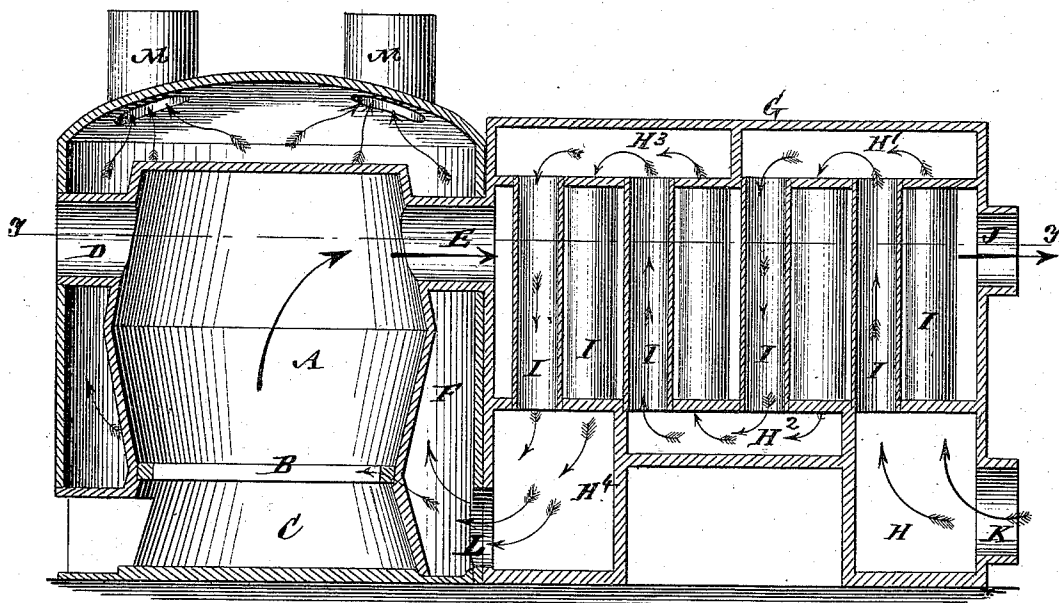
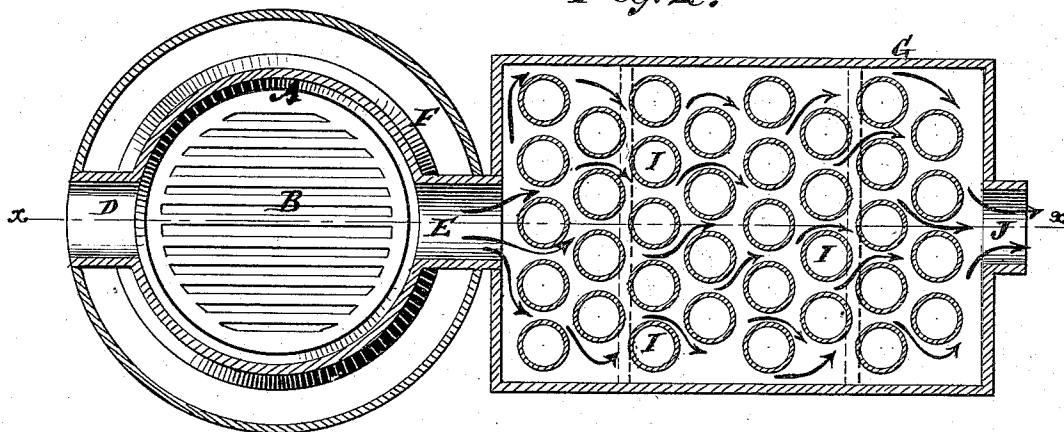


Fig. 2.



Witnesses

John Becker
Fred. Haynes

B. T. Babbitt
by his Attorneys
Romm & Allen

UNITED STATES PATENT OFFICE.

BENJAMIN T. BABBITT, OF NEW YORK, N. Y.

IMPROVEMENT IN HOT-AIR-FURNACE ATTACHMENTS.

Specification forming part of Letters Patent No. **152,820**, dated July 7, 1874; application filed February 7, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city, county, and State of New York, have invented an Improvement in Attachments to Hot-Air Furnaces for house-warming and other purposes; of which the following is a specification:

This invention consists in an attachment to a furnace, composed of a certain combination of air-heating pipes or flues and upper and lower compartments, whereby the air to be heated is made to circulate up and down said flues in a reverse direction as regards the general course of the current to the escaping products of combustion which circulate around and among the air-heating flues, and so that after the air has been thus partially heated, it is finally and more fully heated by being caused to circulate around the furnace and within a surrounding jacket, from which it is finally drawn or taken to be applied as required, the whole forming a most perfect and economical air-heating apparatus, and in which the air is highly heated by the escaping gases before it comes in contact with the fire-pot or furnace.

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improvement on the line *x x*, and Fig. 2 a horizontal section on the line *y y*.

Similar letters of reference indicate corresponding parts.

A is the fire-pot or furnace, B its grate, and C the ash-pit. D is the firing door or mouth, and E the primary outlet for the escaping products of combustion. F is a hot-air jacket surrounding or inclosing the fire-pot and ash-pit. G is an air-heating attachment, composed

of any number of upper and lower compartments, H H¹ H² H³ H⁴, and irregularly disposed vertical pipes or flues, I, among and around which the escaping products of combustion, as they leave the outlet E, circulate, and finally pass off by a rear outlet, J.

The air to be heated enters by an opening, K, the rear lower compartment H; from thence passes up the rear vertical flues I to the upper rear compartment H¹; and from thence down certain of the flues I to the next lower compartment H²; up through another series of the flues I to the upper compartment H³; and from thence down another series of pipes I to the front lower compartment H⁴; from whence, thus partially or highly heated, it enters the jacket F by a lower inlet, L, and, after receiving a further addition of heat from the inclosed fire-pot or furnace A, around which it circulates, escapes or is drawn off as required by one or more outlet-pipes, M.

The number of reversely circulating air-heating pipes I and upper and lower compartments with which they connect may be increased or diminished at pleasure.

I claim—

In combination with the furnace A, having the outlet E and inclosed by the air-heating jacket F, the vertical air-circulating pipes I and air-compartments H H¹ H² H³ H⁴, into which the air-pipes open, and the inlet K and the outlet L, the whole being constructed substantially as shown, for the purpose specified.

B. T. BABBITT.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.