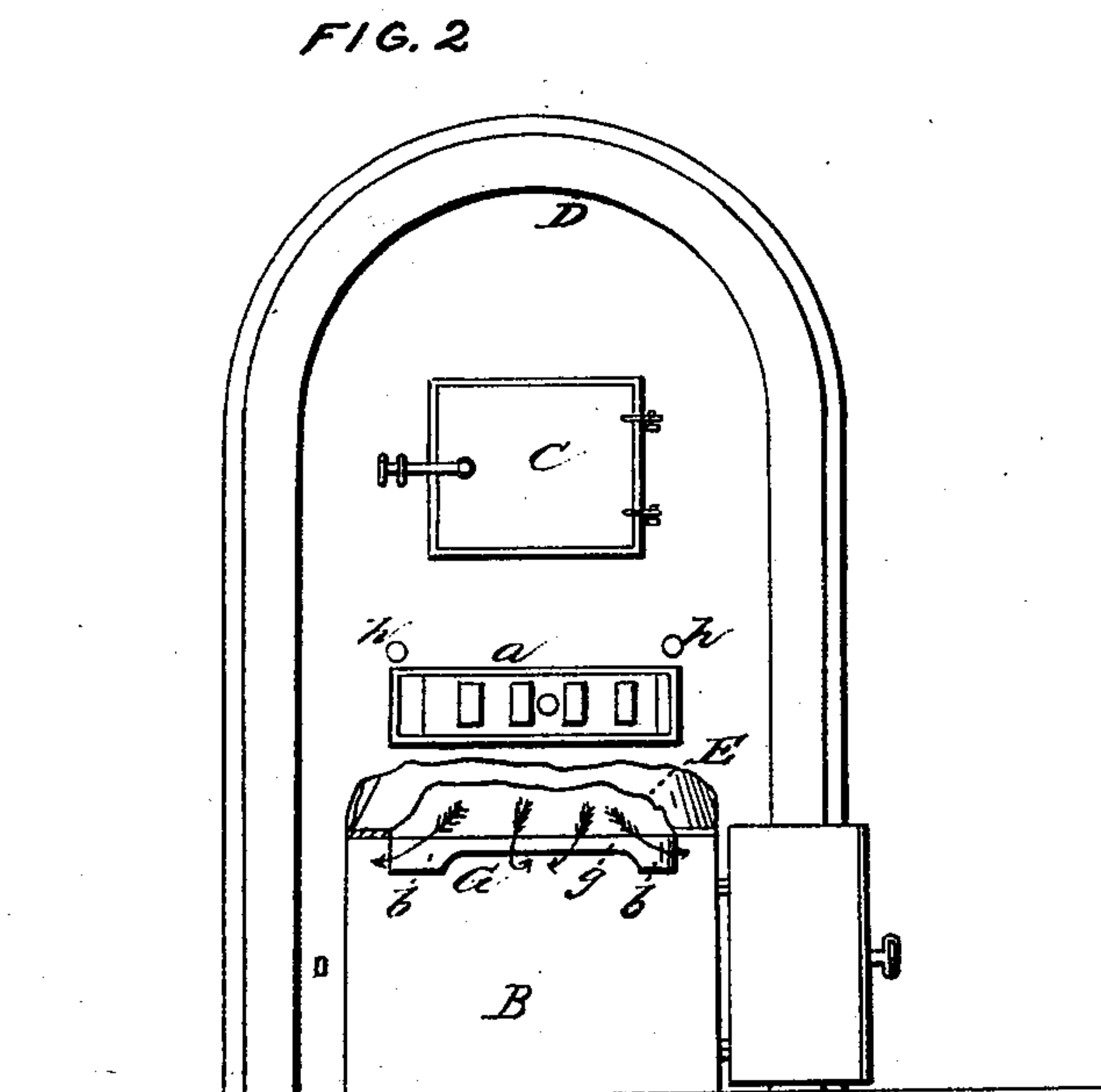
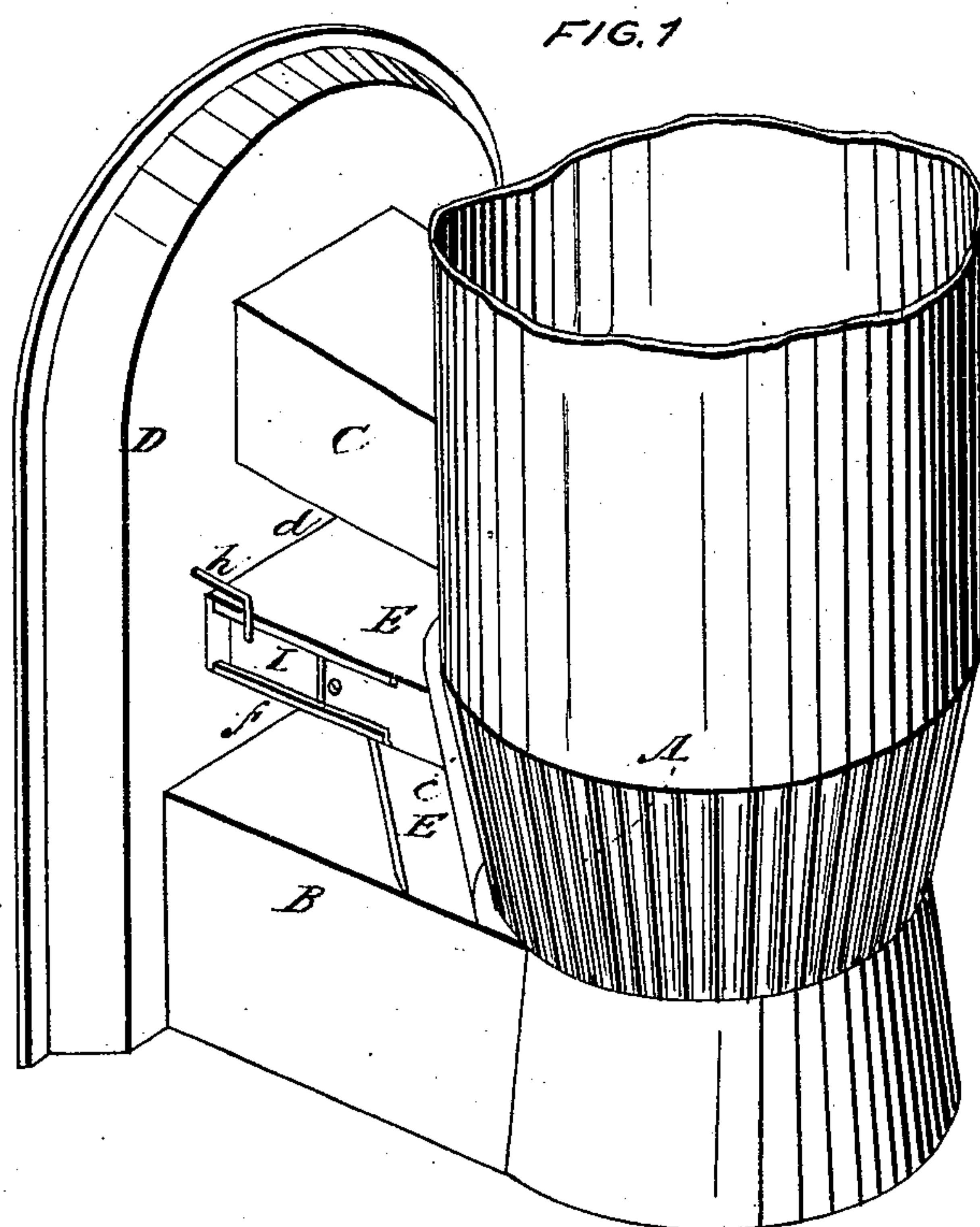


B. GOMMENGINGER.

Hot-Air Furnace.

No. 100,281.

Patented March 1, 1870.



WITNESSES:

R. F. Osgood

Lee. H. Mott

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attys

United States Patent Office.

BARTHOLOMEW GOMMENGINGER, OF ROCHESTER, NEW YORK.

Letters Patent No. 100,281, dated March 1, 1870.

HOT-AIR FURNACE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, BARTHOLOMEW GOMMENGINGER, of the city of Rochester, in the county of Monroe, and State of New York, have invented a certain new and improved Draught Arrangement for Hot-Air Furnaces, of which the following is a full and exact specification.

Nature of the Invention.

This invention consists of a draught-flue of peculiar form, interposed between the ash-pit and feeding-trough, and partially surrounding the fire-pot, and having a jacket beneath, which distributes the air to the grate.

It further consists in the employment of supplementary registers to the draught-flue, opening into said flue from the inclosed hot-air space around the furnace, as hereinafter described.

General Description.

In the drawings—

Figure 1 is a perspective view of the lower portion of a furnace provided with my improvement.

Figure 2, a front elevation of the same.

A represents the fire-pot of the furnace;

B, the ash-pit;

C, the feeding-trough; and

D, the face-plate or front.

These parts are all set in brick-work or in sheet-iron casing, in the usual manner.

Between the ash-pit and feeding-trough is situated a draught-flue, E, in the form of an inclosed trough, which has outside a slide-register, a, for admitting the cold air, while inside it preferably extends horizontally nearly to the fire-pot, between which and itself it forms an annular space, c, when it turns downward and opens through the top of the ash-pit at the front and at the bottom of the grate.

At this point is a jacket or flange, G, fig. 2, which projects vertically downward, and extends concentrically around a quarter circle, more or less, in front of the grate.

At each end is a deeper projection, b, than the center g, as clearly shown.

The novel features in this arrangement are the flue E, inclosed between the ash-pit and feeding-trough, and partially surrounding the fire-pot, so as to receive the greatest amount of heat on all sides, and the jacket G, which distributes the air thus fed in, in a thin sheet all around the grate.

Located in this peculiar manner, the flue not only

receives the heat from the feeding-trough, ash-pit, and fire-pot, but a free and unobstructed passage is left for the hot air, inclosed by the brick walls or sheet-iron casing, to circulate through the spaces c, d, and f, thereby using the maximum of heat to the draught-air before it enters the fire. In this manner the air is heated more intensely than usual and unmixed with cold air, by this means keeping a perpetual fire and preventing clinking, and, at the same time, saving at least one-half the fuel.

The jacket G is important in producing an equal distribution of the draught-air. A portion flows over the narrow center g, while the remainder is carried around, and, finding a barrier in the projections b b, is fed in at the extreme sides of the same.

By the means above described the air that is entered to support the combustion is thoroughly heated, and does not come in contact with the cold air taken in at the bottom of the furnace, as in ordinary furnaces.

The draught-flue within the brick walls is provided with one or more supplementary registers I I, whose stems, h h, pass outward, so that they may be opened or closed at pleasure. I claim a special advantage in this, inasmuch as, at night, the outer register taking in cold air may be closed, and only the heated air of the furnace-space admitted to supply the combustion, thereby saving much loss when only sufficient fire is required to sustain the action.

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

1. The inclosed flue E and vertical jacket G, when combined together and arranged as herein described, for the purpose specified.

2. Specially, the flue E, located between the feeding-trough and ash-pit, and surrounding a portion of the fire-pot, and opening through the top of the ash-pit, and so arranged as to have the free passage-space c, d, f, in the manner and for the purpose specified.

3. Forming the concentric jacket G with the narrow center g and projecting ends b b, in the manner and for the purpose specified.

4. The supplementary registers I I, located in the hot-air space of the furnace, when combined with the flue E, as herein set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

B. GOMMENGINGER.

Witnesses:

P. R. WOODCOCK,

R. F. OSGOOD.