(No Model.)

A. H. PEGG.

FURNACE.

No. 345,536. Patented July 13, 1886.

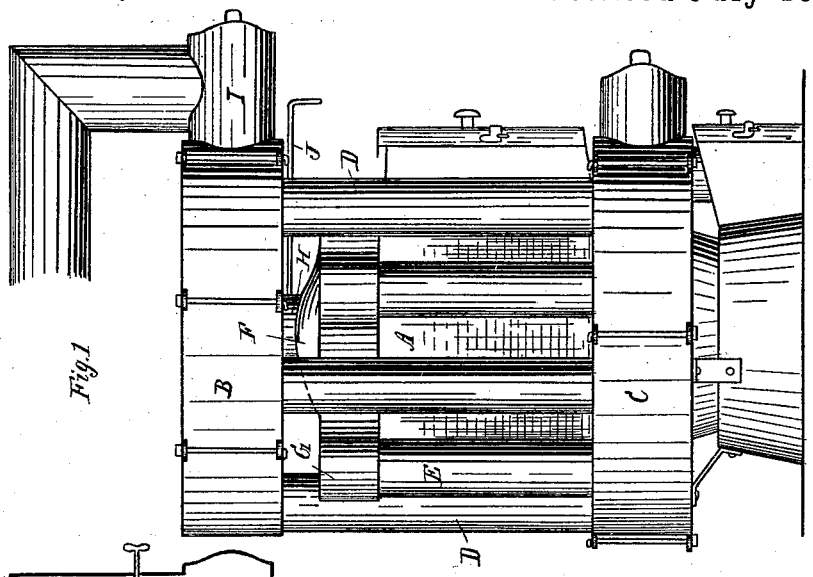

Fig. 1

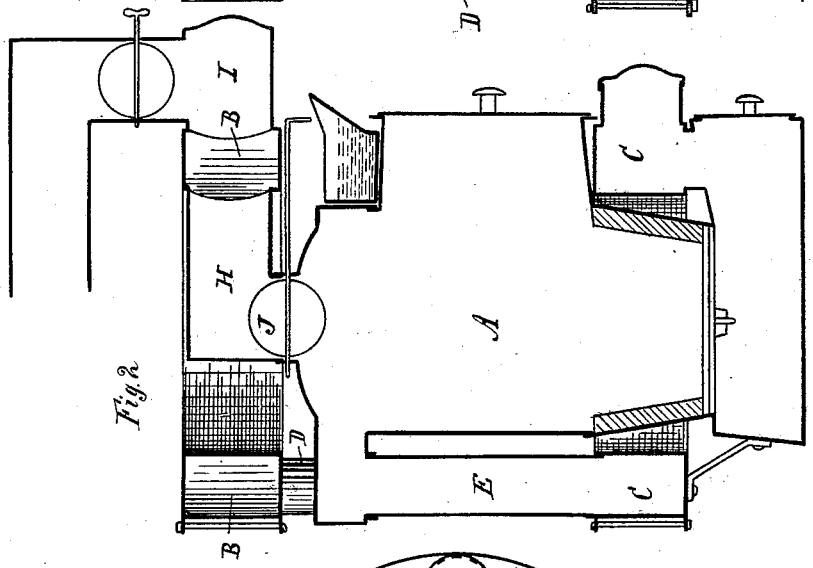

Fig. 2

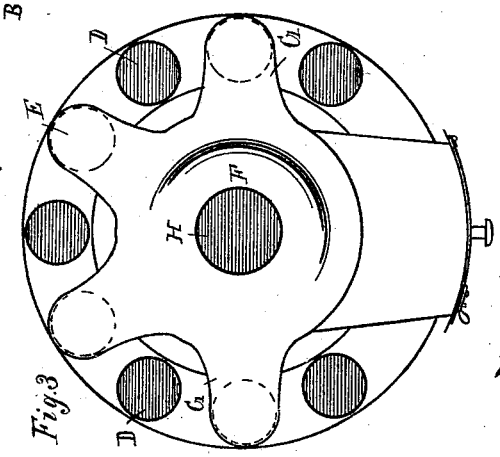

Fig. 3

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UNITED STATES PATENT OFFICE.

ABIJAH H. PEGG, OF DOWAGIAC, MICHIGAN.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 345,536, dated July 13, 1886.

Application filed July 23, 1885. Serial No. 172,414. (No model.)

To all whom it may concern:

Be it known that I, ABIJAH H. PEGG, of Dowagiac, in the county of Cass and State of Michigan, have invented new and useful Improvements in Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to new and useful improvements in hot-air furnaces, as set forth in the following specification, reference being had to the accompanying drawings.

The improvement consists in the novel combination and arrangement of drum and pipe radiators in which the gases of combustion circulate, with a stove for the purpose of heating the air in a more uniform manner on all sides of the furnace.

It further consists in the peculiar construction of the stove relative to said drum and pipe radiator, and vice versa, whereby the construction of the top of the stove is the only part of it which is different from the usual construction of the ordinary round heating-stove.

Figure 1 is a side elevation of my hot-air furnace. Fig. 2 is a vertical central section. Fig. 3 is a plan with the upper drum removed.

A is a round or elliptical stove of any of the usual forms or constructions, except as hereinafter specified.

B and C are two like annular drums placed concentrically around the stove and having their inner diameters suitably larger than the stove, to permit a free passage of hot air between them and the stove. The drum B is placed above the top of the stove, and the drum C is placed below in the region of the fire-pot, or near it.

D are vertical tubes or flues placed at equal distances between the two drums around the available part of the stove. They communicate with the drums at top and bottom.

E are vertical tubes or flues alternating with the tubes or flues D. They communicate at the lower end with the lower drum; but at the upper end they communicate with the top F of the stove. This top F of the stove is of cast-iron, and is provided at its periphery with scallops or projections G, which extend as far as the outer diameter of the drums, and have collars on the under side which receive the upper ends of the tubes E.

H is a direct smoke-flue. It starts from the top of the stove and discharges into the upper drum, through which it communicates with the exit-flue I into the chimney.

J is a damper in the direct smoke-flue.

Operation: If the damper J in the direct draft is closed, the products of combustion are carried from the top of the stove through the projections G into the downdraft-flues E, which discharge them into the lower annular drums, from whence they pass through the updraft-flues D into the upper annular ring, C, and thence into the exit-pipe I at the front.

It will be seen that the gases of combustion are immediately divided up on leaving the combustion-chamber, and continue so until the final exit is reached, and while the downdraft-tubes E undoubtedly receive the gases in a hotter condition the greater length of the updraft-tubes D compensates it, and as the tubes D E are also in the same relation to each other and to the furnace, as a result the air around the furnace will be heated alike on all sides.

I am aware that heating-drums have been formed with upper and lower annular chambers integral therewith, and flues connecting said annular chambers, said drum having central exit controlled by a damper. I am also aware of the Patents Nos. 17,022 and 172,481, and do not seek to cover these constructions in this application.

What I claim as my invention is—

1. In combination with the stove A, the annular upper and lower drums, B C, independent of said stove and arranged concentrically around said stove, with a hot-air space between said drums and the stove, the series of downdraft-flues E between the top of the stove and the lower drum, the series of updraft-flues D between the upper and lower drums and alternating with the other series of tubes in the available space around the stove, and the exit-pipe I, all arranged substantially as described.

2. In combination with the stove A, the annular upper and lower drums, B C, independent of said stove and arranged concentrically around said stove, with a hot-air space between said drums and the stove, the series of vertical up and down draft flues D E, alternating with each other in the available space around the

stove and between the drums, and exit-pipe I at the front of the upper drum, substantially as set forth.

3. In an air-heating furnace, the combination, with the stove A, having the projections provided with collars and integrally formed with its top, and provided with the direct-draft connection H, the upper and lower annular drums, B C, detachable from the stove and arranged concentrically around said stove, with a hot-air space between said drums and the stove, the series of vertical updraft-flues D between the annular drums, the series of downdraft-flues E between the projections of the top of the stove and the lower annular drum, and alternating with the draft-flues in the available space around the stove, and the exit-pipe I in the upper annular drum, all arranged substantially as described.

ABIJAH H. PEGG.

Witnesses:
MARY HAYNES,
HENRY MICHAEL.