

P. B. CLARK.
HOT-AIR FURNACE.

No. 175,664.

Patented April 4, 1876.

Fig. 1

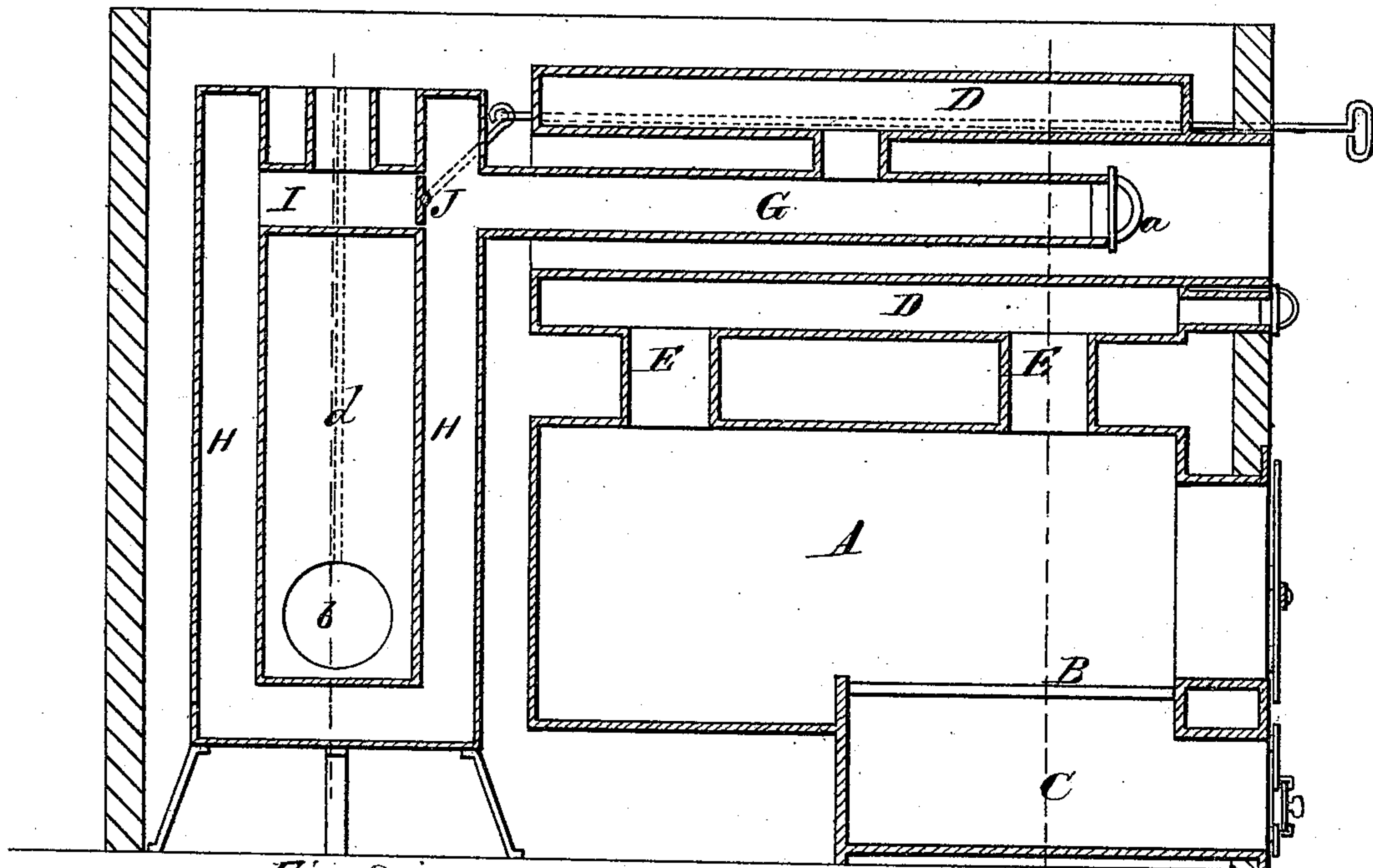


Fig. 2

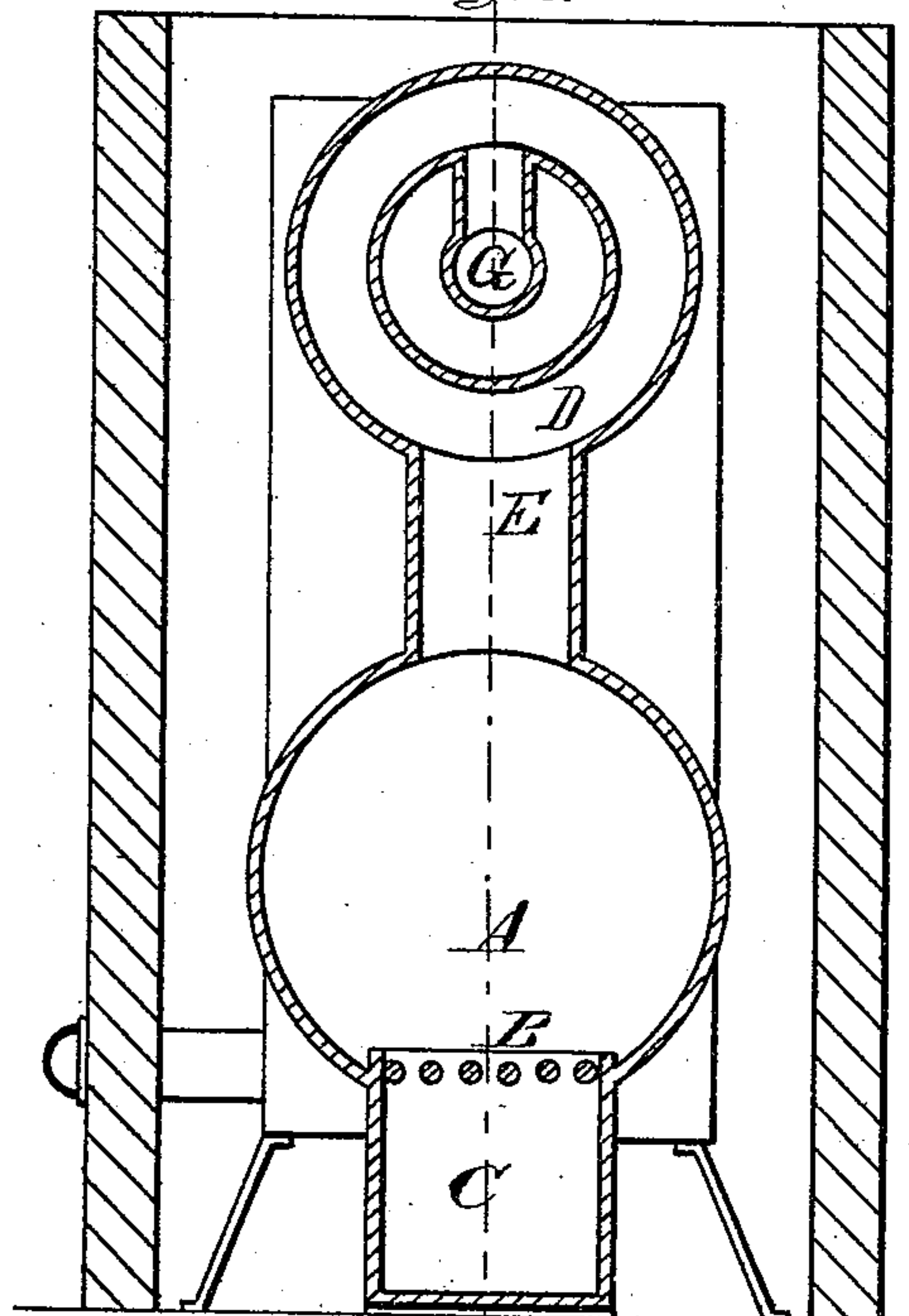
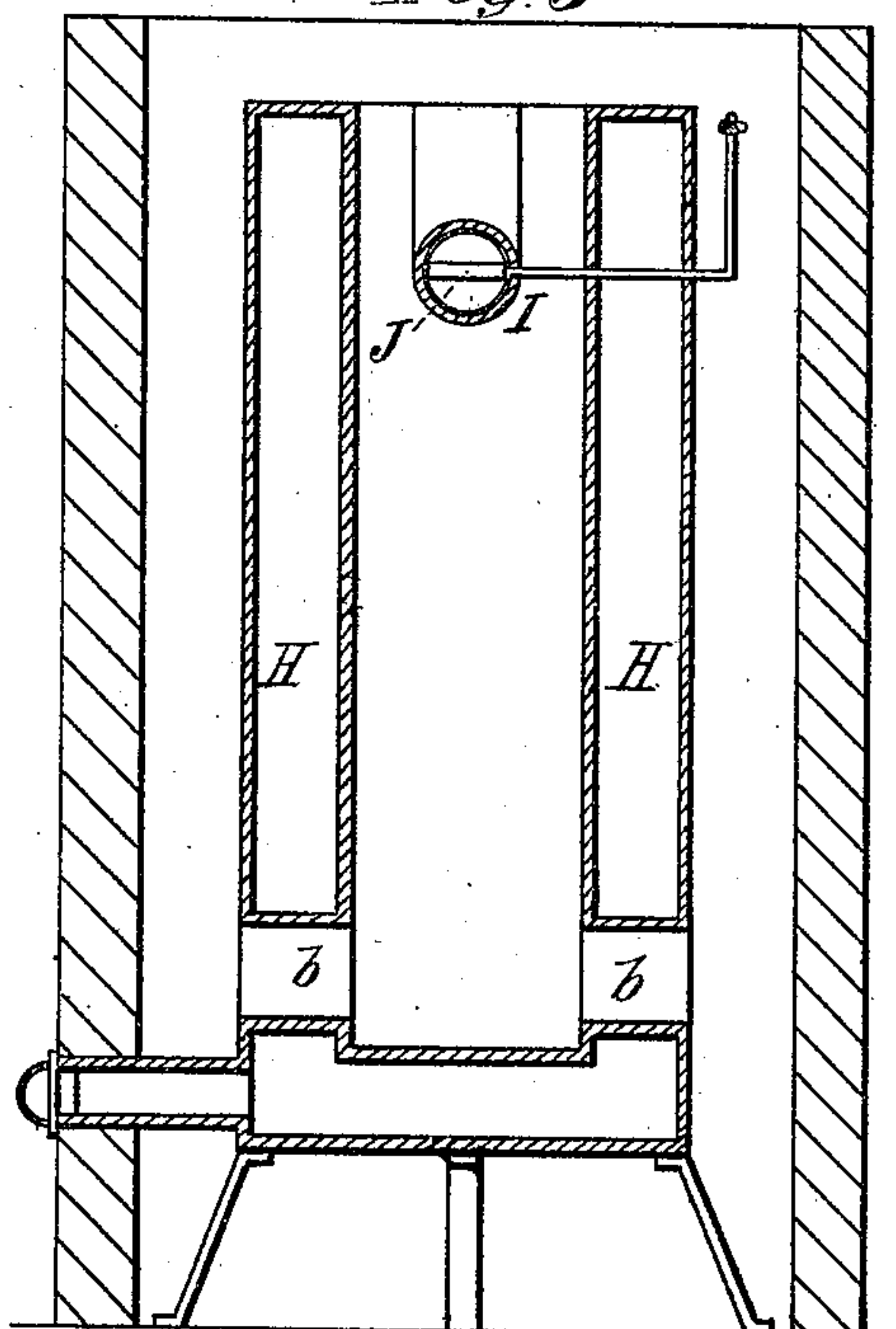


Fig. 3



WITNESSES

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IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. 175,664, dated April 4, 1876; application filed March 11, 1876.

To all whom it may concern:

Be it known that I, PERRY B. CLARK, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and valuable Improvement in Hot-Air Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my furnace, and Figs. 2 and 3 are transverse vertical sectional views thereof.

The nature of my invention consists in the construction and arrangement of a double radiator or hot-air furnace, as will be hereinafter more fully set forth.

In the annexed drawing, A (see Figs. 1 and 2) represents the fire-box, with grate B and ash-pit C underneath. The fire-box A is made in the form of a horizontal cylinder, with two short pipes, E E, connecting with a top horizontal drum, D. This drum is formed of two concentric cylindrical shells, connected together, and leaving the center shell open at both sides for the passage of air to be heated. In the center of this drum D is placed the smoke-pipe G, (see Figs. 1 and 2,) in the form of an inverted T, the center arm communicating with the smoke-space of the drum. The outer end of the smoke-pipe G is closed by a cap, *a*, while the inner end communicates with the perpendicular back drum H, as shown in Fig. 1. This drum is constructed in the same manner as described for the horizontal drum D, and has an air-inlet, *b*, at or near the bottom, as shown in Figs. 1 and 2. In the upper end

of the drum H is the smoke-pipe I, also made in the form of an inverted T, the center arm communicating with the chimney, and the side arms communicating with the smoke-space of the drum directly opposite the entrance, or on a line with the entrance of the pipe G. J is a damper in the end of the pipe I, which damper, when open, admits of a direct draft through said pipe, and, when closed, the smoke is caused to circulate from top to bottom, and up again, by means of a partition, *d*, as shown.

By the arrangement of the T-shaped smoke-pipes in the top and back drums, additional heating-surface is obtained. The various drums are provided with suitable cleaning-holes.

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

1. The inverted-T-shaped smoke-pipe G, in combination with the horizontal drum D and vertical drum H, as and for the purpose set forth.

2. The inverted-T-shaped smoke-pipe I, with damper J, in combination with the vertical drum H, having interior partition *d*, as and for the purpose herein set forth.

3. The combination of the furnace A, passages E, drum D, inverted-T-shaped pipe G, drum H, with air-inlet *b* and partition *d*, and inverted-T-shaped pipe I, with damper J, all for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

PERRY BAKER CLARK.

Witnesses:

L. A. DUNN,

ED. T. SLINGSBY.