

J. H. LAUX.

FURNACE.

APPLICATION FILED NOV. 21, 1908.

Patented Aug. 2, 1910.

965,914.

Fig. 1.

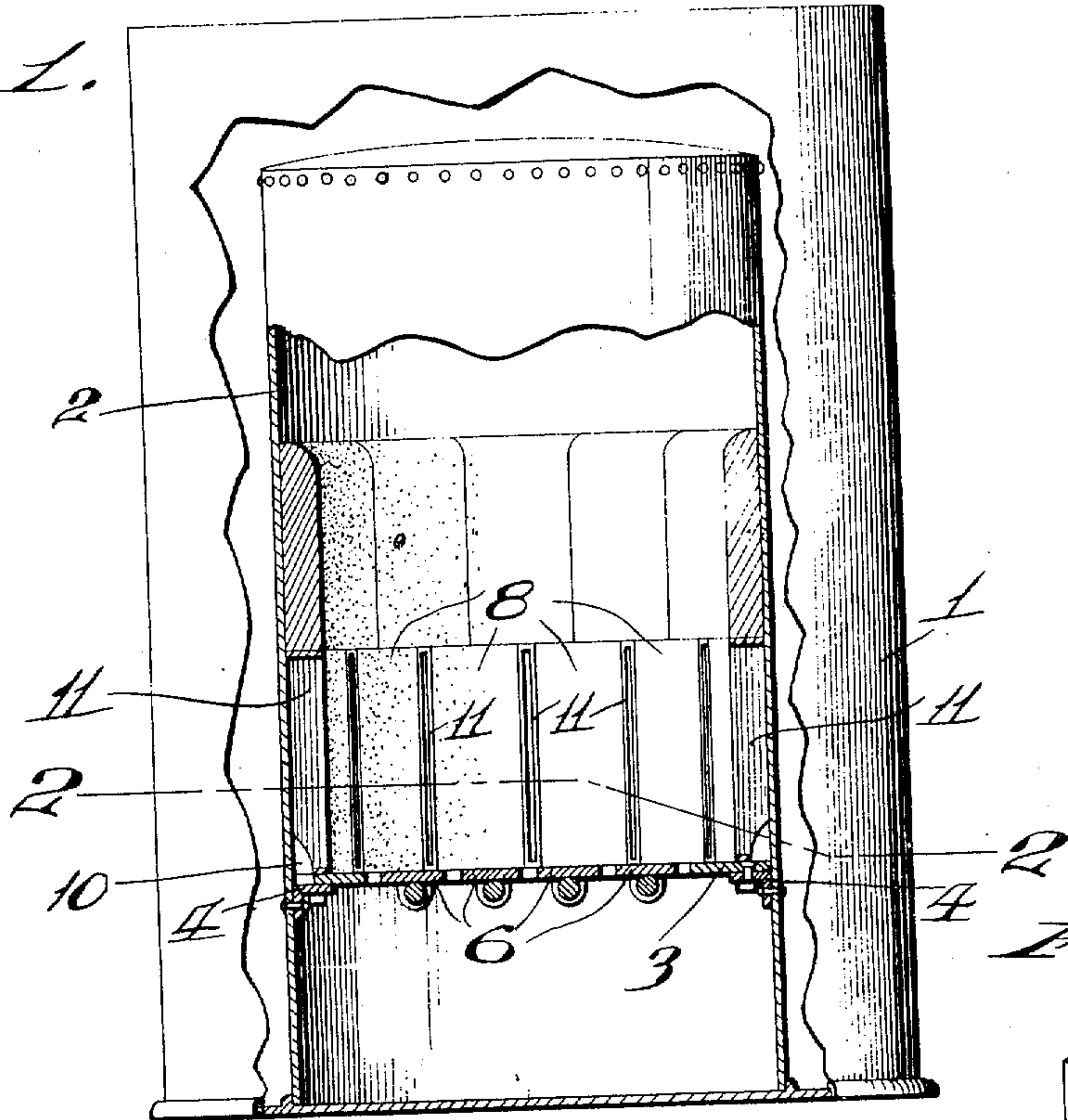


Fig. 3.

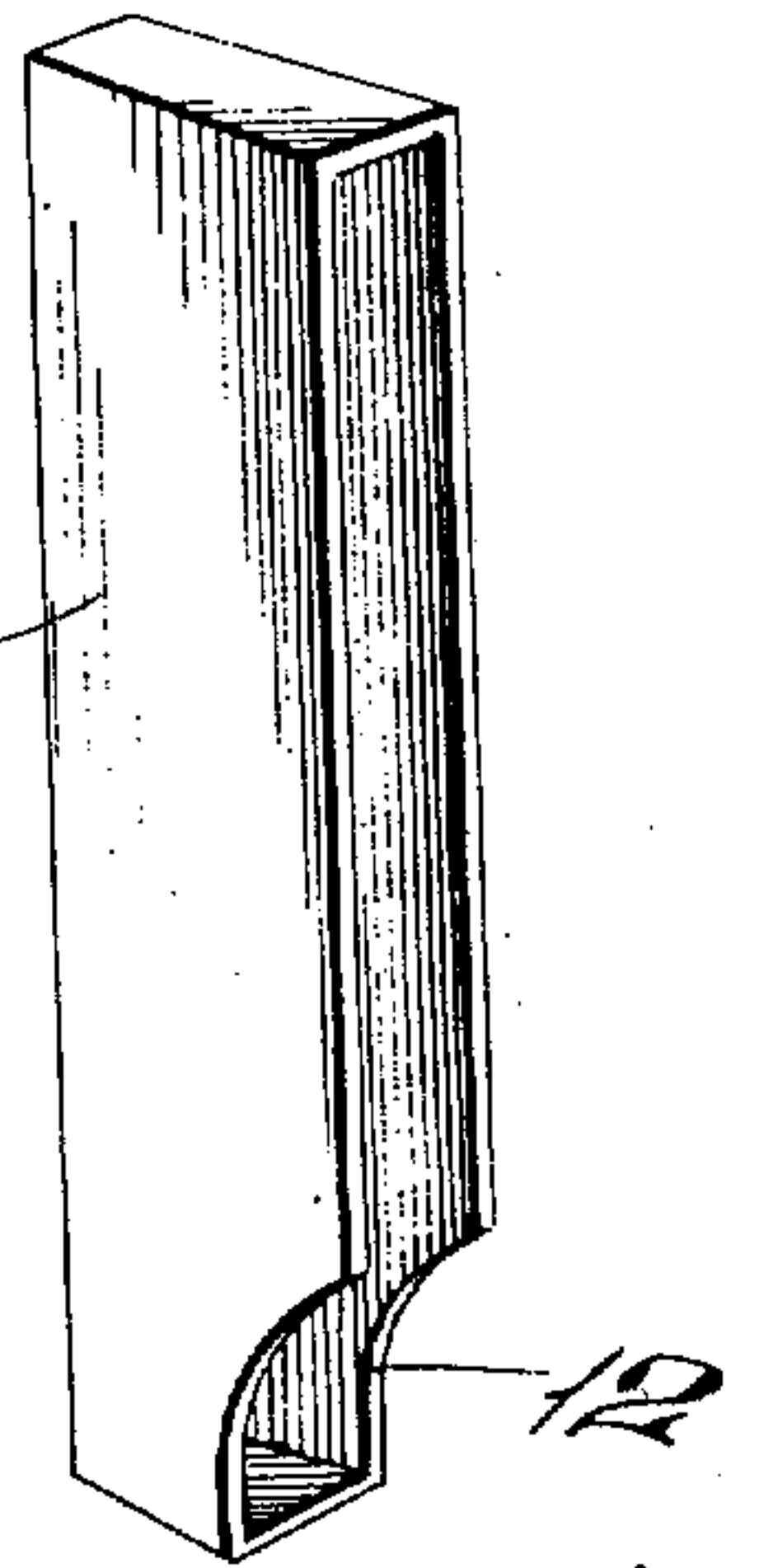


Fig. 2.

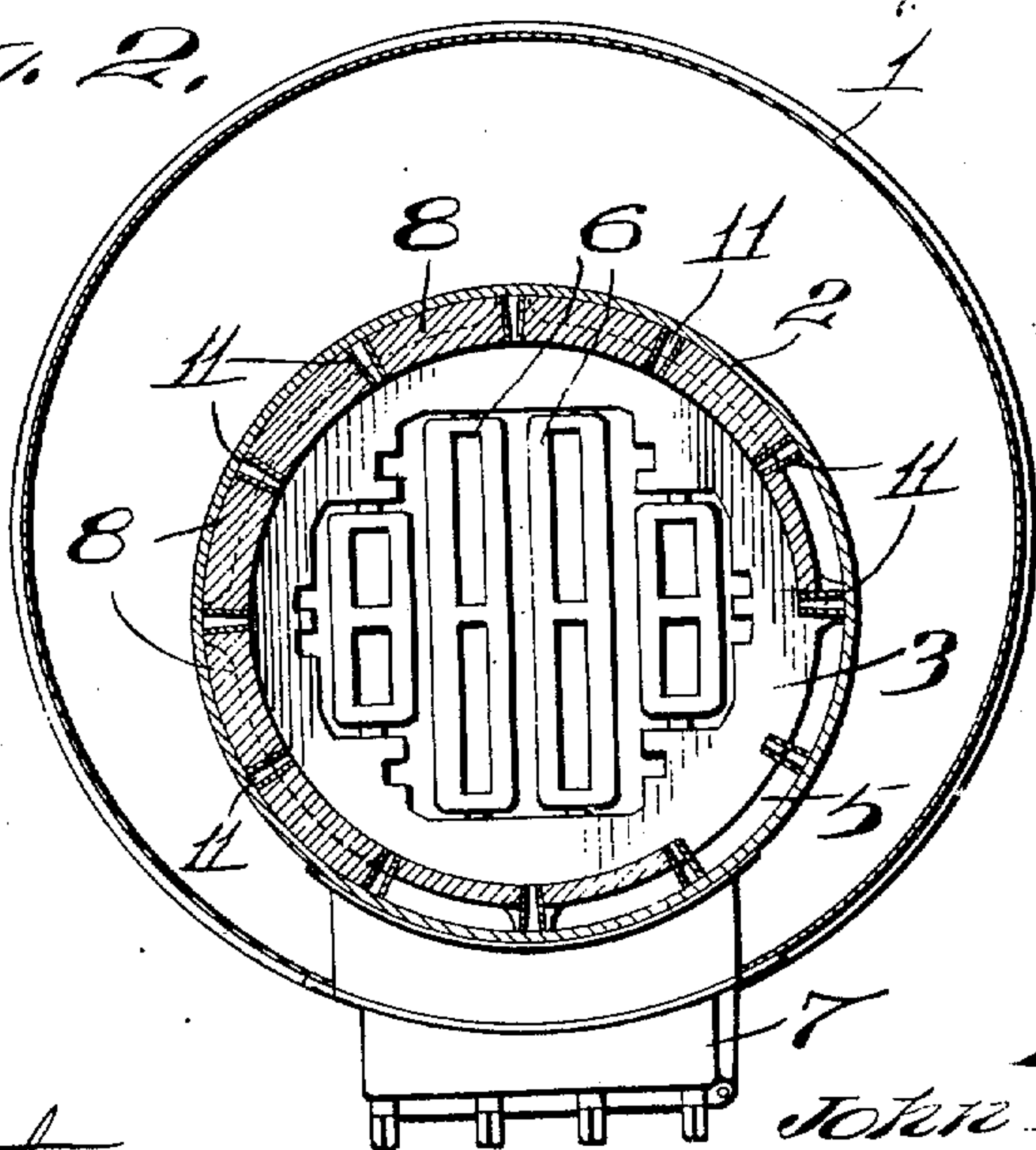
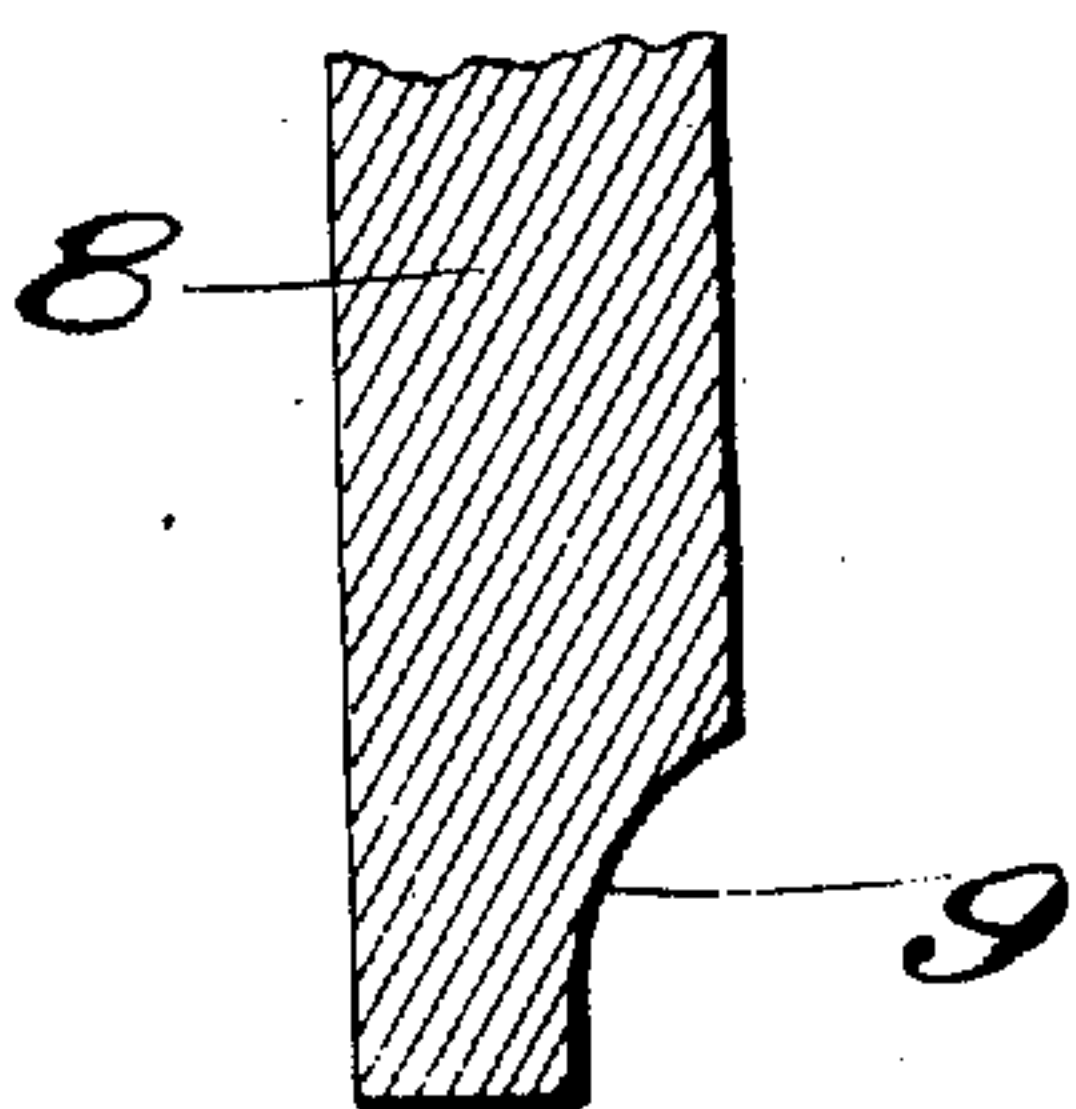


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FURNACE.

965,914.

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To all whom it may concern:

Be it known that I, JOHN H. LAUX, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Furnaces, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates generally to furnaces, and more particularly to the construction of the fire pots thereof, the object of my invention being to provide a simple, inexpensive fire pot and to arrange a series of air inlet members in the wall of the fire pot, thus providing for the delivery of air to all sides of the body of fuel within the fire pot, thus permitting combustion of said fuel and reducing to a minimum the smoke arising from the fire.

For the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings; in which—

Figure 1 is a front elevation of a furnace, the outer shell of which is broken away and showing the fire pot in vertical section; Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is a perspective view of one of the air inlet members used in the construction of the fire pot; and Fig. 4 is a vertical section taken through the center of one of the bricks or devices used in the fire pot of my improved construction.

Referring by numerals to the accompanying drawings: 1 designates the outer shell or wall of a furnace, 2 the inner shell or wall thereof, 3 the grate ring supported on brackets 4 in the lower portion of the inner shell 2, and there being narrow spaces 5 between the outer edge of said ring 3 and the inner face of the shell or wall 2. Arranged within the grate ring 3 is a series of ordinary grate bars 6, and formed in the lower portions of the inner and outer shells 1 and 2, and below the grate bars is the draft inlet 7.

8 designates a series of bricks or tile which form a circular wall around the interior of the inner shell 2 and form the lower portion of the fire pot, and the lower outer corners of these brick or tile are cut away, as designated by 9, to form an annular chamber 10,

immediately above the spaces 5 between the grate ring 3 and the shell 2.

Arranged between the brick or tile 8 are the vertically disposed air inlet members 11, formed of cast iron or analogous material, said members being hollow and open at the front and rear, and the lower outer corners of said members are cut away, as designated by 12, in order to coincide with the cut-away lower corners of the brick or tile 8.

In the construction of an ordinary fire pot utilizing my improved air inlet members, said members combine with a row of brick or tile to form the lower half of the fire pot, and a row of brick or tile is arranged immediately on top of the first row of brick or tile and the air inlet members, which construction is clearly shown in Fig. 1. By cutting away the lower outer corners of the brick or tile and the air inlet members, the annular chamber 10 is formed entirely around the lower outer edge of the fire pot, and air entering the draft inlet 7 passes upward through the spaces 5 into this annular chamber and passes from thence upward through the air inlet members 11 and discharges therefrom in thin jets which are arranged at equal distances apart entirely around the bed of fuel upon the grate bars and within the fire pot, and this even distribution of the draft to the fire promotes combustion, thereby burning all of the gas generated from the fuel within the fire pot and consuming nearly all of the smoke arising from the fire. Any ashes from the fire within the fire pot which may enter the air inlet members will drop to the bottoms thereof and will finally discharge through the spaces 5 into the ash pit below the grate bars.

A fire pot of my improved construction is simple, inexpensive, and can be cheaply constructed, and as it is only necessary to arrange the air inlet members between the brick or tile, the fire pot can be installed by an ordinary workman without the use of special tools or fittings.

I claim:

1. In a furnace, a fire pot comprising a circular wall of fire proof material, a series of air inlet hollow blocks arranged at suitable distances apart in said fire proof wall, which air inlet hollow blocks are provided with completely closed top ends and par-

5 tially closed bottom ends, the vertical side walls of each block being spaced apart from the upper end wall to the lower end wall so as to form a continuous opening completely between said walls.

10 2. In a furnace provided with a grate and a circular grate ring, which grate ring is spaced apart from the inner shell of the furnace, a fire pot comprising a wall of fire proof material supported on the grate ring, the lower outer edge of which wall is cut away above the space between the grate ring and the wall of the furnace, and a series of
15 air inlet hollow blocks arranged at suitable distances apart in said fire proof wall, which air inlet hollow blocks are provided with completely closed top ends and partially closed bottom ends, the vertical side walls of each block being spaced apart from the upper end wall to the lower end wall so as to
20 form a continuous opening completely between said walls.

25 3. The combination with a circular wall forming the fire pot of a furnace, of a series of air inlet hollow blocks arranged at suitable distances apart in the wall, all of which air inlet hollow blocks are provided with completely closed top ends and partially closed bottom ends, the vertical side walls
30 of each block being spaced apart from the upper end wall to the lower end wall so as to form a continuous opening completely between said walls.

35 4. The herein described furnace, constructed with the usual grate, a circular grate ring for supporting the grate on the furnace wall, which grate ring is spaced apart from the furnace wall, a fire-proof wall supported on the outer edge of the
40 grate ring and forming the fire pot of the furnace, the lower outer edge of the fire-

proof wall being cut away, and a plurality of air inlet hollow blocks arranged in the fire pot wall, said air inlet hollow blocks being provided with an opening in their front
45 faces and the lower outer corners of each of the hollow blocks being cut away so as to conform with the cut away portion of the fire-proof wall.

50 5. In a furnace, provided with a grate ring spaced apart from the wall of the furnace, a fire-proof lining supported by said grate ring, a metal hollow block positioned on said grate ring within the fire-proof lining and which block is provided with an upper end completely closed by an end wall,
55 the lower end of said block being partially closed by an end wall, said upper and lower ends being parallel, side walls connecting said upper and lower end walls, said side walls being spaced apart so as to provide an elongated opening between the top wall and
60 the lower end wall.

65 6. A lining for fire pots, consisting of a series of fire-proof blocks having their outer lower corners cut away and an air inlet block having its outer lower corner cut away, said air inlet block having a closed upper end and side walls spaced apart and angularly disposed in relation to each other so as to
70 form between the side walls of said block an inwardly tapered opening extending longitudinally of the block, said air inlet block being placed between two of said fire-proof blocks.

75 In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

JOHN H. LAUX

Witnesses:

M. P. SMITH,
E. L. WALLACE.