

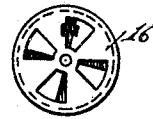
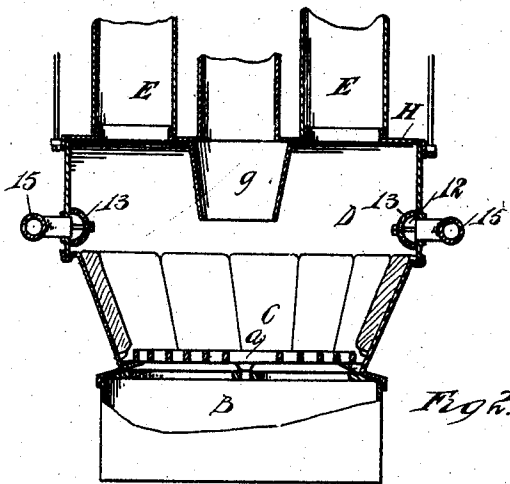
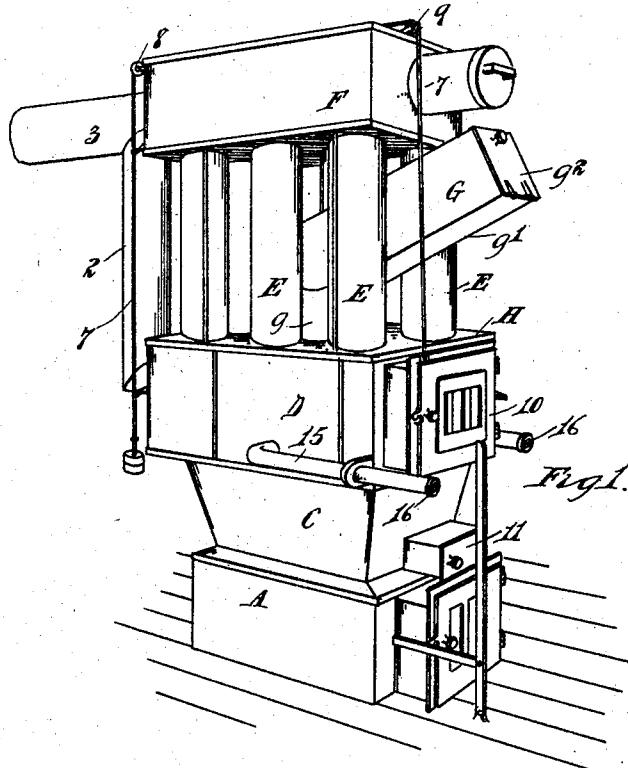
No. 781,388.

PATENTED JAN. 31, 1905.

L. S. BAKER.
FURNACE.

APPLICATION FILED SEPT. 30, 1903.

2 SHEETS—SHEET 1.



WITNESSES
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2 SHEETS—SHEET 2.

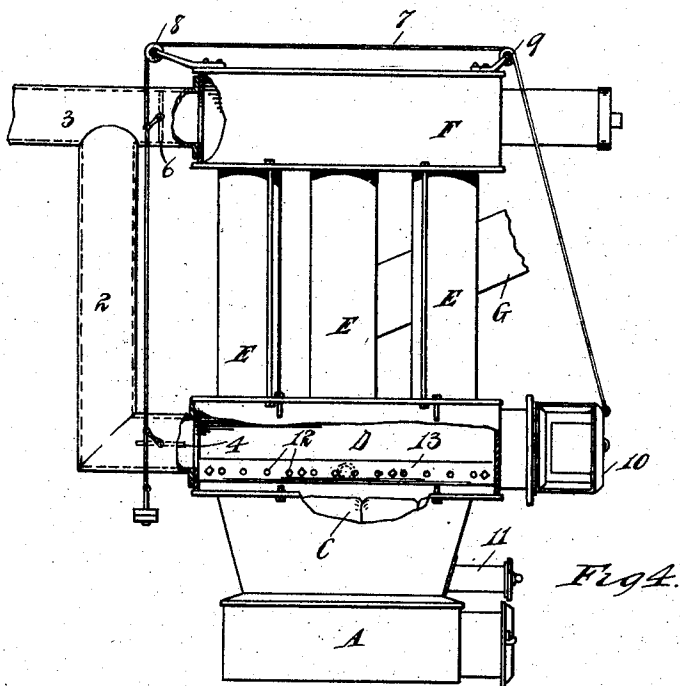


Fig. 4.

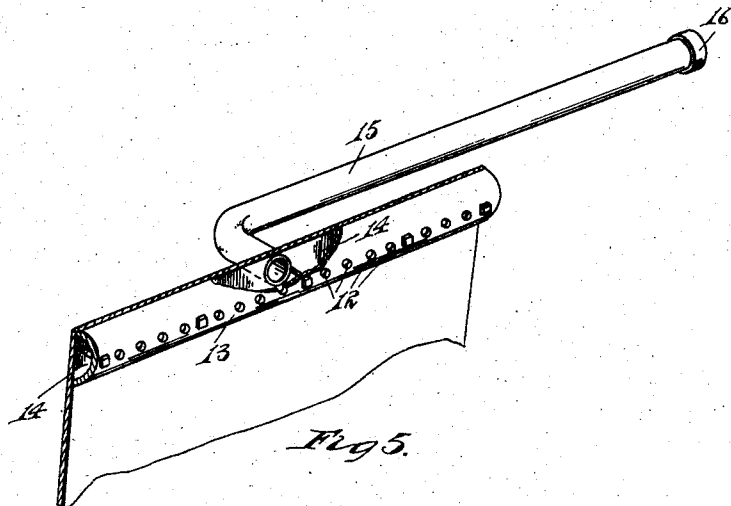


Fig. 5.

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UNITED STATES PATENT OFFICE.

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FURNACE.

SPECIFICATION forming part of Letters Patent No. 781,388, dated January 31, 1905.

Application filed September 30, 1903. Serial No. 175,117.

To all whom it may concern:

Be it known that I, LYMAN S. BAKER, a citizen of the United States, residing at Camden, county of Hillsdale, State of Michigan, have
 5 invented a certain new and useful Improvement in Furnaces; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use
 10 the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to furnaces, and has for its object improvements in various details
 15 of construction of the furnace.

In the drawings, Figure 1 is a perspective of the furnace. Fig. 2 is a vertical cross-sectional view. Fig. 3 shows a damper or air-regulating valve. Fig. 4 is a vertical elevation longitudinal of the furnace, partly broken
 20 away. Fig. 5 is a perspective view showing a detail.

A indicates the base of the furnace, within which is contained the ash-pit B. Above this
 25 is the fire-pot C, separated from the ash-pit by a grate *a*. Above the fire-pot is a combustion-chamber B, above which are radiating-flues E and a radiating-drum F.

G indicates a magazine having a removable
 30 lower terminal *g* and inclined upper portion *g'*, closed by a door *g*². The lower terminal *g* is made separate from the upper portion and is removable from the plate H, which closes the furnace above the combustion-chamber D and through which are the openings
 35 that lead into the radiator-flues E.

A direct-draft pipe 2 leads from the combustion-chamber into the smoke-flue 3. The smoke-flue 3 leads from the drum F.

40 A damper 4 in the direct-draft pipe 2 and a damper 6 in the smoke-flue 3 are arranged to be actuated by a cord 7, that leads over sheaves 8 and 9 to the door 10, and the opening of the

door actuates the dampers to close damper 6 and open the damper 4 and produce a direct
 45 draft to the smoke-flue 3 whenever the door 10 is opened.

The grate *a* is pivoted at its center and is turned on its pivot by a lever that projects
 50 into the shaking-aperture 11.

Secondary air is admitted to the combustion-chamber D through a plurality of small openings 12, that are spaced along a curved
 55 plate 13, and the curved plate 13 is secured to the inside of the walls of the combustion-chamber D, a plate being secured to each side. The curved plate and the walls of the combustion-chamber inclose a distribution-
 60 chamber 14, into which leads an inlet-pipe 15. The pipe 15 leads into the air-distribution chamber 14 at a point intermediate the ends thereof. There are two air-inlet pipes 15, one at each side of the furnace, and each is closed at its outer end by valve 16. The in-
 65 lets 12 admit a large volume of air in small streams into the combustion-chamber D immediately over the surface of the coal in the fire-pot C, furnishing the necessary secondary supply of oxygen for a perfect combustion.

What I claim is—

70 In a furnace, in combination with a fire-pot and a combustion-chamber thereover, radiating-flues and a radiating-drum, a direct-draft pipe leading from the combustion-chamber and a smoke-flue leading from the radiating-
 75 chamber and joining the direct-draft flue, dampers in both of said flues, and means connected with the door whereby they are actuated from the door, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

LYMAN S. BAKER.

Witnesses:

B. R. ALWARD,
 F. L. SHANNON.