No. 661,254. Patented Nov. 6, 1900.

G. P. BASSETT, JR.

DRYING OVEN.

(Application filed May 1, 1899.)

(No Model.) 2 Sheets—Sheet 1.

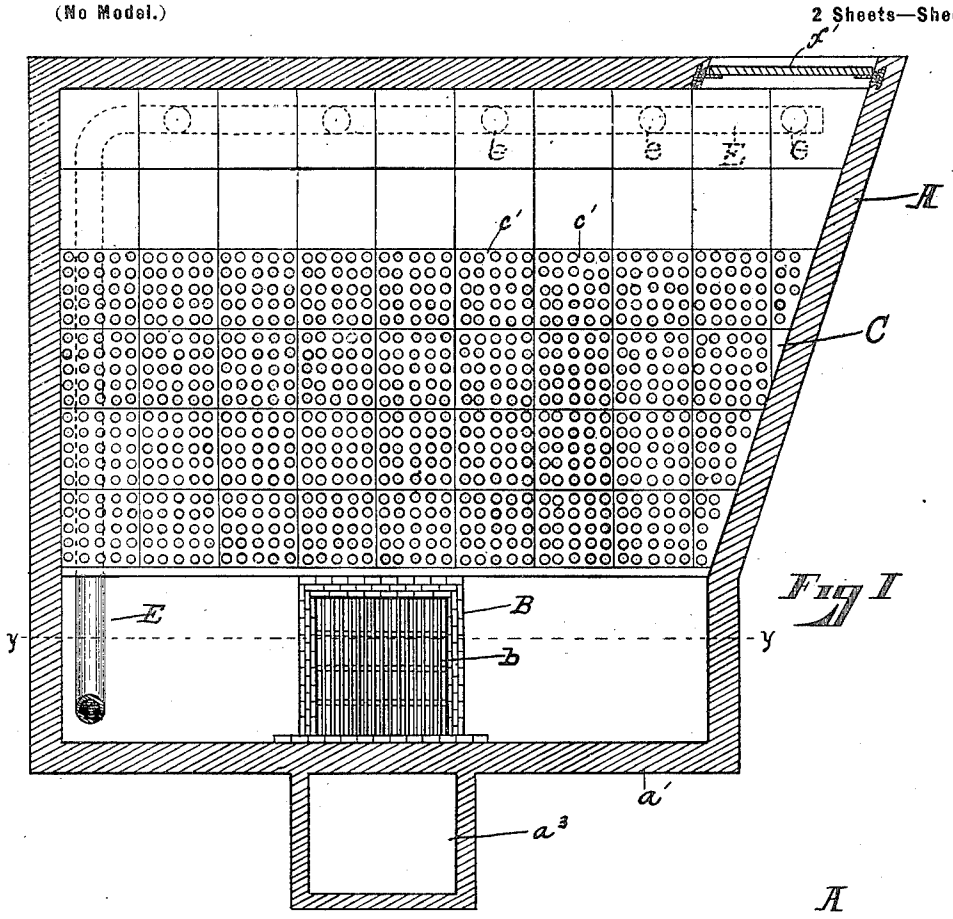


Fig 1

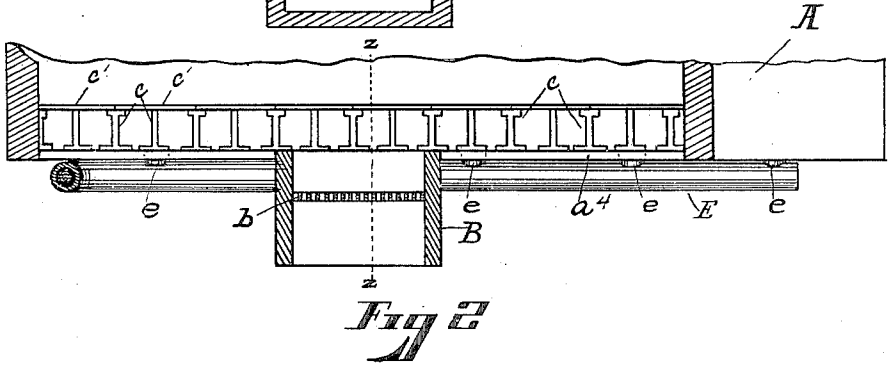


Fig 2

WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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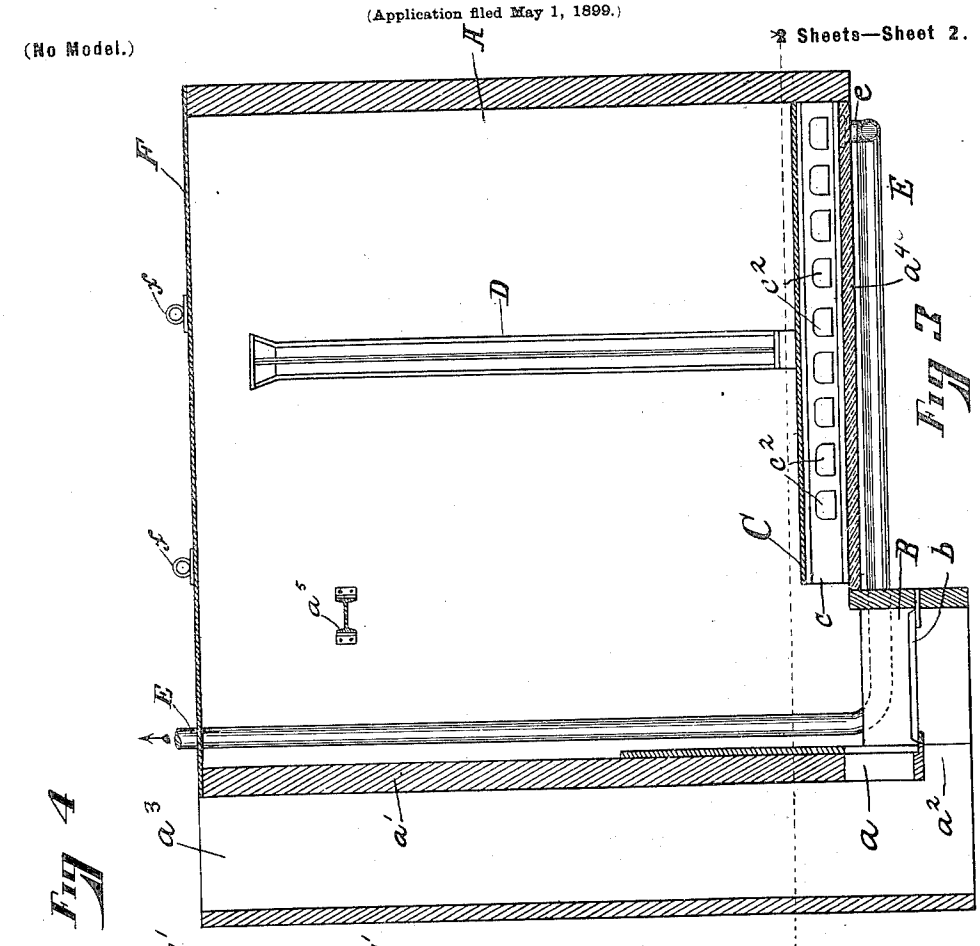


Fig 4

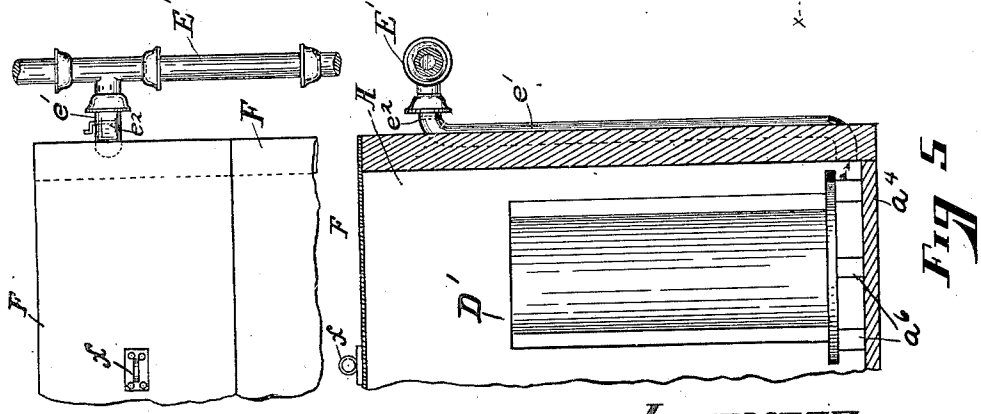


Fig 5

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UNITED STATES PATENT OFFICE.

GEORGE P. BASSETT, JR., OF CINCINNATI, OHIO.

DRYING-OVEN.

SPECIFICATION forming part of Letters Patent No. 661,254, dated November 6, 1900.

Application filed May 1, 1899. Serial No. 715,130. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. BASSETT, Jr., a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Drying-Ovens, of which the following is a specification.

The object of my invention is an oven for drying flasks used in molding pipes from which the vapors taken up from the sand mold by the hot air are effectually withdrawn, and is attained by causing the hot air to rise freely from the fire to the top of the oven, to be thence drawn downward to the interior of the flask and, with the vapors gathered therein, to be carried out of the oven at or near its floor.

In the accompanying drawings, Figure 1 is a plan view of an oven embodying my invention, the walls thereof being shown broken off upon line $x\ x$, Fig. 3, and some of the perforations in the plates of the floor being left out, so as not to obscure the pipe (shown in dotted lines) which leads to the blower. Fig. 2 is a vertical longitudinal sectional view taken upon line $y\ y$, Fig. 1. Fig. 3 is a transverse sectional view taken upon line $z\ z$, Fig. 2, one of the flasks used in molding being shown in edge elevation. Fig. 4 is a partial plan view of a modification. Fig. 5 is a side elevation of the same, a flask for pipes of greater circumference being shown in elevation.

It should be understood before describing the parts in detail that the flasks to be dried have been rammed up with sand between the pattern and the flasks in the usual manner, the pattern withdrawn, and the sand mold in the flask, which forms the outer contour of the pipe, "blackwashed" in the usual manner preparatory to drying the sand mold within the flasks. When speaking of flasks throughout the specification, I mean the flasks rammed up in the usual manner. It is of course understood that after the flask has been dried the core, which has also been dried, and may be dried in my improved oven as well as the flask, is inserted in the flask after it has been removed to the molding-pit.

Referring to the parts, which are indicated by similar reference-letters wherever they occur throughout the various views, the oven A has built within it an open-top grate or fireplace B, upon the grate-bars b of which fuel is thrown through an opening a at the lower end of the front wall a' of the oven, below which is a second opening a^2 for the admission of air to the fire from the shaft a^3, which is built out from the front wall a'. Upon a level with the top of the grate the oven has a concrete floor a^4, upon which rest the bearing-bars c, which support the floor C, which consists of perforated plates c', upon which the flasks D are supported in a vertical position for drying, the first row of them leaning against the cross-beam a^5 and succeeding rows against the first row. A pipe E, which connects with an exhaust or blower, extends beneath the concrete a^4 and has branch pipes e extending upward through it and communicating with the rear end of the chambers formed between the concrete a^4, the perforated plates c', and the bearing-bars c, which have holes c^2 cut in their webs to put these chambers in communication one with the other. The top of the oven is covered by imperforate metal plates or doors F, which rest upon its front and rear walls and have rings f, secured to their upper surface, by which to lift them off the oven. Access to the oven may be had through a door f'. The hot air and gaseous products of combustion (carbon monoxid, C^2O') rise up from the fire into the upper part of the oven and are thence drawn downward by the suction of the blower going through the interior of the flasks and the perforations in the plates, drying the flasks and carrying off the vapors.

The modification shown in Figs. 4 and 5 is especially adapted to flasks of large diameter. The construction is the same as that of the oven just described, with the exception that the pipe E′ is placed upon the outside of the oven and has branch pipes e' tapped through the oven-wall opposite the grate and near the floor a^4, the perforated plates and the bearing-bars being omitted and the flasks D′ being supported above the concrete a^4 upon movable blocks a^6. The branch pipes e' have within them valves e^2, so that when the oven is not filled with flasks those outlets near

which there are no flasks may be closed, so as to cause the outflow to take place only near the flasks.

What I claim is—

1. In an oven for drying flasks the combination of the closed-top oven, the fireplace within the oven having an imperforate end wall and in direct open communication with the interior thereof and the pipe connected with an air-exhaust and communicating with the oven at or near its floor, substantially as shown and described.

2. In an oven for drying flasks the combination of the closed-top oven, the fireplace within the oven having an imperforate end wall and in direct open communication with the interior thereof, the perforated plates supported above the floor thereof, and the pipe connected to a blower and communicating with the oven below the perforated plates, substantially as described.

3. The combination of the closed-top oven, the open-top fireplace within the oven having imperforate end wall, openings in the oven-wall for the admission of fuel and air to the fire, bearing-bars upon the oven-floor, perforated plates supported by said bars, and pipes connecting the chambers formed by said floor bars and plates, with an exhaust, substantially as shown and described.

4. The combination of the closed-top oven having a concrete floor, the bearing-bars resting upon said floor and having their webs perforated, the perforated plates supported by said bearing-bars to support the flasks to be dried, the open-top grate or fire-chamber within the oven arranged at its forward end and having its top on a substantially horizontal level with the top of the concrete floor of the oven, pipes at the rear end of the oven below the concrete floor and in communication with the chambers between the concrete floor and perforated plates and also in communication with the pipe connected with the exhaust, substantially as shown and described.

5. In a flask-drying oven the combination substantially as hereinbefore set forth of the closed oven, the furnace arranged at the forward end of the oven having the top of its fire-chamber arranged below the level of the oven-floor, an open-top air-shaft in front of the oven having its inner wall perforated and provided with openings to supply fuel to the fire-chamber and air to the ash-pit, the bearing-bars resting upon the floor of the oven, the perforated plates resting upon said bearing-bars to support the flasks to be dried, the perforations communicating with the chambers between the bearing-bars and the chambers between the bearing-bars being in communication with each other, an exhaust-pipe beneath the concrete floor of the oven having branch pipes extending through the floor of the oven communicating with the chambers between the concrete floor and perforated plates, whereby the gaseous products of combustion which ascend from the fire-chamber to the top of the oven are drawn down through and around the flasks supported above and upon the perforated plates and the vapors caused by the drying of the flasks exhausted.

GEORGE P. BASSETT, JR.

Witnesses:

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GEO. J. MURRAY.