

(No Model.)

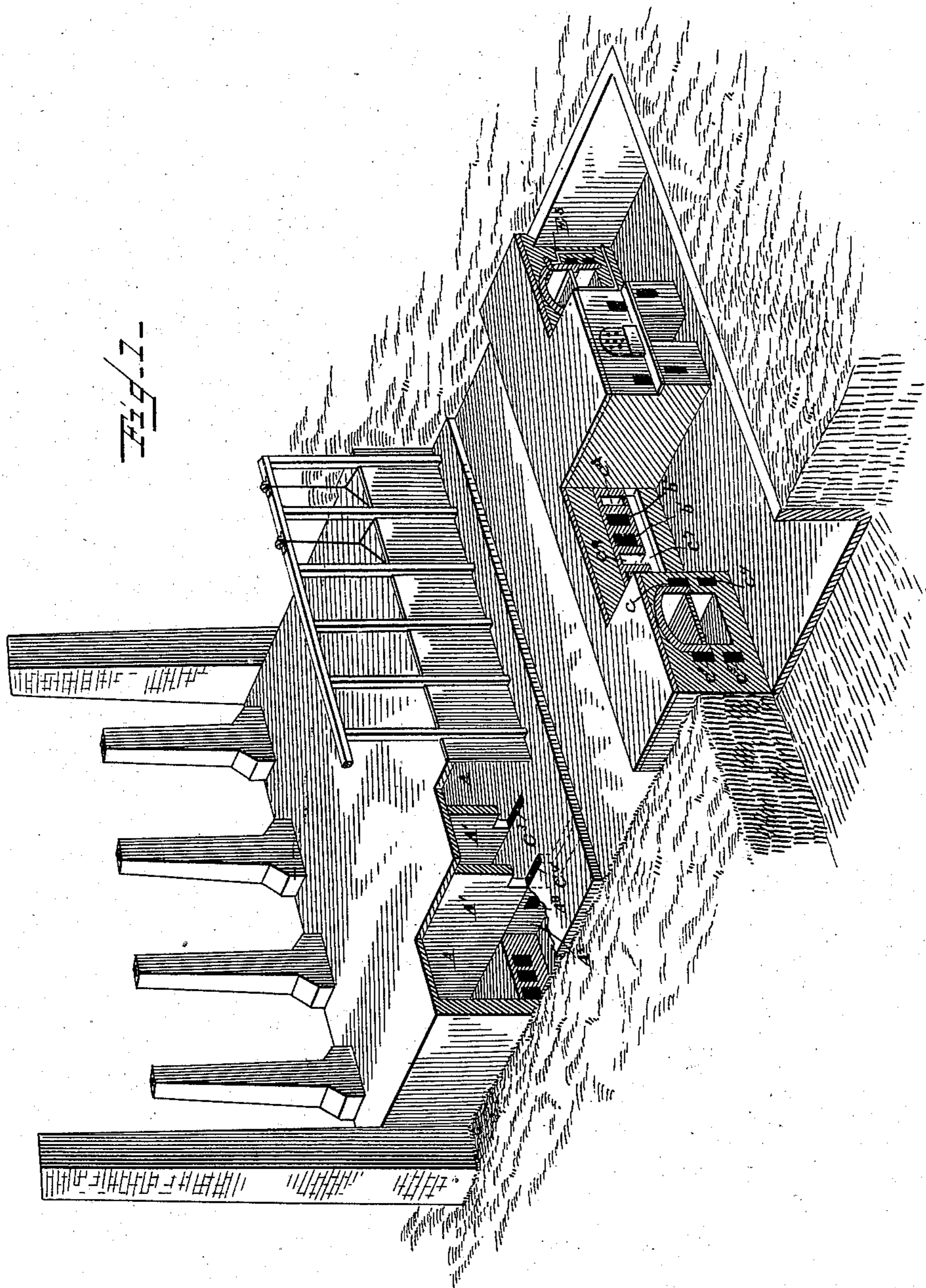
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G. W. SHARER.

DRIER.

No. 385,208.

Patented June 26, 1888.



WITNESSES,

Edwin L. Yewell,

John Enders, Jr.

INVENTOR,

Geo. W. Sharer.

per Hallenck + Stallock.

Attorney S.

(No Model.)

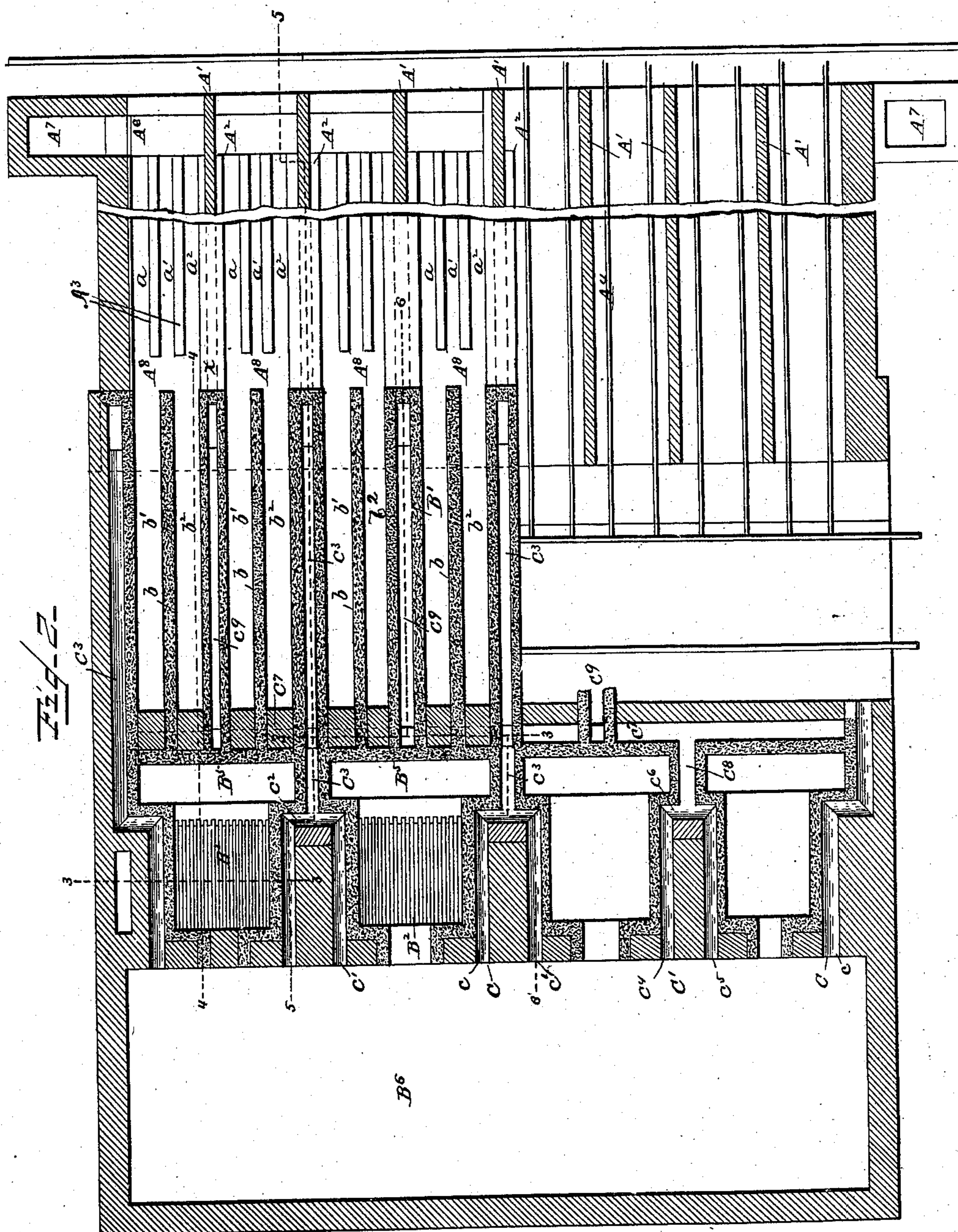
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No. 385,208.

Patented June 26, 1888.



**WITNESSES.**

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(No Model.)

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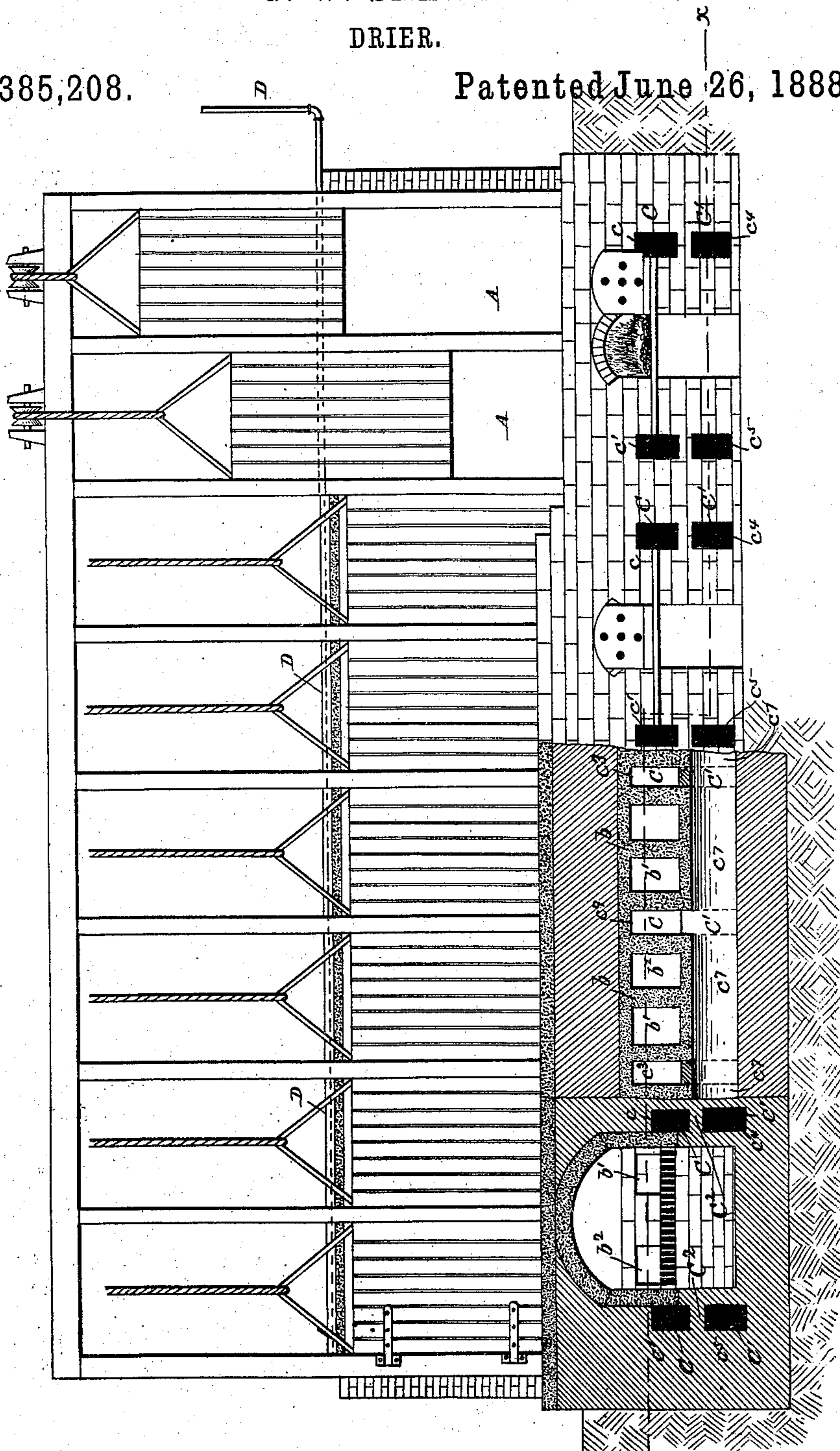
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Fig. 3



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5 Sheets—Sheet 4.

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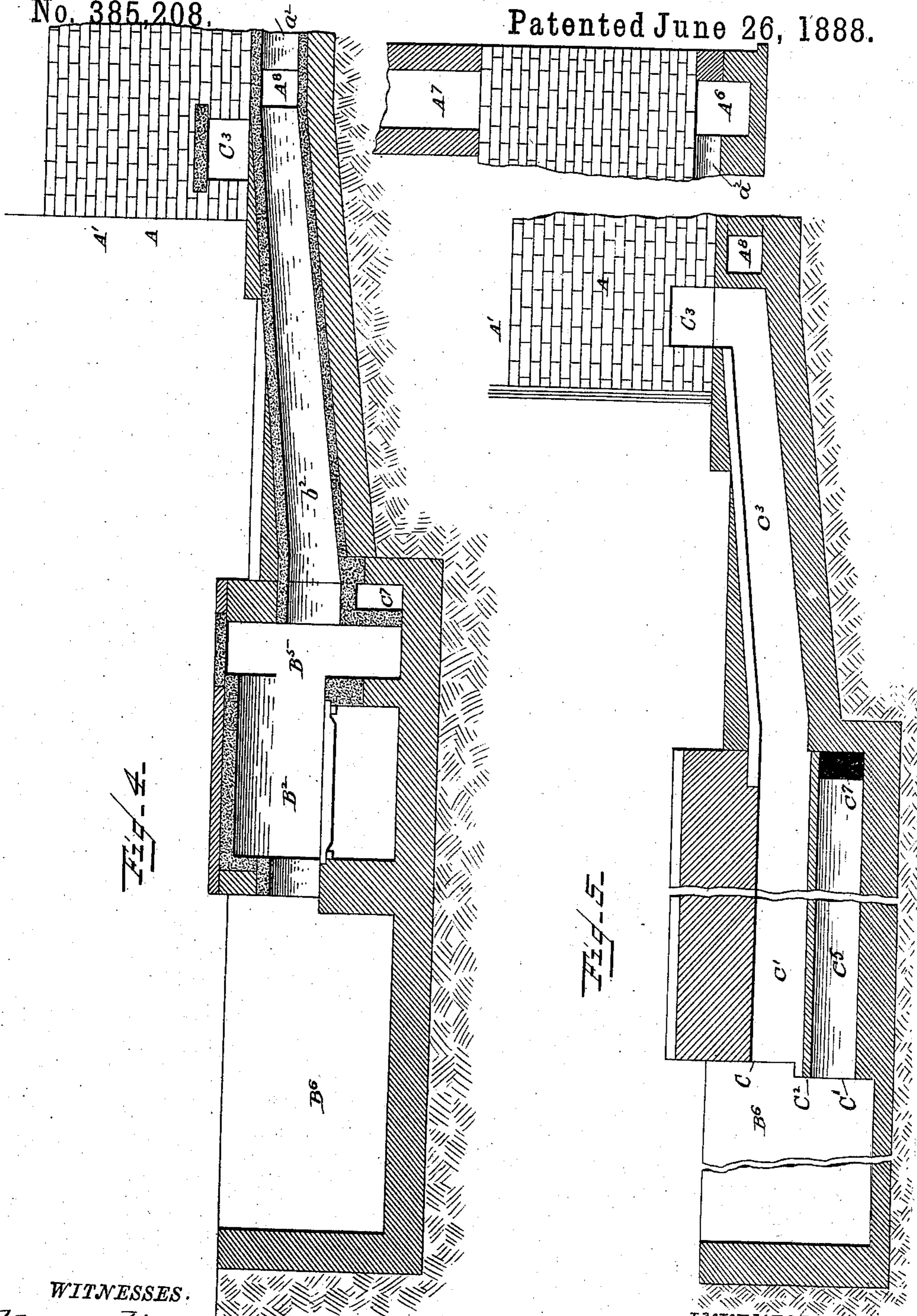


Fig. 4.

Fig. 5.

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(No Model.)

5 Sheets—Sheet 5.

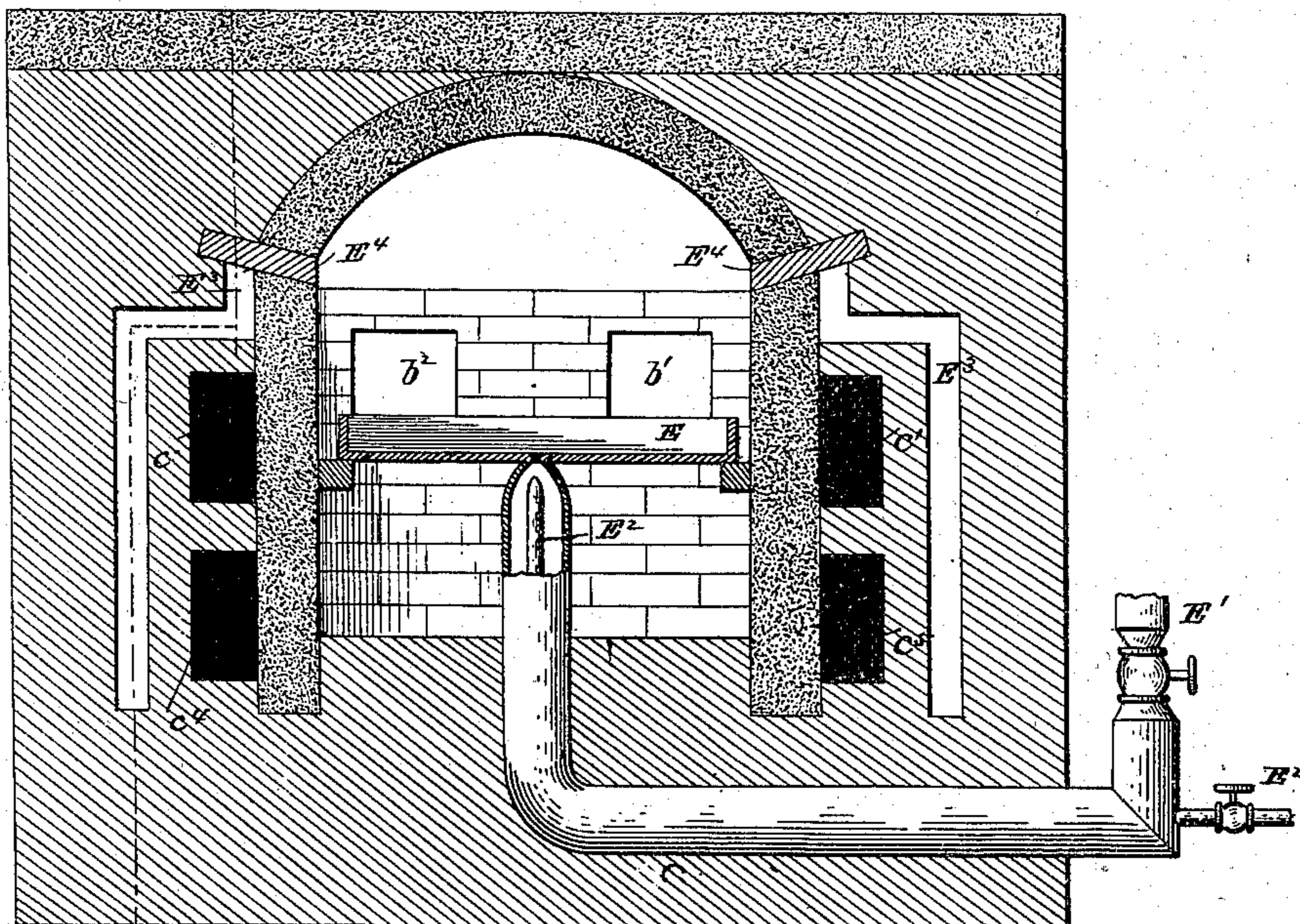
G. W. SHARER.

DRIER.

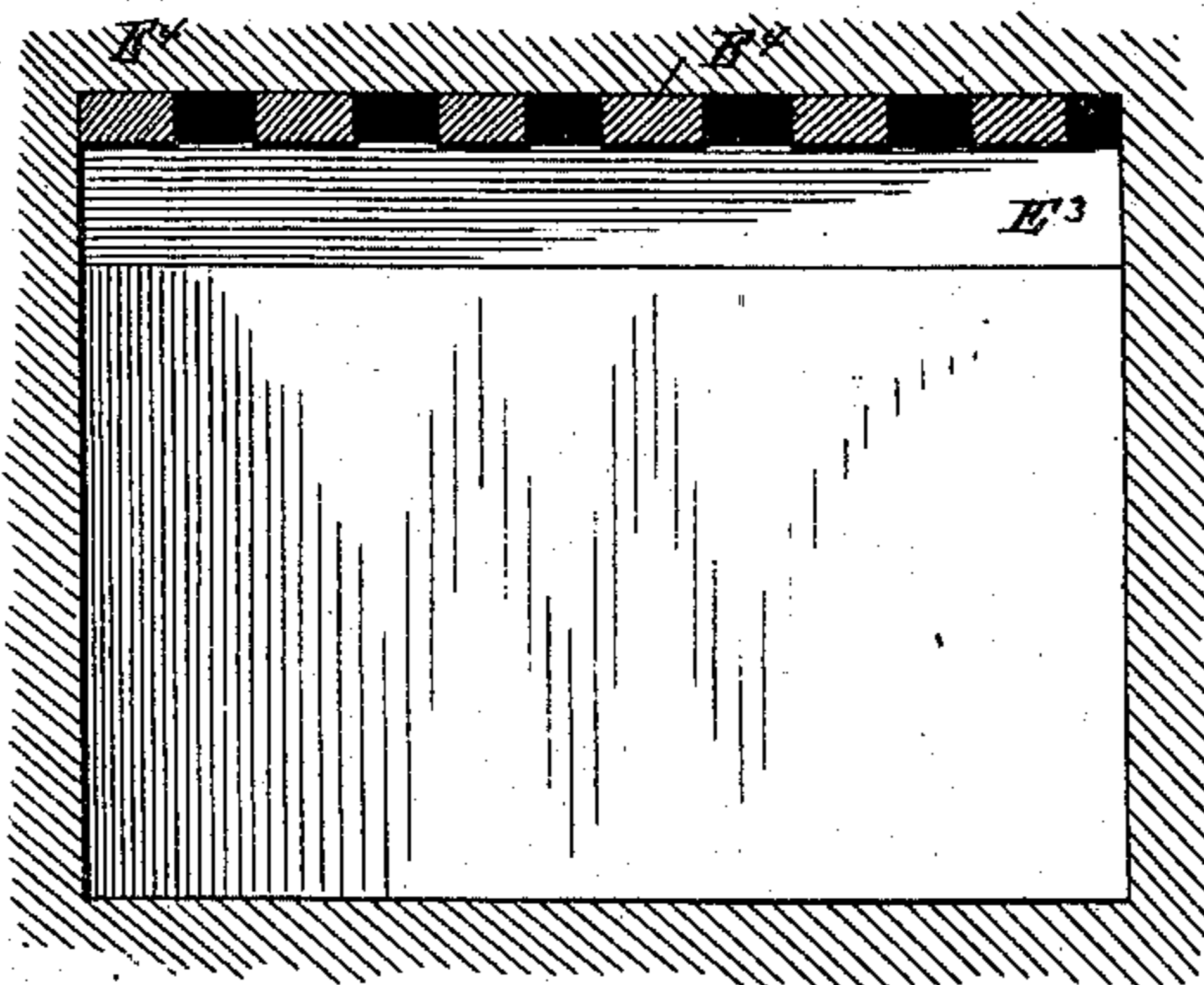
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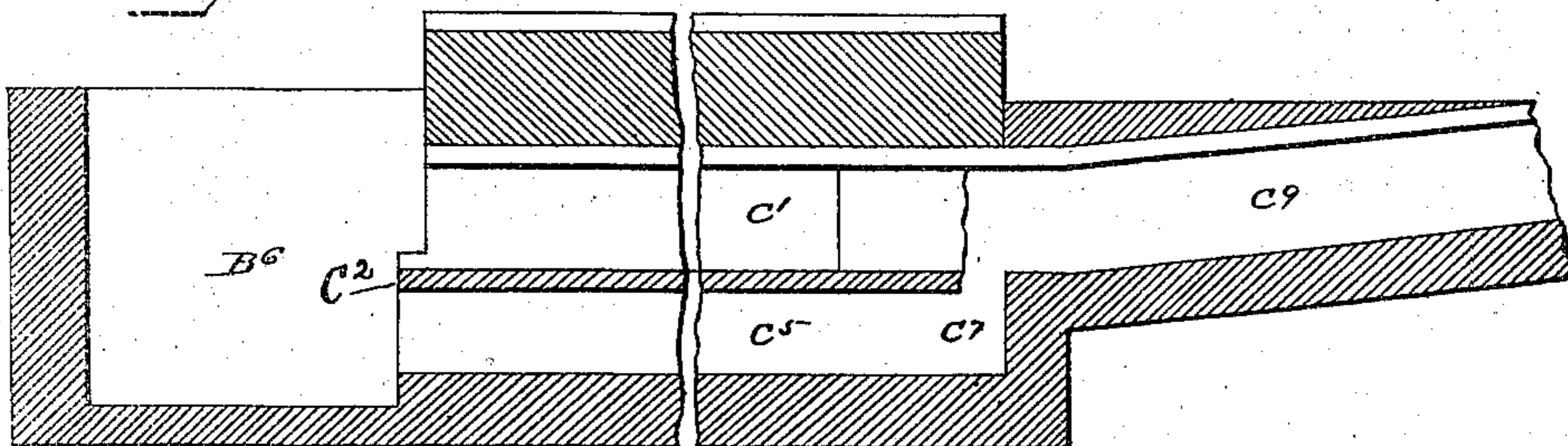
*Fig. 7-*



*Fig. 8-*



*Fig. 9-*



WITNESSES.

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Attorney &c.

# UNITED STATES PATENT OFFICE.

GEORGE W. SHARER, OF TERRE HAUTE, INDIANA.

## DRIER.

SPECIFICATION forming part of Letters Patent No. 385,208, dated June 26, 1888.

Application filed August 19, 1887. Serial No. 247,383. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. SHARER, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Driers; and I do hereby 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 appertains to make and use the same.

My invention relates, generally, to driers which can be used for drying lumber, brick, pottery, terra-cotta, terra-cotta lumber, and other similar substances, and particularly relates to that class in which terra-cotta, terra-cotta castings, and terra-cotta lumber and bricks are dried.

The object of my invention is to improve the general construction of driers of this kind; and the invention therefore consists of constructions and combinations, all as will hereinafter be described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective with parts broken away to show the construction; Fig. 2, a horizontal section, the upper right-hand part being through the drying-chamber, the upper left-hand part through the flues, and the lower part through the furnaces on line  $x x$ , Fig. 3; Fig. 3, a front elevation with parts broken away to show the furnace and flues in section; Fig. 4, a longitudinal section through one of the furnaces and one of its flues and taken on line 4 4, Fig. 2; Fig. 5, a longitudinal section on lines 5 5, Fig. 2; Fig. 6, a longitudinal section on line 6 6, Fig. 2; Fig. 7, a transverse section of the furnace, showing the manner of using petroleum as a fuel; and Fig. 8, a longitudinal section on line 8 8, Fig. 7.

The drying-chambers A, which may be of any desired number, separated from each other by partitions A', which rest upon longitudinal walls A<sup>2</sup> under the floor of the drier, are of ordinary construction. Beneath the drying-chamber are the flues  $a$ ,  $a'$ , and  $a''$ , formed by the longitudinal division-walls A<sup>2</sup> and flue-walls A<sup>3</sup>, the floor A<sup>4</sup> of the drying-chambers, and the bottom or foundation of the drier. These flues open at the rear end into a transverse flue, A<sup>6</sup>, which is connected at its ends

to the chimneys A<sup>7</sup>. These flues are formed in sets, one set for each drying-chamber, and the front end of the flues of each set are connected with a chamber, A<sup>8</sup>, and each chamber is separated from the adjoining chamber by the walls A<sup>2</sup>, which abut at the front end against the hollow divisional walls B and B'. Each furnace is provided with two sets of flues separated from each other by the hollow divisional walls, and the sets of flues are subdivided by means of a longitudinal partition,  $b$ , forming individual or sub flues  $b'$   $b''$ , and terminate in chamber A<sup>8</sup> at a point opposite to the flue  $a'$  under the drier. The object of this construction is to concentrate the heat of the products of combustion upon the walls containing the air-ducts and then disseminate it equally under the drier by means of the chamber A<sup>8</sup>, the flues  $a$ ,  $a'$ , and  $a''$ , the transverse flue A<sup>6</sup>, and chimneys A<sup>7</sup>, placed at each end of the latter, so as to make the flues draw equally. The sub-flues  $b'$   $b''$  open into the distributing-chamber B<sup>5</sup> in the back part of the furnace B<sup>2</sup>, which is sunk partly or wholly below the surface and provided in front with the working-pit B<sup>6</sup>. The space between it and the drier is also slightly depressed for the transfer-track for the truck to be moved from the drier.

In the walls which divide the furnaces are formed the air-ducts C and C', separated from each other by the tile C<sup>2</sup>. The ducts C, except those at the ends, as shown in Fig. 2, are formed of two separate passages,  $c$   $c'$ , joined together by the transverse passage  $c''$ , from which the main passage  $c''$  in the wall B leads. This latter passage follows the inclination of the flue, and the upper end terminates in a passage, C<sup>3</sup>, in the drier partition-walls, (see Figs. 1, 4, and 5,) so that the heat will be equally distributed to the drying-chambers in each side of the wall. The lower flue, C', is formed of passages  $c^4$   $c^5$   $c^6$ , which respectively correspond to and are formed underneath the passages  $c$ ,  $c'$ , and  $c''$ . Passage  $c^6$  is connected with a transverse passage,  $c^7$ , by a short passage,  $c^8$ , immediately under passage  $c^7$ . This passage is connected at each end with the passages  $c^9$  in the walls B' and opens into the transverse passage C<sup>4</sup> (see Figs. 1 and 2) in the drier partition-walls. By this construction it will be seen that I am enabled to heat the air to a high temperature and evenly

distribute it in the drying-chambers, and also heat the bottom of the drier evenly by means of the products of combustion. If desired, a steam-pipe, D, may be placed in the drier.

5 This construction of drier will dry any ordinary article, such as lumber, brick, terra-cotta, terra-cotta castings, terra-cotta lumber, and similar articles.

In Figs. 1, 2, 3, and 4 the furnace is shown with a grate, and in Figs. 7 and 8 a device is shown whereby petroleum or hydrocarbon can be substituted for the fuel used in the furnace having a grate.

15 E in Fig. 7 represents a pan having a nozzle-opening in its bottom and connected with a water-supplying device by means of a pipe, E', which incloses a second pipe, E<sup>2</sup>, through which oil is supplied to the pan E. The water and oil pipes are supplied with suitable  
20 cocks to regulate the flow into the pan. In the walls of the furnace are formed air-passages, which lead upwardly into a chamber, E<sup>3</sup>, that opens into the fire-box. This chamber is di-

vided into compartments by bricks E<sup>4</sup>, arranged at suitable intervals, so that the air admitted to the fire-box will be in jets. 25

What I claim as new is—

In a drier, the combination of the drying-chambers having flues under the bottoms, furnaces having flues communicating with the  
30 flues beneath the drying-chambers, the air-ducts C and C' in the side walls of the furnaces, and air-ducts c<sup>3</sup> and c<sup>4</sup>, formed in the divisional walls of the furnace-flues and delivering into the air-inlets of the drying-chambers, and the  
35 air-ducts c<sup>3</sup> being connected with duct C by lateral passages, and air-ducts c<sup>4</sup> being connected together by the duct c<sup>5</sup>, and by it with passage or duct C', substantially as described.

In testimony whereof I affix my signature in  
40 presence of two witnesses.

GEO. W. SHARER.

Witnesses:

SAML. C. MILLS,  
M. F. HALLECK.