(No Model.)

H. L. DYE.

DRIER.

No. 379,942. Patented Mar. 27, 1888.

FIG. 1.

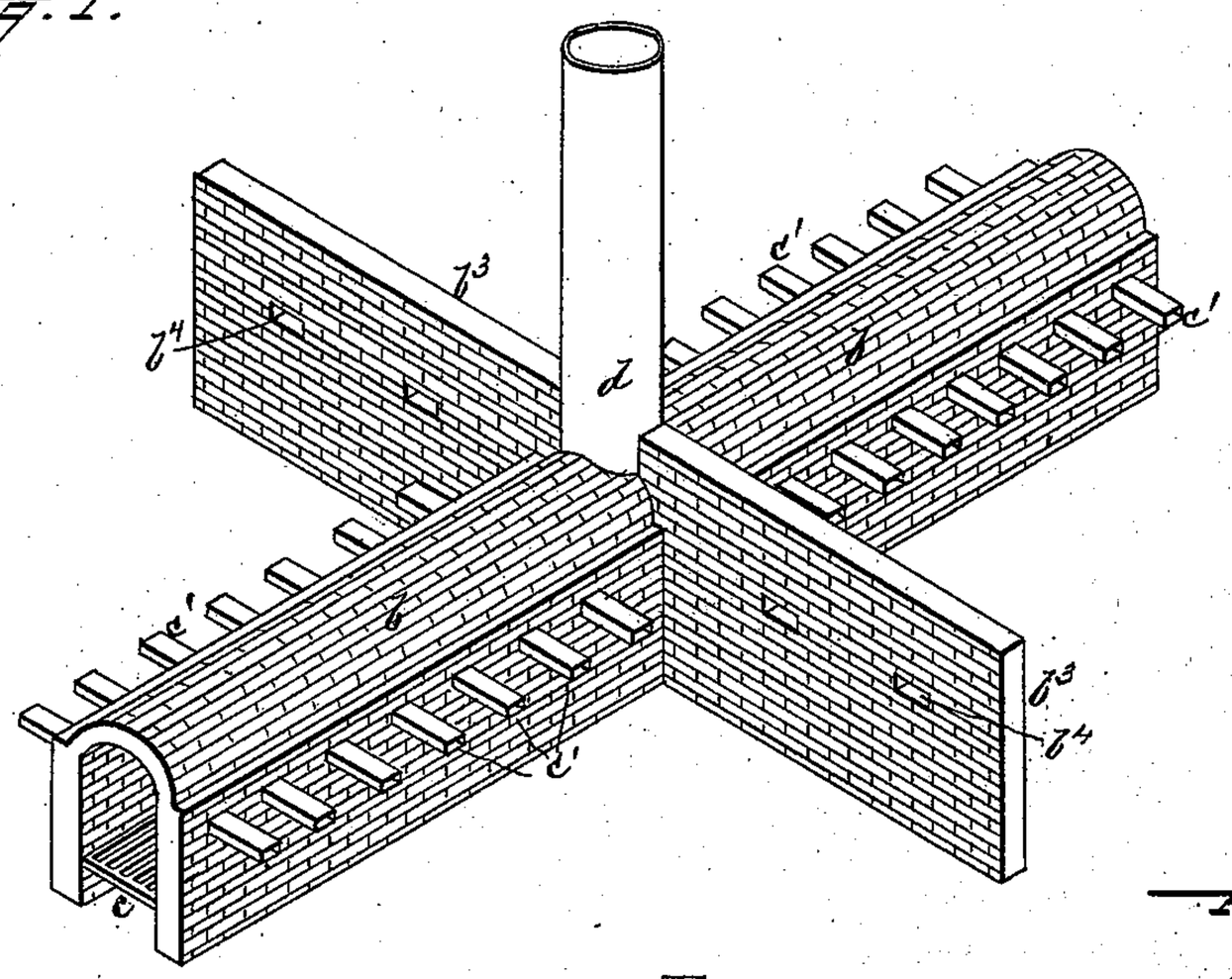


FIG. 2.

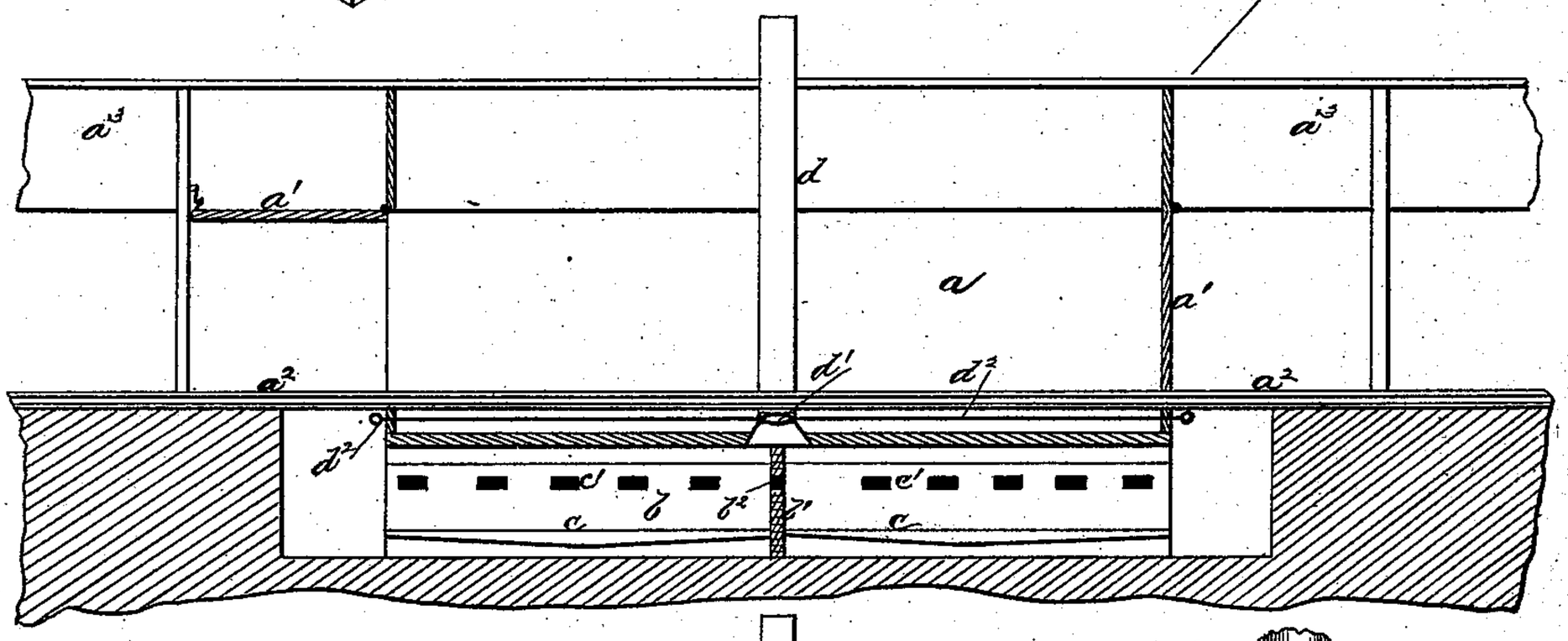


FIG. 3.

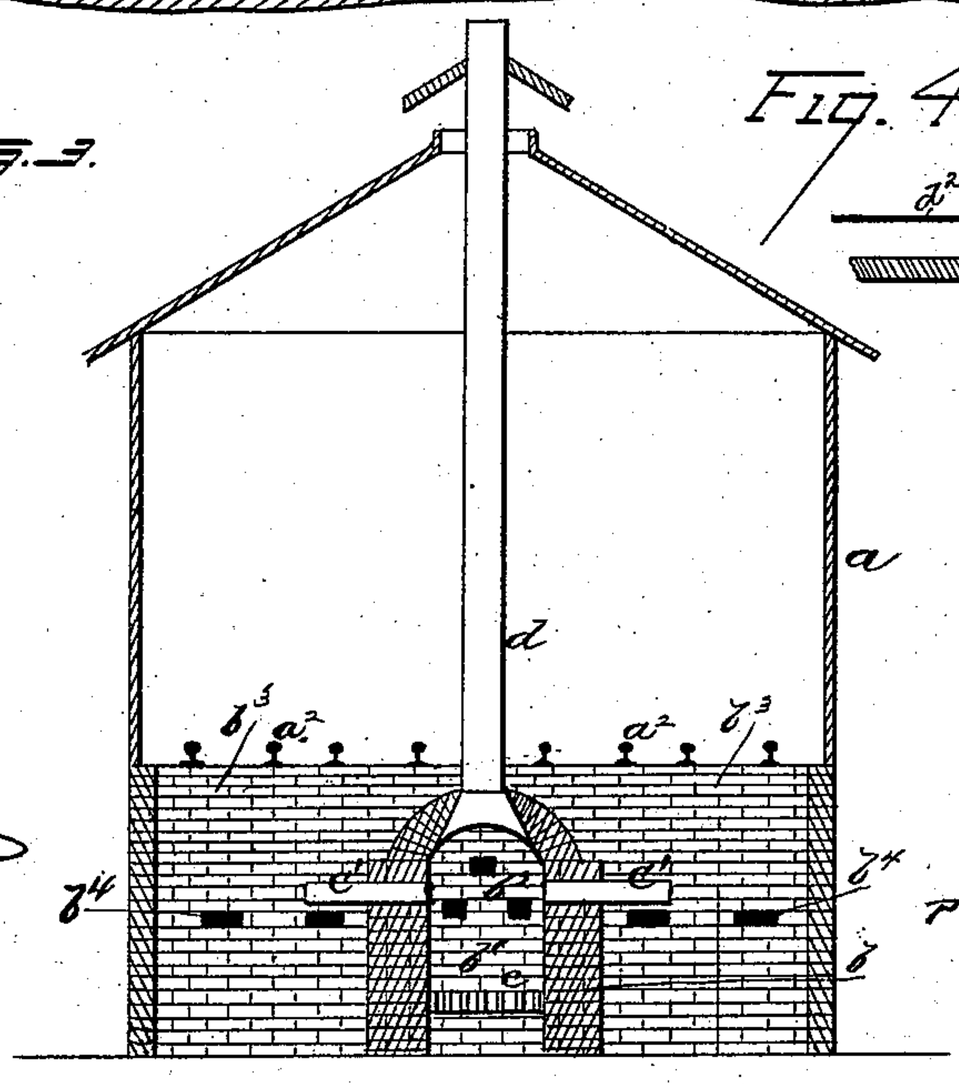
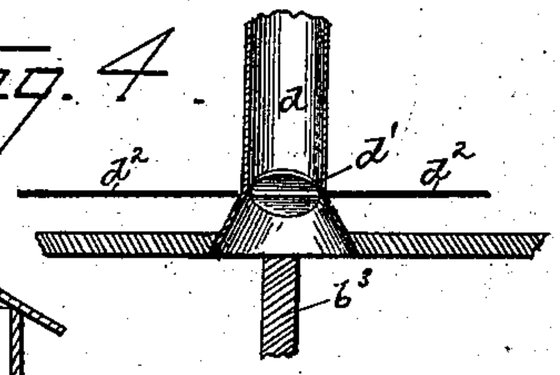


FIG. 4.



Witnesses:
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per
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UNITED STATES PATENT OFFICE.

HORACE L. DYE, OF CHICAGO, ASSIGNOR OF ONE-HALF TO GEORGE HINCHLIFF, OF EVANSTON, ILLINOIS.

DRIER.

SPECIFICATION forming part of Letters Patent No. 379,942, dated March 27, 1888.

Application filed December 9, 1886. Serial No. 221,109. (No model.)

To all whom it may concern:

Be it known that I, HORACE L. DYE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Driers, of which the following is a specification, to wit:

This invention relates to driers; and it consists in certain peculiarities of the construction and arrangement of the same, substantially as will be hereinafter more fully set forth and claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my drying-furnace; Fig. 2, a longitudinal section of the house and furnace, and Fig. 3 a transverse section of the same. Fig. 4 is a detail view of the damper.

a represents a drying-house of any desired size and form, but which is herein shown as a building having a furnace, *b*, in its lower part, doors *a'* at each end, and suitable tracks, a^2, for trucks, run entirely through the house, and extended under protecting shed-roofs a^3 at each end of the same. The furnaces *b* are formed of suitable size and extend through the building its entire length, divided in the center by a division-wall *b'*, through which is formed a series of openings, b^2, above the grate. These furnaces are open at their outer ends through the sides of the house-walls, and are fed without entering the building, as is shown by the drawings.

The lower part of the house is divided by a transverse wall, b^3, which extends up to the tracks a^2, and has openings b^4 through it, so that air may be permitted to circulate from one side of the building to the other; but the wall prevents any strong and disturbing drafts.

Each furnace is provided with suitable grate-bars, *c*, and along each side, near its top, with a series of laterally-extending tubes *c'*, which extend out into the building a sufficient distance to carry the hot air out and equally distribute it, as shown.

To provide a direct draft, I have placed a stack or smoke-escape flue, *d*, directly over the division-wall of the two furnaces, and connected it with each furnace, as in Fig. 2, so that one flue or stack will serve for both furnaces, and it is provided with a damper, *d'*, which has a rod, d^2, running to each end of the building, so that it may be controlled without trouble to suit the fire in either furnace.

In use fire is made in the two furnaces, of any material which it is desired to use, and until this fire has gained proper headway the damper is opened to give a direct draft. After proper headway is gained the damper is closed, and the hot draft then passes out through the lateral tubes from each furnace, and is by them carried out to a distance sufficient to insure its proper distribution as it rises through the building around the material to be dried, which is sustained on cars or trucks run in upon the tracks shown.

Should the fire in either furnace become low, it is soon started up by opening the damper in the stack and giving a direct draft for a short time, after which it is again closed. The openings in the division-wall of the furnaces permit any excess of heat in one furnace to pass readily into the other, while the wall extended across the building divides it and prevents any undue disturbance of the upwardly-rising heat, yet its openings give a free communication from one side to the other.

This drier is applicable to any purpose where such a device is needed, but is particularily designed for drying brick, tile, terra-cotta, lumber, &c. For this purpose I find it convenient to form doors at both ends of the building, and extend the tracks through them under sheds, in order that while some loaded trucks are in the dry-house others may be left in one shed waiting their turn, and still others in the second shed awaiting unloading. This is, however, a matter of convenience not affecting the invention. Too much stress cannot be laid on the stack and its damper by which a direct draft is had when needed, and also on the lateral tubes for spreading the heat before it is allowed to rise, and thus treating all the material in an equal manner.

It will be particularly noted that my lateral distributing-tubes are inserted in the furnace-

walls some distance below its top. In this case they are shown located just at the spring of the arch. In this manner I am enabled to collect in the arch above the tubes the smoke and gases, and they there become so highly heated as to be readily consumed, and I thus accomplish the double object of consuming the smoke and gases and thus obtaining more heat from any given quantity of fuel; but I also prevent the smoke from passing in any large degree into the drying-chamber to discolor the articles therein treated.

I am aware that lateral tubes have been used at the top of the arch; but they cannot in any case accomplish the object I have in view by placing them some distance below the top, and they conduct all the smoke directly into the dry-room, which is one of the main things I desire to avoid.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a dry-house, the combination, with the house, formed with a heat-distributing room in its lower part divided by a transverse wall, and a drying-room above the same and separated from it only by the supports of the articles to be dried, of a pair of furnaces opening at opposite ends of the building and provided with lateral draft-openings into the heat-distributing room, and a stack or flue located at the junction of and communicating with both furnaces and provided with a damper, whereby either a direct or indirect draft is had from either or both furnaces at will, substantially as described.

2. The combination, with the building *a*, constructed substantially as described, and provided with the perforated wall b^3, of the furnaces *b*, having a perforated division-wall, *b'*, the stack *d*, and damper *d'*, having a rod, d^2, extended to each end of the house, and the lateral tubes *c'*, all constructed and arranged to operate substantially as and for the purpose set forth.

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

HORACE L. DYE.

Witnesses:
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W. S. McARTHUR.