

(No Model.)

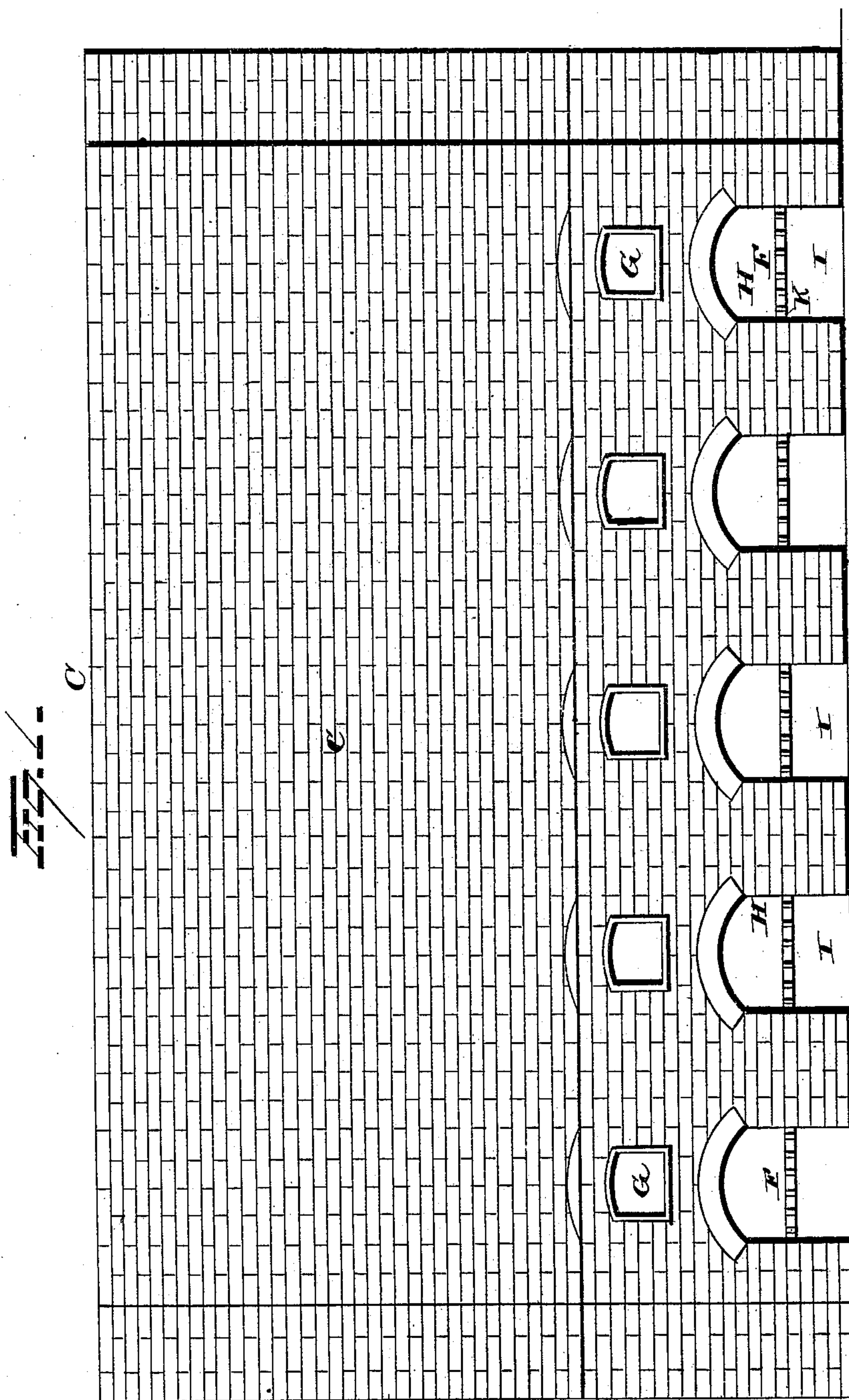
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J. E. GAMBLE.

BRICK KILN.

No. 273,354.

Patented Mar. 6, 1883.



WITNESSES

S. E. Nottingham
Geo. W. Pezmon

INVENTOR

John E. Gamble
B. Sargent & Sargent
Attorney

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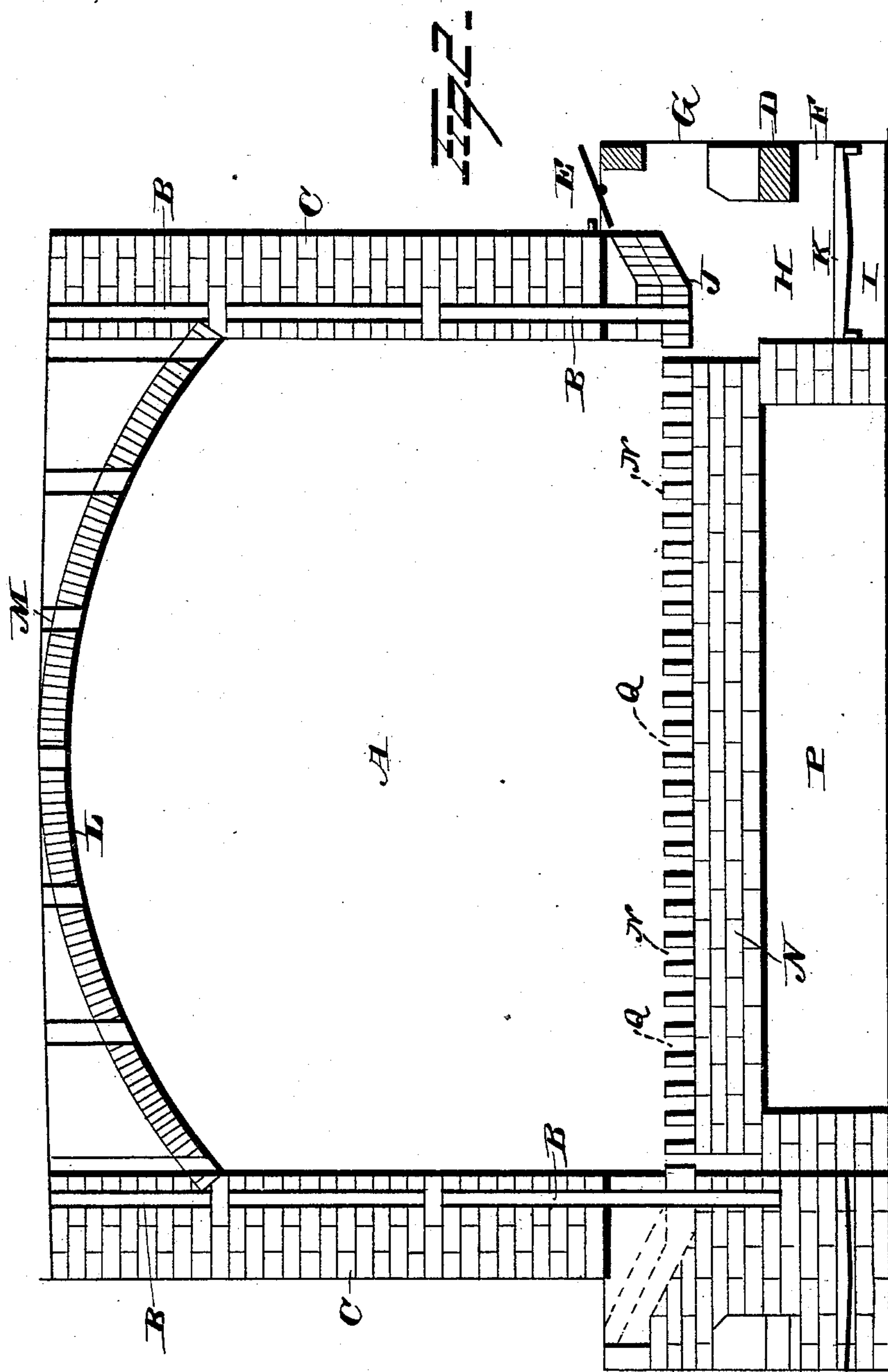
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J. G. Nottingham
Geo. B. Legman

INVENTOR

INVENTOR
John E. Gamble.
By Sargent & Sargent.
Attorney

Attorney

(No Model.)

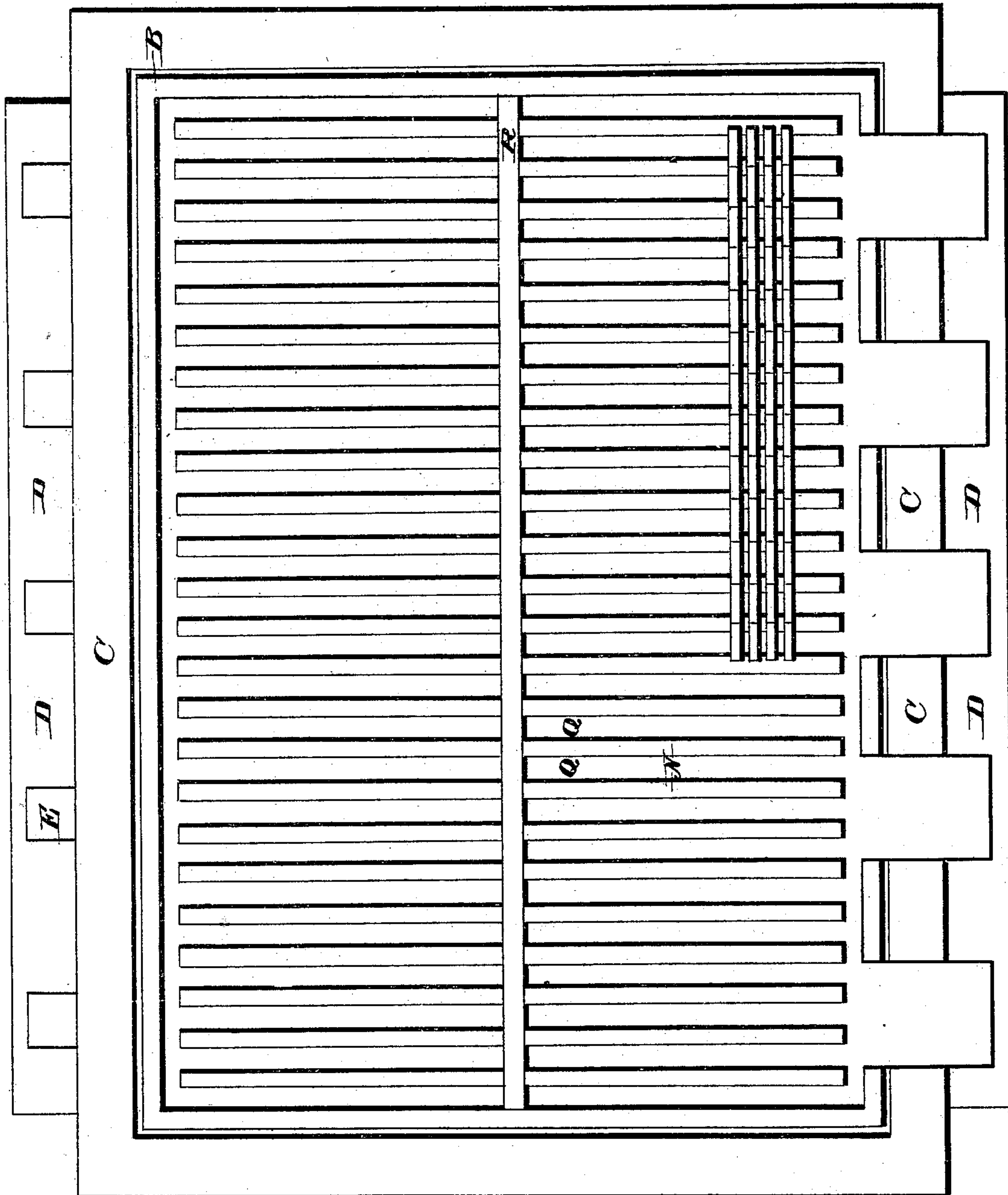
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WITNESSES
J. G. Nottingham
Geo. W. Pezmann

SEE

INVENTOR
John E. Gamble
By Sargent & Sargent
Attorneys

UNITED STATES PATENT OFFICE.

JOHN E. GAMBLE, OF EAST LIVERPOOL, OHIO.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 273,354, dated March 6, 1883.

Application filed November 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. GAMBLE, of East Liverpool, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Brick-Kilns; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in kilns for burning both pressed and common bricks, tiles, ordinary and terra-cotta wares, and other articles of like character, the object being to construct a kiln adapted to burn the whole charge uniformly with regard to quality and with the expenditure of a comparatively small quantity of fuel.

A further object of my invention is to produce a kiln which shall combine simplicity of construction with durability and efficiency in use.

With these objects in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view representing in elevation the front and rear walls of a kiln constructed in accordance with my invention. Fig. 2 is a view embodying a transverse section through the front and a similar section through the rear wall of the kiln, the said sections being taken respectively through the furnaces and through the walls interposed between them. Fig. 3 is a view containing two ground plans of the kiln, one being taken above the fuel-traps and the other below them.

My improved kiln is embodied in a structure consisting of four upright double walls inclosing a rectangular chamber, A. The spaces B, located in the said walls, communicate with each other and with the furnaces, which are situated in the front and rear walls, C, of the kiln. In virtue of this construction a current of heated air is constantly deflected through the walls of the kiln, which are thereby maintained at a constantly high heat so long as the fires in the furnaces are kept up, the heat radiated by the

said walls into the chamber A operating to maintain the outer portions thereof at a temperature corresponding with that of its central portion, whereby all portions of the charge are burned uniformly with regard to quality and in the same time. This feature of construction renders the kiln especially valuable for burning pressed brick, as the entire charge can be composed of them, thus increasing the capacity of the kiln, whereas in burning bricks of this character in kilns of ordinary construction, which are hotter in the center, they constitute only a portion of the charge, being placed in the center and surrounded by common brick, which are burned with less heat. Inasmuch as the making of composite charges involves considerable extra expense in the way of labor, pressed bricks can be produced more cheaply in mine than in the old style of kilns. It is also very desirable to have a uniformly-heated chamber for burning ordinary bricks, as it does away with the production of arch-bricks, which are always produced in the centers of charges burned in common kilns.

The front and rear walls, C, of the furnaces are provided with extensions D, in which the fuel-traps E and the furnace-doors F and G are located, the combustion-chambers H and the ash-pits I being arranged to extend under the arches J, formed in the walls C. The arched doors F afford access both to the combustion-chambers and to the ash-pits, the grates K being about on a level with the central portions of the doors. The doors G, which are located above the arches of the doors just mentioned, are designed for introducing into the combustion-chambers the fuel employed to start the furnace-fires. After the fires are under way the said doors are closed, and the fires are sustained by fuel introduced through the self-closing traps F, which may be of any desired construction.

It will be observed, as the traps are located above and over the furnaces, and as they are self-closing, that in adding fuel to the furnace-fires there is little or no opportunity for currents of cold air to enter the kiln and chill it and its contents.

The chamber A is covered in by a dome, L, which is provided with apertures M for the escape of the caloric-current, the said flues be-

ing adapted to be closed for the purpose of regulating the heat of the chamber when such a course is desirable. The bottom of the said chamber is composed of a series of walls, N, parallel with each other and with the end walls, O, built upon an earth foundation, P, and having spaces Q between them, which constitute flues, the outer ends of which communicate with the furnaces, while their inner ends terminate in a partition-wall, R, located midway between the front and rear walls of the kiln.

The articles to be burned are laid upon or built up in tiers from the walls N, being arranged to extend across them at right angles, interstices being left to permit the caloric current to rise from the flues or spaces Q.

In virtue of its peculiar construction, my improved kiln will cool off much sooner than those of ordinary construction. It requires less fuel to run it, and is very easily managed.

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

1. In a brick-kiln, the combination, with the end extensions, of the front and rear walls hav-

ing the furnaces located therein, and provided with the main front doors, G, and the top openings having the tilting automatically-closing traps E, substantially as described.

2. A kiln having parallel walls located on its floor, and separated by spaces communicating with the furnace and forming flues therefor, substantially as described.

3. In a brick-kiln, double front and rear and end walls, the spaces inclosed by them communicating with each other and with the furnaces which are located in the said front and rear walls, parallel walls located in the bottom of the kiln, and having spaces between them which communicate with and constitute flues for the furnaces, and a partition intersecting the said parallel walls midway of their lengths, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of October, 1882.

JOHN E. GAMBLE.

Witnesses:

A. H. FLEMING,
J. T. ROBINSON.