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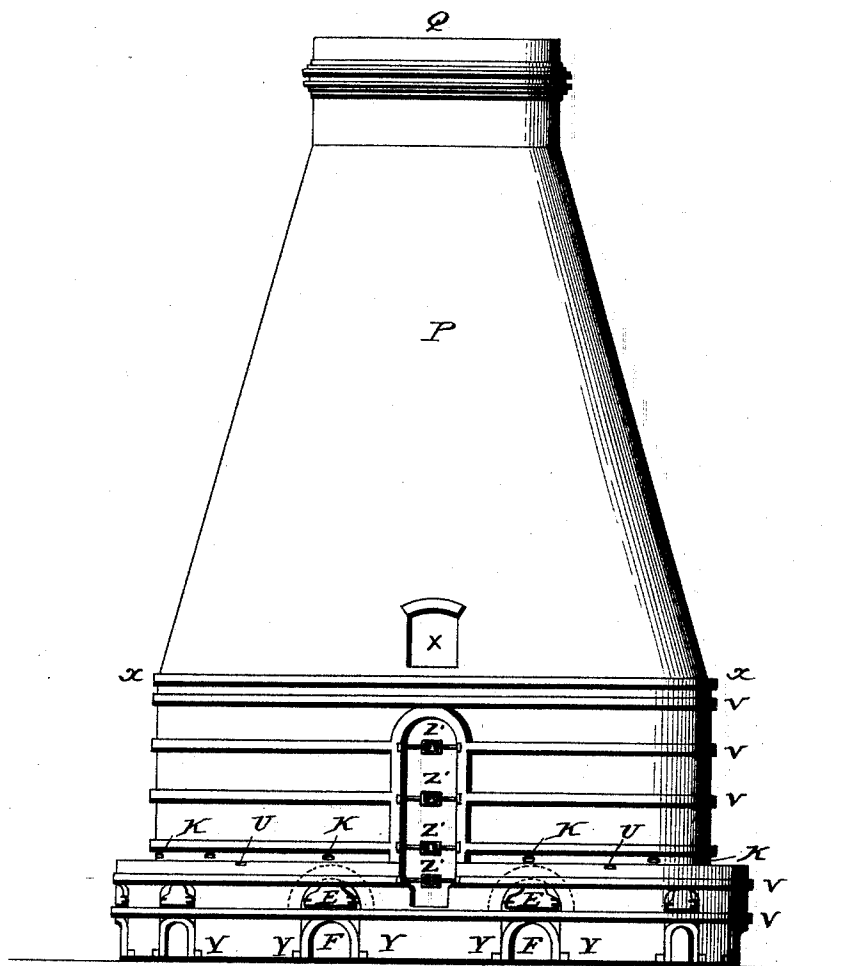
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W. A. EVANS.
BRICK KILN.

No. 498,050.

Patented May 23, 1893.

Fig. 7.



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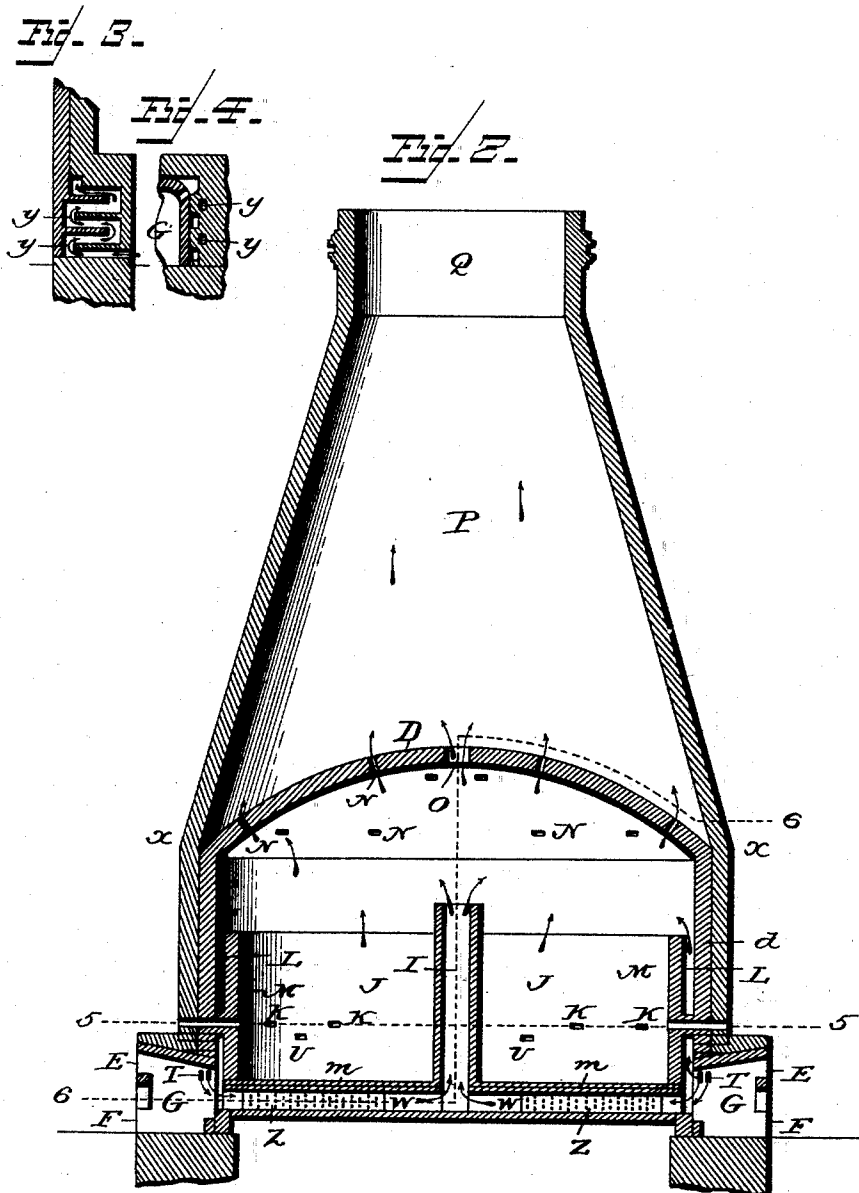
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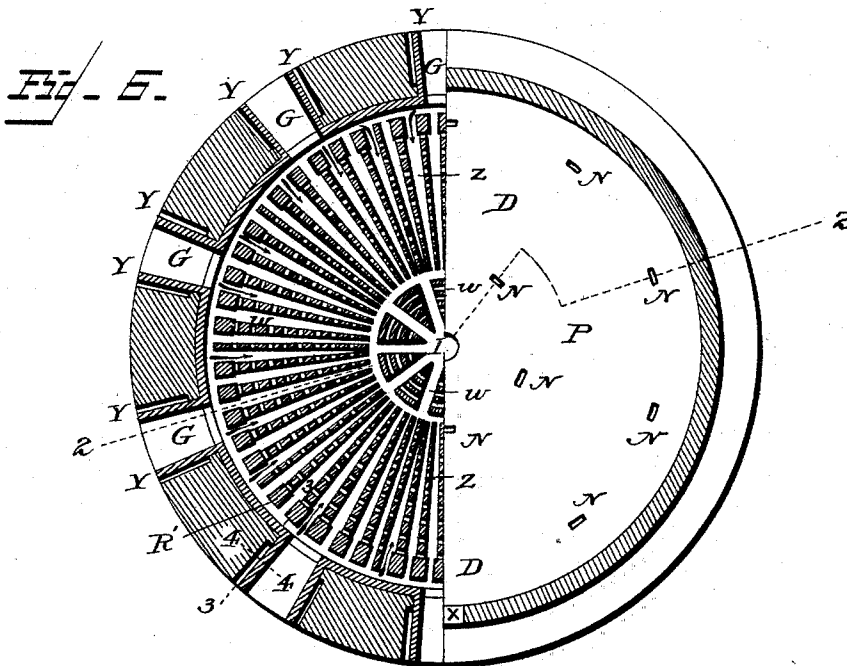
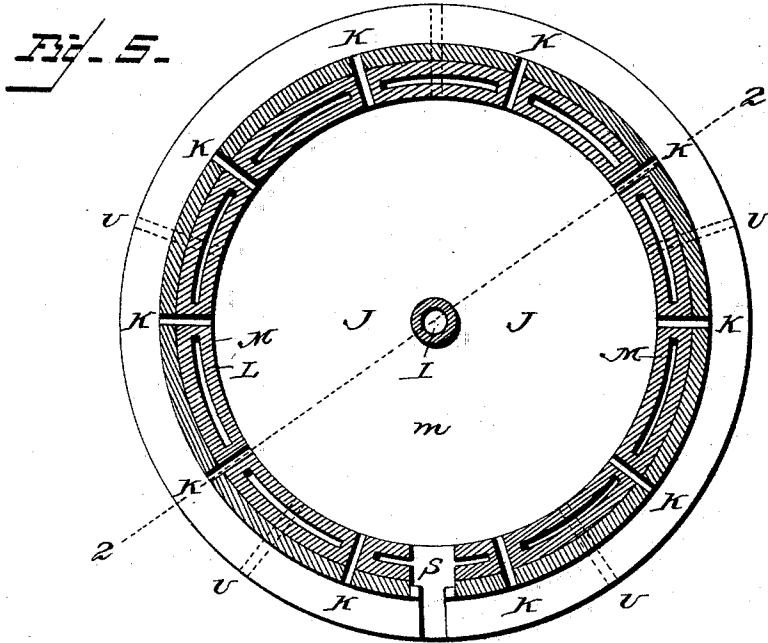
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UNITED STATES PATENT OFFICE.

WILLIAM A. EVANS, OF ZANESVILLE, OHIO.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 498,050, dated May 23, 1893.

Application filed August 24, 1892. Serial No. 444,024. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. EVANS, a citizen of the United States, residing at Zanesville, in the county of Muskingum and State of Ohio, have invented certain new and useful Improvements in Kilns, of which the following is a specification.

My invention relates to kilns of the class adapted to burn clay and earthenware, such as brick, tile, terra cotta building material, &c.

The object of my invention is to provide and maintain a uniform and continuous heat throughout the entire kiln, and thereby accomplish a regular and uniform baking or burning of the material throughout the kiln.

In the accompanying drawings illustrating my invention—Figure 1 is a front elevation of my improved kiln. Fig. 2 is a vertical central section, on the line 2—2 of Figs. 5 and 6. Fig. 3 is a detail view in section, on the line 3—3 of Fig. 6. Fig. 4 is a detail view in section, on the line 4—4 of Fig. 6. Fig. 5 is a transverse section, on the line 5—5 of Fig. 2, and Fig. 6 is a transverse section, on the line 6—6 of Fig. 2.

The base of the kiln may be of fire-brick, or other suitable material. It is provided with a series of fire-pots G, having ash doors F, and coal doors E. Above the base is located the main body portion or smoke-stack P, of the kiln, which is cylindrical and of uniform diameter from its lower end which rests on the base of the kiln to the point *a*, from which point it tapers inwardly and upwardly to the cylindrical upper end or exit Q. Within the body portion P, is an arch D, which is convex at top and cylindrical at its lower portion *d*, which fits closely the inside of the body portion P, and rests on the base. The convex or upper portion is provided with a central opening or flue O, and numerous perforations or flues N. Within the arch is located a receptacle M, which is provided with a suitable floor *m*, to receive the articles to be fired. The vertical wall of the receptacle M is located a short distance within the sides *d*, of the arch, to provide an annular flue L, which communicates with the fire-pots and with the space below the top of the arch and above the upper edge of the receptacle M. Below the receptacle M is a flat cylindrical chamber Z, which is closed at top and bottom and

connects with a central tubular flue I, which rises above the top of the receptacle M, and discharges into the space below the arch D. A series of V-shaped perforated blocks W, arranged radially around the center of the chamber Z, divides the chamber at the center into channels *w*. Outside the blocks W is arranged a series of radially perforated plates or partitions R, R', extending from the blocks to the outer edge of the chamber. They are arranged a suitable distance apart to allow the free circulation of air, but they effect a uniform distribution of the air so that the entire chamber is uniformly heated, and thus the articles in the kiln will be uniformly burned or fired.

Peep holes K, over each furnace door, enable the operator to observe the extent and distribution of the heat, and trial doors U, may be employed for the purpose of determining the progress of the burning and when the same is completed.

X represents the man-hole and vent to the kiln, and S the entrance door thereto.

The wrought-iron bands V, which surround the kiln, are held in place by swivels and tie-rods Z', by manipulating which access to the kiln may be obtained, and after the kiln is filled the swivels and tie-rods may be tightened up to hold all parts tightly in place.

Fresh air enters at Y, and passes through passages provided with interlocking partitions *y*, as indicated in Fig. 3, and thence through openings T into the fire-pots; thence the heated air passes through the chamber Z, up through the flue I, and also through the flue L, into the space below the arch, thus completely and uniformly heating the kiln.

The kiln herein shown and described is an "up-draft" kiln. It may readily be changed to a "down-draft" kiln by extending the flue I to the crown of the kiln, and doing away with the continuous bag wall, and placing a bag wall in front of each furnace mouth, and providing openings to connect with the appropriate flues.

I claim as my invention—

1. A kiln comprising a smoke stack, a base at the foot of the smoke stack having a series of furnaces or fire pots therein, an arch D, within the lower portion of the smoke stack and having an annular side *d* fitting closely

the interior of the smoke stack, a receptacle M, having vertical slots between which and the smoke stack there is the annular flue L, which communicates with the furnaces and with the space directly under the arch, a chamber Z, below the receptacle communicating with the furnaces, a central flue communicating with said chamber, and opening into the space below the arch, a series of V-shaped perforated blocks W, arranged radially around the center of the chamber, and dividing it at the center into channels *w*, a series of radially arranged perforated plates or partitions R, R', extending from the blocks W to the outer edge of the chamber Z and arranged a suitable distance apart to allow the free circulation of air and to effect a uniform distribution of the air.

2. A kiln comprising a smoke stack, a base at the foot of the smoke stack having a series of furnaces or fire pots therein, an arch D, within the lower portion of the smoke stack and having an annular side *d* fitting closely the interior of the smoke stack, a receptacle

M, having vertical walls between which and the smoke stack there is the annular flue L, which communicates with the furnaces and with the space directly under the arch, a chamber Z, below the receptacle communicating with the furnaces, a central flue communicating with the said chamber, V-shaped blocks W arranged radially and having their pointed or sharp ends directly below the central flue, a series of radially arranged perforated partitions R R' dividing the chamber Z and having their inner ends separated from the V-shaped blocks W, the circuitous passages formed by the interlocking partitions *y y* in the walls or base of the furnace, communicating with the fire pots G by the openings T, and with the atmosphere by the openings Y, for the purpose specified.

In testimony whereof I have hereunto subscribed my name.

WILLIAM A. EVANS.

Witnesses:

W. S. O'NEAL,
R. J. BROWN.