

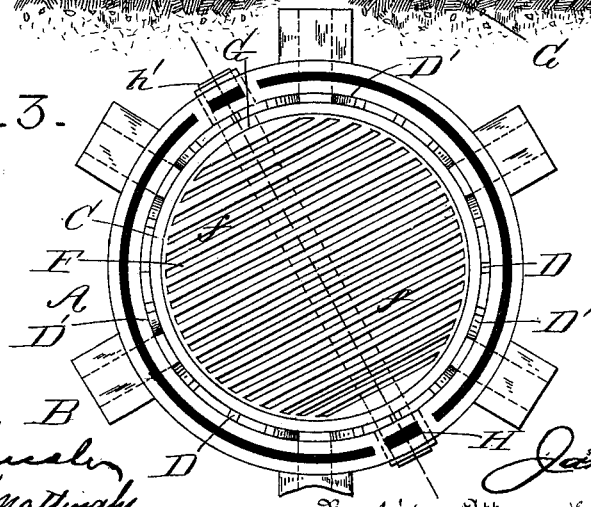
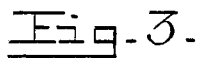
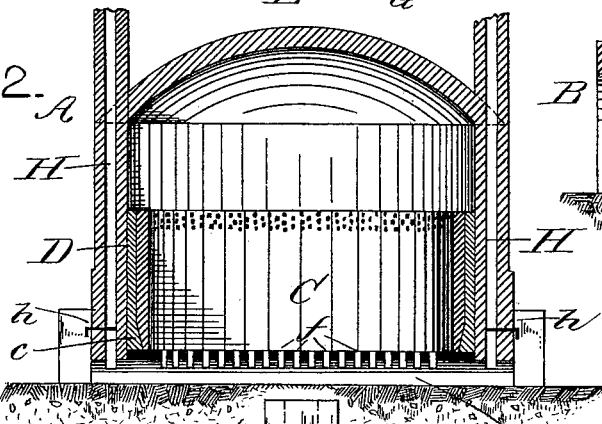
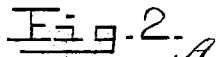
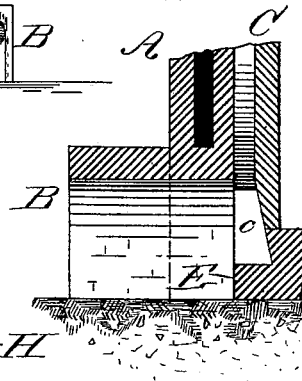
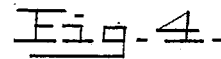
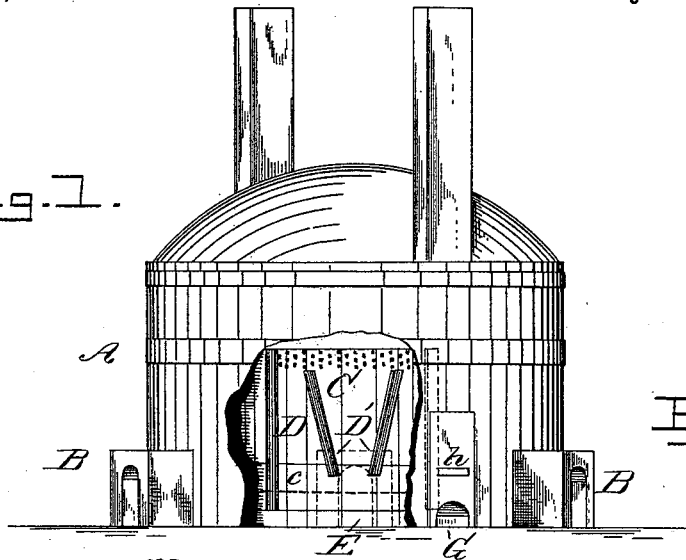
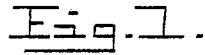
(No Model.)

J. B. GRAWCOCK.

BRICK KILN.

No. 386,813.

Patented July 31, 1888.



Witnesses *B*  
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# UNITED STATES PATENT OFFICE.

JAMES B. GRAWCOCK, OF CHURUBUSCO, INDIANA.

## BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 386,813, dated July 31, 1888.

Application filed January 6, 1888. Serial No. 239,943. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES B. GRAWCOCK, a citizen of the United States, residing at Churubusco, in the county of Whitley and State of Indiana, have invented certain new and useful Improvements in Brick, Tile, and Pottery Kilns; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to kilns for burning tiles, bricks, pottery, and the like; and it consists in certain improvements in construction, which will be hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is an elevation of a kiln, partly broken away to show my improved deflecting-partitions. Fig. 2 is a vertical section of the kiln. Fig. 3 is a plan with the top removed; and Fig. 4 is a section of one of the fire-doors on an enlarged scale.

The kiln may be of any convenient size or shape. I have shown a circular one, hooped with iron, as usual, and provided with an arched top. The main wall A is constructed with two shells, having an air-space between them to prevent the conduction of heat to the outside and to render the outer shell less liable to crack. At suitable points around the base of the main wall A are fire-doors B, of ordinary construction. Inside of the kiln, and concentric with the main wall A, is the fire-wall C, which at the bottom has an inwardly-inclined bevel, *c*. The upper line of this bevel is about on a line with the crown of the arch of the fire-doors. The annular space between the main wall A and the fire-wall C is therefore considerably greater on the level of the fire-doors than it is above them, forming a lateral flue running to right and left from each fire-door. When the flame and heat from the fire-doors enter this lower space and strike the bevel *c*, a portion of them is deflected and is spread out to each side through these flues before rising. Midway between each pair of fire-doors is a vertical partition, D, extending from the floor E up to the top of the fire-wall

C. These partitions prevent the flames from the several fire-doors from mingling and confine them to certain portions of the fire-wall, even though a strong wind may be blowing. The flames, upon rising into the narrow annular space above the bevel *c*, are spread out very effectually, and to assist this result and render the action of the heat more even, I introduce two deflecting-partitions, D', between each pair of partitions D. The partitions D' start just below the crown of the fire-door arch on each side thereof, and extend upwardly, diverging from each other, nearly to the top of the fire-wall C, as clearly shown in Fig. 1.

By means of the bevel *c* and the partitions D and D' the flames are effectively spread out and caused to play over the entire surface of the fire-wall C, heating it evenly and regularly. The partitions are made a part of both the main wall and the fire-wall, thus binding them securely together and rendering them stronger and more durable.

The upper portion of the fire-wall is perforated, so that a part of the heat passes through it into the articles piled up in the kiln.

The heat, entering the kiln through and over the wall C, flows down through the kiln to the parallel open flues or channels F, which are formed by the bars *f*, placed side by side on the floor E. Across the floor below these bars runs a large transverse flue, G, which communicates at each end with a vertical chimney-flue, H, in which is a damper, *h*. The heat escapes from the flue F into the transverse flue G and the chimney H. By means of the damper *h* the heat can be regulated.

My improvements enable better work to be done with a smaller number of fire-doors than any kiln with which I am familiar.

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

1. A kiln having a main wall, fire-doors, and a fire-wall, and provided with a lateral flue between the walls on a level with the fire-doors, and communicating with narrow vertical flues extending to the top of the fire-wall, substantially as described.

2. A kiln having a main wall provided with fire-doors, and a fire-wall beveled inwardly at

its lower part, so as to form an annular space of greater area than that between the walls above the fire-doors, substantially as described.

3. A kiln having a main wall provided with 5 fire-doors, a fire-wall beveled inwardly at its lower part, and partitions midway between the fire-doors, substantially as described.

4. A kiln having a main wall provided with 10 fire-doors, a fire-wall beveled inwardly at its lower part, vertical partitions midway between the fire-doors, and deflecting-partitions running from the top of the fire-door toward the top of the fire-wall, substantially as described.

5. A kiln having a main wall provided with 15 fire-doors and an air-space, and a fire-wall having its lower part inwardly inclined and its upper part perforated, substantially as described.

In testimony whereof I affix my signature in 20 presence of two witnesses.

JAMES B. GRAWCOCK.

Witnesses:

JAMES W. SQUIRES,  
WILLIAM ARTHUR.