(No Model.) 2 Sheets—Sheet 1.

S. D. RADER.

BRICK KILN.

No. 265,436. Patented Oct. 3, 1882.

Fig. 1.

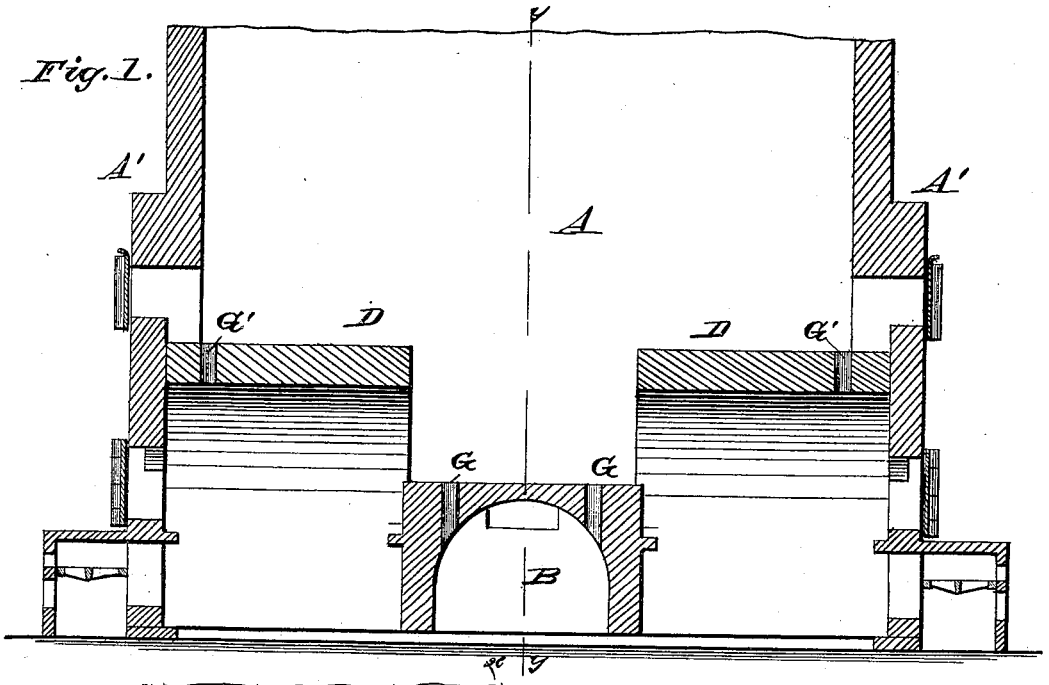
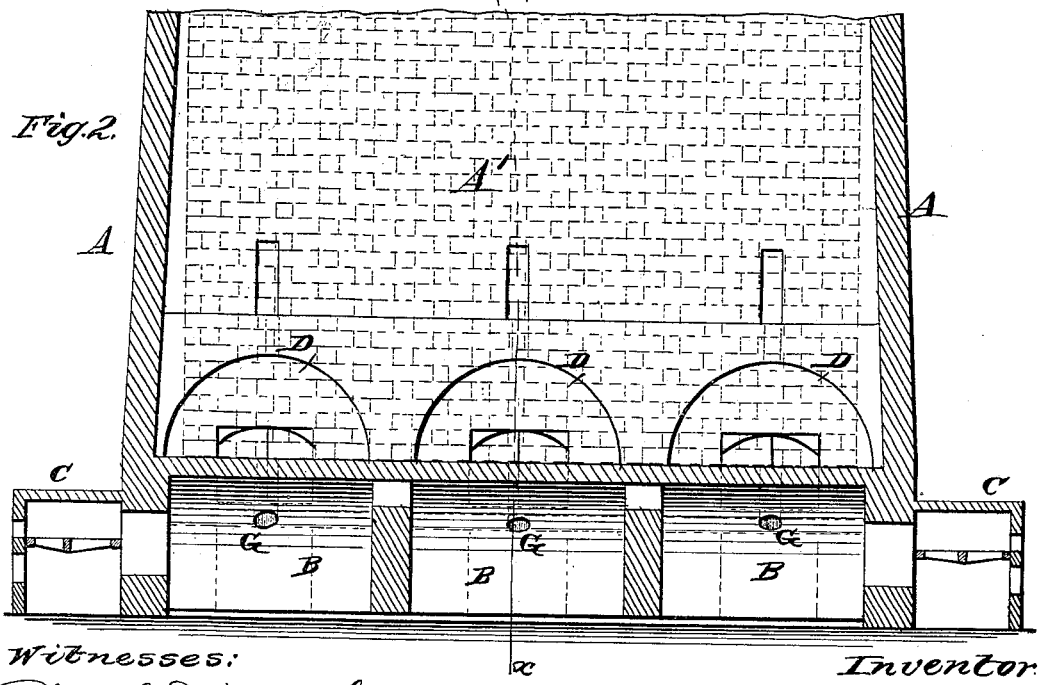


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

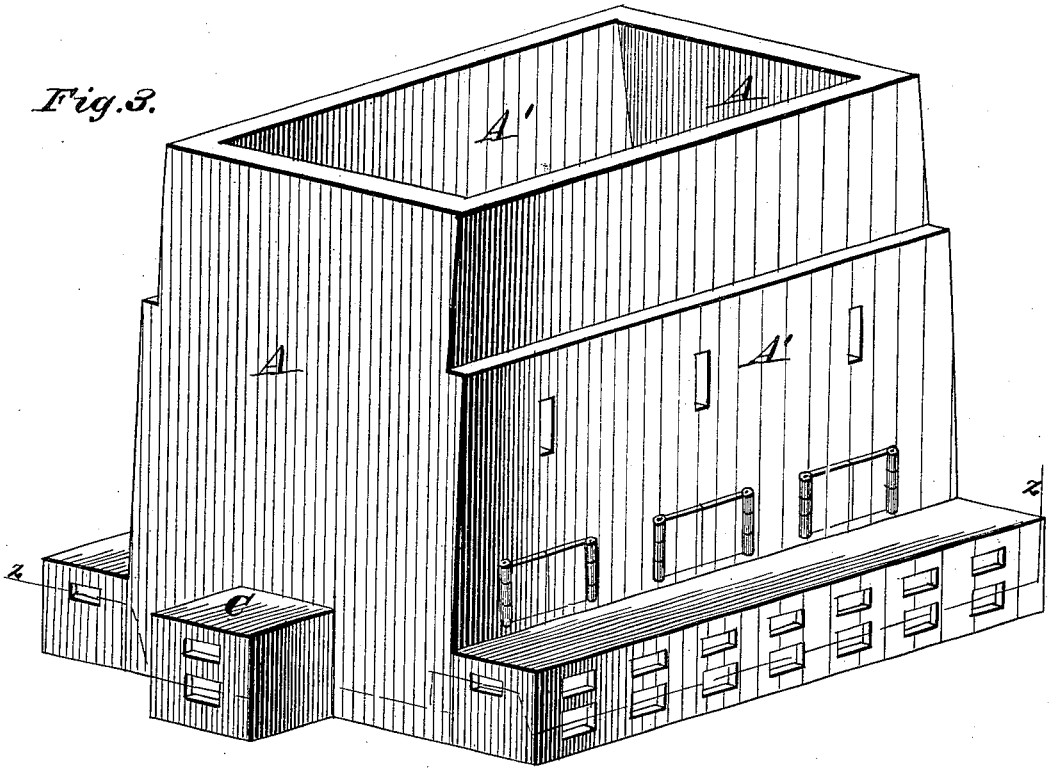
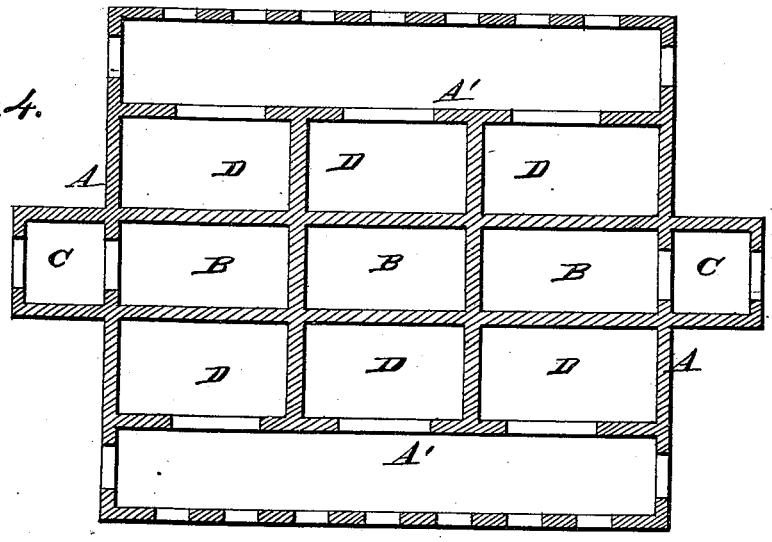


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

STEPHEN D. RADER, OF SIEGFRIED BRIDGE, PENNSYLVANIA.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 265,436, dated October 3, 1882.

Application filed August 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, S. D. RADER, of Siegfried Bridge, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Brick-Kilns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to kilns which are designed for burning bricks; and the nature of my invention consists mainly in the combination of an interior longitudinal arch extending from one end wall to the other with a series of transverse arches which have crowns arranged in a plane higher than the plane of the said longitudinal arch, and with furnace-chambers arranged outside of the planes of the side walls, as will be fully understood from the following description when taken in connection with the annexed drawings.

Figure 1 of the annexed drawings is a vertical transverse section of my improved kiln, taken in the plane indicated on Fig. 2 by the dotted line *x x*. Fig. 2 is a vertical longitudinal section taken through the kiln, indicated by the dotted line *y y* on Fig. 1. Fig. 3 is a perspective view of the kiln, showing the furnaces offset from the main walls. Fig. 4 is a horizontal section taken in the plane indicated by the dotted line *z z*, Fig. 3.

A A A′ A′ designate the walls of my improved brick-kiln, which latter, when taken horizontally, is of rectangular form. Through the center of this kiln at its base extends a furnace, B, which is constructed with end chambers at the termini of the main furnace-chamber, which end chambers I now letter C C. They are outside of the end walls, and they are provided with grate-bars and ash-pits suitably arranged. The end walls, A A, are constructed with inclined sides, inclining inwardly on their inner sides, for a purpose hereinafter explained.

On opposite sides of the longitudinal central furnace, B, I construct a series of transverse arches, D, the upper surfaces of which are in a plane higher than the surface of the longitudinal furnace B. I thus present inside of the kiln two banks, arranged on the opposite sides of a central arched furnace, each one of the said banks consisting of arches arranged at right angles to the line of the central arch.

I have above referred to outside furnaces, and I have shown that I may construct my fires outside of the walls of the kiln. The openings G through the central longitudinal arch will afford fire-flues for the products of combustion and flames rising from said longitudinal arch, and the openings G′ through the horizontal transverse arches allow the flames and combustible products to rise near the side walls.

In carrying out my invention I so build up the green bricks that there will be a space left between the end walls and the pile, for the purpose of allowing a complete or free circulation of the flame and heated products of combustion from below upward and through the cells, formed by the manner well known of laying bricks, for the purpose of having them uniformly burned.

It is by the process, the construction of my kiln, and the arrangement of the several parts constituting the same, as I have shown and described, that I am able to burn bricks uniformly. The arrangement of the two high banks of transverse arches on opposite sides of a longitudinal arch, the latter being depressed below the plane of the highest points of the said banks, affords a central fire-flue in a rectangular kiln, which causes a uniform distribution of flame and a dissemination of heat which is not attained by any other arrangement of furnaces known to me.

The arrangement of the bricks in the furnace-kiln is shown in the drawings.

Having described my invention, I claim—

1. A brick-kiln which is constructed with a longitudinal fire-arch, in combination with transverse arches and offsets arranged outside of the furnace-walls, substantially in the manner and for the purposes described.

2. The combination of the longitudinal and transverse arches, the latter being arranged in banks above the plane of the longitudinal arch and provided with outside furnaces, substantially in the manner and for the purposes described.

3. In a brick-kiln, the combination of the end walls inclined inwardly internally, the side walls having vertical sides internally, the longitudinal centrally-arranged fire-arch, the external fire-chambers at the ends of the fire-

walls, the transverse arches, and the external chambers arranged outside of the transverse arches, all combined and adapted to operate substantially in the manner and for the purpose described.

4. In combination with a brick-kiln, the end walls inclined inwardly, the two high banks of transverse arches, and the lower longitudinal bank of arches arranged with respect to the furnace-chambers outside of the main furnace-walls of the kiln, all constructed and arranged substantially in the manner and for the purposes described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

STEPHEN D. RADER.

Witnesses:
T. H. ALEXANDER,
J. A. KRAMER.