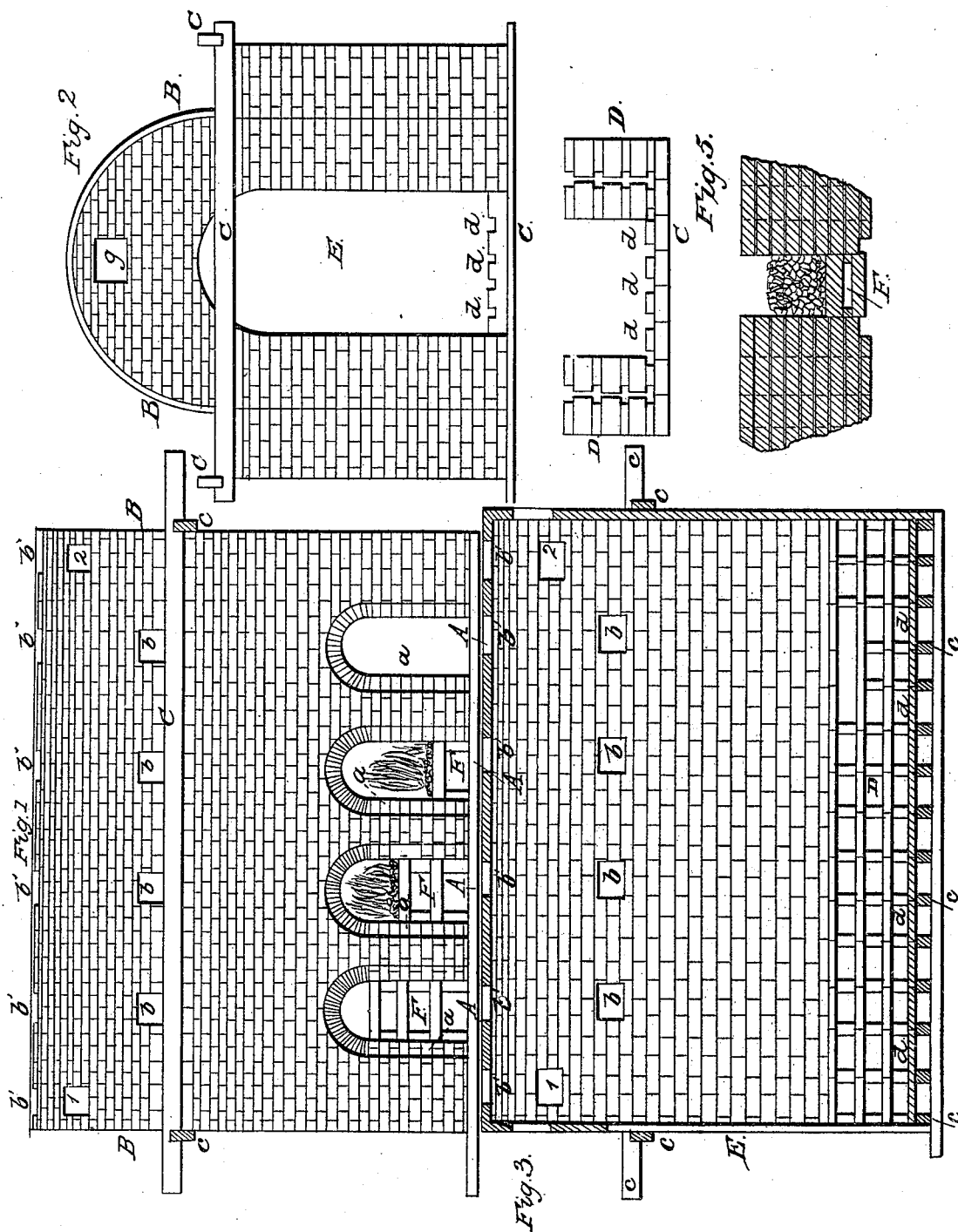


J. OGLE,  
Brick Kiln.

No. 5,551.

Patented May 9, 1848.



# UNITED STATES PATENT OFFICE.

JOSEPH OGLE, OF BALTIMORE, MARYLAND.

## BRICK-KILN.

Specification of Letters Patent No. 5,551, dated May 9, 1848.

*To all whom it may concern:*

Be it known that I, JOSEPH OGLE, of the city of Baltimore and State of Maryland, have invented a new and useful Improvement in the Construction of Kilns for Burning Brick with Coal; and I do hereby declare, that the following is full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is a side elevation. Fig. 2 an end elevation. Fig. 3 a longitudinal vertical section. Fig. 4 an elevation of the internal arrangement of the kiln. Fig. 5 a horizontal section through one of the arches.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I build a rectangular inclosure by raising four perpendicular walls, as in the construction of a common kiln. The longitudinal walls of the kiln, (one of which is represented in Fig. 1 the opposite one being similar in all respects,) I build three feet thick, while the other two may be of any thickness to insure durability. Along the walls lengthwise of the kiln, I place a number of arches A Fig. 1 about two feet four inches in height, and ten inches in width, exclusive of a recess (a) surrounding the outer opening of the arches A for the purpose of facilitating the operator in firing the kiln. I cover the walls with a light arch B, of brick work, containing a number of draft holes or flues one being situated immediately over each arch, and others in lateral row marked *b'* (represented in Fig. 1 and 3) on the top of the roof, parallel with those located above the arches marked (*b*) and represented in same figures. In addition to these, are four other draft holes; two of which 1 and 2 are represented in the same figures located on either side of the two extreme flues on the row on top of the roof. The whole of the draft holes or flues are about eight inches square, and may be topped in the form of chimneys if found advisable. The height and general dimensions of the kiln, as well as the number of arches, I do not particularly specify; that being determined by the number of bricks it may be requisite to burn, but the draft holes or flues must be in number proportional to the number of arches, and located similar

to those herein described. In a kiln of eight arches, the draft holes will be eighteen in number and I have found it advisable to adhere to this proportion in all my trials of the kiln. The angles of the kiln are then strengthened by four pieces of timber C, passing around the walls and near their top, and joined or fastened at the points of intersection in any manner that will subserve the purpose.

In the interior of the kiln and on the floor thereof, at right angles to the walls containing the arches, I arrange rows of fire brick (*c*) set up edge-wise, at short and regular distances apart, extending from one side of the kiln to the other. On the top of these transverse rows, I place lateral rows marked (*d d*) (Figs. 2, 3 and 4) closer together than those last mentioned, and laid flatwise, running the length of the kiln. On the top of this grating, from two to three inches from the arched sides of the kiln; I arrange additional gratings D D, (Fig. 5) by placing the brick at regular distances apart, transversely of the kiln, not exceeding two bricks in length. Again upon these, I lay flatwise, a double lateral row running the length of the kiln. This process I repeat by laying transverse and lateral rows alternately, until the grating is carried up to the top of the arches, when it terminates. This grating is represented in Fig. 3, marked D.

The brick to be burnt I set in the usual manner on this grating; an opening E being left in the end of the kiln for that purpose. This door way is then closed and the kiln burnt in the following manner. A grating F, (Figs. 1 and 5) is built in each of the arches, by placing two fire bricks ten inches in length along the sides of the arches edge-wise, and laying two others of the same length across them, as will be seen by reference to (Fig. 5). The coal is placed upon this grating, and the fire kept up ten or twelve hours, or until the kiln is dried off. The coal is then pushed gently from the grating into the arches and lodges in the bottom part thereof, where it still continues burning; a little more fuel being added for the purpose of keeping it from going out. A second grating, is then built upon the one from which the fire has been removed, of the same material and in a similar manner to the first grating, and fuel in such quantity

as the grating is capable of holding, is thrown upon it, and the fire continued for fifteen or twenty hours; when it is pushed from the grating as above described, and an additional quantity of fuel added to increase the fire. A third grating is built on the second similar in all respects to the several gratings above described, and a like quantity of fuel is put thereon and managed as before. The fire is applied in this manner, for the purpose of guarding against the danger of the kiln bursting from a too sudden application of heat. After this operation the arches as was before stated, being only two feet four inches in height and ten inches in width, it will be perceived, that they will be filled, or nearly so, with burning coal which is kept from immediate contact with the brick to be burnt by the fire brick grating D, in the interior of the kiln so that there can be no possible danger of the raw brick adhering together, and thus blocking up the interstices formed in the setting of the kiln. As the raw brick are set in the usual manner as has been above stated, viz, a small distance apart, for the purpose of forming channels, or conducting passages for the circulation of the heat, which not being large enough to conduct all the heat emanating from the arches, a large portion therefore, is carried under the grating constructed on the floor of the

kiln and thence upward by means of the draft holes in the roof.

What I claim as my invention and desire to secure by Letters Patent is,—

1. The interposition of a grating of fire brick or other material applicable to the purpose, between the fire and the brick to be burnt in the manner herein described, by means of which, I prevent the fire in the arches from immediate contact with the brick to be burnt, thereby obviating the danger of the bricks adhering together in the lower portion of the kiln, and blocking up the channels formed in the setting of the brick, for the circulation of the heat.

2. The construction of a grating along the floor of the kiln of fire brick or other suitable material in the maner above specified and combining the same with the grating (D) and draft holes in the roof by means of which I cause the greater part of the heat emanating from the arches to circulate between the floor of the kiln and the grating (d) and thence upward to every part of the kiln, thus enabling the operator to burn the brick to any degree of hardness requisite.

JOSEPH OGLE.

Witnesses:

SAML. HANSON,  
C. E. SIMS.