

(No Model.)

3 Sheets—Sheet 1.

F. L. HALL.  
BRICK KILN.

No. 287,432.

Patented Oct. 30, 1883.

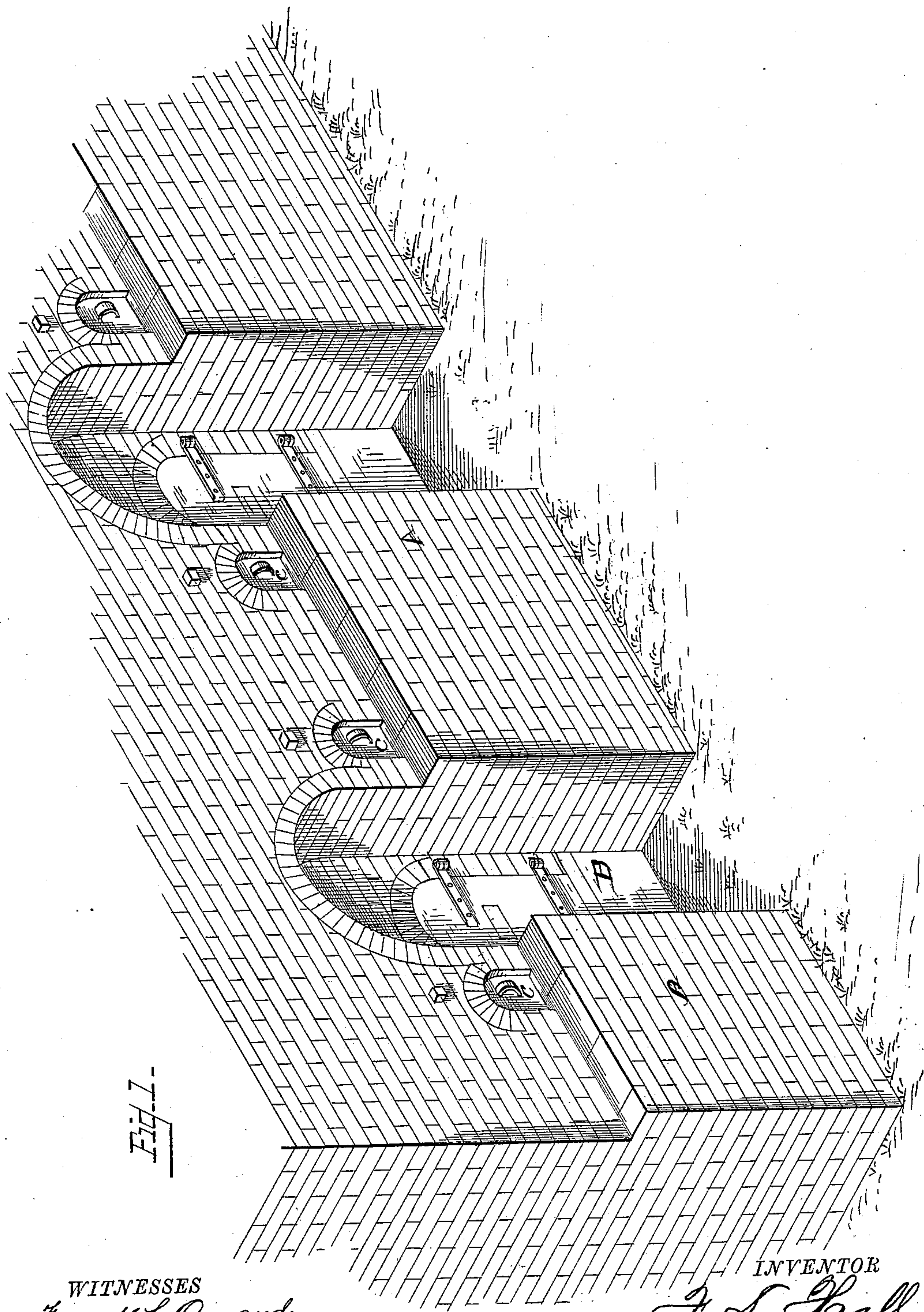


Fig. 1.

WITNESSES  
Frank L. Orvand.  
A. Bernhard.

INVENTOR  
F. L. Hall  
per Edson Bros.  
Attorney



(No Model.)

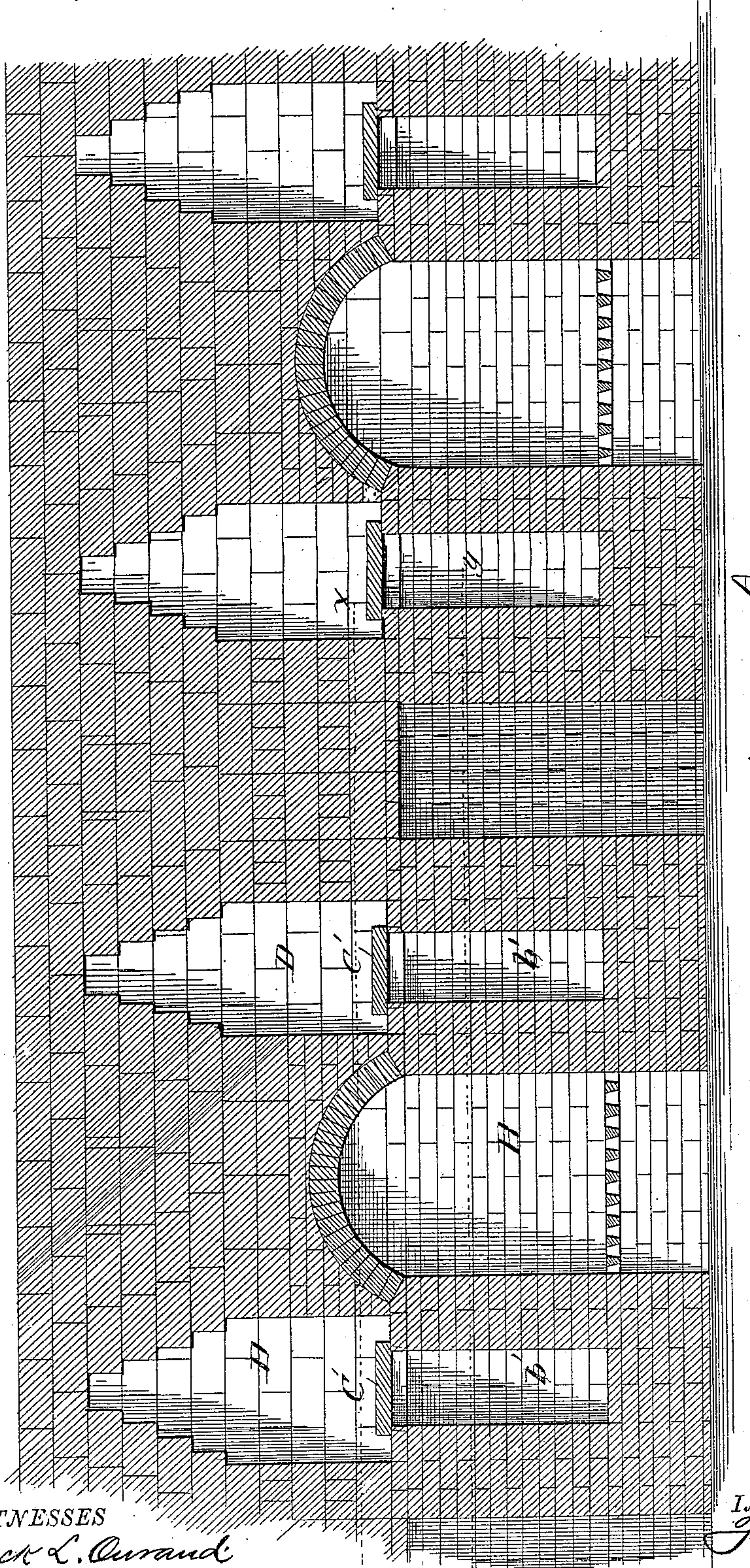
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Fig. 2.



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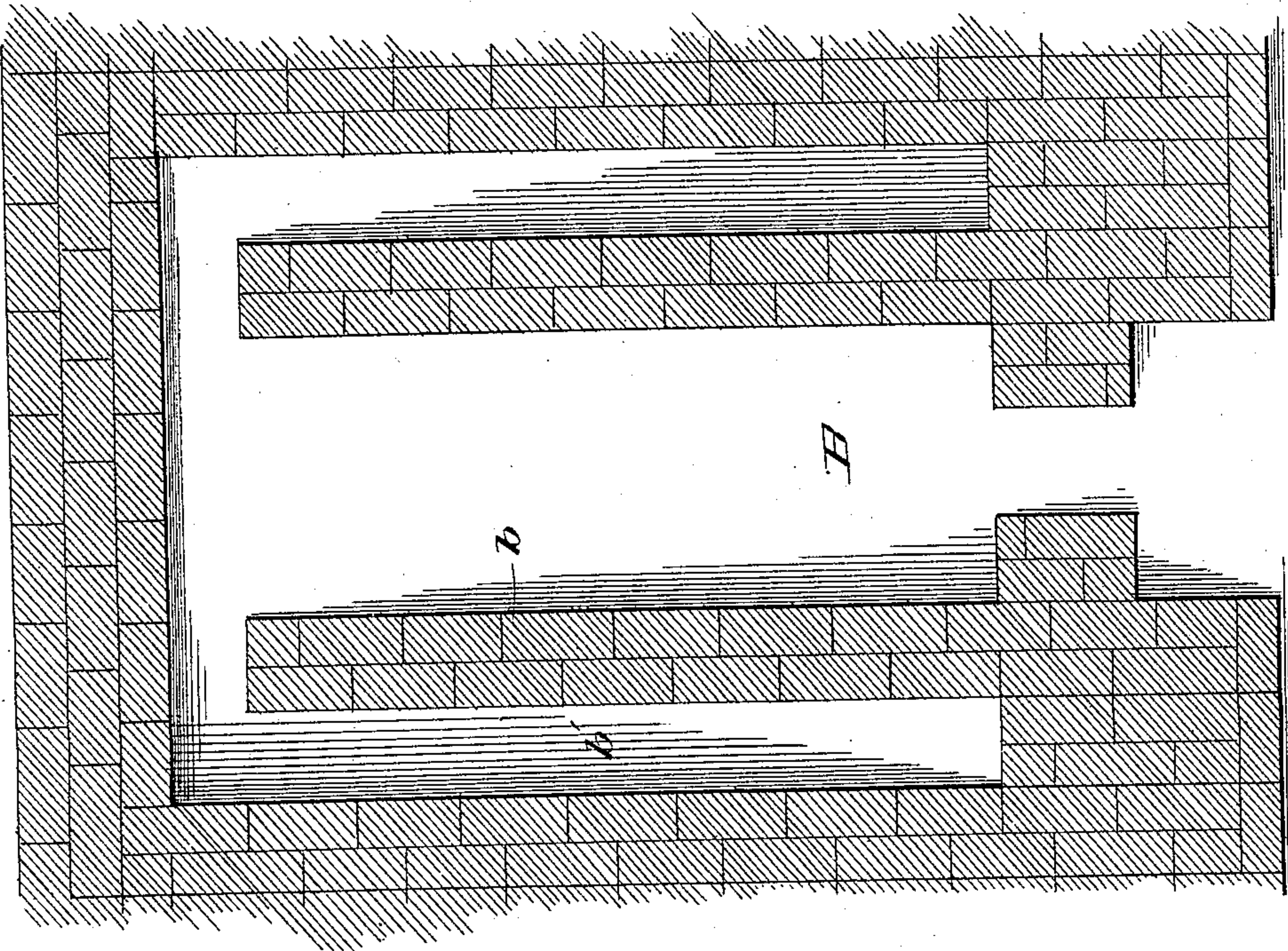


Fig. 4.

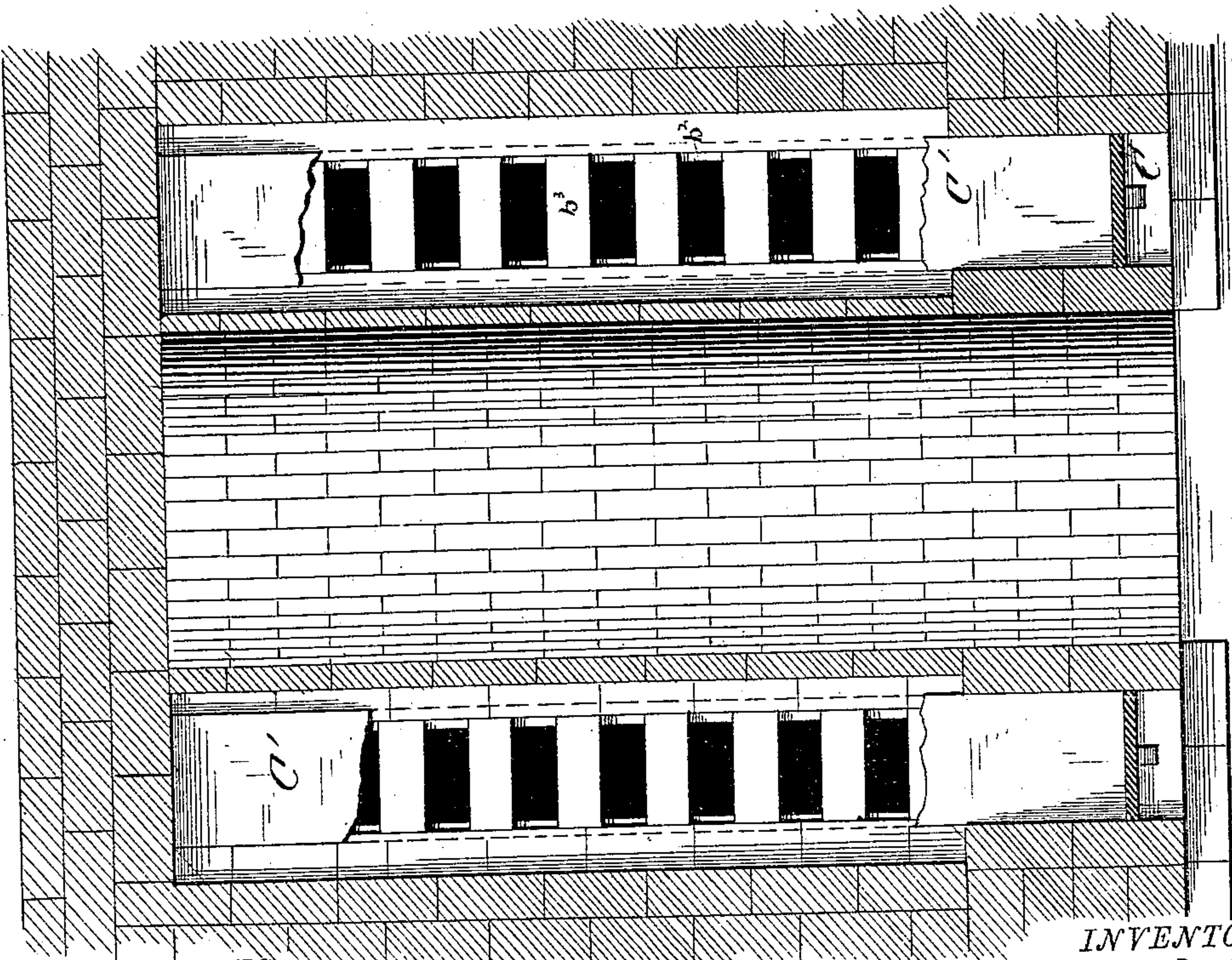


Fig. 5.

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INVENTOR  
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# UNITED STATES PATENT OFFICE.

FRANCIS L. HALL, OF ONEIDA, NEW YORK.

## BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 287,432, dated October 30, 1883.

Application filed May 4, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS L. HALL, a citizen of the United States, residing at Oneida, in the county of Madison and State of New York, have invented certain new and useful Improvements in Brick-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.

This invention relates to kilns for burning brick; and the novelty consists in the construction and arrangement, and in the adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The objects, among others, of the invention may be said to be, in general, to provide a kiln which shall allow the operator to obtain the best results from a given quantity of fuel, and to moderate the heat; to simultaneously modify the flow of products of combustion and supply oxygen to further consume such products; to conveniently supply additional fuel and combustion when it is indicated by the condition of the kiln, and to provide a device which shall be efficient in service and simple and easy of operation.

To these ends the invention consists in the arrangements illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of the outside of a kiln or kiln-case. Fig. 2 is a front elevation with the case removed, the permanent floor or body of the kiln being in section. Fig. 3 is a horizontal section through the line *xx* of Fig. 2, and Fig. 4 a similar view on the line *yy*, same figure.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A represents the permanent floor or body of the kiln, in which masonry is built the furnaces B, each of which has upon either side a hot-air chamber, *b'*, formed by a bridge-wall, *b*, the connection between the two being at the rear of the furnace. The kiln of green brick is built upon this floor A, having

an arch, D, built over each hot-air chamber *b'*, the two being connected by a series of apertures, *b<sup>2</sup>*, formed in a horizontal partition, *b<sup>3</sup>*. It will thus be observed that each furnace supplies two arches of the green kiln with its products of combustion.

*C'* represents a slide having perforations which correspond with the apertures *b<sup>2</sup>*, and which may be forced in either direction, to close or partially close the same by means of the door C, which is detachably secured to the slide, and which forms a tight joint, allowing sufficient space for expansion and contraction, with its aperture formed in the kiln-case. It will thus be observed that not only may the condition of fire arising through the apertures *b<sup>2</sup>* be discerned by removing or partially removing the door without disturbing the slide *C'*, or the slide be adjusted, as occasion may require, to give more or less draft by moving the door out or in without detaching it from the slide, but also that the said slide and partition *b<sup>3</sup>* furnish a convenient and efficient grate to convert each arch D into an auxiliary furnace for the reception of wood to supply any minus quantity of heat to the kiln. It will further be observed that in case unconsumed fuel—such as smoke and gas—is passing into the arches D, the slide and door being pulled outward, the flow of such unconsumed fuel is partially stopped, and at the same time sufficient oxygen is admitted to allow the consumption of such as is passing into the arches.

The kiln is formed, preferably, with furnaces on opposite sides, and in other respects in the ordinary manner.

The points of importance in this invention lie, chiefly, in, first, the arrangement of arches D, hot-air flues *b'*, and furnaces; second, in the detachably-connected slides *C'* and doors C; and, third, in the arches D, serving as auxiliary furnaces. In these features modifications may be made in details of construction without departing from the principle or sacrificing the advantages of my invention, the operation of which will be readily understood from the foregoing description, taken in connection with the drawings.

Having thus fully described the invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination with the furnaces having return-flues  $b'$ , and the base A, having partition  $b^3$ , with draft-apertures  $b^2$ , connecting said furnaces with the arches D, a perforated  
5 slide, as C', and means for operating it, whereby each arch D is formed into an auxiliary furnace, as set forth.

2. In combination with the furnace having return-flue  $b'$ , the arches D, and the perforated  
10 partition  $b^3$ , the slide C', having corresponding perforations, and the door C, detachably connected therewith, as and for the purposes set forth.

3. In a brick-kiln, and in combination with the furnaces formed in the permanent part 15 thereof, with partitions to form heat-flues upon either side of each furnace, the arches D, formed in the unburned kiln, and adapted to connect with said heat-flues, as specified.

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

FRANCIS L. HALL.

Witnesses:

T. E. BARNES,  
PAGE BARNES.