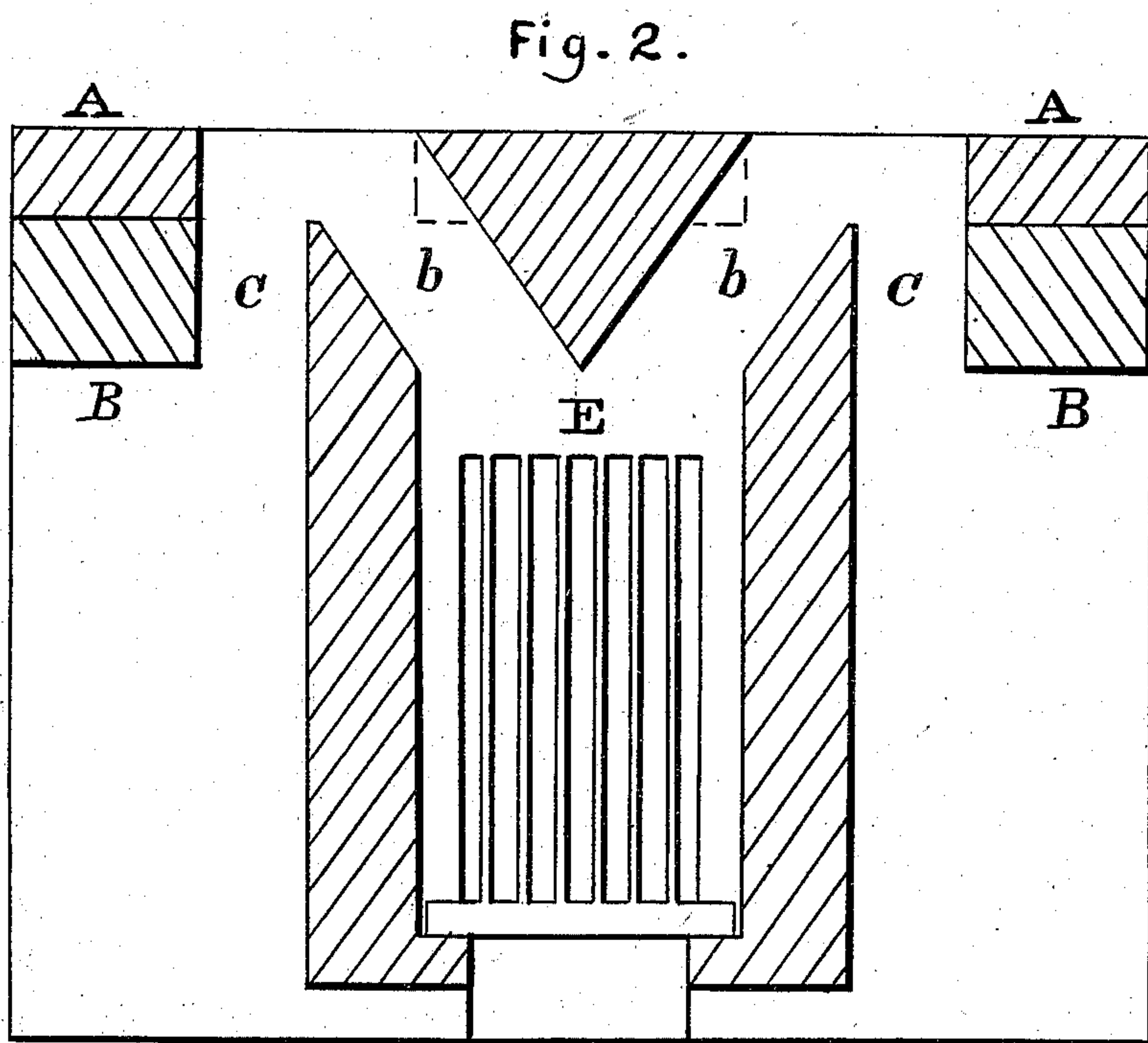
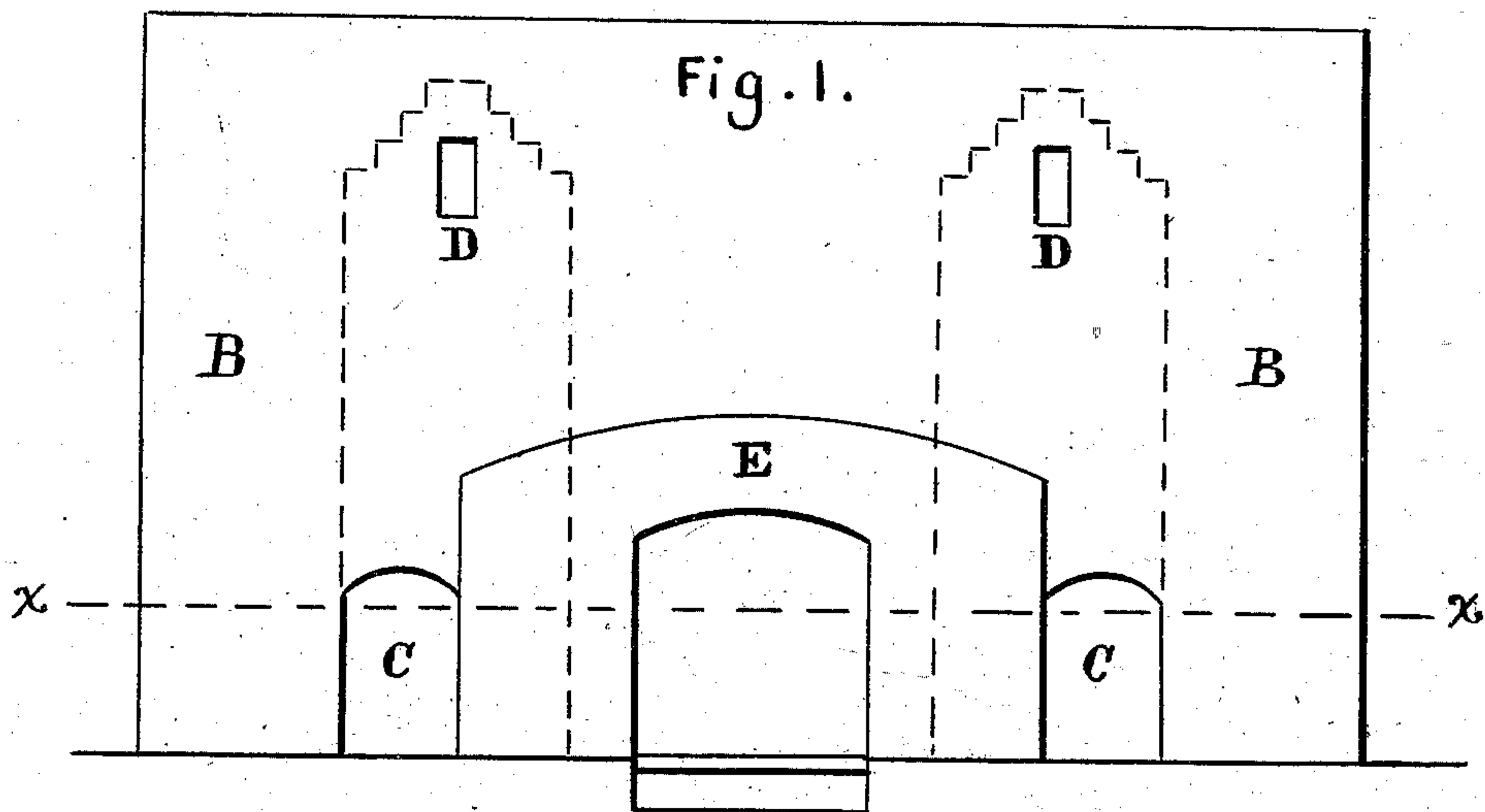


E. R. McDOUGAL.

BRICK-KILN.

No. 190,060,

Patented April 24, 1877.



Witnesses :
Geo. Mungen
H. A. Daniels

Inventor :
Edwin R. McDougal
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UNITED STATES PATENT OFFICE

EDWIN RAY McDOUGAL, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **190,060**, dated April 24, 1877; application filed October 18, 1876.

To all whom it may concern:

Be it known that I, EDWIN R. McDOUGAL, of Indianapolis, in the county of Marion and State of Indiana, 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, which 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a front elevation of my improved brick-machine; Fig. 2, a horizontal section taken in the plane *xx* of Fig. 1.

Like letters in both figures of the drawing indicate like parts.

The object of this invention is to use coal or coke in addition to wood, so as to increase the heat, and thus save time in the burning of brick, as will be hereinafter more fully explained.

The brick-kiln is built, as ordinarily, with arches *A*, and surrounded by a casing-wall, *B*, having the usual fire flues or openings *C C* made in the casing at the ends of the arches. These openings are provided with the usual doors having shutters, but, not having any direct bearing upon the invention, it was not deemed necessary to show them in the drawing. *DD* are peep-holes, to enable the brick-maker to see how his fires are burning within the kiln. The kiln as thus described represents a kiln for the use of wood only in the burning of brick.

A furnace, *E*, of brick, having the usual fire-grate for coal or coke is built against the casing-wall *B* between the fire-flues *C C*. The heat is conveyed into the kiln by means of flues *b b*, diverging right and left from the furnace, and leading partially into the fire flues *C C*, the construction of the furnace-flues in connection with the fire-flues being such that the currents of air through the furnace-

flues uniting with the currents of air through the fire-flues will produce an increased draft. These furnaces will be placed on both sides of the kiln and between every two fire-openings; consequently they will be exactly opposite each other.

The advantages derived from placing the furnace between the fire-flues *C C* is that the brick-maker can use either coal or wood, or both at the same time, at his option, so that he can force the heat to any part of the kiln, the arrangement of the furnaces in exactly opposite directions, and, in connection with the fire-openings, producing a strong draft. Thus, if one side of the kiln should be found to be heating too slowly, in consequence of the wind being on that side, or from any other cause, then he can close up the door, or, in other words, shut off the draft on the core side, and open the door and increase the draft on the opposite side of the kiln, and by this means the heat can be forced against the wall wherever it may be required, it only being necessary to use the doors of the fire-flues when it is found that the kiln is not heating equally in all parts thereof, or when the furnaces should happen to get out of order.

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

The fire openings or flues *C C*, in combination with the flues *b b* of the furnace *E*, with imperforate side walls, constructed as described, so that the flues *C C* can be used either separately or in conjunction with flues *b b*, to give a greater or less degree of heat, substantially as and for the purpose set forth.

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

EDWIN RAY McDOUGAL.

Witnesses:

A. M. DÉ SOUCHET,
SID. N. JOHNSON.