

W. T. MATHEWS.

Brick Kiln.

No. 102,141.

Patented April 19, 1870.

Fig. 1.

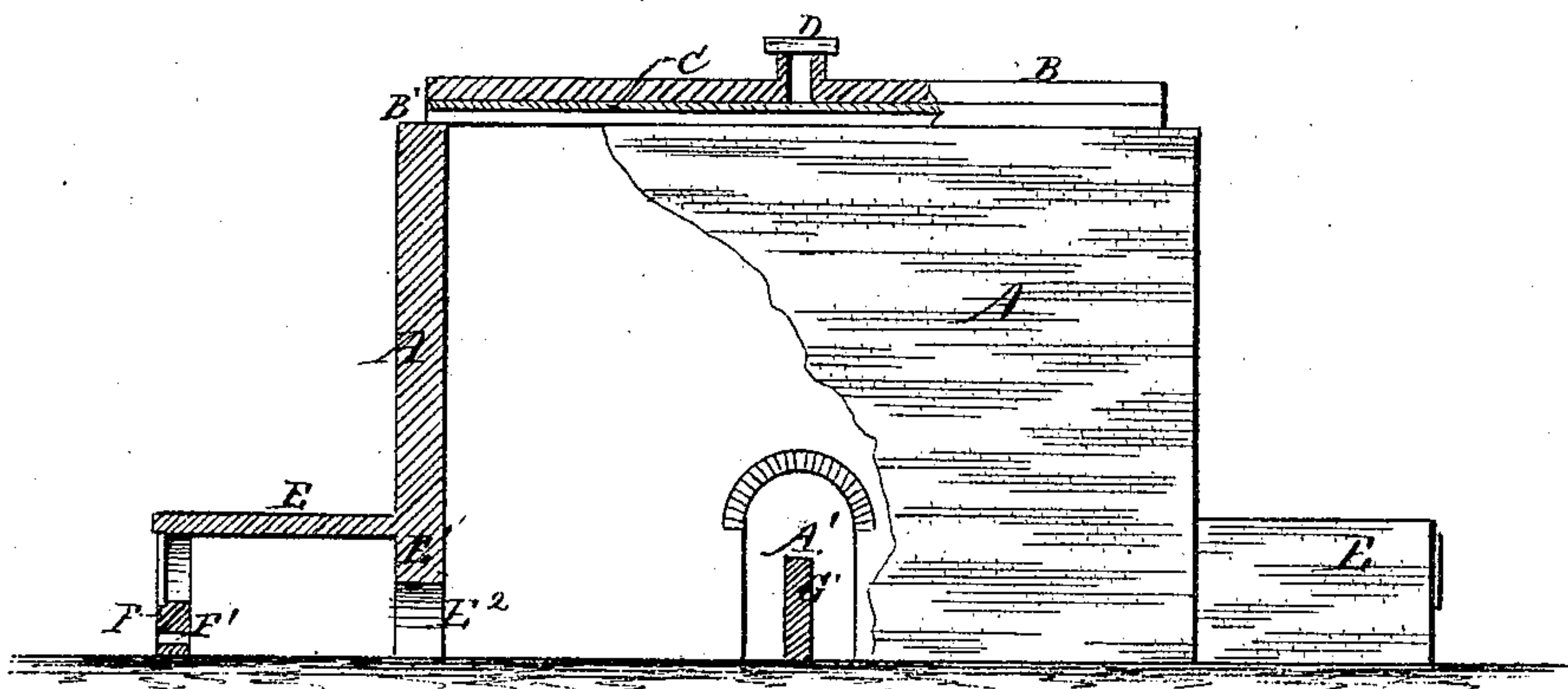


Fig. 2.

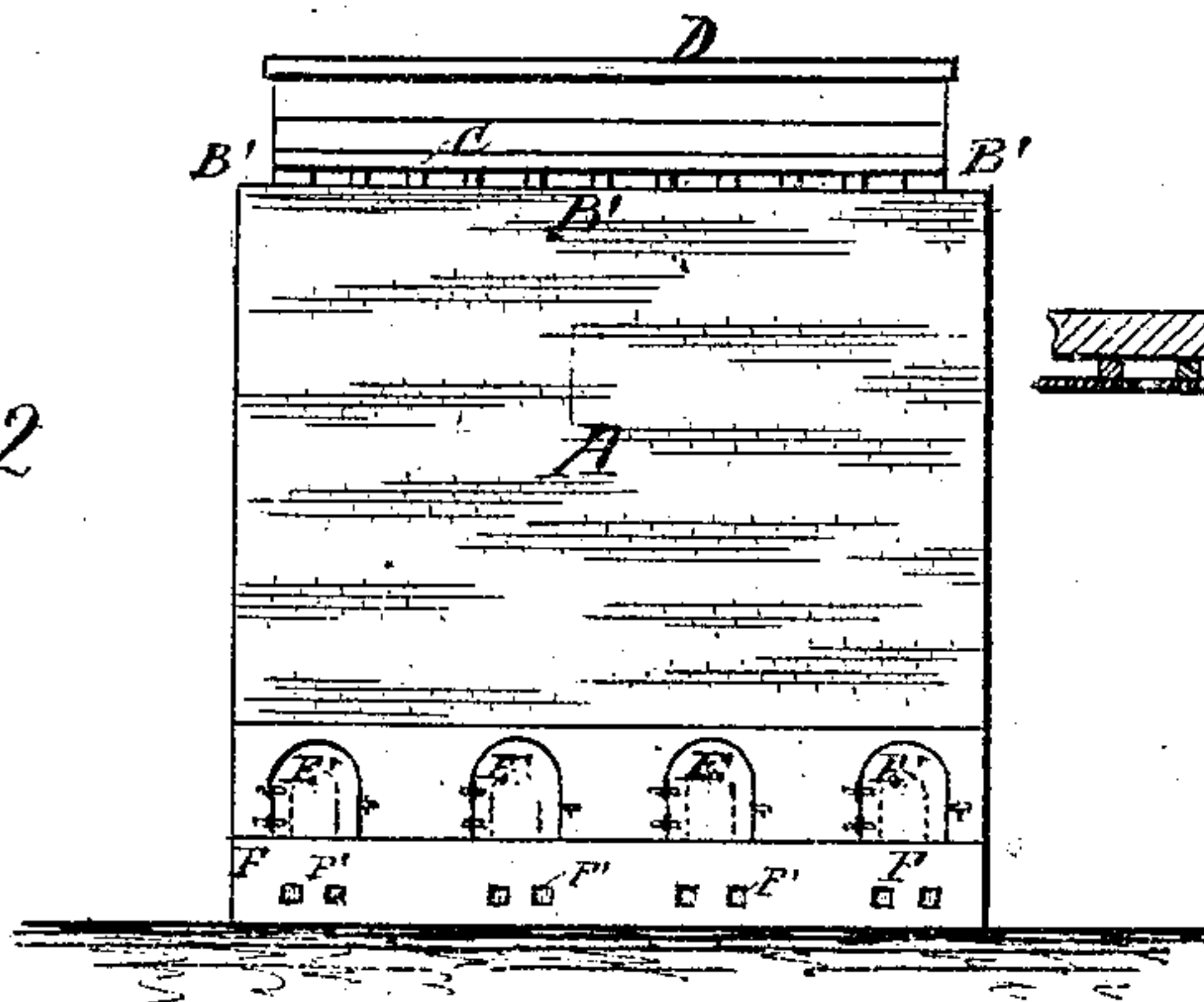


Fig. 3.

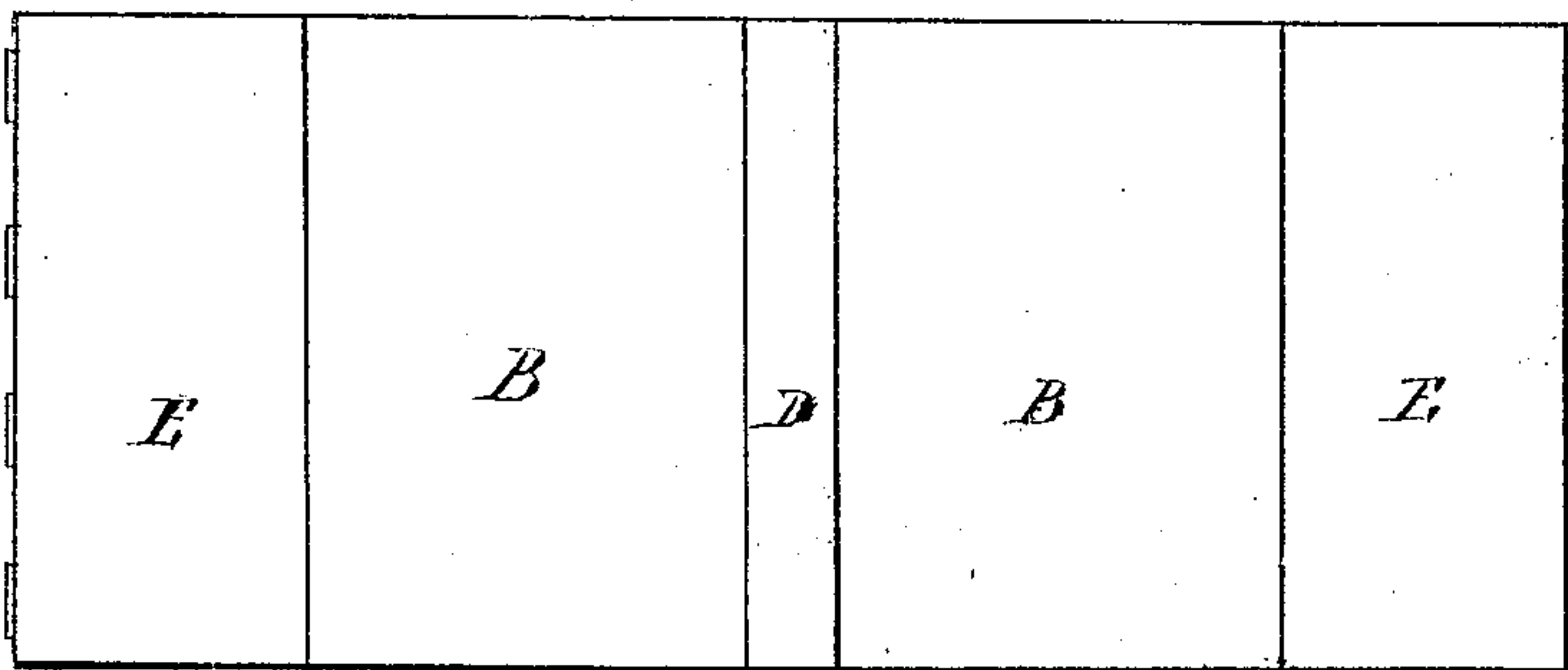


Fig. 4.

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C. H. Sprague

W. T. Mathews  
Inventor  
per Edson Brothers  
his atty.

# United States Patent Office.

WILLIAM T. MATHEWS, OF NEGAUNEE, MICHIGAN.

Letters Patent No. 102,141, dated April 19, 1870.

## IMPROVEMENT IN BRICK-KILNS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM T. MATHEWS, of Negaunee, in the county of Marquette and State of Michigan, 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.

### Drawings.

Figure 1 is a side elevation, partly in section.

Figure 2 is an end elevation.

Figure 3 is a section of the cover and perforated ceiling.

Figure 4 is a plan view.

Same letters in similar figures indicate identical parts.

My invention relates particularly to that class of kilns in which wood is used as a fuel; and

It consists in certain peculiarities of construction, to be hereinafter specifically designated in the following specification and claim, the object of which is to secure a more equal distribution of heat through the body of the kiln, and thereby effect a more equal burning of the bricks in the different parts of the kiln, and at the same time effecting an economy of the fuel.

In the annexed drawings—

A represents a permanent wall of brick, forming the body of the kiln.

A' is an arched doorway, to be used in filling the kiln with the unburned brick, which are to be piled in the usual manner, so as to leave spaces between them for the free circulation of the draught. When the kiln has been filled, this doorway should be closed by an iron door, bricked up, or otherwise secured.

B is a cover or double roof of burnt brick, below which is a perforated ceiling, C, to be made of suitable metallic plates, perforated with small holes over their entire extent or surface. These holes are arranged in rows, and between the rows are placed longitudinal ridges, extending the entire length of the cover, and filling the space between the ceiling and cover or roof so as to form longitudinal flues, extending the entire

length and opening into the air at both ends for the free escape of the draught.

D is a ventilator, extending transversely across the roof or cover, which is intended to be used while the water-smoke is being driven out, and then to be closed while the burning of the brick is being completed.

E E are the furnaces, which I propose to build at each end of the kiln, of suitable size and length to receive the wood intended to be burned.

E<sup>1</sup> is a bridge wall, extended down to form the flues opening at E<sup>2</sup>, and to such a distance that the opening of the flues E<sup>2</sup> shall be below the level of the fuel with which the furnaces are filled. The object of this arrangement is to prevent the entrance into the kiln of any air except that which has passed through the body of the fire, and thus been highly heated, so as to preserve the arches from the effect of cold air entering with the draught.

Across the front of the furnaces are the walls F, which are formed with openings F', through which air may enter below the grate-bars.

A partition-wall, G, is extended transversely across the center of the kiln, and raised to a height above the level of the top of the flues E<sup>2</sup>. The object of this wall is to divert and give an upward direction to the draught from the opposed furnaces, thus insuring an equal distribution of the heat through the body of the kiln.

What I claim, and desire to secure by Letters Patent of the United States, is—

The combination and arrangement, in the kiln herein shown, of the perforated and fluted ceiling C and cover B, ventilator D, exterior fire-chamber E, descending bridge wall E<sup>1</sup>, flue E<sup>2</sup>, and air-draught F', constructed substantially as described, and for the purpose set forth.

Signed at Negaunee, county of Marquette, State of Michigan this 26th day of January, A. D. 1870.

W. T. MATHEWS.

Witnesses:

H. HASTINGS,  
C. C. EDDY.