

(No Model.)

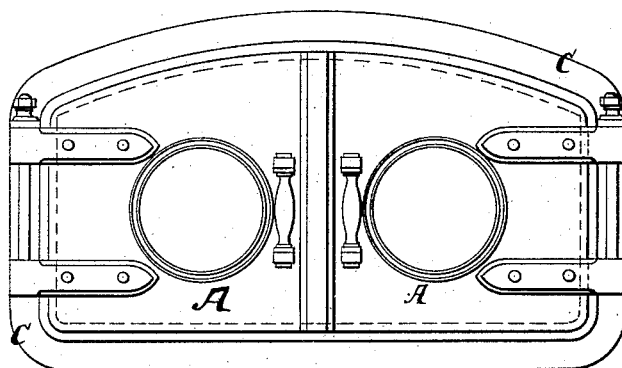
J. B. F. HERRESHOFF.

FIRE DOOR FOR FURNACES.

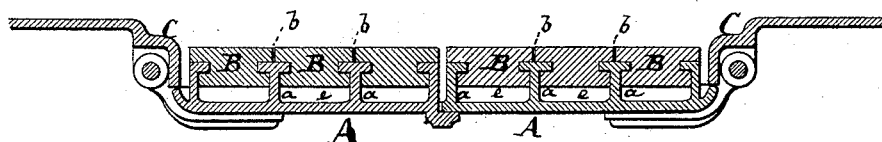
No. 342,511.

Patented May 25, 1886.

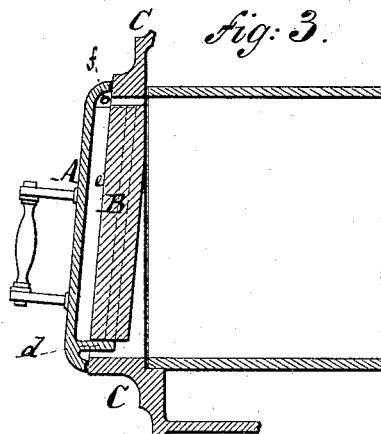
*Fig. 1.*



*Fig. 2.*



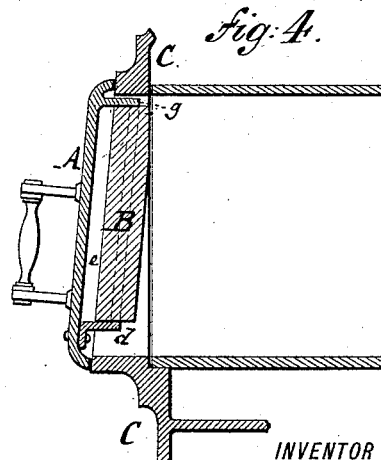
*Fig. 3.*



WITNESSES:

*A. Schehl.*  
*John M. Speer.*

*Fig. 4.*



INVENTOR

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# UNITED STATES PATENT OFFICE.

JOHN BROWN FRANCIS HERRESHOFF, OF BROOKLYN, NEW YORK, ASSIGNOR  
TO HIMSELF, GEORGE H. NICHOLS, AND WILLIAM H. NICHOLS, ALL OF  
SAME PLACE.

## FIRE-DOOR FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 342,511, dated May 25, 1886.

Application filed March 13, 1886. Serial No. 195,063. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BROWN FRANCIS HERRESHOFF, of the city of Brooklyn, in the county of Kings and State of New York, have  
5 invented an Improved Fire-Door for Furnaces, &c., of which the following is a complete specification, reference being had to the accompanying drawings, in which—

Figure 1 is a face view of my improved fire-  
10 door. Fig. 2 is a horizontal section; Fig. 3, a vertical section of the same; and Fig. 4 is a vertical section of a modification thereof.

This invention relates to improvements on fire-doors for furnaces of all kinds, its object  
15 being to prevent the rapid destruction of the door by the heat of the furnace.

The invention consists in a peculiar construction of lining for the inner side of the fire-door, as hereinafter described.

20 In the drawings, the letter A represents the outer metal body or face-piece of the fire-door, which may be of suitable form and thickness. On the inner side this door has inwardly-projecting parallel ribs *a a*, each of which is substantially T-shaped in cross-section, as in Fig.  
25 2. The T-heads at the inner ends of these ribs *a a* serve to receive and hold in place blocks B B, of fire-brick or analogous substance. These blocks are grooved at their edges to fit the  
30 ribs *a a*, and are substantially contiguous along the inner face of the door—that is to say, they lap over the T-heads of the ribs *a a*, so as to meet at *b* behind side ribs. These blocks or bricks B B can be slid into position from  
35 above, as in Fig. 3, so as to rest on a ledge or shoulder, *d*, which is formed for this purpose on the lower portion of the door.

The letters C C represent the door-frame or the body of the furnace.

40 It will be perceived from an inspection of Figs. 2 and 3 that the blocks or bricks B B are by the ribs *a a* held at a distance from the

metal body of the door A, so as to leave an air-space, *e*, between, which, by an aperture or otherwise, may communicate with the interior  
4 of the furnace and with the outer atmosphere. The bricks B B thus protect the metal of the door from the direct and destructive influence of the heat of the furnace, and they likewise protect the ribs *a a*, that hold them from direct  
5 contact with the heated gases. Being in sections, these bricks are not liable to warp or crack, as is the case with the continuous linings that have been already suggested for the  
inner faces of fire-doors; but even if one or  
5 more of these bricks should become destroyed by the heat it can easily be taken out and replaced by another.

I have shown the invention applied to a fire-door; but it is quite evident that it is applicable  
6 also to other parts of furnaces which require protection from the effect of great heat.

The modification which is shown in Fig. 4 consists in inserting each brick or block B from below instead of from above, as in Fig.  
6 3, the upper edge of the brick or block B resting against the lip *g*, that extends inwardly from the door, while the lower end of each brick or block is supported on the ledge *d*,  
7 which in this modification is made detachable, being fastened to the door A by suitable bolts.

I claim—

The fire door or plate A, having T-shaped upright ribs *a a*, and ledge *d* at right angles  
7 to said ribs, in combination with the bricks or blocks B B, which are held between said ribs, overlapping the same, and rested on said ledge at a distance from said plate A, as specified.

JOHN BROWN FRANCIS HERRESHOFF.

Witnesses:

C. H. JOÛET,  
B. NAFIS.