

No. 695,750.

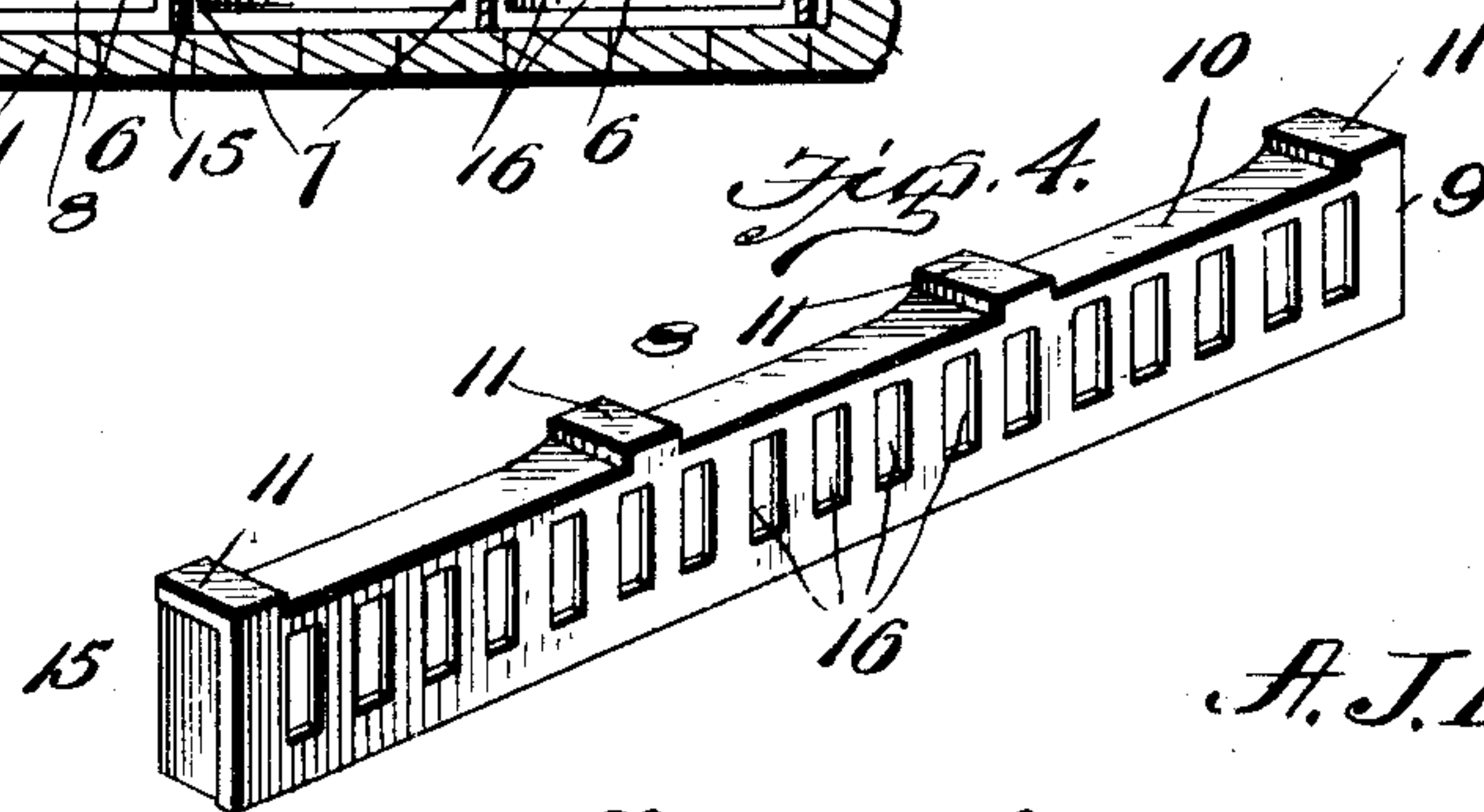
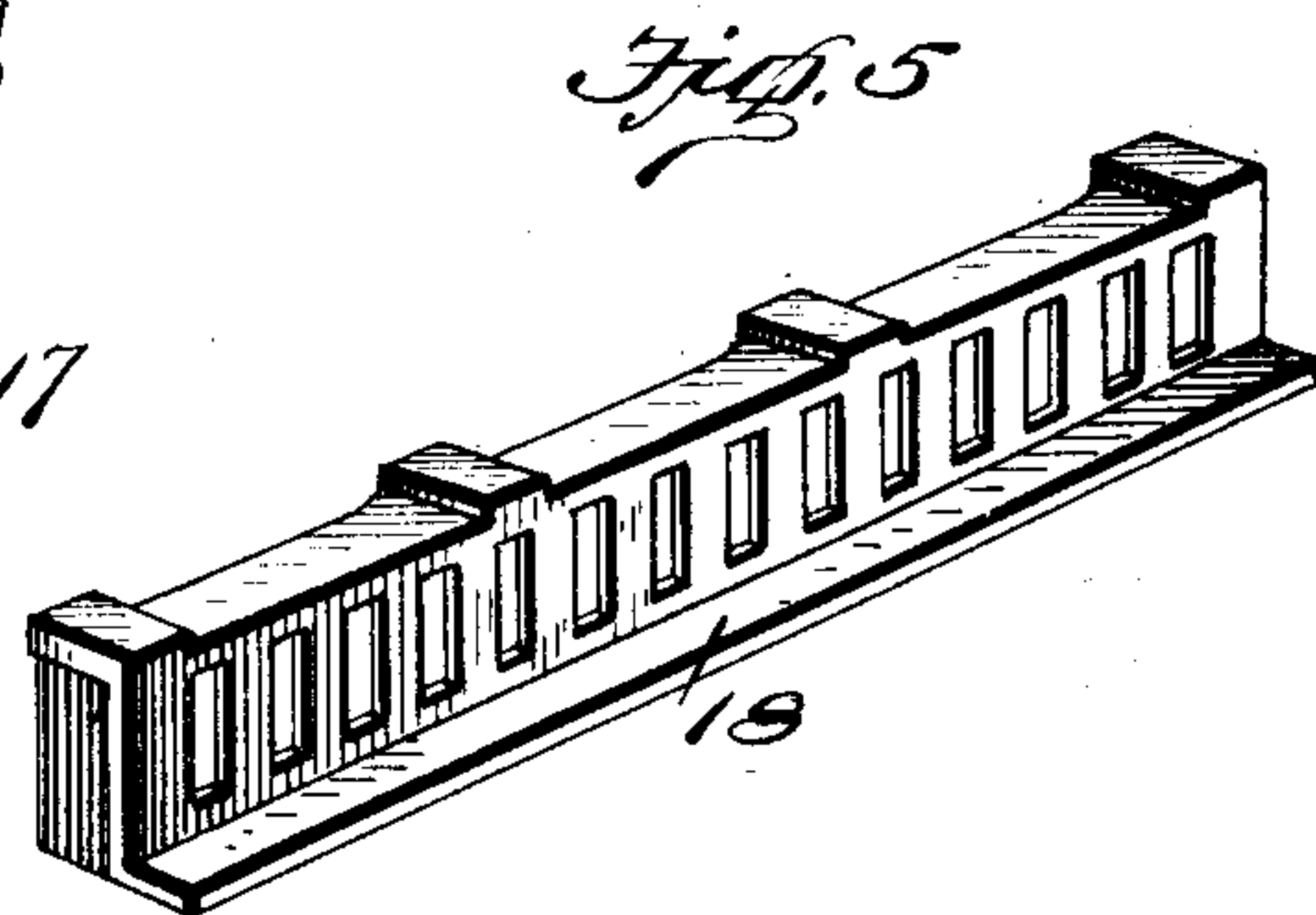
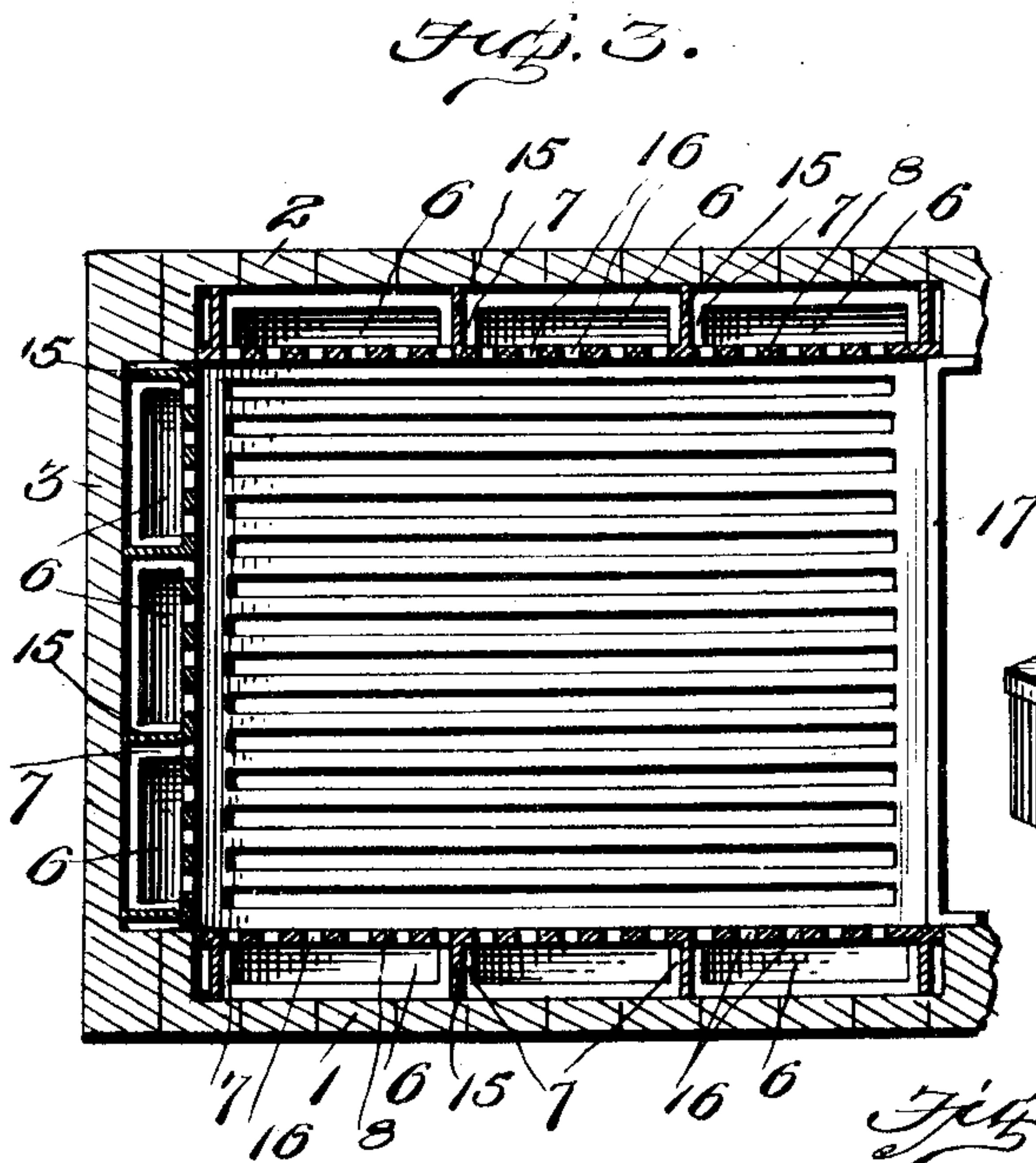
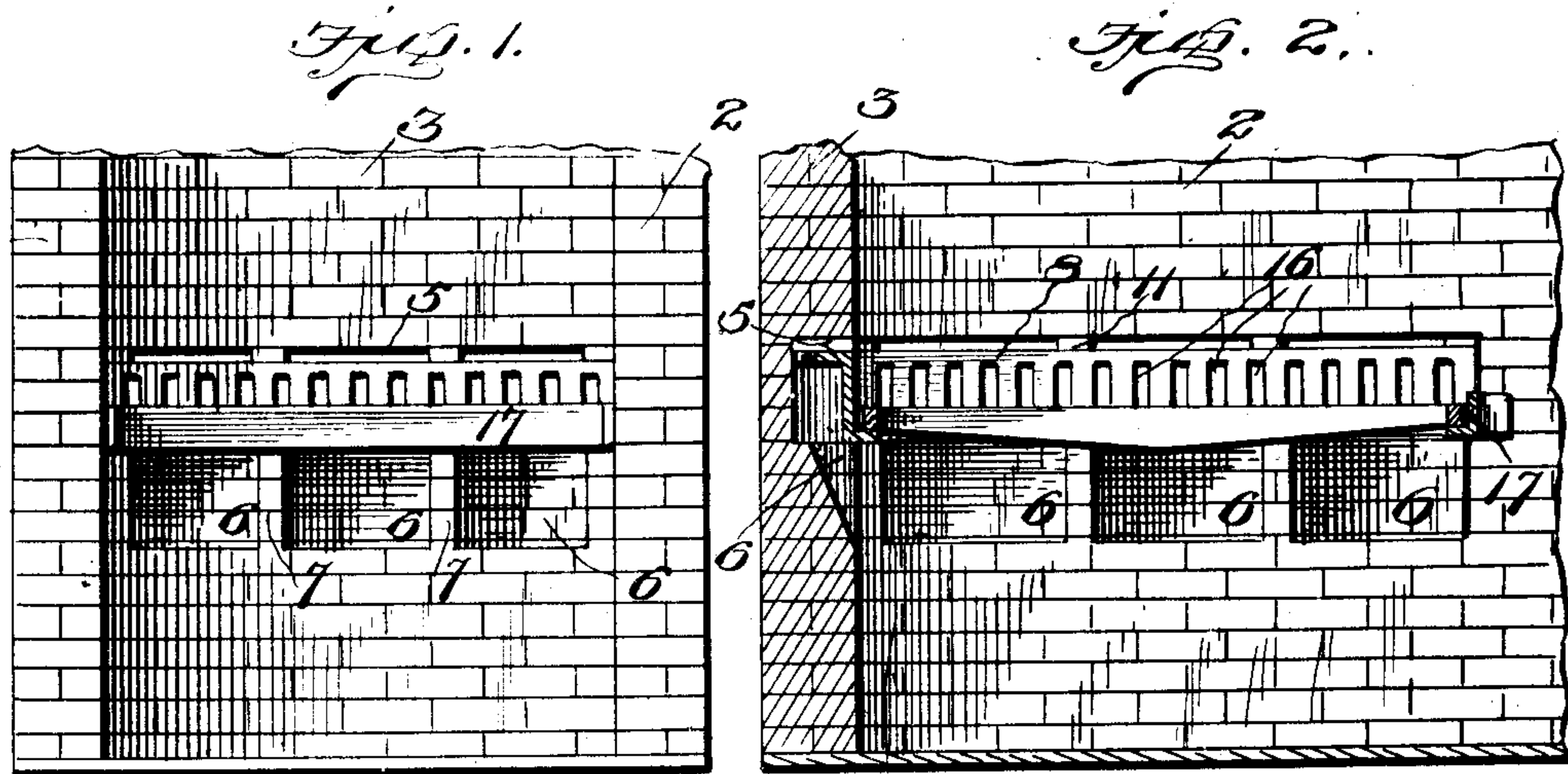
Patented Mar. 18, 1902.

A. J. F. MILLER.

FURNACE.

(Application filed June 27, 1901.)

No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

AUGUST J. F. MILLER, OF CENTRALIA, ILLINOIS, ASSIGNOR OF ONE-HALF  
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## FURNACE.

**SPECIFICATION** forming part of Letters Patent No. 695,750, dated March 18, 1902.

Application filed June 27, 1901. Serial No. 66,297. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST J. F. MILLER, a citizen of the United States, residing at Centralia, in the county of Marion and State of Illinois, have invented certain new and useful Improvements in Furnaces; 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 ap-  
10 pertains to make and use the same.

The invention relates to furnaces.

The object of the invention is to provide a furnace with a grated lining at its rear and side walls to prevent the formation of clink-  
15 ers on the wall and the consequent injury of the wall in the act of removing the same and at the same time to assist in promoting combustion, thus more thoroughly consuming the fuel, and which will also enable the furnace  
20 to be more readily cleaned than the constructions heretofore extant.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement  
25 of parts which will be hereinafter more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a front view of a furnace, illustrating my in-  
30 vention. Fig. 2 is a longitudinal vertical sectional view. Fig. 3 is a horizontal sectional view. Fig. 4 is a perspective view of one of the side linings, and Fig. 5 is a view of the end lining.

35 In the drawings, 1 and 2 denote the side walls, and 3 the rear end wall, of the furnace. The side walls and the end wall are each provided with a horizontally-disposed chamber having a horizontal top wall 5 and an inclined  
40 base-wall 6, provided with supporting-lugs 7, spaced apart.

8 denotes the side linings, each of which consists of a metallic strip or plate having a vertical side 9 and horizontal top 10, the up-  
45 per surfaces of which are formed with spacing-blocks 11, which engage the brick forming the top wall of the chamber 4 and form air-passages between said horizontal portion

10 and the top wall 5 of the chamber. The lower edge of the vertical portion 9 of the  
50 plate seats upon the lugs 7, and in order to obtain an additional support at this point, and thus effectually prevent the tilting of the plate, I provide the inner sides of the section 9 with vertical webs 15, which rest upon said  
55 lugs 7. The vertical portions of these plates are each provided with a horizontal row of air-inlet slots or apertures 16, so that air passing up under the grate between the lugs and  
60 into the chamber 4 will some pass out through said slots or openings, while the remaining portion will ascend and pass out between the horizontal portion of the plate and the top  
wall of the chamber.

17 denotes the forward bridge, preferably 65 made of angle-iron and secured to the sides of the furnace at its lower end, and 18 denotes the lower bridge, which is formed integral with the rear end lining. Upon these bridges is adapted to be supported in the usual man-  
70 ner the grate.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and ad-  
75 vantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and details of construction may be made with-  
80 in the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Pat-  
85 ent, is—

The combination, in a furnace, of a furnace-wall having a longitudinal chamber hav-  
ing an inclined base-wall, lugs or supports projecting from said inclined base-wall, and a grate-lining consisting of a strip of metal  
90 the vertical side of which is perforated and is provided on its outer face with webs to engage said lugs or supports and provided at its upper edge with an outwardly-projecting  
range or ledge having blocks upon its upper  
95 surface to engage the top wall of the cham-

ber and form a space between said outwardly-  
projecting flange and top wall whereby the  
air passing into said chamber from below,  
partly escapes through the slots or apertures  
5 in said lining and through the space between  
the flange of the lining and the top wall of  
the chamber, substantially as set forth.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit-  
nesses.

AUGUST J. F. MILLER.

Witnesses:

W. H. WARNER,  
C. L. BREWSTER.