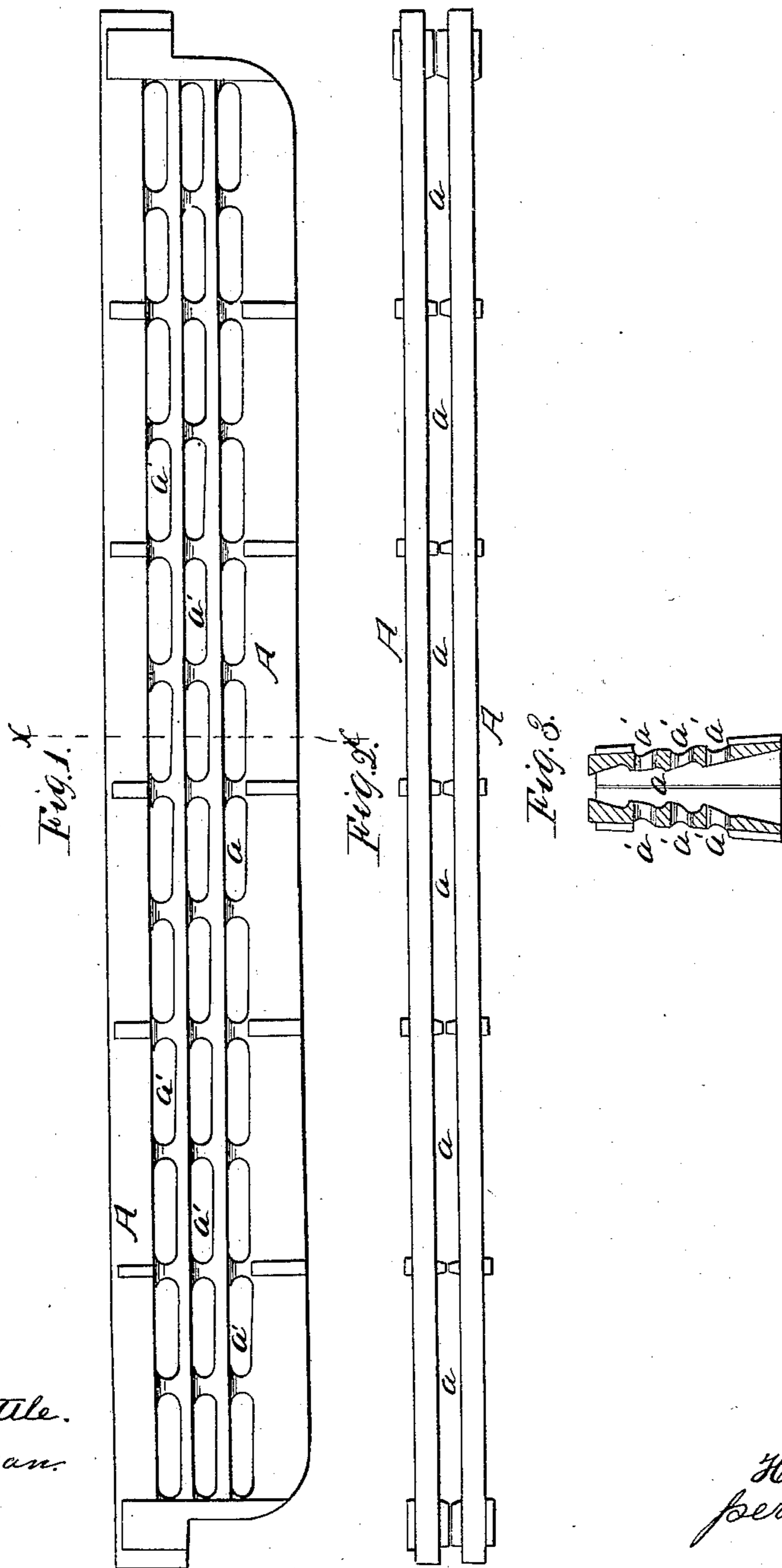


*H. King,*

*Furnace-Grate Bar.*

*N<sup>o</sup> 78,292.*

*Patented May 26, 1868.*



*Witnesses.*  
*W. C. Aslikette.*  
*Jm. A. Morgan.*

*Inventor.*  
*Henry King.*  
*per Wm. St.*  
*Attys*

# United States Patent Office.

HENRY KING, OF WATERBURY, CONNECTICUT, ASSIGNOR TO HIMSELF  
AND FRANCIS STAPPERS, OF NEW YORK CITY.

*Letters Patent No. 78,292, dated May 26, 1868.*

## IMPROVEMENT IN GRATE-BARS.

*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, HENRY KING, of Waterbury, in the county of New Haven, and State of Connecticut, have invented a new and useful Improvement in Grate-Bars; 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention.

Figure 2 is a plan view of the same.

Figure 3 is a vertical cross-sectional view of the same, taken in the line  $x x$ , fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a new and improved method of constructing the grate-bars of furnaces, fire-boxes, &c., whereby air is more freely admitted to the burning fuel, and whereby the same are rendered more durable.

Each grate-bar, A, is made of iron or any other suitable material, of suitable length and breadth for the furnace, where the same is to be employed, and is either made in two longitudinal sections, or in one piece, in such a manner as to leave spaces  $a$  between the two parts of the bar, as shown in the drawings, figs. 2 and 3, for the admission of air, through the bar A, to the fire. Said spaces  $a$  are wider at the bottom than at the top, so as to give the ashes, cinders, &c., a free passage out through the same, and by means of which also the fire is more easily and thoroughly cleaned.

Laterally through each bar A is any convenient number of openings or apertures,  $a'$ , arranged in rows, as shown in the drawing, or in any convenient manner. The apertures  $a'$  may be of any convenient form, and opening into the spaces  $a$ , between the two parts of the bar A, admit air to the fire, and also bring the air in contact with the bar at many points, and thus prevent the same from being injured by the fire.

Having thus described the invention, I claim as new, and desire to secure by Letters Patent—

A grate-bar, formed in two longitudinal sections, or in one piece, having spaces  $a$  through the same, wider at the bottom, with apertures  $a'$  opening into said spaces  $a$ , substantially as shown and described, and for the purposes set forth.

HENRY KING.

Witnesses:

WM. F. McNAMARA,

ALEX. F. ROBERTS.