

G. A. EYARS.
Grate Bar for Furnaces.

No. 90,248.

Patented May 18, 1869.

Fig. 1.

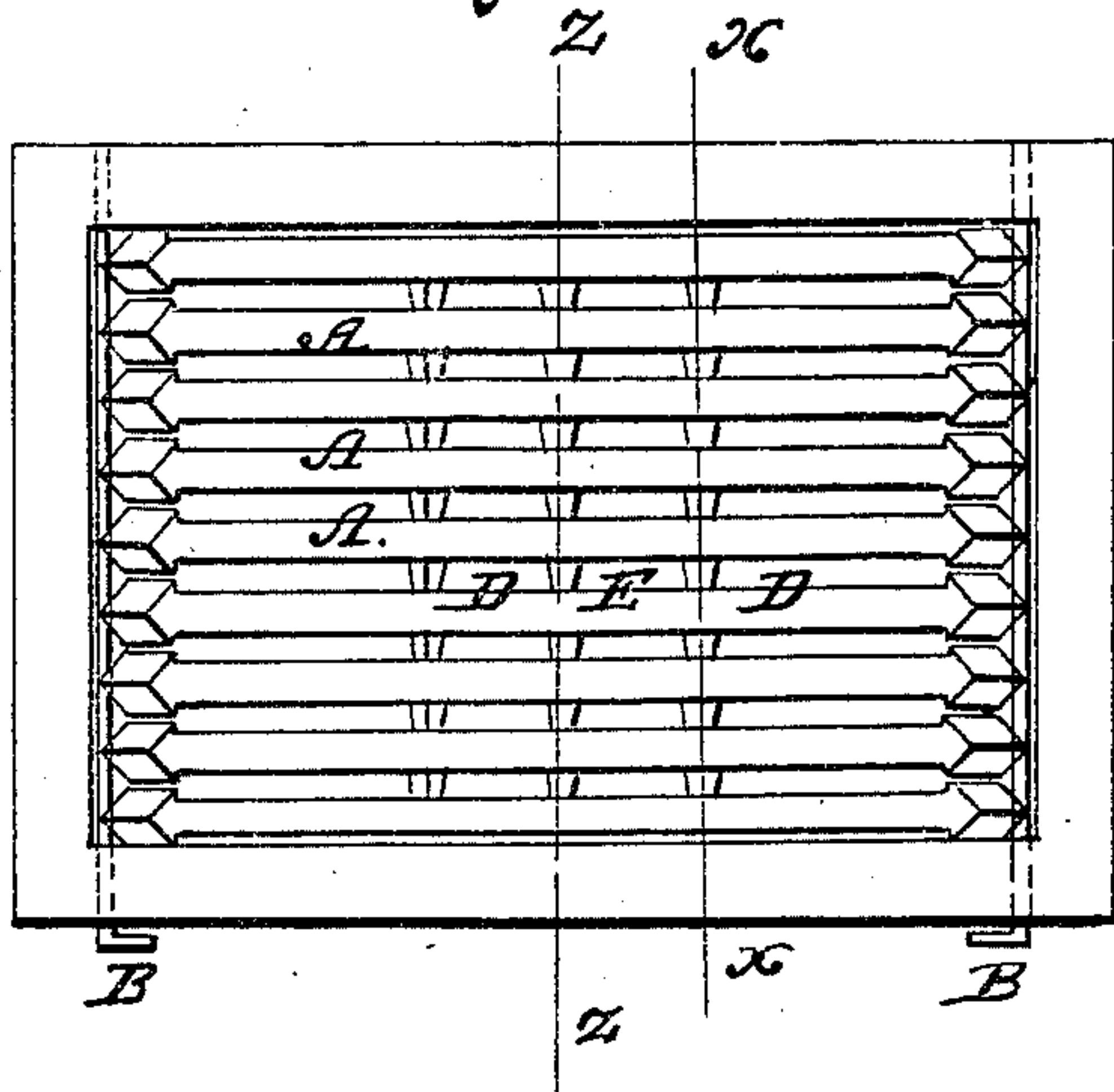


Fig. 2.

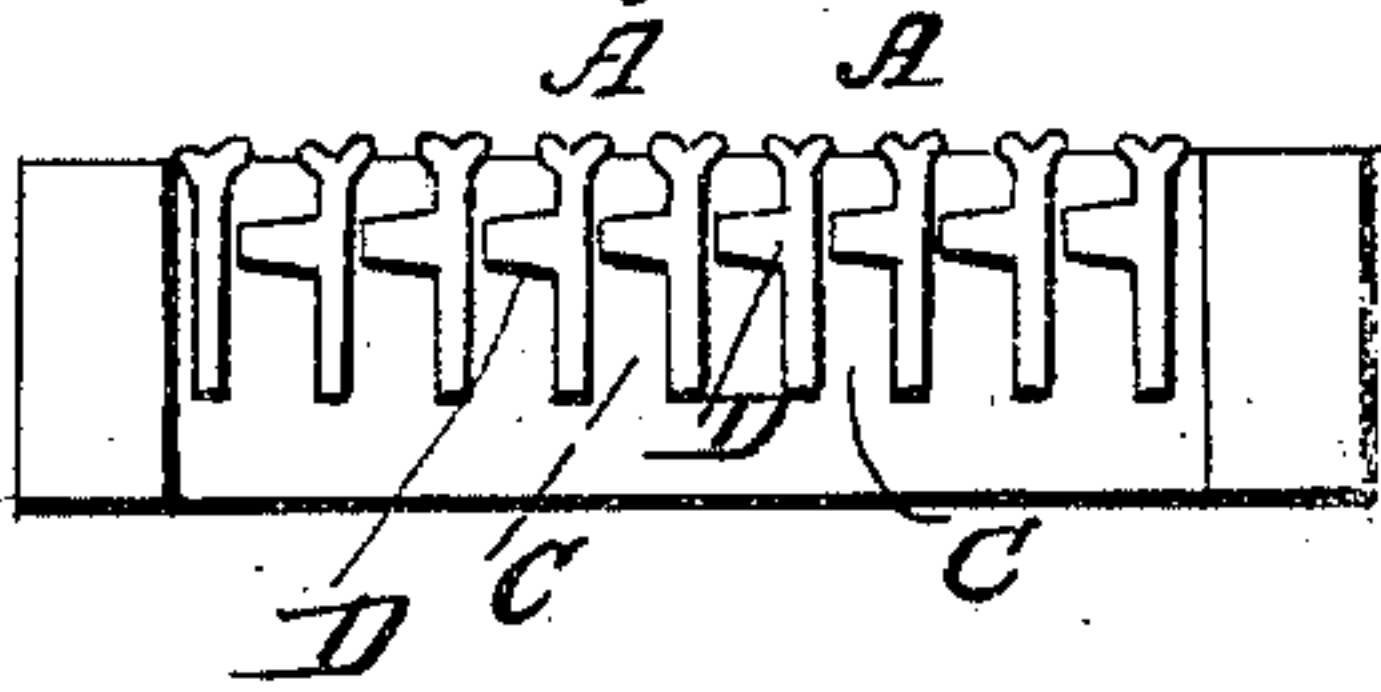


Fig. 3.

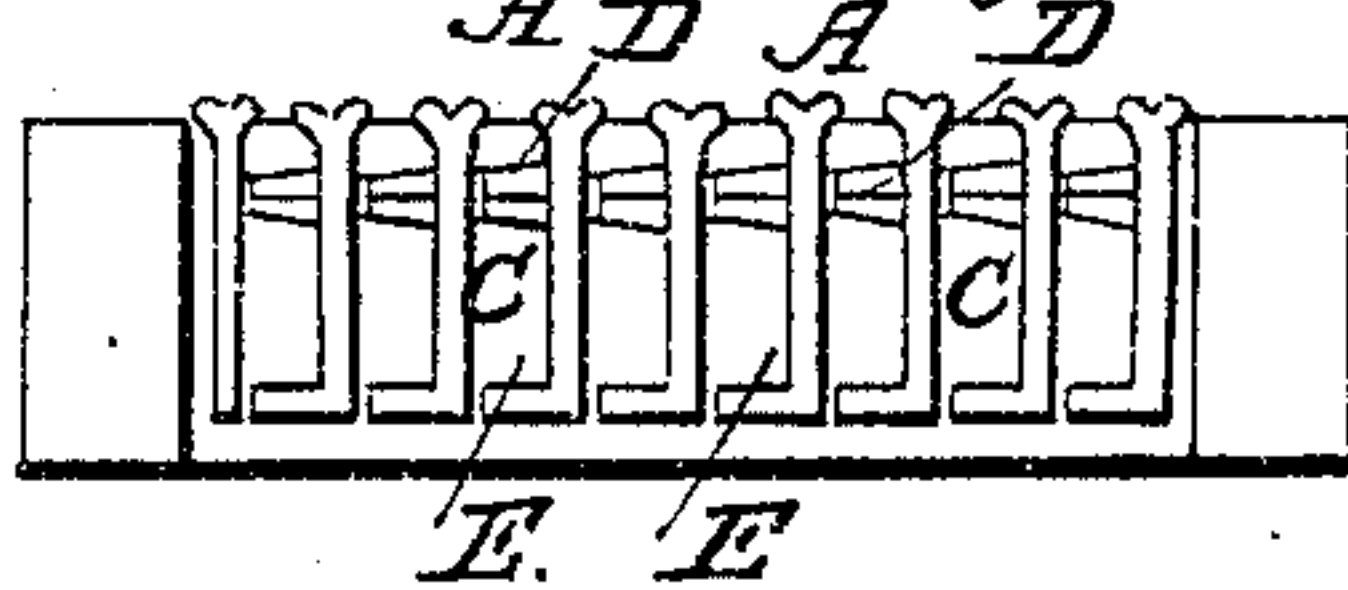
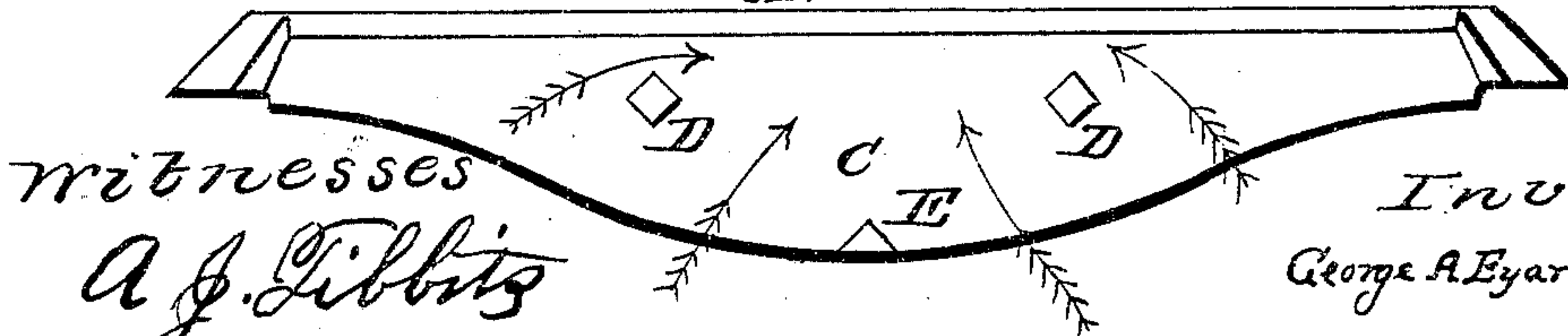


Fig. 4.



Witnesses
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Inventor
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By his Attorney
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GEORGE A. EYARS, OF MERIDEN, CONNECTICUT, ASSIGNOR TO
WILBUR F. PARKER, OF SAME PLACE.

Letters Patent No. 90,248, dated May 18, 1869.

IMPROVEMENT IN GRATE-BARS FOR BOILER AND OTHER FURNACES.

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, GEORGE A. EYARS, of Meriden, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Fire-Grates; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view;

Figure 2, a section on line *x x*;

Figure 3, a section on line *z z*; and in

Figure 4, a side view of a single bar.

This invention relates to an improvement in the construction of fire-grates, whereby they are prevented from "springing" or "twisting," by the action of the fire upon the grate; and consists in the peculiar construction, whereby this object is attained.

In order to the better understanding of my invention, as well as to enable others to construct the same, I will proceed to a description as illustrated in the accompanying drawings.

A A are the bars, supported, at either end, upon a projecting ledge in the fire-box, or otherwise, and secured therein by rods B B, passing through above the points of the bars, as seen in fig. 1.

The bars are formed with a concave surface, upon the top, and formed with a deep flange, C, projecting downward, but thinner than the top of the bar.

The ends of the bars are inclined into a "plow-like shape," as seen in figs. 1 and 4, forming a sharp edge at their point of bearing, so that as the bars expand, they may move, one toward the other, the "plow-shaped" end raising the ashes from between the bars, which would otherwise prevent such expansion.

Upon one side of the bar, below the fire-surface, I form projecting studs D D and E, formed so as to present an angle up, to prevent the lodgment of ashes thereon, and the said studs of such length as to extend nearly, or quite to the next bar; or, if preferred, the studs may be of less length, and upon both sides of the bar.

The studs, thus arranged, are so far below the fire, that the air necessary to the consumption of fuel passes in and around the said studs, and prevents their being heated to any great extent, whereas, as heretofore constructed, the connections, or supports between the bars have been in direct contact with, and subject to the extreme heat of the fire, thus communicating the heat to other parts of the bars, and aiding materially in the warping and twisting of the bars.

The flange-portion C of the bar is made deep in the centre, and the stud E at the farthest point from the fire.

It will, therefore, be readily seen, that, with the usual and necessary circulation of air, the lower portion of the bar will be much cooler than the upper portion, and, by the several bearings, will resist the inclination of the bars to yield to the heat of the fire, and thus preserve the bars until the metal itself is destroyed.

Having thus fully described my invention,

What I claim as new and useful, and desire to secure by Letters Patent, is—

The construction of the grate-bars, with one or both sides of either or both ends inclined, substantially as herein specified.

GEO. A. EYARS.

Witnesses:

A. J. TIBBITS,

JOHN H. SHUMWAY.