

A. B. COREY.
Grate-Bars.

No. 157,379.

Patented Dec. 1, 1874.

Fig: 2.

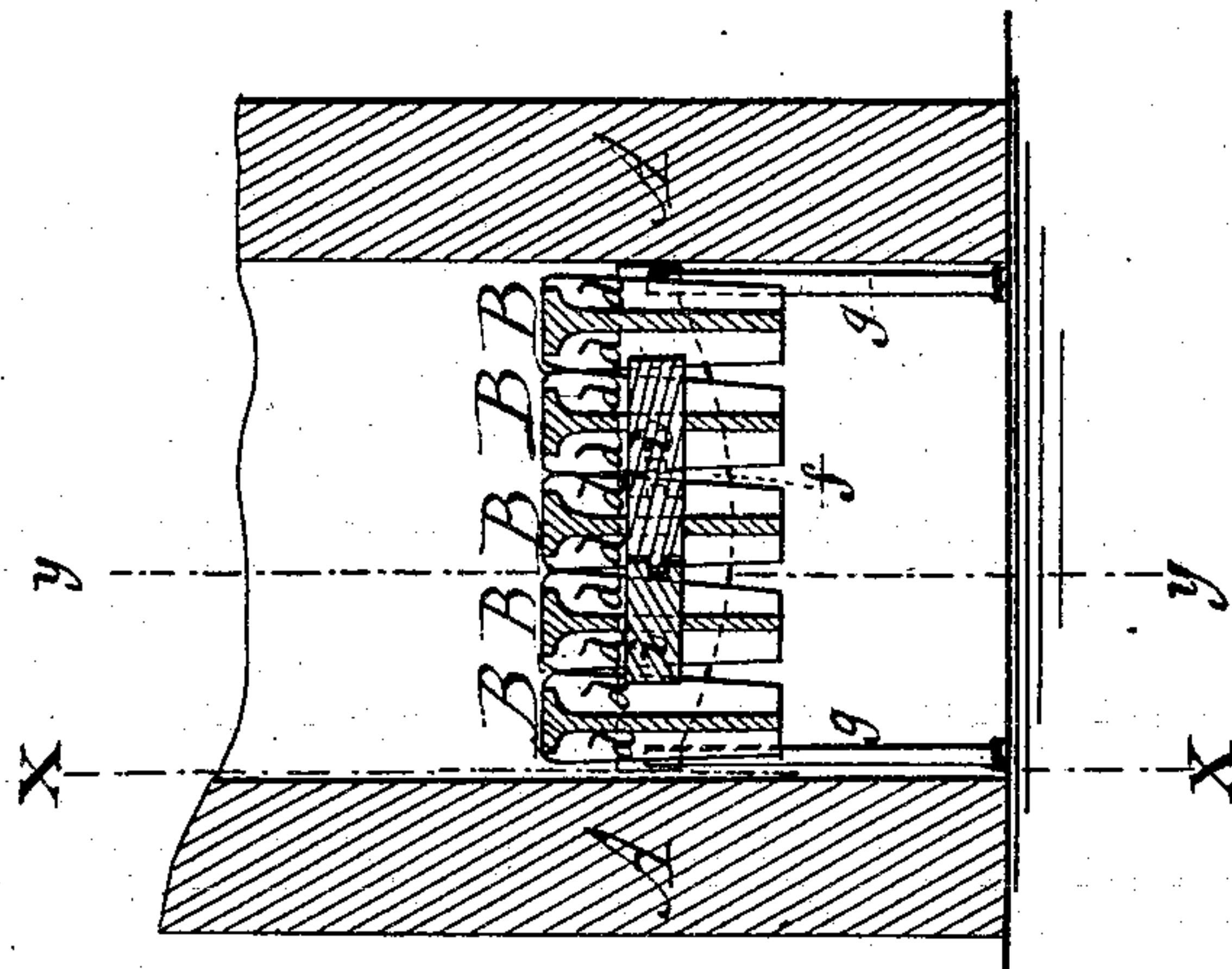
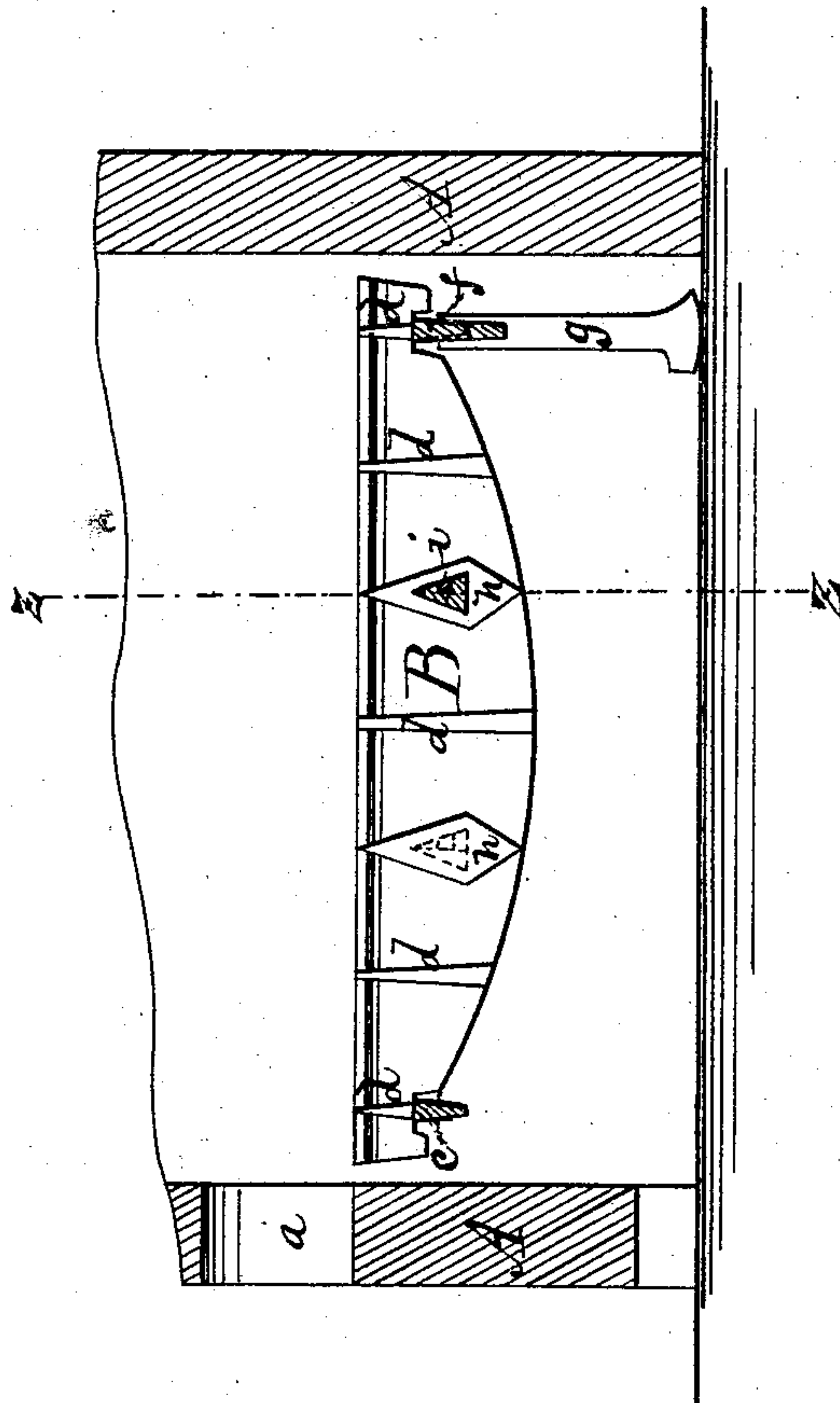


Fig: 1.



Witnesses:

Henry Eichling.
Fred. Haynes

Alfred B. Corey
by his Attorneys
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UNITED STATES PATENT OFFICE.

ALFRED B. COREY, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. **157,379**, dated December 1, 1874; application filed March 17, 1874.

To all whom it may concern:

Be it known that I, ALFRED B. COREY, of Providence, in the county of Providence and State of Rhode Island, have invented certain Improvements in Grate-Bars, of which the following is a specification:

My invention relates to certain improvements whereby a strong, durable, and economical grate is obtained.

The invention consists in the combination, with the grate-bars, of a stationary front bearer and a rear bearer, supported by standards, having at their lower ends rockers to allow of contraction and expansion without breakage, as hereinafter described.

In the accompanying drawing, Figure 1 is a longitudinal vertical section partly through the line *x x* and partly through the line *y y* of Fig. 2. Fig. 2 is a transverse vertical section through the line *z z* of Fig. 1.

A represents the wall of the furnace or fire-box, to which the grate is applied, and *a* the door. The grate-bar B is formed with its sides straight and parallel with each other for a portion of its width. Near the upper edge or bearing-surface of the bar the sides are concave, forming arcs of small circles compared with the width of the bars. By this construction the air, passing upward between the bars, is concentrated more abruptly than if the bars tapered gradually, and, consequently, the draft is increased, and the bars are cooled. On each side of the bar are projections or ribs *d*, extending from top to bottom, and having their sides tapering upward toward each other.

These ribs serve to strengthen and support the bar, and form passages or channels for the draft. The front ends of the bars, or the ends nearest the mouth or door of the furnace, rest upon a stationary bearer, *e*. The rear or opposite ends rest upon a bearer, *f*, which is supported by standards *g*, having rockers formed on their lower ends, which rest on the bottom of the ash-pit. By this construction the grate is allowed to contract or expand without danger of warping. At two or more points on each side of the grate-bar are rhomboidal or diamond-shaped enlargements *h*, in which are triangular openings. Through these openings pass triangular rods *i*, which connect with each other by lap-joints, and serve to hold a number of bars together. The outermost bar on each side of the grate has no openings in the enlargements; but the ends of the triangular rods abut against said enlargements, and are prevented from displacement. By this arrangement the bars may be removed one at a time, when desired.

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

In combination with the grate-bars, the stationary front bearer *e*, the rear bearer *f*, and standards *g*, having at their lower ends rockers resting on the ash-pit, substantially as and for the purpose herein described.

ALFRED B. COREY.

Witnesses:

HENRY T. BROWN,
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