

J. A. Miller. Grate Bar.

No. 118,962.

Patented Sep. 12, 1871.

Fig. 1.

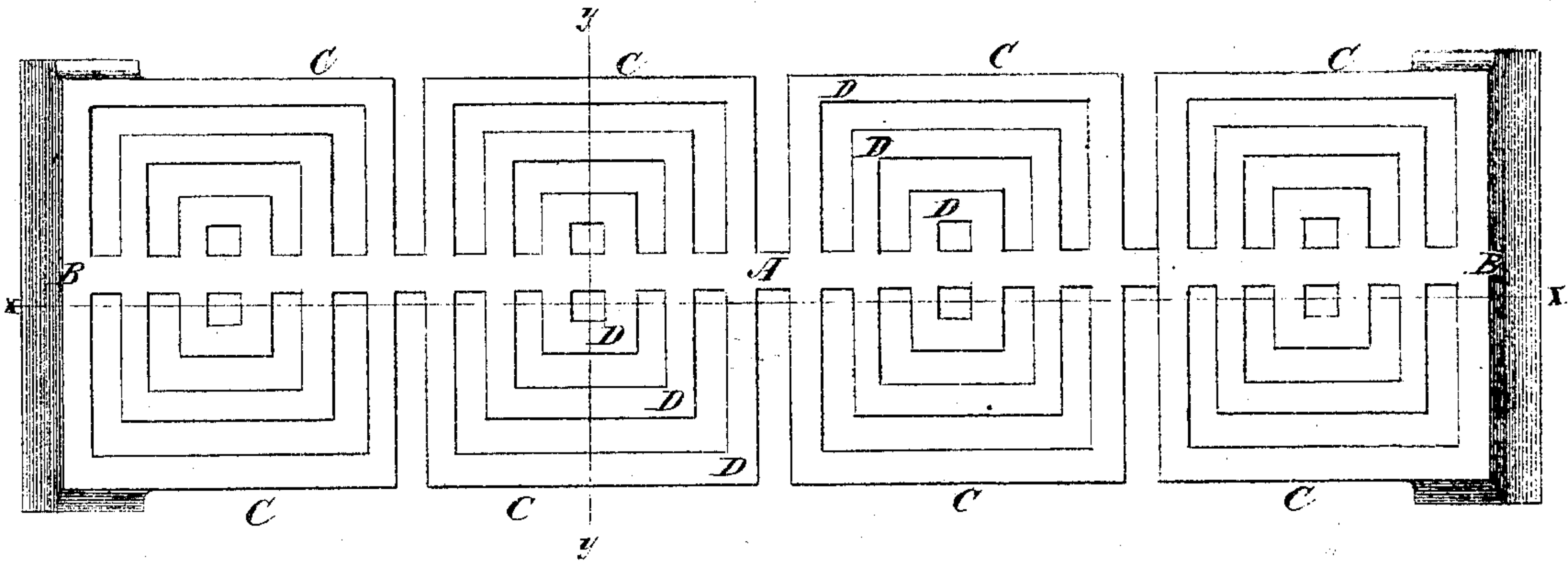


Fig. 2.

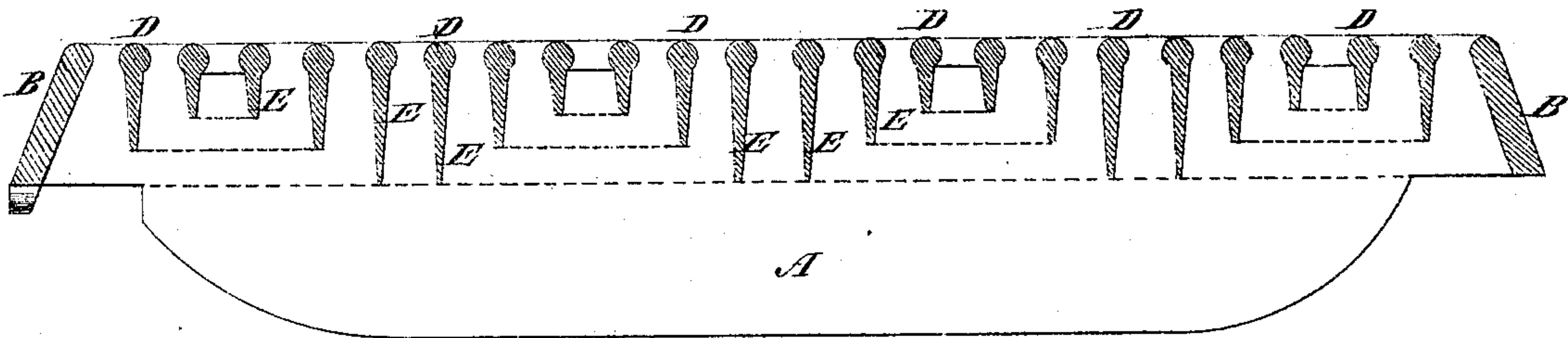
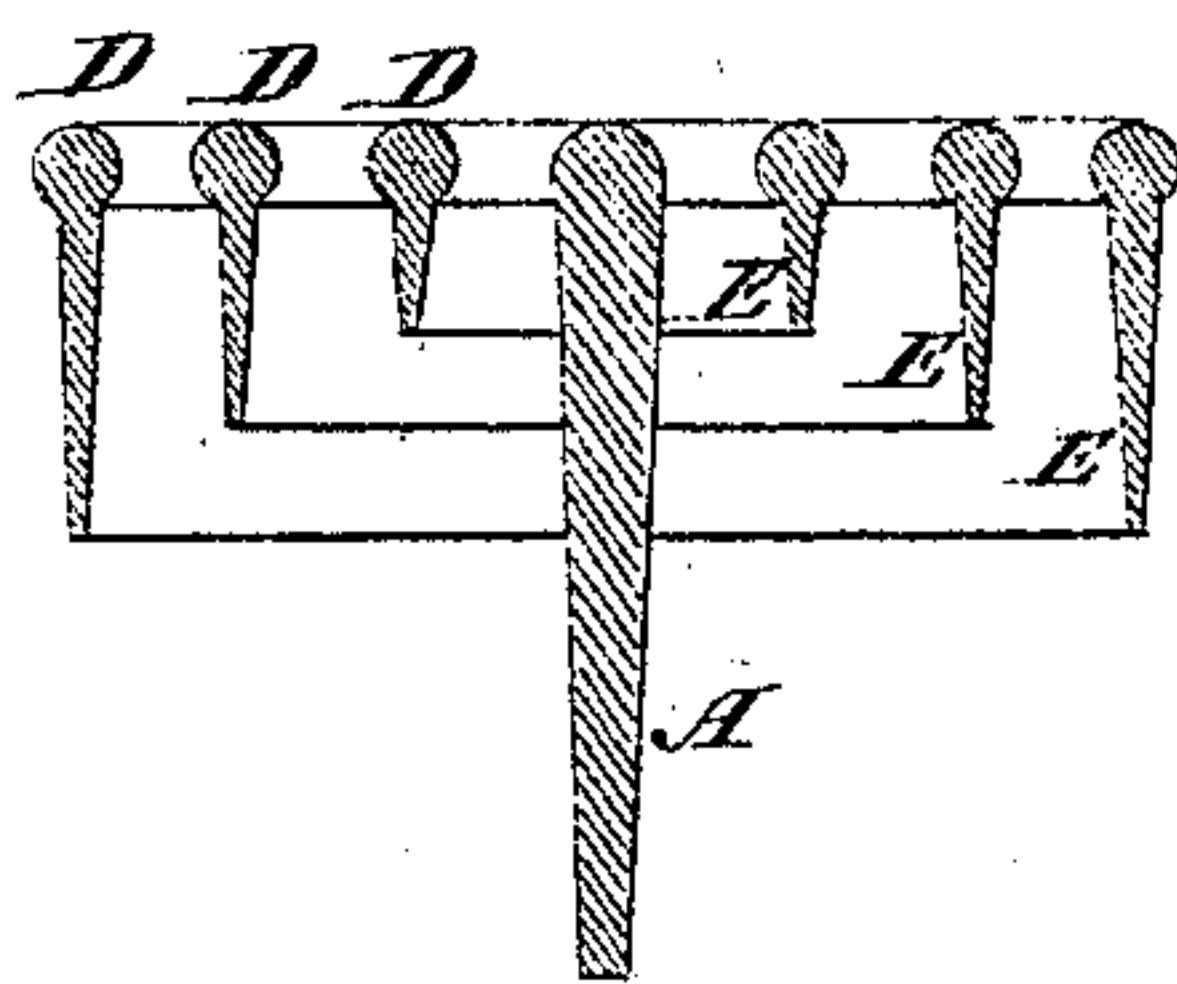


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH A. MILLER, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. 118,962, dated September 12, 1871.

To all whom it may concern:

Be it known that I, JOSEPH A. MILLER, of Providence, in the county of Providence and State of Rhode Island, 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 drawing forming part of this specification.

The object of this invention is to so construct grate-bars as to combine strength with lightness of metal and large area of air-space with narrow openings, and allow freedom to expand and contract with varying temperatures, as will be hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a top or plan view of a grate-bar constructed according to my invention. Fig. 2 is a vertical longitudinal section of Fig. 1 taken on the line *x x*. Fig. 3 is a vertical cross-section of the grate taken on the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is a broad central bearing-bar, connected with the end-pieces B B, to the sides of which are attached one or more sections C, consisting

of three (more or less) independent brackets, D, which brackets increase in size and width from the inner to the outer one, as represented in the drawing.

The form of the brackets is seen in the cross-section, the top portion of each being a round, with its rib E extending down, and diminishing in thickness, so that a great area of air-space is allowed beneath the fuel, while the ashes and incombustible matter mingled with the fuel freely escape to the ash-pit. Instead of casting the sections C to the central bar, as represented in the drawing, the sections or the brackets may be cast separately and hooked or attached in any manner to the central bar A.

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

The brackets D D D, having thereon the projections E E E, of unequal length, and diminishing downwardly to an edge, combined with broad central bearing A and end pieces B, when constructed, arranged, and applied as and for the purpose specified.

JOSEPH A. MILLER.

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(4.)