J. ASHCROFT.

Grate-Bars for Furnaces.

No. 197,510. Patented Nov. 27, 1877.

Fig. 1.

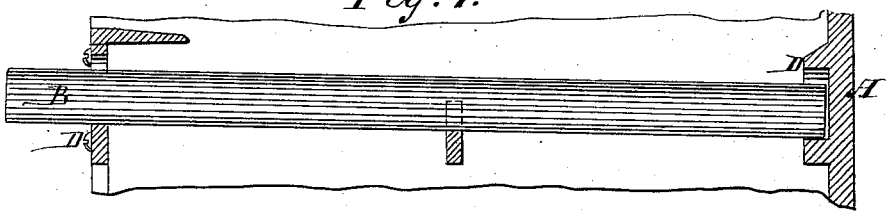


Fig. 2.

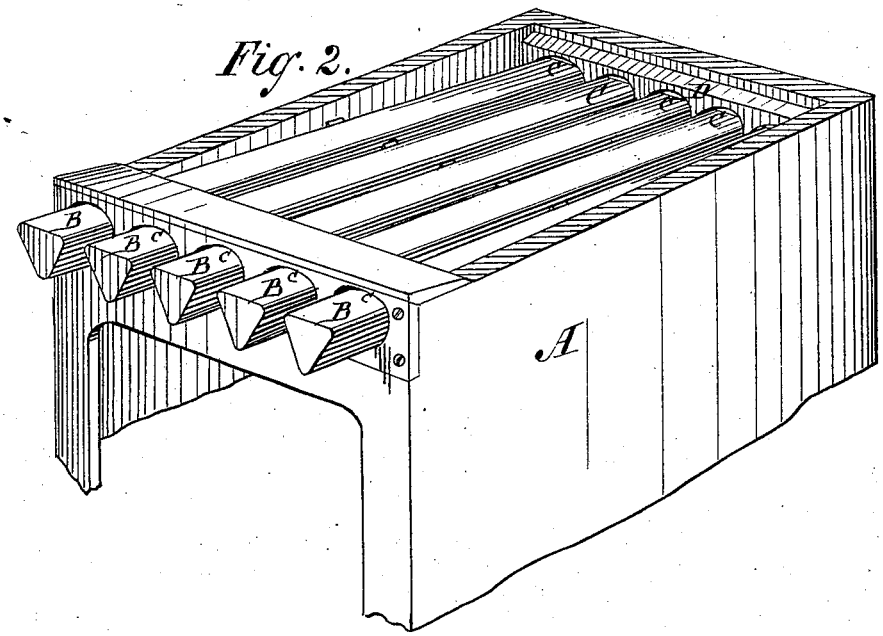
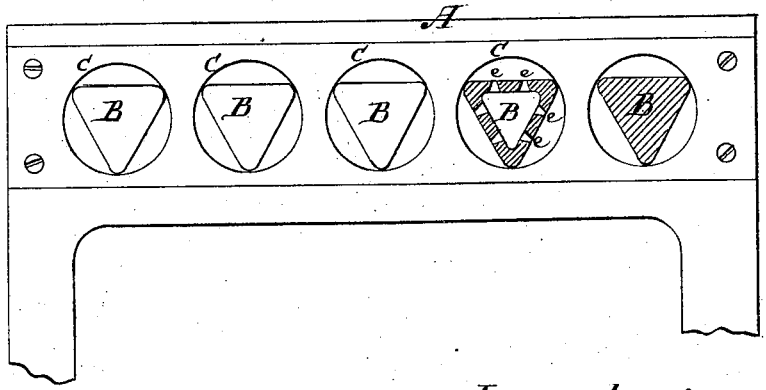


Fig. 3.



Witnesses:

~~Philip Bottman~~

C. F. Barnum.

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN ASHCROFT, OF BROOKLYN, NEW YORK, ASSIGNOR TO SARAH JANE ASHCROFT, OF SAME PLACE.

IMPROVEMENT IN GRATE-BARS FOR FURNACES.

Specification forming part of Letters Patent No. **197,510**, dated November 27, 1877; application filed June 15, 1877.

To all whom it may concern:

Be it known that I, JOHN ASHCROFT, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Grate-Bars for Furnaces; and declare that the following is a full, true, and perfect description of the same, reference being had to the accompanying drawings, made a part of this specification, wherein—

Figure 1 is a longitudinal section of the side, front, and rear walls of a furnace, and of the improved grate-bar and supports and guides. Fig. 2 is a plan view of a furnace and grate-bars; and Fig. 3 is a front view of the same, showing, in addition, a hollow bar on a cross-section behind the front wall of the furnace.

My invention consists in a grate-bar so arranged as to rock or revolve, said grate-bar being triangular in its general conformation, and a cross-section of which on its outline describing a triangle or a figure with three sides, the intersections of the sides being sharp or slightly rounded.

In the drawing, A represents the four walls of an ordinary furnace; B B B, grate-bars, which are triangular or three-sided on their cross-section, and may be sharp or slightly rounded at the intersection of the sides. C C C C are circular recesses or holes, into or through which the grate-bars are passed. D D are plates, attached to the rear and front walls, or making part thereof, in which the circular recesses or holes are sunk or perforated.

In Fig. 2 is shown a center cross-bearer, scalloped on its upper side, either in the segment of a circle or any other desired shape, to support and assist in guiding the bars.

In operation, the bars being placed in position, the front ends extend through the front plate D to the outside of the furnace, where they may be readily reached and revolved by the application of a key or wrench.

The shape of the bar results in four great advantages:

First, the bar in position presents one side to support the body of the fuel. Any ashes or clinkers that pass between the interstices of the bars must necessarily fall, because the width of the interstices constantly increases toward the bottom.

Second, the circulation of air up through or between the bars is free, because of the shape of the interstices and the decrease of friction.

Third, as a resultant from the free circulation of air the bars do not heat so quickly or so much.

Fourth, nearly or not quite one-half of the material in the bar is saved.

This saving may be increased by making this bar hollow, and perforating its shell with holes, as shown in Fig. 3, the circulation of air both through the bar and on its sides being so free as to prevent its destruction by the heat.

Having described my invention and its application, what I claim as new, is—

A revolving or rocking grate-bar, a cross-section of which shows the outline of a triangle or with three sides, the intersections thereof being sharp or slightly-rounded edges.

JOHN ASHCROFT.

Witnesses:
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