J. ASHCROFT.

Square Revolving Grate-Bar.

No. 208,356. Patented Sept. 24, 1878.

Fig. 3.

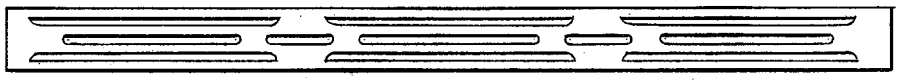

Fig. 1.

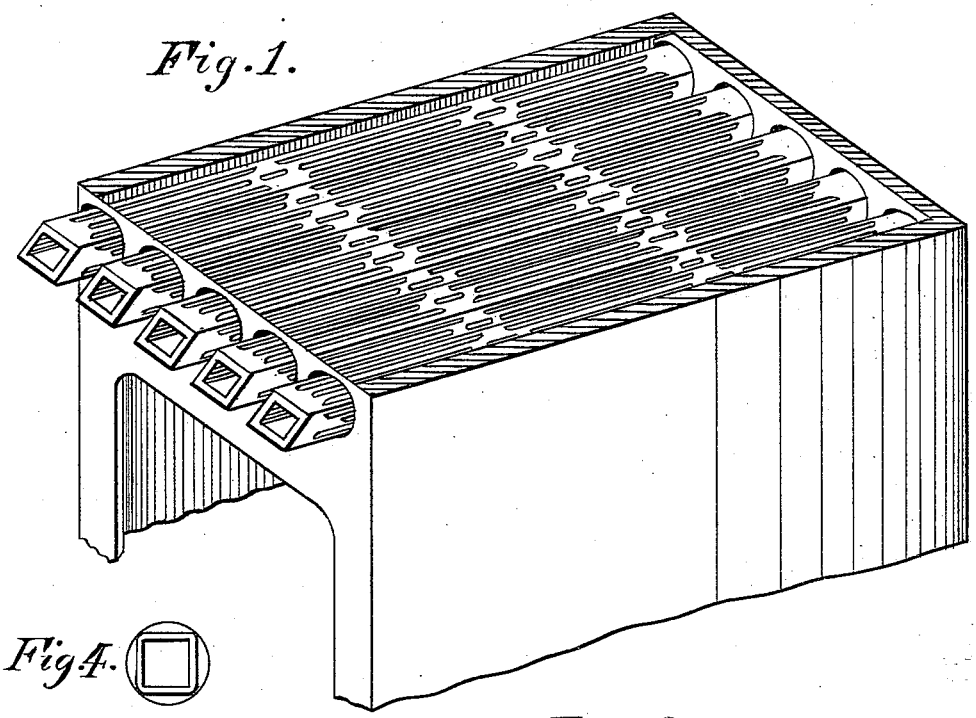

Fig. 4.

Fig. 2.

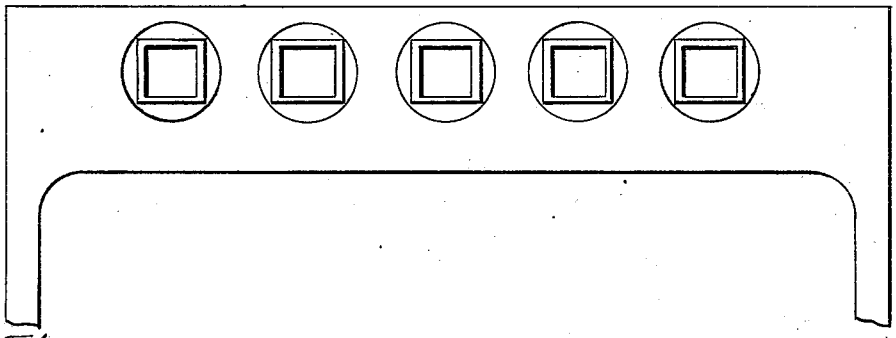

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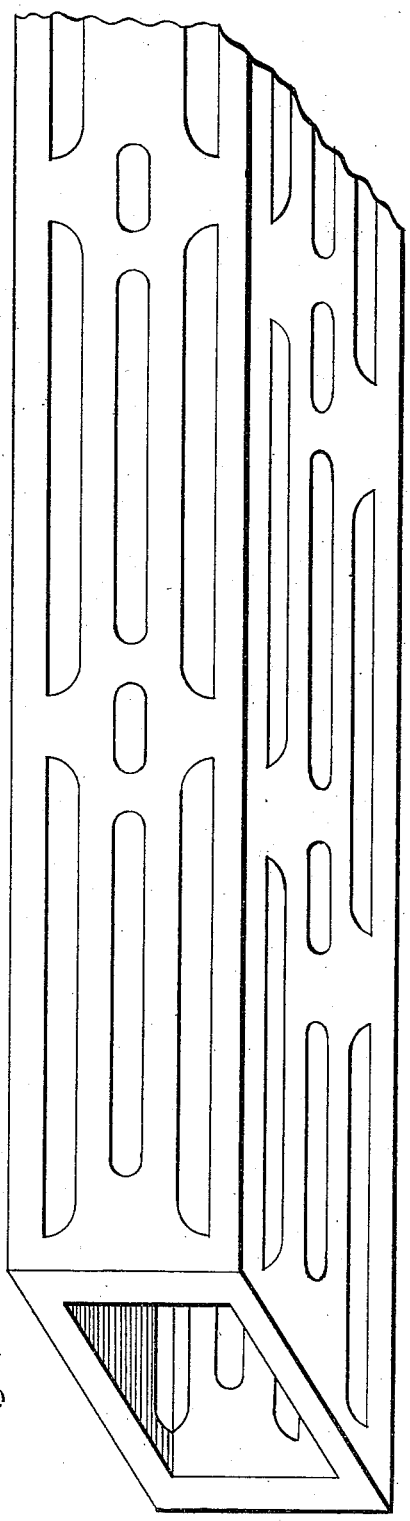
Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN ASHCROFT, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SQUARE REVOLVING GRATE-BARS.

Specification forming part of Letters Patent No. **208,356,** dated September 24, 1878; application filed September 20, 1878.

To all whom it may concern:

Be it known that I, JOHN ASHCROFT, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Square Revolving 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 which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to revolving grate-bars of light construction, in which great economy of material and an efficient and uniform supply of air is admitted to the fuel; and it consists in making the grate-bar of square cross-section and hollow throughout its entire length, all the sides being perforated with air-apertures of any suitable shape or design that will accomplish the purpose; or, if preferred, all the sides may be cast separately and joined together by lugs or bolts, or by any well-known means; or the whole bar may be cast in one piece, if desired. All of the sides must be of the same width, depth, and thickness.

In referring to the drawings, Figure 1 represents a perspective view of a set of my improved bars in position, resting in their bearers. Fig. 2 shows a front view of the grate-bars, also in position. Fig. 3 is a plan of one of the bars, clearly illustrating the air apertures or perforations; and Fig. 4 shows the end of one of the bars having its corner edges slightly rounded and arranged to revolve in its journal or bearing bar. Fig. 5 is an enlarged view of one of the grate-bars. Sheet 2 shows an enlarged view of the grate-bar in perspective.

The bars may be made of reduced or enlarged size, as may be required to suit the furnace or the kind of fuel used. These bars are hollow, as shown, and cast in one piece; but they may be cast in several pieces, such as in halves, or each side may be cast separately and bolted together by any well-known means.

The gist of my invention is in making a hollow square perforated grate-bar, adapted to revolve in bearers or journals.

It is obvious that the bar may be constructed of sections in various ways and still retain its hollow square form; but I prefer casting them in one piece.

This bar is in the same line of invention as those patents granted to me and bearing date, respectively, November 27, 1877, No. 197,510, and April 16, 1878, No. 202,323.

My improved bar may be revolved by inserting a wrench into the hollow of the bar at its front end, or by any other equivalent means.

These hollow square and perforated grate-bars may be used in ordinary furnaces, resting on an ordinary bearing-bar, with good results. The openings in the front of these bars are sufficient to supply air to the furnaces for the burning of some kinds of fuel with the ash-pit doors closed. Said ends may be also plugged up if desired.

I am aware that grate-bars have been made of square cross-section and solid, and also of round and triangular form, and do not therefore claim such; but

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

1. A hollow grate-bar made of square cross-section and provided with air-apertures on all its sides, and adapted to revolve in journals or bearings, substantially as shown.

2. A square hollow grate-bar provided with air-apertures on all of its sides, as an article of manufacture, substantially as shown.

3. A hollow square perforated grate-bar, in combination with grooved bearings, operating as described, and adapted to revolve in said bearings, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN ASHCROFT.

Witnesses:

JAMES NICHS. CALLAN,

M. S. CALLAN.