

J. H. BLANCHARD.
 GRATE-BARS FOR FURNACES.

No. 188,278.

Patented March 13, 1877.

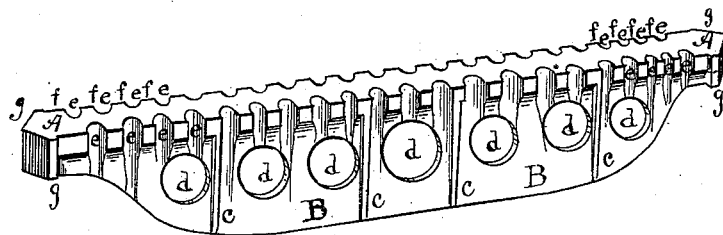


Fig. 1.

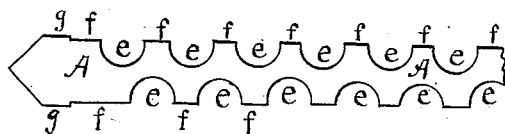


Fig. 2.

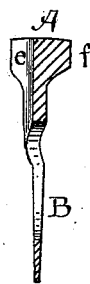


Fig. 3.

WITNESSES

Frank G. Parker
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UNITED STATES PATENT OFFICE.

JOHN H. BLANCHARD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GRATE-BARS FOR FURNACES.

Specification forming part of Letters Patent No. 188,278, dated March 13, 1877; application filed January 24, 1876.

To all whom it may concern:

Be it known that I, JOHN H. BLANCHARD, of Boston, Massachusetts, have invented an Improved Grate-Bar, of which the following is a specification:

This invention consists in a peculiar form of grate-bar, whereby it is rendered easy to cast, of limited cost, strong, light, easy to clean, and of abundant air-supplying quality.

Fig. 1 is a perspective. Fig. 2 is a top plan. Fig. 3 is a vertical section.

A is the fire-surface. B is the web extending downward, and very much narrower than the fire-surface. *c* are buttresses formed on the web to increase its strength and stiffness at the least weight possible, and *d* are holes in the web, which save material and better the access of air to the fire, while *e* are air-channels made in the sides of the bar, between the fuel-supports *f*, whose upper surfaces form the fire-surface A.

It will be observed that the fire-surface A is provided with alternate niches or air-channels *e* and projections or fuel-supports *f*; that each niche has its accompanying projection on the opposite side of the bar; also, that the niches are all wider between the ends of the projection *f* than the ends of the projections between the niches. This construction is necessary to secure an air-passage between each projection *f* on one bar and the accompanying projections on the next bar, as it is designed that the end of each projection

should project toward the niches in the next bar, so that the air-spaces between the bars resemble a connected series of semicircular or crescent shaped orifices.

The bar is intended to be set so that a narrow interval sufficient for the passage of a poker exists between its fuel-supports and those of the next adjacent bar to right and left, and that this air-passage may never be closed a small offset, *g*, is formed on either end of the bar, on each side.

It is usual in grate-bars to make the ends inclined from above downward, making a sort of a knife-edge with the lower side flap. This crowds the ashes up, and is apt to bank them at the ends of the bar. If, however, the bars are set with intervals by beveling them vertically on each side of the median line the ashes tend to crowd back and fall into the ash-pit between the bars, and this construction is the one I have adopted, as shown.

I claim and desire to secure by Letters Patent—

In a grate-bar, the combination of a fire-surface composed of projections *f* and niches *e* broader than the projections, perforated web B provided with the buttresses *c*, with the wedge-shaped supporting ends, substantially as shown and described.

JOHN H. BLANCHARD.

Witnesses:

ALFRED B. JENKINS,
L. H. CLEMENT.