

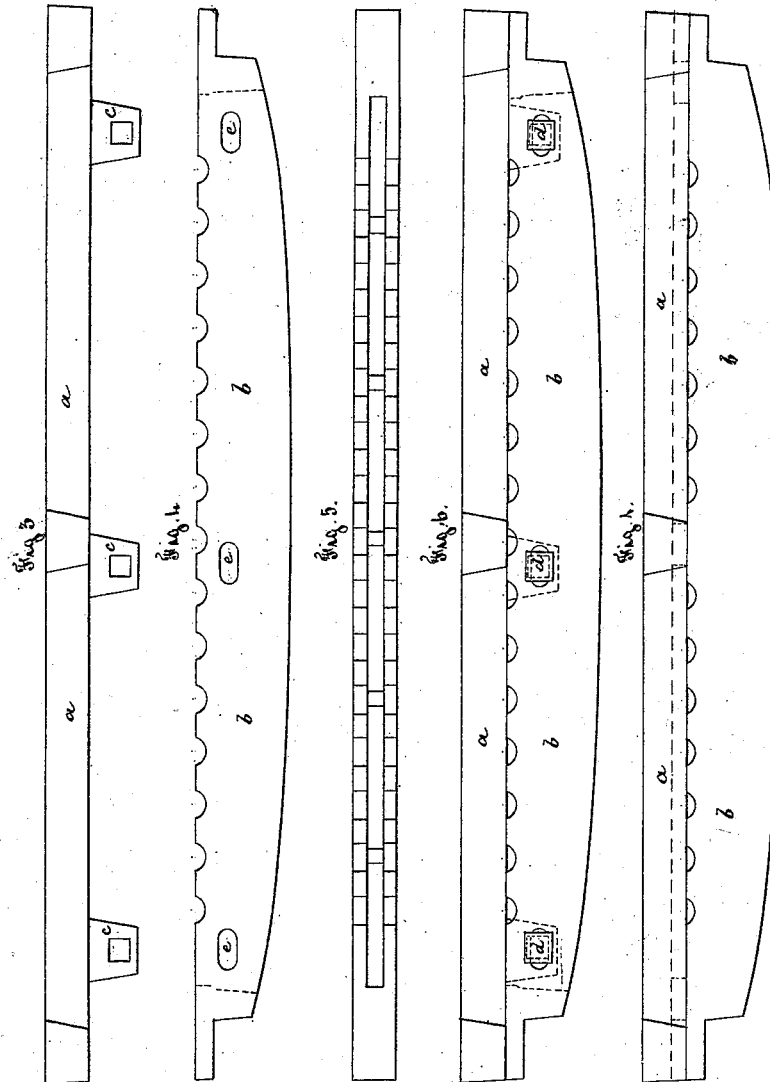
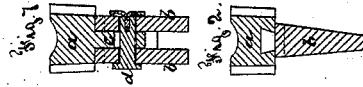
W. Batchelor,

2. Sheets, Sheet 1.

Fire Bar.

No. 111,031.

Patented Jan. 17, 1871



Witnesses

William H. Woodruff

J. H. Brown

Inventor

William Batchelor

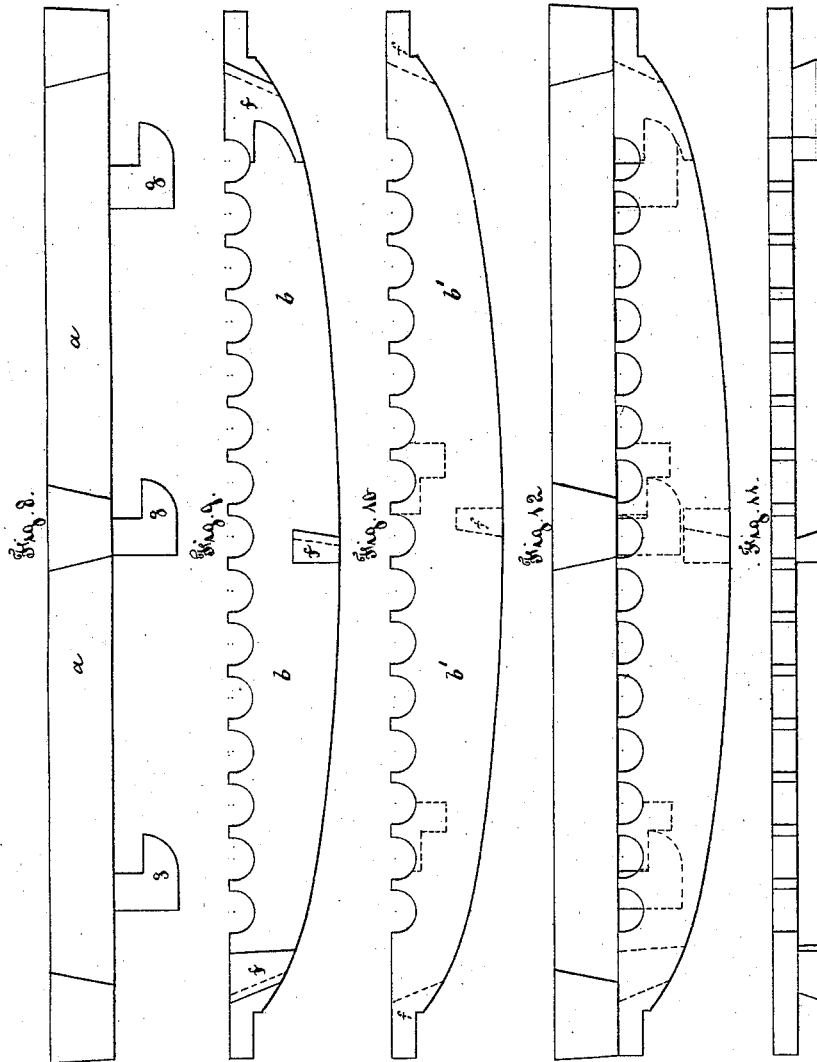
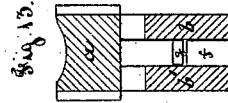
W. Batchelor,

2. Sheets, Sheet 2

Fire Bar.

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Witnesses

William H. Woodcock
H. M. Mower

Inventor

William Batchelor

United States Patent Office.

WILLIAM BATCHELOR, OF WINCHESTER, ENGLAND, ASSIGNOR TO EDWIN RUSS AND THOMAS SHEWELL MORRIS, OF SAME PLACE.

Letters Patent No. 111,031, dated January 17, 1871.

IMPROVEMENT IN FIRE-BARS.

The Schedule referred to in these Letters Patent and making part of the same.

To all to whom it may concern:

Be it known that I, WILLIAM BATCHELOR, of Winchester, in the county of Hants, England, iron and brass founder, have invented certain new and useful "Improvements in Fire-Bars;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The object of my invention is to construct fire-bars in such a way that the upper part, which is more directly exposed to the heat, may be replaced when burnt away or unfit for use, while the other or lower part may last and be available for a very much longer time.

The upper and lower parts are dovetailed or otherwise suitably joined together by projections on one fitting into corresponding cavities on the other in such a way that the fit is quite loose and easy when the bar is cold, but sufficiently tight, when the bar is hot, to prevent warping or other inconveniences, the upper part expanding to a greater extent than the lower.

The under part, where it is joined to the upper part, may be scalloped, cut out, notched, or perforated, for the air to pass right through. The lower part may be hollow, or in two parts or sides, with a space between.

In the accompanying drawing—

Figure 1 is a side elevation, and

Figure 2, a vertical cross-section of my simplest form of fire-bar, *a* being the upper part and *b* the lower part, which here is made in one piece; the two are joined together by projections on one fitting into a corresponding dovetail cavity on the other, as shown.

Figure 3 is an elevation of the upper part of a fire-bar, of a somewhat different construction.

Figure 4 is an elevation, and

Figure 5, a plan of the corresponding lower part, which is cast hollow, as shown.

The three lugs *c c c* fit loosely in between the two sides of *b*, and the upper and lower parts are joined by split keys *d d d*, passing through the holes *e e e* and the lugs *c c c*.

The air, entering into the cavity between the two sides of the lower part, passes out through the small holes formed between the upper part and the notches in the lower part, and, by intermingling with the burning elements of the fuel, causes perfect combustion, without leaving any clinkers, thereby causing a great saving in fuel.

The bar when joined and ready for service is shown in outside elevation by Figure 6, and in cross-section by Figure 7.

The remaining figures, 8 to 13, show another modification in various views;

Figure 8 being an elevation of the upper part, and

Figures 9 and 10, elevations of each side, composing the lower part.

Figure 11 is a plan of one of the sides.

From figs. 9, 10, and 11 it will be seen that the two sides *b* and *b'* are joined by corresponding dovetail pieces *f f*.

The hook-shaped projections *g g g* catch hold of corresponding lugs on one of the sides, and thus the upper and lower parts are joined, as shown in Figure 12.

The notched upper edges of the bearing-bars *b* serve as a support to the fire-bars *a*, and allow a free circulation of air, to prevent the bearing-bar becoming too hot.

The elongated holes for the keys *d* allow for any motion that may arise from expansion or contraction.

I claim as my invention—

1. The bearing-bars *b*, with notched upper edges, upon which the under side of the fire-bars *a* rest, as and for the purposes set forth.

2. The elongated openings *c* and keys *d*, combined with the bars *a*, bearers *b*, and projections upon the said bars *a*, as and for the purposes set forth.

WILLIAM BATCHELOR.

Witnesses:

WILLIAM H. WOOLDRIDGE,
F. BROWN.