

W. MUIR & P. BUTLER.

Improvement in Grate Bars.

No. 116,080.

Fig. 1.

Patented June 20, 1871.

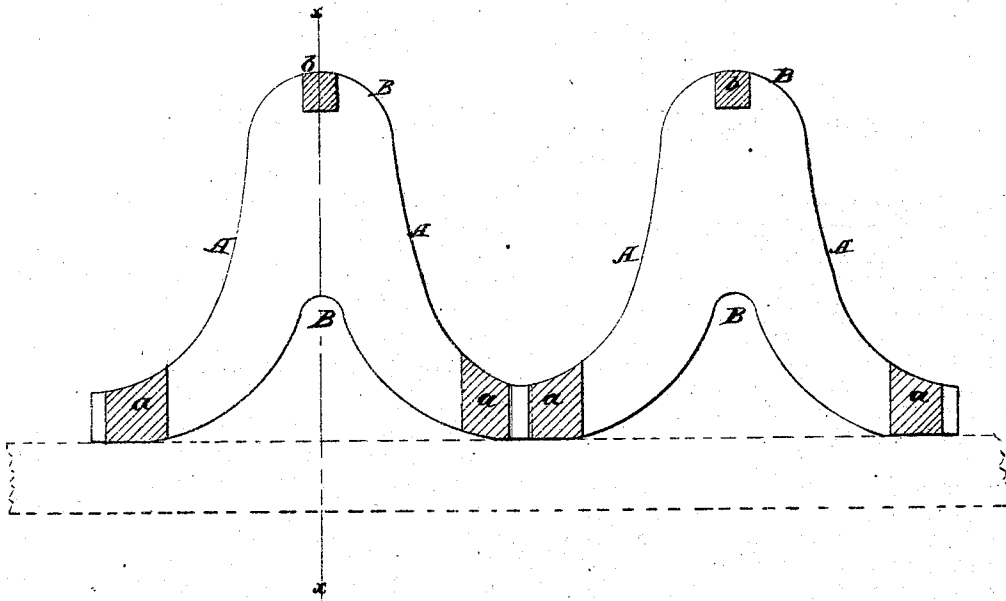
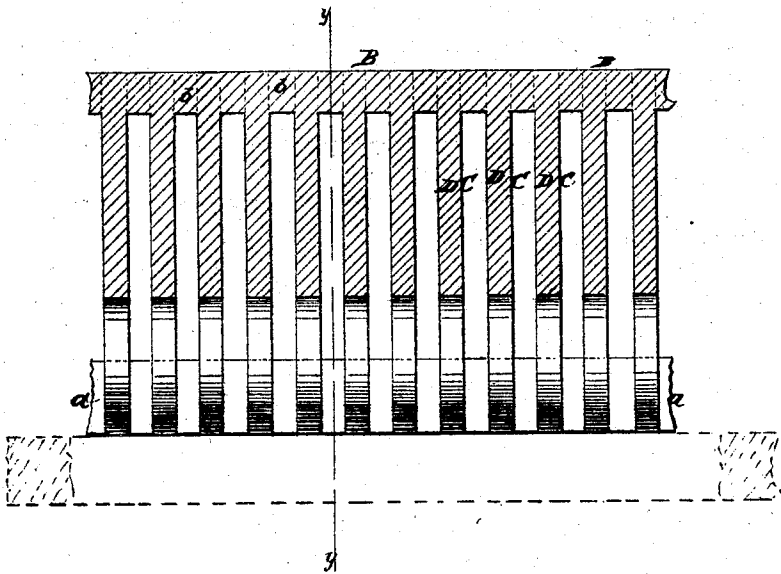


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM MUIR, OF ARCHIBALD, AND PIERCE BUTLER, OF CARBONDALE,
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IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. 116,080, dated June 20, 1871.

To all whom it may concern:

Be it known that we, WILLIAM MUIR, of Archibald, and PIERCE BUTLER, of Carbon-dale, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Grate-Bar; and we 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.

This invention relates to improvements in furnace-grates; and it consists in a bar having a broad base and narrow top, with concave sides and oval top, and with a deep longitudinal groove in the bottom, and having numerous transverse openings from the bottom up through the sides and part of the top, calculated to extend upward considerably in the fuel to admit the air freely to fine fuel, such as culm, sawdust, spent tan-bark, and the like, all as hereinafter described.

Figure 1 is a transverse section of our improved grate-bars, and Fig. 2 is a longitudinal section of the same.

Similar letters of reference indicate corresponding parts.

The said bars, which represent in cross-section

a figure with three wide sides and one narrow one, are made quite broad on the bottom, and as high or thereabout as they are broad, with concave sides A and a deep groove, B, in the bottom. The upper side B, which is quite narrow, is preferably convex. These bars are provided with numerous slots C or openings from the bottom up through the sides and most of the top, alternating with dividing-walls D, to admit a free supply of air to a considerable height in the fuel for burning fine and wet fuel. The said dividing-walls D are connected together at *a a b* by a sufficient amount of metal to insure the proper amount of strength. They are made of cast metal.

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

A furnace-grate having broad base, narrow oval top, concave sides, and grooved and apertured bottom, all made of cast metal and in one piece, as specified.

WILLIAM MUIR.
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Witnesses:

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