

R. C. GRAVES.

Furnace Grate-Bars.

No. 135,799.

Patented Feb. 11, 1873.

Fig. 1.

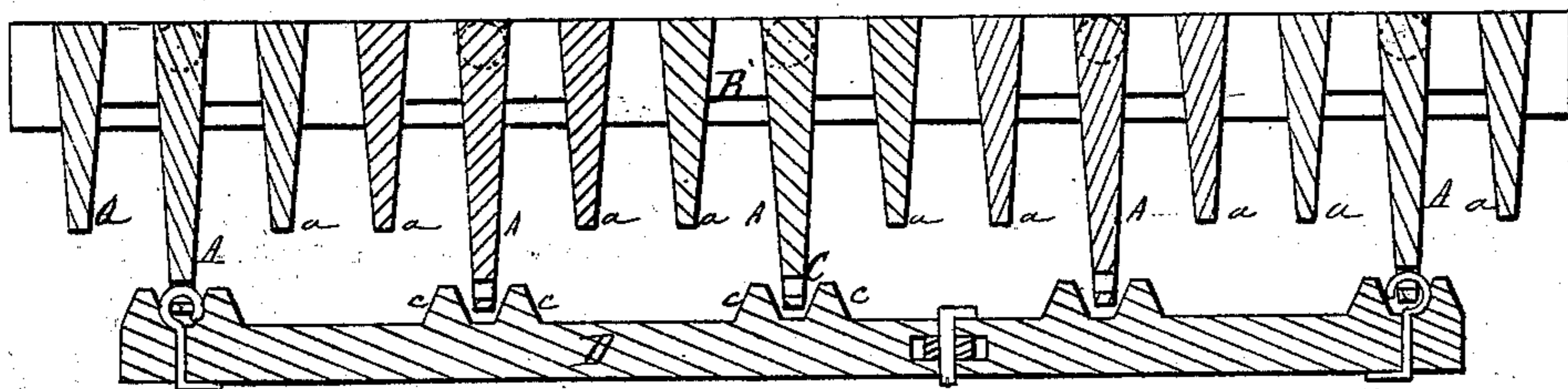
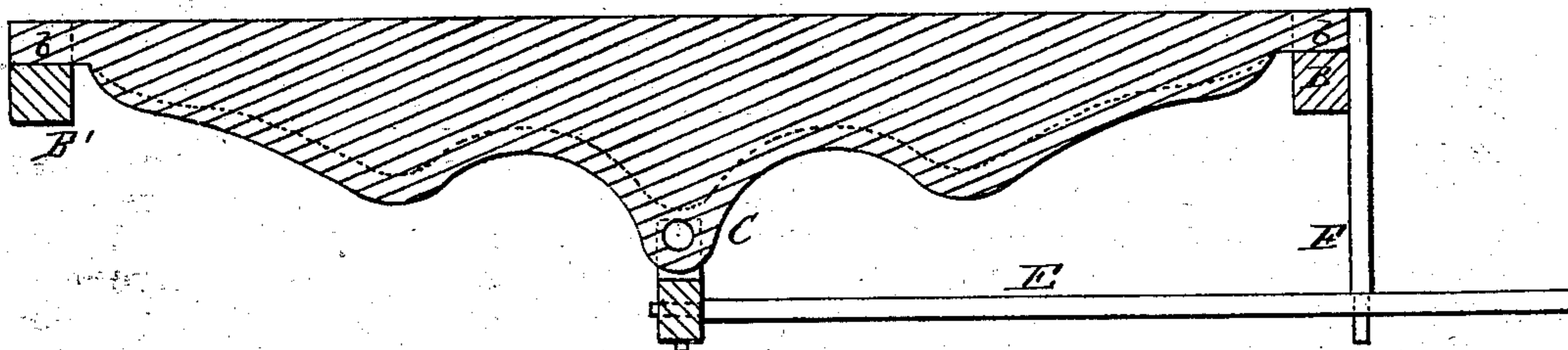


Fig. 2.



WITNESSES.

E. A. Bates

Geo. E. Pham.

INVENTOR.

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UNITED STATES PATENT OFFICE.

ROBERT C. GRAVES, OF BARNESVILLE, OHIO.

IMPROVEMENT IN FURNACE-GRATE BARS.

Specification forming part of Letters Patent No. **135,799**, dated February 11, 1873.

To all whom it may concern:

Be it known that I, ROBERT C. GRAVES, of Barnesville, in the county of Belmont and State of Ohio, have invented a new and valuable Improvement in Furnace-Grate Bars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a transverse vertical section of the grate, and Fig. 2 is a longitudinal section through the middle rib of the grate-bar.

This invention has relation to furnace-grates; and it consists in the construction and novel arrangement of the triple grate-bars with unequal ribs, and the recessed reciprocating bar for actuating the same, whereby a sufficient amount of play is allowed in the agitation of the grate-bars, while the reciprocating actuating-bar is brought up close under the grate, all as hereinafter described.

Referring to the drawing, A *a* designate the grate-bars, cast in sets of three, which are connected together at their ends by cross-pieces, from which project pivots *b*, fitting sockets in the front and back bars B B' of the grate-frame. The bars A have their middle parts constructed with depending portions or lugs C, to fit between studs *c* on the upper surface

of a transverse bar, D, which is hinged to the two outer bars of the series A, or may be hinged to all. To this bar is pivoted a lever, E, which extends to the front of the grate, and is fulcrumed on a depending standard, F.

The grate-bars are rocked from side to side by properly vibrating the lever E, and are limited in their movement by the inner surfaces of the studs *c*, which are beveled, as shown, and which prevent the bars from turning over and allowing the fuel to fall out.

It will be noticed that the side bars *a* do not extend down so far as the middle bars A, and that the reciprocating bar D is cut away or recessed under said side bars, the object being to provide space for the oscillation of the grate-bars.

What I claim as new is—

The oscillating grate-bars constructed in sets of three, having the side bars *a* of less depth than the middle bar A, as shown, in combination with the reciprocating bar D, constructed with recesses to allow limited play to the bars *a*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ROBERT C. GRAVES.

Witnesses:

J. E. ELLIS,
B. F. MACKALL.