H. ADAMS.

ROCKING GRATES FOR FURNACES.

No. 182,513. Patented Sept. 26, 1876.

Fig. 1.

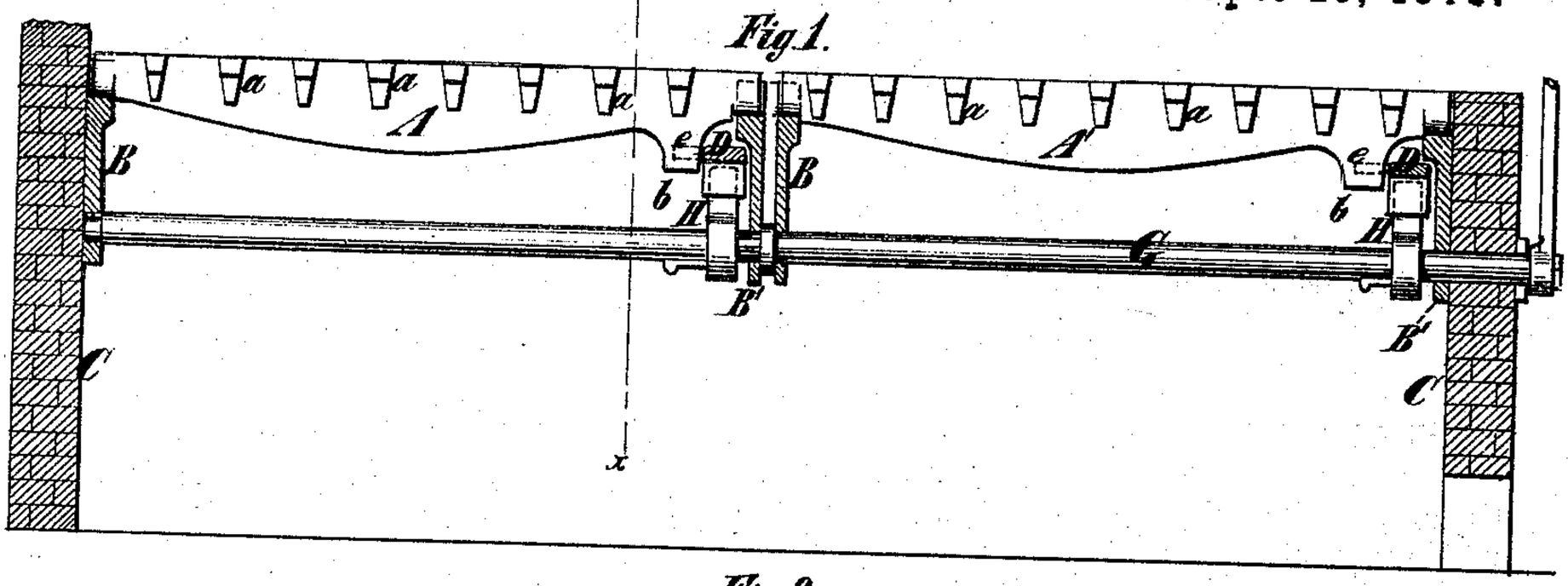


Fig. 2.

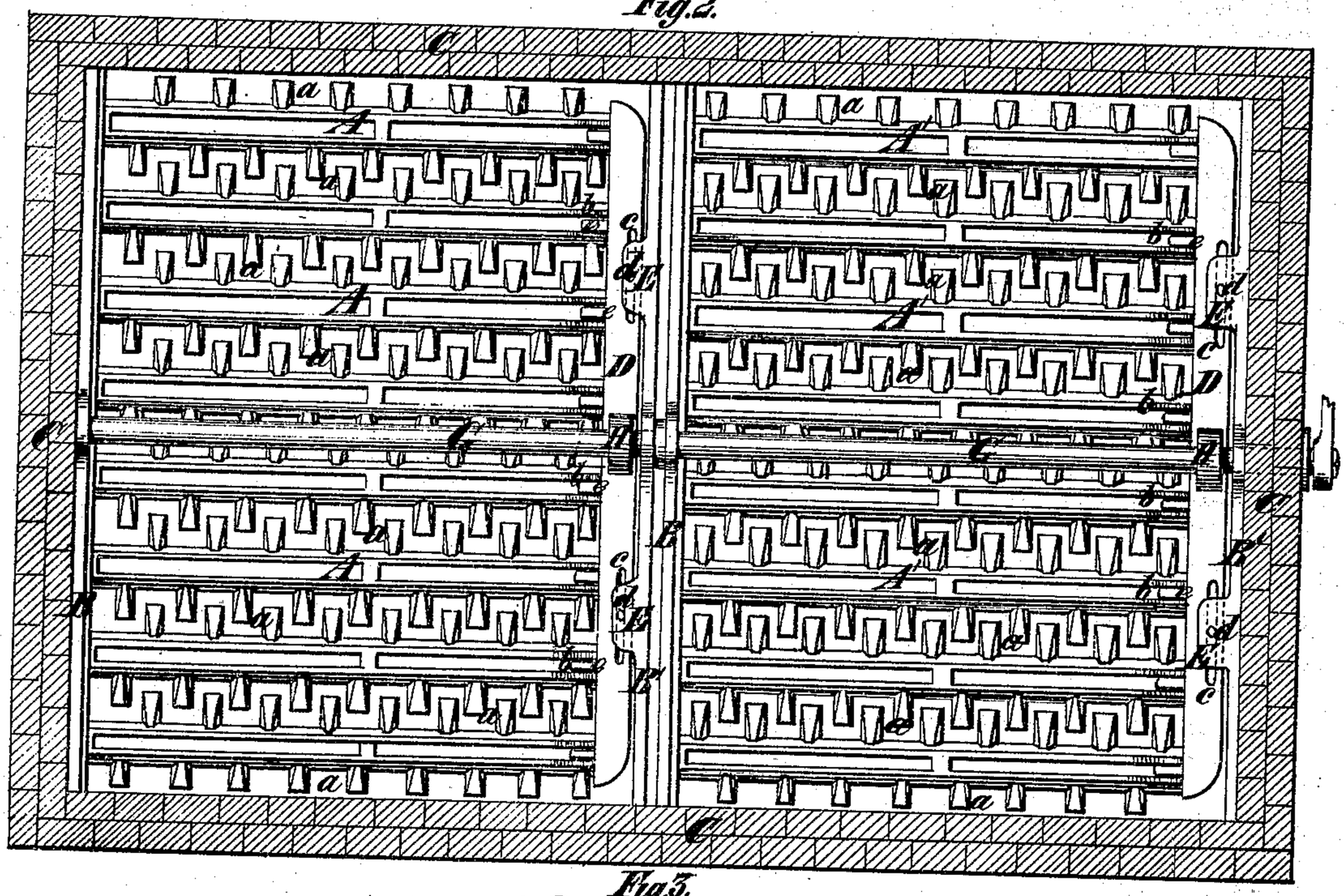
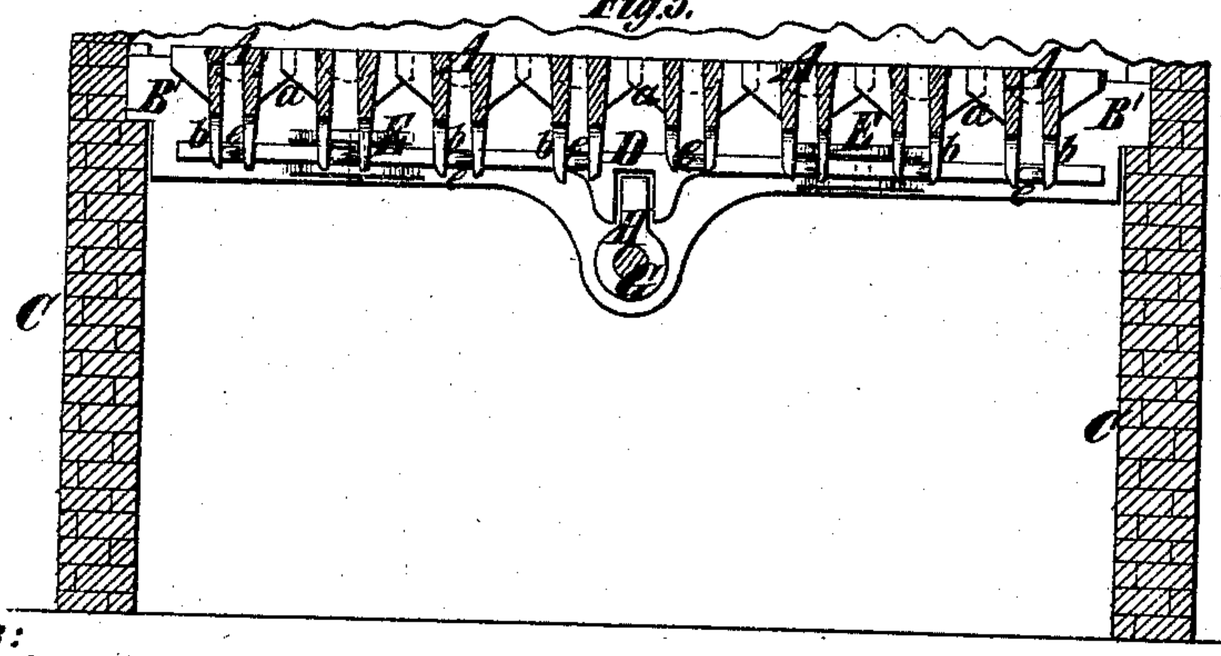


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN ROCKING-GRATES FOR FURNACES.

Specification forming part of Letters Patent No. **182,513,** dated September 26, 1876; application filed June 5, 1875.

To all whom it may concern:

Be it known that I, HAWLEY ADAMS, of the city of New York, in the county and State of New York, have invented a certain new and useful Improvement in Shaking-Grates; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification.

The invention consists in the combination with a grate, composed of a series of separate and independent grate-bars, of an actuating slide-bar (one or more) arranged to move transversely of the grate, and to engage with the bars thereof, and a rock-shaft provided with arms, or an equivalent therefor, for engaging with the said transversely-sliding bar or bars, whereby, upon oscillating or rocking the said shaft, the several independent grate-bars will be canted or rocked to and fro simultaneously.

In the accompanying drawing, Figure 1 is a vertical longitudinal section of a shaking-grate, embodying my present invention. Fig. 2 is an inverted plan or under side view of the same; and Fig. 3 is a transverse vertical section thereof, taken on the plane of the dotted line *x x*, Fig. 1.

A A′ designate a series of grate-bars, which are represented as of such length as to produce a furnace-grate composed of two distinct sections. These bars are shown as being cast with longitudinal slots, for the sake of lightness. The outer side of each bar is provided with a series of lugs or projections, *a a*, so arranged that those on one bar will intervene those on the adjacent bar, and so that one bar will not interfere with the free vibration or rocking of any other bar. These grate-bars are provided with trunnions on their ends, which are mounted in boxes in the metal bearers B B′, so that they may be shaken or oscillated, as will be presently described. In the drawing, the bearers B′ are shown as attached to the masonry C, and the bearers B as extending side by side across the ash-pit, their ends being supported in the masonry. In the present instance the forward end of each bar is provided with a pair of downwardly-extending lugs or projections, *b b*, the office of which which will be presently explained.

D D designate reciprocating slide-bars, supported in such manner that they can move freely back and forth in front of the lugs or projections *b b*. In the present instance, these bars are arranged between the jaws or supports E E, (see Fig. 3,) which may be cast with or secured to the bearers B′. The said slide-bars D D are provided with slots *c c*, (see Fig. 2,) through which pass pins *d d*, which confine the said bars in place; and they are also provided with teeth or projections *e e*, one of which projects between a pair of the lugs or projections, *b b*, in such manner that when the said slide-bars D D are moved back and forth longitudinally the lugs *b b* and pin *e* will cant, vibrate, or shake the grate-bars in a well-known manner.

G designates a rock-shaft, arranged centrally and longitudinally under the two sections of the grate. The said rock-shaft G is provided with arms or teeth H H, which engage with notches or projections in the slide-bars D D, whereby, when the said shaft is rocked, a reciprocating motion is imparted to the bars D D, and hence the grate-bars of each section of the grate are simultaneously canted or rocked to and fro, and hence shaken.

It is obvious that in the example of my invention just described, the bars of the two sections of the grate operate simultaneously; but I will here remark that the bars A′ of the forward section of the grate, and the bars A of the rear section of the grate, may be provided with independent rock-shafts or other mechanism, whereby they may be operated separately, and this may be done with great advantage where there are a large number of bars, the labor and exertion required for shaking being, in such case, materially reduced.

I will remark that the grate-bars, if desirable, may, of course, be made in more than two sections; and I will also remark that the shaking mechanism is applicable to a grate made in one section, though I have shown it as applied to a grate in two sections.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the rock-shaft G, having the arms or teeth H, with the slide-bar D, provided with the guiding-slots and pins *c d*, and a grate composed of independent grate-bars, provided with the lugs or projections *b b*, substantially as and for the purpose herein specified.

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Witnesses:
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