2 Sheets—Sheet 1.

J. A. LAWSON.

Stove-Grate.

No. 199,296. **Patented Jan. 15, 1878.**

Fig. 1.

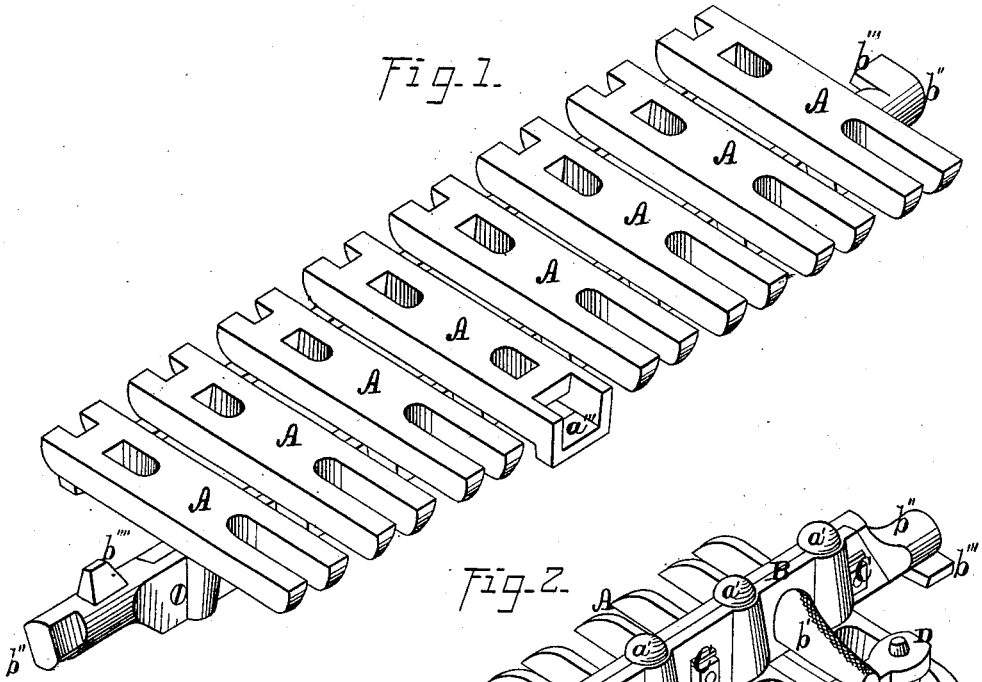
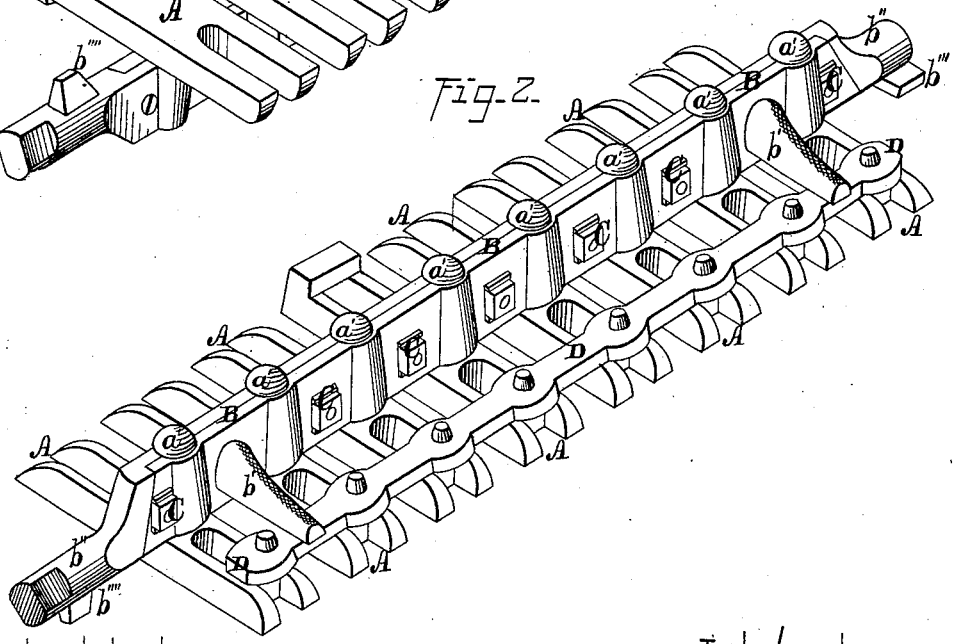


Fig. 2.



WITNESSES:

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Henry C. Hazard.

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Jas. A. Lawson, by Pindle and Pindle Attys

2 Sheets—Sheet 2.

J. A. LAWSON.

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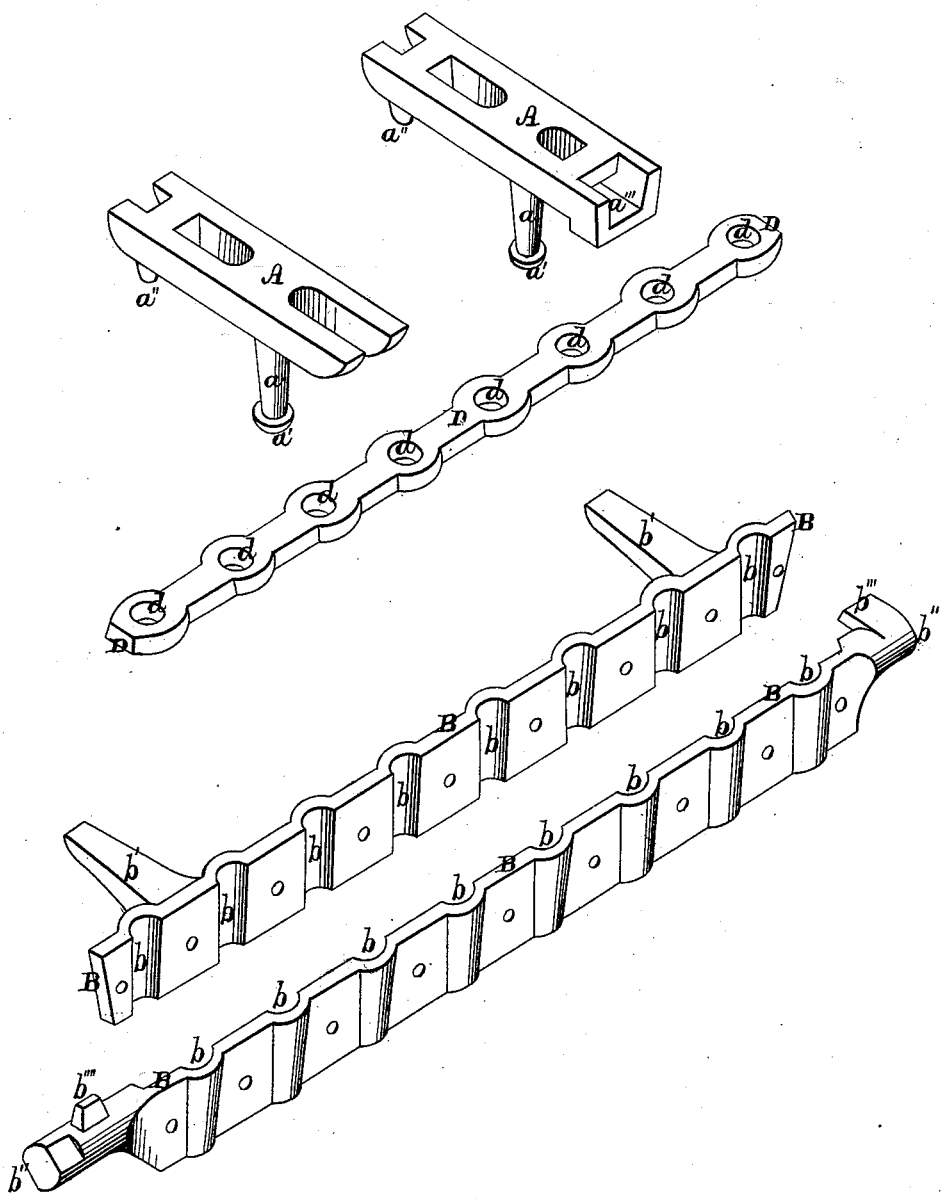
Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES A. LAWSON, OF TROY, NEW YORK.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. **199,296**, dated January 15, 1878; application filed October 19, 1877.

To all whom it may concern:

Be it known that I, JAMES A. LAWSON, of Troy, in the county of Rensselaer, and in the State of New York, have invented certain new and useful Improvements in Stove-Grates; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the upper side of my improved grate. Fig. 2 is a like view of the lower side of the same; and Fig. 3 is a perspective view of the upper side of the parts composing said grate, separated from each other.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the strength and durability of shaking-grates, and to render the same more easily constructed and repaired, and more perfect in operation; to which end it consists, principally, in a grate-bar provided upon its lower side, at or near its longitudinal center, with a pintle, which extends downward, and at its lower end has an enlargement or head, substantially as and for the purpose hereinafter specified.

It consists, further, in a supporting-bar for pivoted movable grate-bars, which is divided longitudinally upon a central line, and has its sections secured rigidly together by bolts or other equivalent fastenings, substantially as and for the purpose hereinafter shown.

It consists, further, in the means employed for connecting together the rear ends of the pivoted grate-bars, substantially as and for the purpose hereinafter set forth.

It consists, further, in the means employed for sustaining the connected ends of the pivoted grate-bars, and for securing the connecting-bar in engagement with the latter, substantially as and for the purpose hereinafter shown and described.

It consists, finally, in the grate as a whole, its several parts being constructed and combined to operate in the manner and for the purpose substantially as hereinafter specified.

In the annexed drawings, A represents one of my grate-bars, which is, preferably, constructed with a vertical longitudinal opening upon each side of its longitudinal center, and at or near said point is provided with a round pintle, *a*, that extends downward from the lower side of said grate-bar, decreases somewhat in diameter from its upper end to its lower end, and at the latter point is provided with an enlargement or head, *a'*.

Near one end of each grate-bar A a second shorter pintle, *a''*, projects downward from its lower side, the object of which will be hereinafter explained.

The grate-bars A are pivoted within and supported by a bar, B, which has a depth equal to the distance between the lower side of a bar and the upper side of the head *a'* of its central pintle *a*, and is provided with a number of vertical openings, *b*, that each correspond to the size and shape of said pintle *a*, and are arranged at equidistant points, so as to cause said bars to be separated by spaces which correspond in width to the like feature of the air-openings within the same.

The bar B is formed in two sections, which are divided upon a vertical central line, so that each contains one-half of each opening or bearing *b*. Said sections are secured together by means of bolts C, which pass horizontally through the same midway between said bearings *b*.

The ends of the bars A are secured in relative position by means of a connecting-bar, D, which is provided with suitable openings *d*, that permit it to pass over and engage with the pintles *a''*, in which position said bar D is held by means of two lugs or arms, *b'*, that extend horizontally outward beneath its ends.

As thus arranged, the grate-bars A may be oscillated in a horizontal plane upon their pivotal bearings *a*, by placing the end of a shaker-bar within a socket, *a'''*, that is formed within one end of the central bar.

The lugs or arms *b'* not only insure the engagement of the bar D with the pintles *a''*, but also serve as supports for the rear ends of the grate-bars A, said ends being sustained by said bar D, while the latter rests directly upon said arms.

It will be seen that, while the supporting-bar B is intact and its sections are connected together, the grate-bars A can neither be re-

moved nor disconnected from each other, while by separating the sections of said bar B each portion of the grate may be removed.

The pivotal bearings b'' of the grate are, preferably, formed upon opposite ends of the same section of the bar B, and one of the same has such conformation as to enable it to receive a shaker-bar.

The grate is held in horizontal position by means of a lug, b''', which is formed upon and extends rearward from one of the bearings b'' and engages with a suitable stop upon the end of the ash-pit or upon the grate-frame, while its tilting motion is limited by a lug, b'''', that extends upward from the opposite pintle, and in like manner engages with a stop.

The grate thus constructed has few parts, is easily constructed, its parts are not liable to breakage or injury, and each can be placed in or removed from position quickly and with ease.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In a stove-grate, a grate-bar provided upon its lower side, at or near its longitudinal center, with a pintle, which extends downward therefrom, and at its lower end has an enlargement or head, said parts being cast in one piece, substantially as and for the purpose specified.

2. In a stove-grate, a supporting-bar for pivoted movable grate-bars, which is divided longitudinally upon a central line, and has its sections secured rigidly together, substantially as and for the purpose shown.

3. In combination with the grate-bars A, provided with the pintles a'', the connecting-bar D, having the openings d, which engage with said pintle, substantially as and for the purpose set forth.

4. In combination with the connecting-bar D and with the rear ends of the pivoted grate-bars A, the lugs or arms b', projecting from the bar B beneath said parts, substantially as and for the purpose shown and described.

5. The hereinbefore-described stove-grate, in which the grate-bars A, provided with the pivotal pintles a, having heads a', and the shaking-pintles a'', the supporting-bar B, formed in two sections and provided with the openings b and lugs or arms b', and the connecting-bar D, having the openings d, are constructed and combined to operate in the manner and for the purpose substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of October, 1877.

J. A. LAWSON.

Witnesses:
HERBERT A. VIETS,
ROBERT S. WOOD.