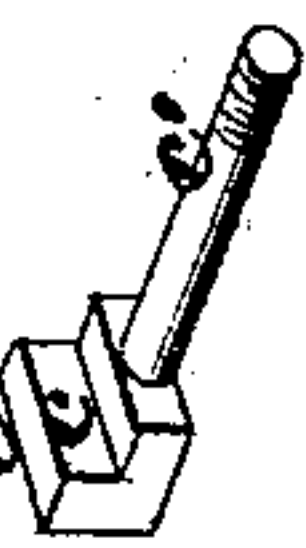
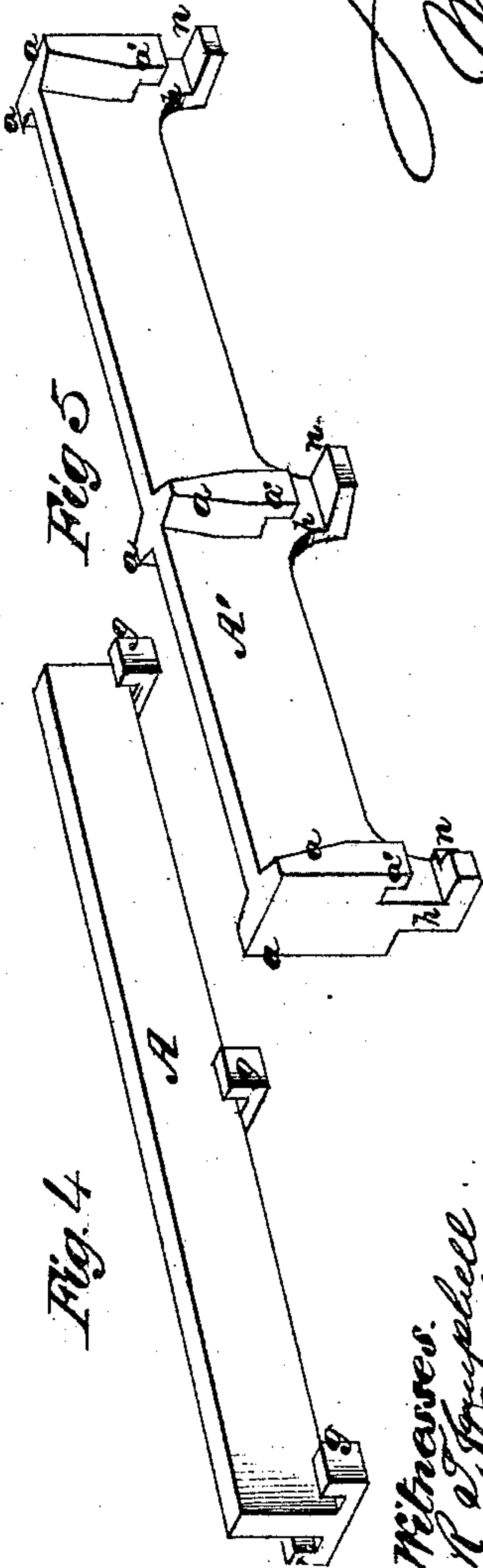
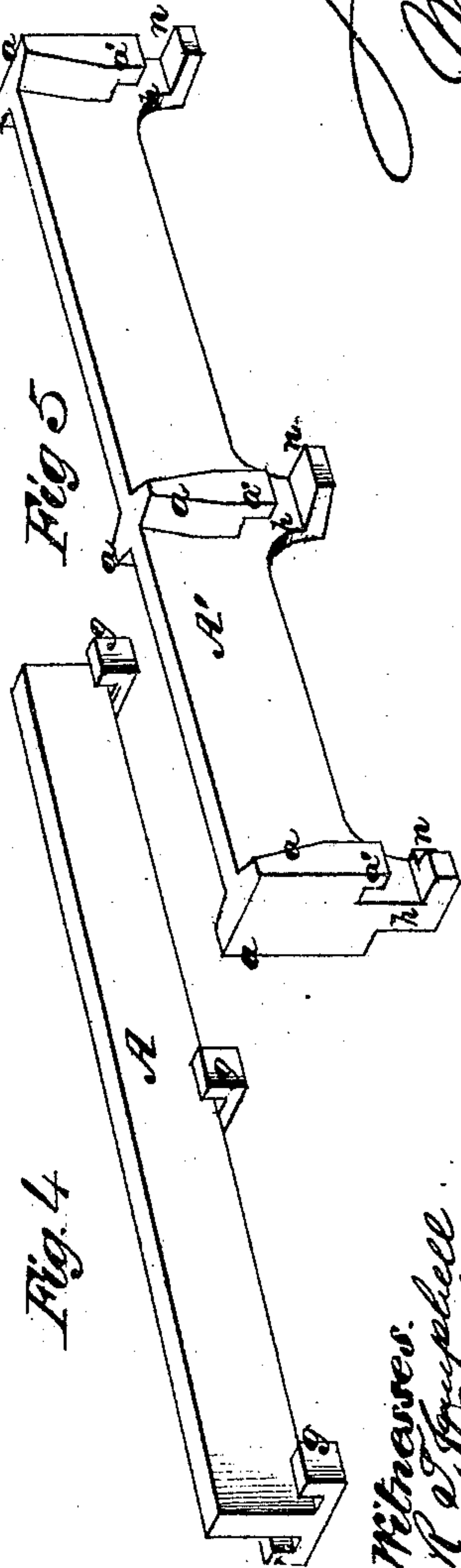
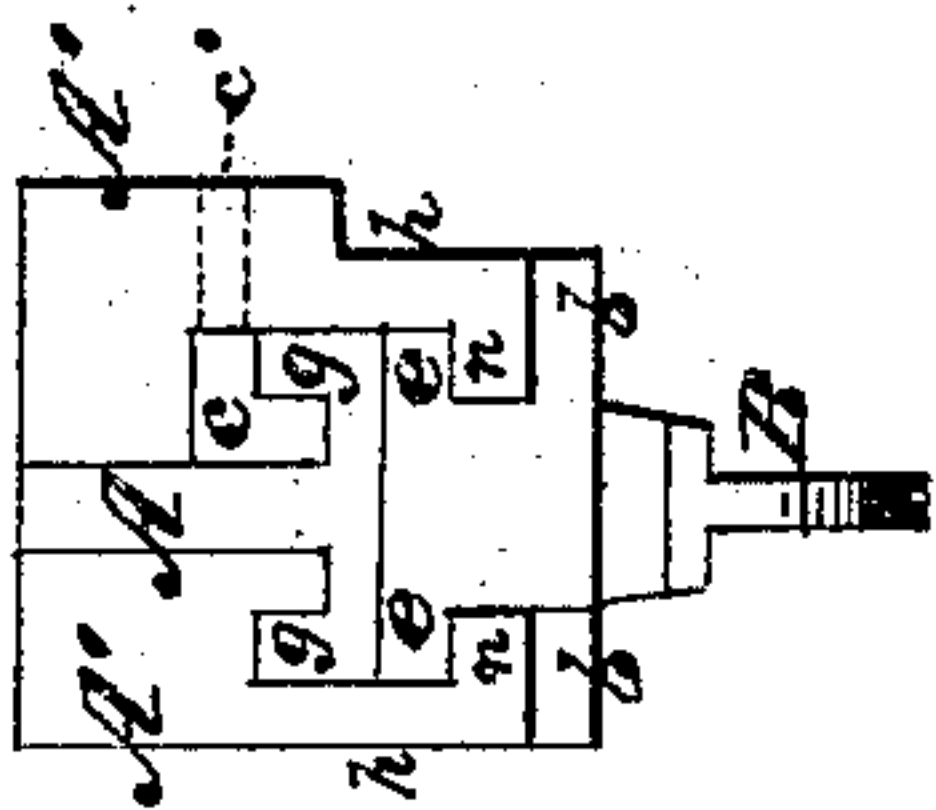
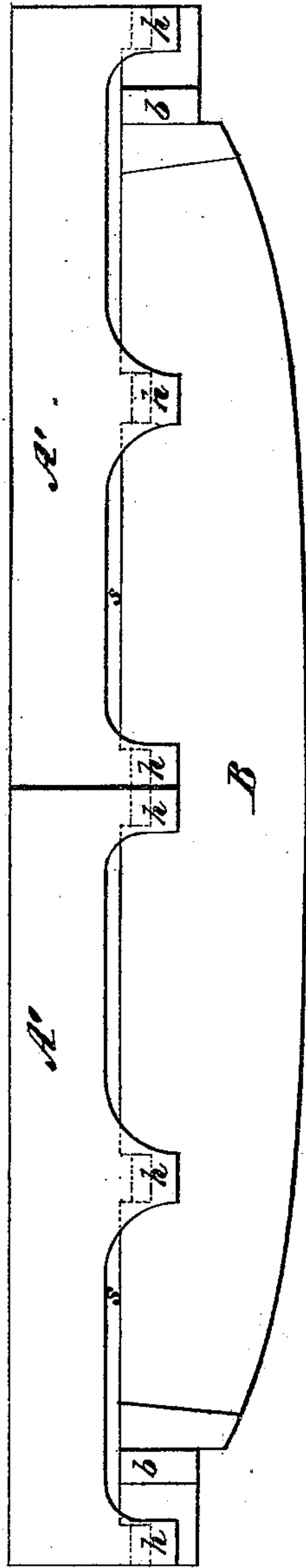
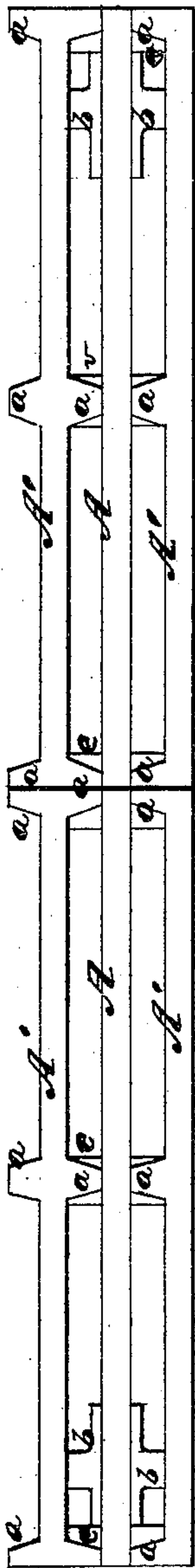


Turnace Grate Bar.

No. 109285.

Patented Nov. 15. 1870.



Inventor

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JAMES YOCOM, JR., OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 109,285, dated November 15, 1870.

IMPROVEMENT IN GRATE-BARS.

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

To all whom it may concern:

Be it known that I, JAMES YOCOM, JR., of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Grate-Bars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a top-view of several sections of bars applied to a single bearer.

Figure 2 is a side view of the same.

Figure 3 is an end view.

Figures 4, 5, and 6 are detached parts of the grate.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to combine, with a single bearer or supporting-bar, several removable sectional bars, in such manner that, when any one or more of the sections which are exposed to the fire are destroyed, their places can be substituted by new sections; at the same time to provide for a free passage of air between the sections for supplying combustion, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

It will be seen, by reference to the accompanying drawing, that six fire-exposed sections are applied to and are sustained by a single bearer, B; but, in carrying my invention into effect, I do not confine myself to the use of six movable sections, as two or more may be used in combination with a single bearer.

My object is to diminish the number of bearers in a sectional grate, and thus diminish the cost of the grate, and also the amount of obstruction to the circulation of air between the bars. To do this, I construct the bearer of the fish-belly form, with an upper straight edge, and with slight lateral depressions in it at proper distances apart.

On each side of each depression is a laterally-extended lug, *e*, which increases the bearing-surface for the central movable fire-exposed sections A A, and also affords a means for attaching the side sections A' A' to the bearer.

The bearer is also constructed with laterally-projecting lugs and thickened portions, *b b*, at and near its extremities, which afford a steady bearing upon the supports for the grate.

The removable sections A A, which are arranged directly over and upon the bearer B, are constructed with inverted T's *g g g*, on their lower edges, the flat surfaces of which rest upon and cover the

lugs *e* on the bearer B, as shown in the end view, fig. 3.

The heads of the inverted T's extend below the edge of their respective sections A.

In all other respects these central sections A are narrow straight pieces, half the length of the bearer.

When the sections are in place, spaces are left between them and the bearer for the free circulation of air.

On each side of each section A is another removable section, A', which is secured to the bearer and central section in the following manner:

On the sides of each section A' spacing-lugs *a* are formed. Those which are next to the central section A, on one side thereof, are hooked, at their lower ends *a'*, to interlock with the heads of the T's *g*, while those lugs on the opposite side of the central section terminate squarely, and rest upon right-angular key-pieces *c*, from which stems *c'* project.

Below each spacing-lug *g*, and below the lower edge of the section A', are right-angular lugs or holding-down pieces, *h*, the horizontal transverse lips *n* of which lie beneath the ends of the lugs *e e e* on the bearer, and thereby hold the bar A' down in its place.

The right-angular key-pieces *c*, on one side of the central section A, are intended to take the place of the interlocking lips *a' a' a'*, which are formed on the lower ends of the spacing-lugs *a a a*, on the inside of the section A', on the opposite side of the said central section A.

These key-pieces *c* are for the purpose of allowing the section A' next to them to be applied to the bearer and central section, and to be secured in its place.

This can be done by first applying the section A', having the lips *a'* on its spacing-lugs, to the section A, then adjusting sections A' A on the bearer, after which the key-pieces *c* are all adjusted in their places on the T-pieces *g*, and the other section A' set up laterally to its place, with the stems *c'* on the key-pieces *c*, through holes which are made through this section A', as shown in dotted lines, fig. 3. The ends of the stems *c'* are then rivet-headed, and the work is done.

To detach the sections A' A' A from the bearer B, the rivet-heads are removed, and the section A' next the key-pieces detached, after which the other two sections will be loose.

It is obvious that two side sections A' may be used, instead of the four shown in the drawing; that is to say, instead of dividing the fire-exposed surfaces A' A' A' midway of their length, they may each be of one piece.

I am aware of Kirk and Elliott's patent of March 27, 1855, and, therefore, I do not claim making a grate-bar with its wearing parts divided and removable independently of the bearers or supports; but

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

The combination, with a single bearer, B, of a

central fire-exposed surface, A, and one or more side fire-exposed surfaces, A' A', by the means and in the manner substantially as herein described and shown.

JAMES YOCOM, JR.

Witnesses:

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ROBERT HENDERSON.