

G. R. MOORE.
Furnace-Grates.

No. 149,325.

Patented April 7, 1874.

Fig. 1

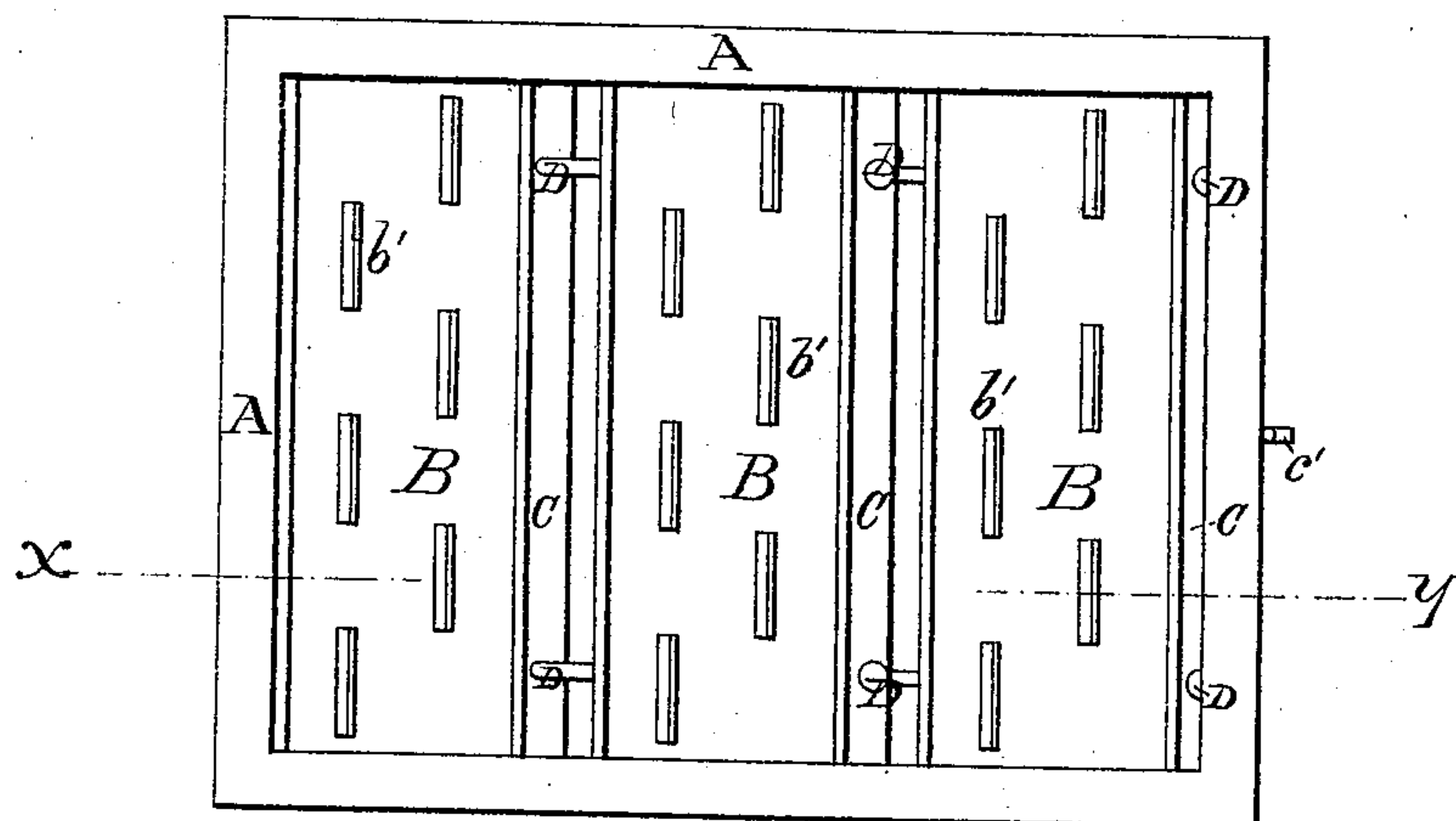


Fig. 2

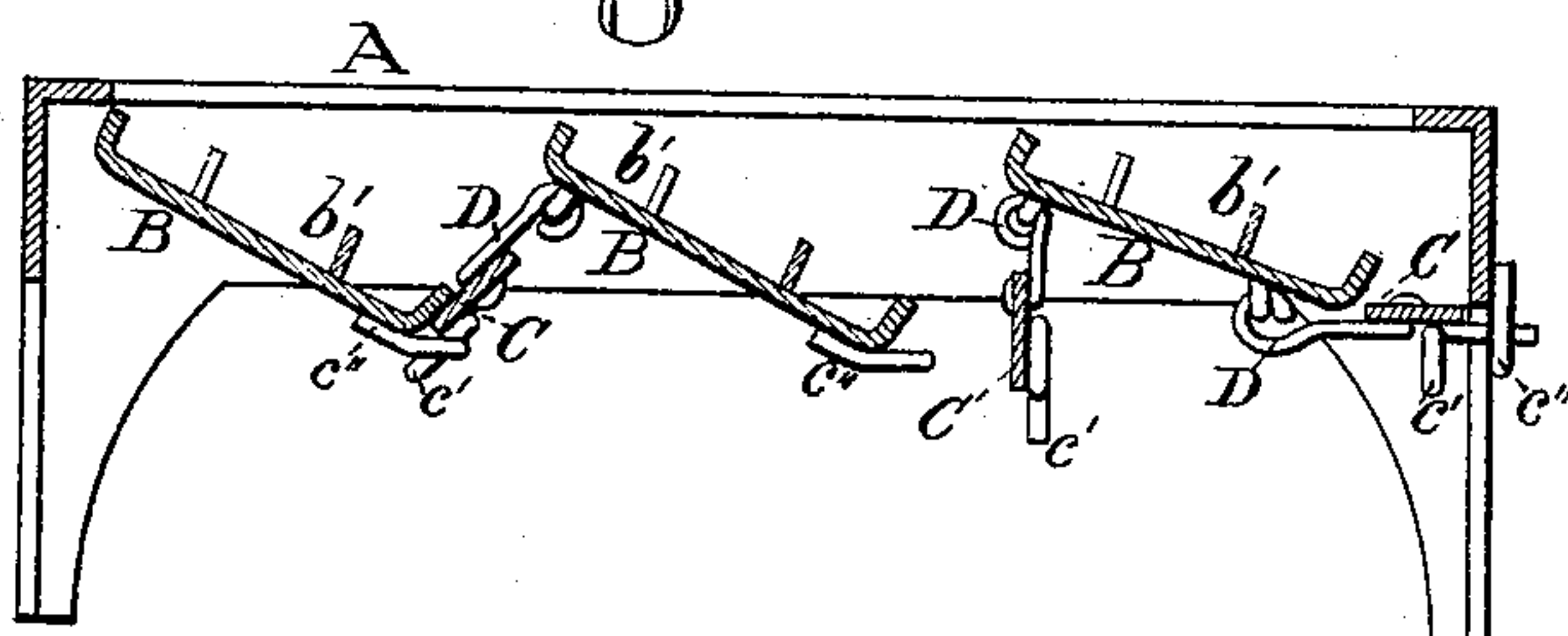
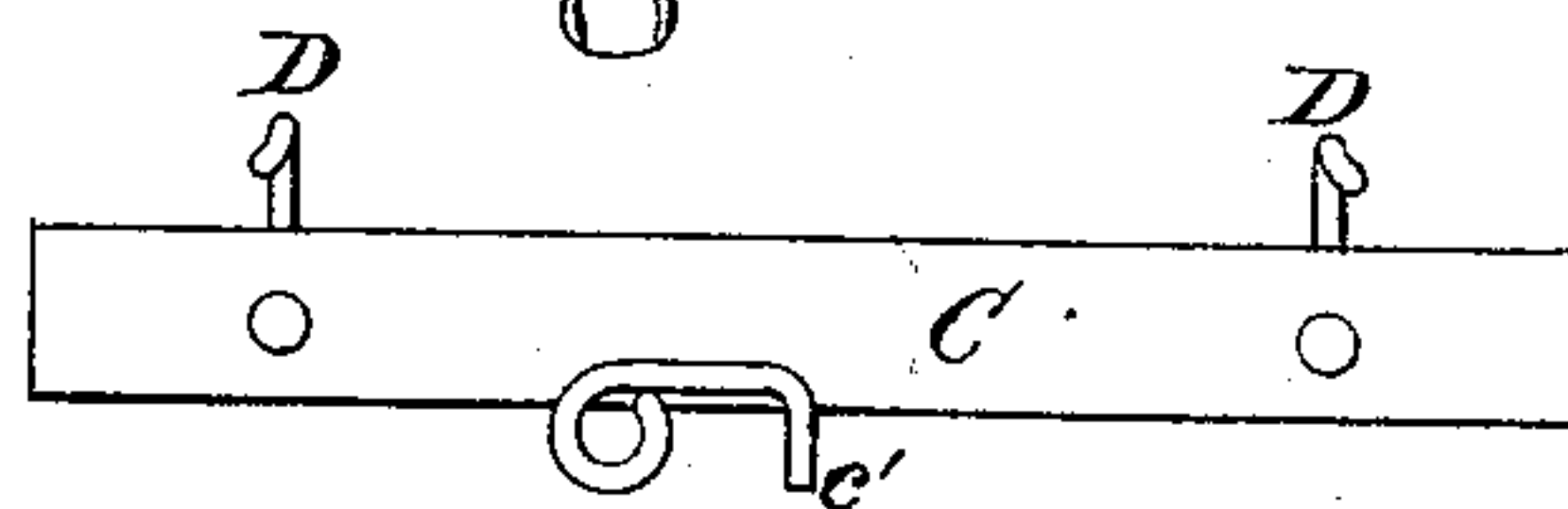


Fig. 3



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UNITED STATES PATENT OFFICE.

GEORGE R. MOORE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN FURNACE-GRATES.

Specification forming part of Letters Patent No. 149,325, dated April 7, 1874; application filed February 17, 1874.

To all whom it may concern:

Be it known that I, GEO. R. MOORE, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Furnace-Grates, of which the following is a specification:

The object of my invention is to improve large grates for coal fires in the following particulars: First, to provide a broad, light bar that will make the whole fire-bed with less in number, and with very much less weight of iron, than is commonly used; second, one that can be easily protected from burning out, and at the same time prevent excessive radiation of heat into the ash-pit, and consequent waste of fuel, and discomfort to firemen; third, to provide such mechanical devices for managing the fire in respect to cleaning it that it need not be broken into from the top, or "sliced," as firemen call the usual operation of cleaning large fires, but may be relieved of ashes and cinder by removal beneath the fire, and directly into the ash-pit, through suitable and sufficiently large doorways, obtained by swinging bars attached to the stationary ones, so as to admit of being latched, and closing a part of the space between them.

Figure 1 is a top view of three bars and their attachments with the frame in which they are placed. Fig. 2 is a transverse vertical section taken in the line *x y* of Fig. 1. Fig. 3 is a plan view of the swinging bars with their attachments.

A is the frame; B B B, the stationary inclined bars, upon which *b* indicates numerous projecting ribs for retaining ashes, and to prevent their being accidentally poked off in cleaning the fire. C C C are swinging bars to be used at discretion to prevent the coal from wasting off the inclined bars. D indicates the

hooked rod, attaching C C C to the stationary bars. C' C' C' are latches for connecting these swinging bars, by means of the nitched catches C'' C'' C'', to the bars adjoining the ones from which they swing.

It will readily be seen that when these swinging bars are latched, the main air-spaces to the fire are over their upper edge. This affords air enough until the consumption of coal causes such an accumulation of ashes upon the stationary bars that no coal will roll out between them, even when open.

The main use of the swinging bar, then, is to keep the coal from wasting between the others, while at the same time it serves, to a great extent, as a draft-regulator.

It is obvious that my object in providing so large a space between the elevated edge of one stationary bar and the depressed edge of the adjoining one is to have abundant room for the removal of ashes and cinder.

While the stationary inclined bars would operate perfectly alone, arranged as shown in the drawings, it would not be prudent to allow so large a space as I have given without some kind of guard to prevent the waste of coal, in making new fires especially.

What I claim as my invention is—

1. The grate-bar B, placed in an inclined position, and having a series of projecting ribs, *b*, substantially as and for the purpose herein set forth.

2. The combination of the stationary bar B and swinging bar C, substantially as shown.

3. The mode of hanging the bar C by the loosely-jointed hook D, substantially as shown.

GEO. R. MOORE.

Witnesses:

J. PLANKINGTON,
JOS. MANUEL.