(No Model.)

L. PASSMORE.

GRATE.

No. 301,263. Patented July 1, 1884.

Fig. 1.

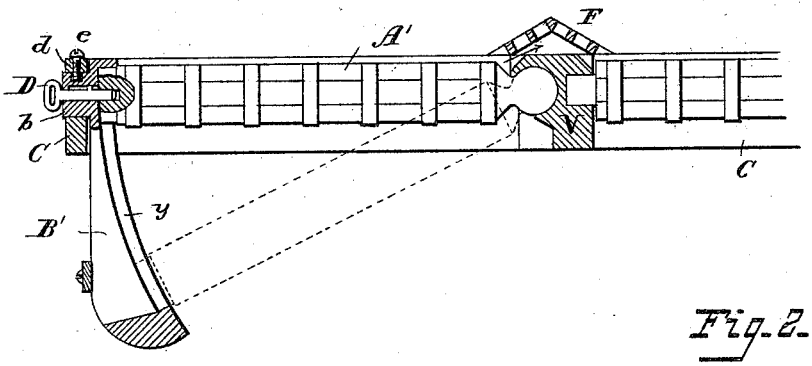


Fig. 2.

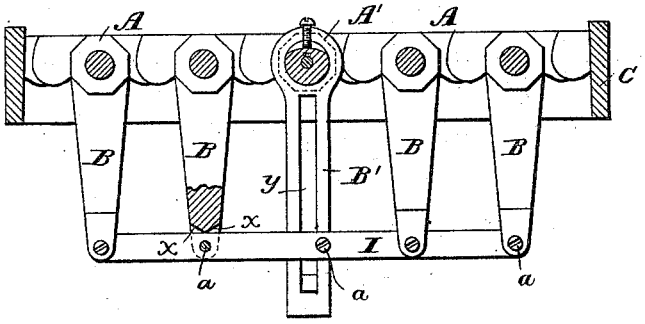
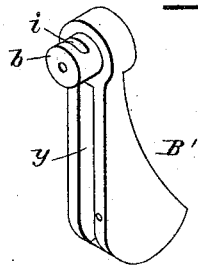


Fig. 3.



Attest:
Court. a Cooper.
H. C. Hanaman.

Lewis Passmore,
Inventor.
By his Attorney
Charles E. Foster

UNITED STATES PATENT OFFICE.

LEVIS PASSMORE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AMERICAN GRATE BAR COMPANY, OF CAMDEN, NEW JERSEY.

GRATE.

SPECIFICATION forming part of Letters Patent No. 301,263, dated July 1, 1884.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, LEVIS PASSMORE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Grates, of which the following is a specification.

My invention relates to that class of grates in which one or more bars are dumped or dropped to permit the discharge of the contents of the fire-pot; and my invention consists in means of guiding and elevating the dropping bars.

The invention also embraces a construction of devices specially applicable to grates having rocking bars.

In the drawings, Figure 1 is a sectional elevation of a rocking-bar grate, showing my invention. Fig. 2 is a front elevation in part section, and Fig. 3 is a perspective view of part of the device.

Ordinarily, when a bar or section of a grate is allowed to drop to discharge the ashes from the fire-pot, it is common to permit such section or bar to fall until it strikes the bottom of the ash-pit or the ashes therein. This is liable to result in injury to the bars or ash-pan, and in the case of rocking-bar grates the turning of the other bars sometimes interferes with the raising or lowering of the dropping bars. To avoid these objections I provide a guide or guides, whereby the falling end of the dropping bar or section is so limited in its movements that it cannot pass below the proper point, and is maintained at all times in proper position relative to the other bars. The arrangement of this guide will depend somewhat upon the character of the grate. As shown in the drawings, it is adapted for a grate having rocking bars A A′, the central bar, A′, being a dumping-bar, with pendent arms B B′, connected by a cross-bar, I, so that all the arms may be vibrated and all the bars rocked together. Each arm B is forked to receive the connecting-bar I, secured by a pin, *a*, and shoulders *x* are formed on each arm, as shown in Fig. 2, so as to strike the bar I when the bars are rocked, so as to prevent undue motion, which would raise the lugs of one bar above those of the other. The bars have their rear bearings in sockets in the frame C, the journal of the central dropping bar, A′, being enlarged to form a ball-and-socket connection, so that the bar is swiveled at this end, and may be lifted and depressed at the front without being detached from its swivel-bearing. Each arm B may have a trunnion or journal, *b*, adapted to a bearing in the front bar, *d*, of the frame C, a pin, *e*, entering a slot, *i*, in said journal, and preventing its withdrawal from its socket without interfering with its rocking movement. The dropping bar A′ is socketed at the front end to receive the end of a catch device—for instance, a sliding pin, D, which will sustain the bar in its horizontal position until the pin is withdrawn, when the bar is permitted to fall. The guide in this case is the arm B′, which has a slot or groove, *y*, to guide the end of the bar when it falls, and is curved to correspond to a circle having the rear trunnion of the bar as its center. When, therefore, the pin D is drawn out and the end of the bar falls, it is guided by the groove *y*, and its movement limited by the length of the groove, and is retained in contact with the arm B′, so that whatever may be the position of the bars and arms the bar A′ will be retained in relative position to the others, while the dropping of the bar does not prevent the rocking of the other bars of the grate or disarrange the parts.

It will be apparent that the end of the bar A′ may be recessed to receive a rib or guide on the arm B′, instead of making the latter with a groove. The bar may be drawn up into place by means of a chain, or by a bar or poker passed through the slot *y*.

In grates having extended surfaces it becomes necessary to use two or more series of bars in line. The central bar-supports, V, Fig. 1, in such cases are apt to interfere with the admission of air and deaden the fire at such points. I prevent this by putting a perforated bridge, F, over the furnaces and bearing-bar, which lifts up the coal and permits the air to get above the bar and into the fire, insuring more perfect combustion.

Without limiting myself to the precise construction of parts described, I claim—

1. A grate provided with one or more inde-

pendent dumping or falling bars, and with a guide constructed to receive the end of the falling bar and to limit the movement thereof, substantially as set forth.

2. The combination, in a grate, of rocking bars, one or more swiveled at the rear, a catch for retaining the front end of such swiveled bar, and a guide constructed to receive the front end of said bar, and hung to vibrate with the bar, substantially as set forth.

3. The combination, in a grate, of rocking bars and arms B, connected to said bars and to each other, one of said arms having a recess or guide to direct the end of one of the bars when the latter is dumped, substantially as set forth.

4. The combination, with the cross-bar V, and with the separate series of bars, of a perforated plate, F, extending over the end bearings of the bars, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEVIS PASSMORE.

Witnesses:
C. A. DOUGHERTY,
W. W. DOUGHERTY.