W. H. BAUSH.

ROCKING GRATE.

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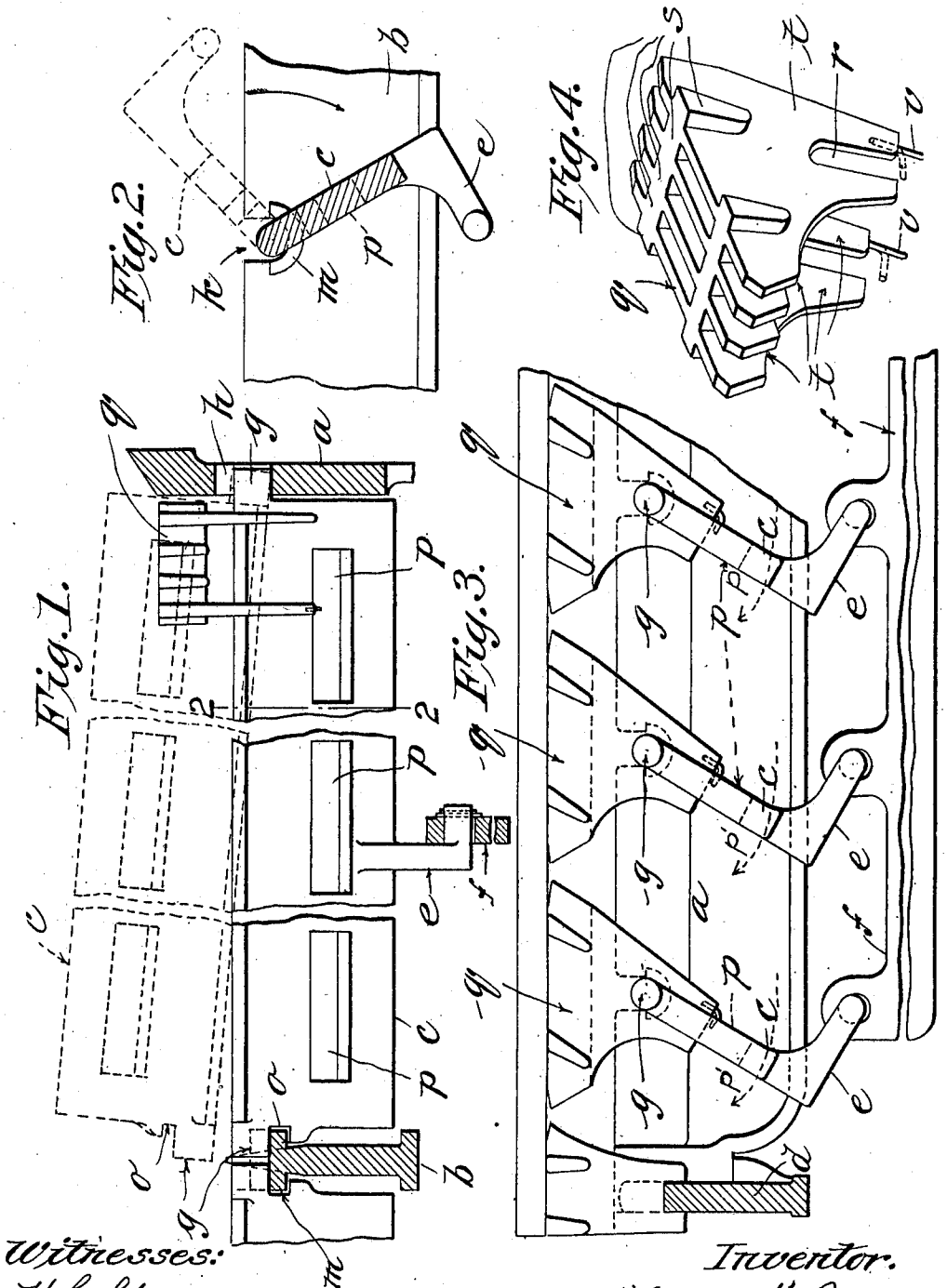
988,687. Patented Apr. 4, 1911.



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UNITED STATES PATENT OFFICE.

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ROCKING GRATE.

988,687. Specification of Letters Patent. Patented Apr. 4, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM H. BAUSH, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Rocking Grates, of which the following is a specification.

This invention relates to improvements in rocking grates for boiler furnaces and the like, and the object thereof is to provide a construction in which the separate grate sections are removably attached to the rocker-bars and the latter constructed to permit a draft of air through openings therein, in a plane substantially parallel with the under side of the grates and between the top of the rocker-bars and the grates, the rocker-bars being supported in the frame in a manner to permit them to swing in the usual manner but whereby they will be prevented from being forced upward by the jamming of clinkers between the grate sections when the latter are actuated, all as fully described in the following specification and as will be carefully pointed out in the claim appended thereto.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a transverse section through a part of the frame of the grate showing a rocker-bar in full lines in operative position and showing the same in inverted position as held when introduced into its end bearings, one grate section being shown in position astride the rocker-bar. Fig. 2 is a sectional elevation taken in the plane of line 2—2, Fig. 1. Fig. 3 is a side elevation of the rocker-bars having grate-sections thereon, this figure being in section. Fig. 4 is a perspective view of one of the grate-sections.

Referring to these drawings, *a*, Fig. 1, is one of the side frames of the grate, *b* being a support parallel with the side frames between which and the latter the rocker-bars *c* are supported when, by reason of the width of the furnace, the bars can not extend thereacross in one piece.

d (Fig. 3) indicates one of the ends of the frame.

The rocker-bars and the frames in which they are supported are shown only in a fragmentary manner as their general construction is well understood, the invention residing in this case in the specific construction of the rocker-bars and the separable grate-sections carried thereby, and means to support the rocker-bars and grate sections, all as will herein appear.

The rocker-bars *c* are provided with the usual downhanging arms *e* whereby connection is made with the shaker-bar *f*.

It is very desirable in rocking-grate constructions that the rocker-bars and grate sections should be easily removable for purposes of repair or replacement of new parts, but it is of equal importance that these parts should, during the rocking movements thereof, be securely held in the general horizontal plane of the grate surface. By the use of the invention forming the subject of this application both of these objects are attained.

The rocker-bars *c* are provided at each end thereof with trunnions *g* one of which enters a hole *h* in the side-frame *a* and the other of which lies in an open bearing *k* below which is a semi-circular projection *m*, concentric with the bearing and which extends into a notch *o* in the end of the rocker-bars as shown in Fig. 1 most clearly. This engagement of the projection *m* with said notch *o* while permitting the free oscillation of the rocker-bars makes it impossible for the latter to be lifted vertically out of the open bearing, the trunnion on the opposite end of the bar being located in a hole in the side frame and likewise prevented from moving vertically.

To insert or remove one of the rocker-bars, they are swung to the position shown in Fig. 1, that is to a position substantially at right angles to and above the grate surface, whereupon the notch *o* in the end of the bar is freed from its engagement with the projection *m* permitting that end of the bar to be lifted out of the bearing *k* and permitting the endwise withdrawal of the opposite trunnion from its bearing in the side frame, the hole in the latter being made sufficiently large to permit this.

The rocker-bars, in their normal position, are inclined relative to the grate surface, as shown in Figs. 2 and 3.

In the grate-bars the openings *p* are provided which extend lengthwise of the latter through which a draft of air may take place as shown by the arrows *p'* whereby the bars are kept cooler than they otherwise would be, and whereby the air-current which would otherwise pass around the bottom of

the rocker-bars, will be directed, by reason of these openings, upwardly against the grate sections beyond. During the rocking movements of the bars, the ashes will also pass through these openings during the extreme movement of the bar in either direction. To establish a current of air over the top of the rocker-bars also whereby they are kept cooler and thus prevented from warping, the grate sections *q* are provided with slots *r* for the upper edge of the rocker-bars which do not extend upwardly as far as the under side of the grate-bar sections, the plane of which is substantially in line with the lower end of the transverse portion *s* of these sections. This current of air between the upper side of the rocker-bars and the under side of the grate sections keeps the surface of the latter cooler than when the grate sections are permitted to rest on the top of the rocker-bars as has heretofore been the general practice. The grate sections are thus supported entirely on the depending sides *t* thereof in which the slots *r* are located, and to prevent displacement of these grate-sections, the pins *v* are cast in the end of the depending sides *t* which, when the sections are in place astride of the rocker-bars, may be bent up as shown in dotted lines in Figs. 3 and 4, to enter the openings *p* in the rocker-bars *c*, whereby they may be temporarily secured thereto and be prevented from lifting vertically during the rocking movements thereof, should any clinkers become jammed between the depressed edge of one grate section and the side of the next adjacent thereto.

The forward and rear edges of the sections, it will be noticed, are arranged so that they stand in a juxtaposed relation to each other, and when the bars are rocked, a crushing action in a substantially horizontal plane between the sections will occur.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

A grate for boiler furnaces and the like comprising a frame, perforated rocker-bars supported thereon and inclined in the direction of the incoming draft of air, means for rocking the same, grate sections seated on the upper edge of the said bars, the sections having one edge substantially parallel with the rear surface of the rocker-bars and its other edge extending forwardly of the rocker-bar, the front and rear edges of the sections on adjacent grate-bars being in juxtaposition whereby when the sections are rocked a horizontal crushing action between the sections will take place, as described, and means for preventing the upward movement of the rocker-bars.

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