

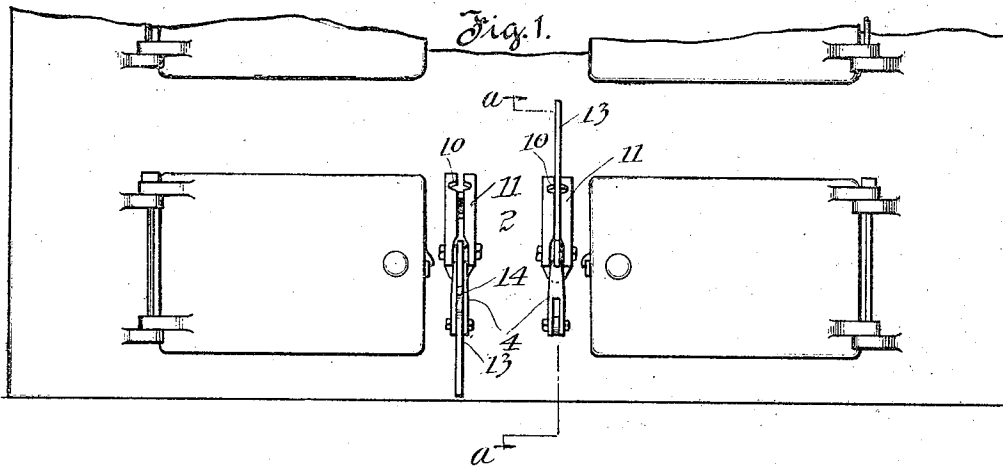
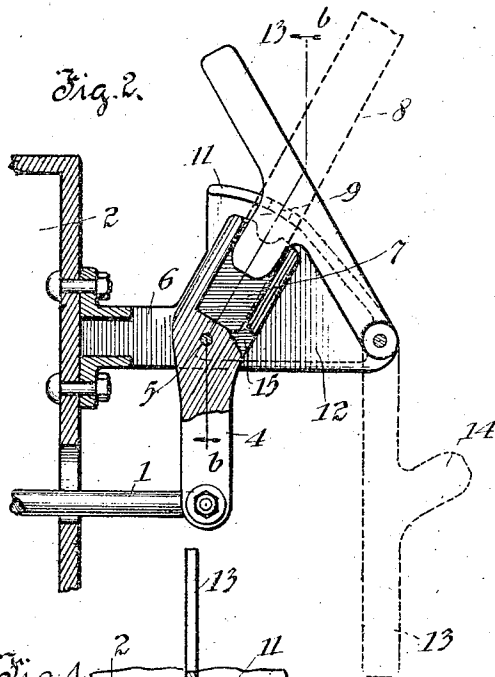
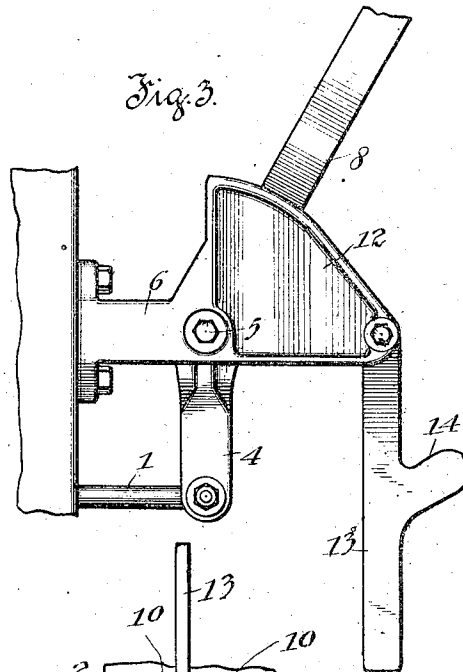
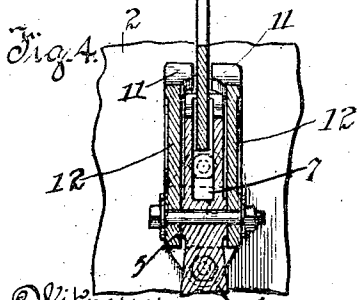
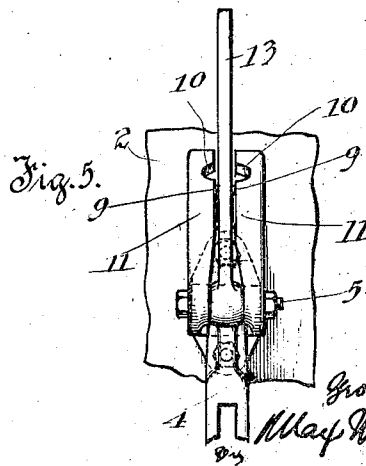
G. A. KOHOUT.
GRATE.

APPLICATION FILED OCT. 21, 1914.

1,246,937.

Patented Nov. 20, 1917.

2 SHEETS—SHEET 1.



Witnesses
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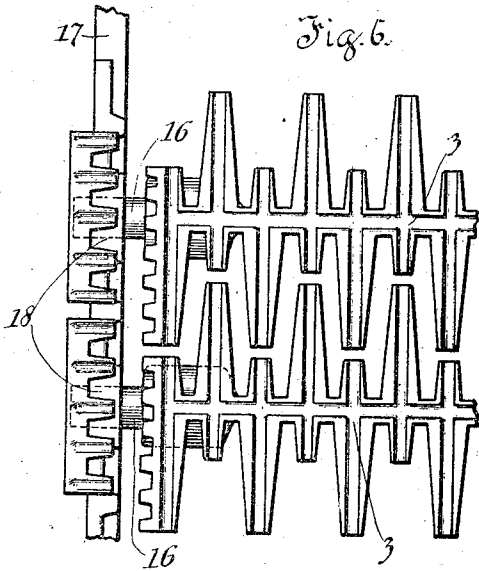
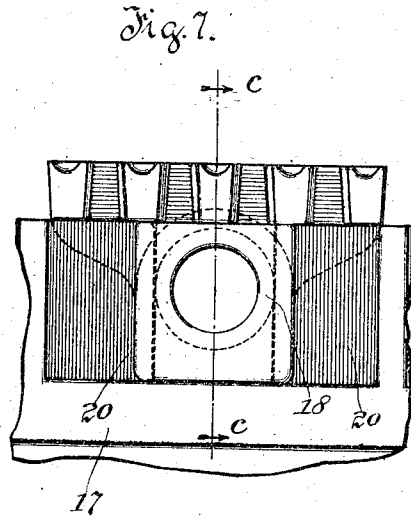
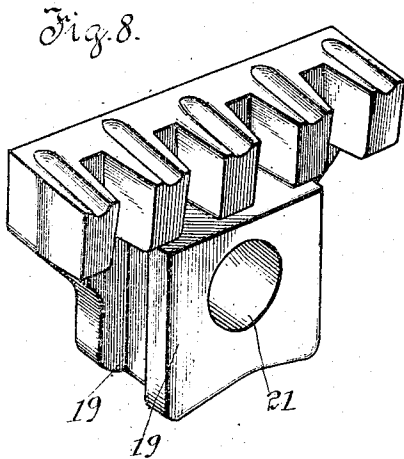
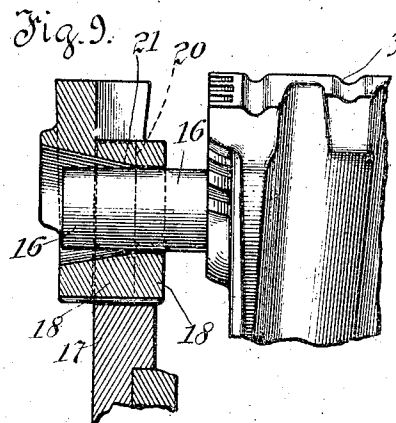
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE A. KOHOUT, OF CHICAGO, ILLINOIS, ASSIGNOR TO SHEAR-KLEAN GRATE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

GRATE.

1,246,937.

Specification of Letters Patent.

Patented Nov. 20, 1917.

Application filed October 21, 1914. Serial No. 867,810.

To all whom it may concern:

Be it known that I, GEORGE A. KOHOUT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Grates, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to grates and has for its object the provision of improved means for operating grates for cleaning the fire, commonly understood as shaking. My improved means are of an interlocking character so designed that the grate bars when the operation of cleaning has been completed must always be returned to proper horizontal position before the operating handle can be removed. My invention further contemplates the provision of locking mechanism which is mounted in place when the operating handle is removed to prevent motion of the grate bars. My invention finds considerable use in connection with rocking grate bars and contemplates also the provision of improved means for pivotally supporting said rocking grate bars.

I will describe one form which my invention may take more in detail by referring to the accompanying drawings, in which—

Figure 1 represents a front view of a furnace having my improved grate operating mechanism in place;

Fig. 2 is a sectional view on line *a— a* of Fig. 1;

Fig. 3 is a side view of the apparatus shown in Fig. 2;

Fig. 4 is a sectional view on line *b— b* of Fig. 2;

Fig. 5 is a front view of the apparatus shown in Fig. 3;

Fig. 6 is a top view of a portion of a grate showing my improved trunnion and bearing construction;

Fig. 7 is an end view thereof;

Fig. 8 is a perspective view of the bearing, and

Fig. 9 is a sectional view on line *c— c* of Fig. 7.

Referring more particularly to Figs. 1, 2, 3, 4 and 5, I show a bar 1 adapted to project inwardly into the grate chamber 2 to operate a plurality of pivotally mounted grate bars 3 shown more clearly in Figs. 6 and 7.

The bar 1 is pivotally connected to a bell crank lever 4 pivotally mounted at 5 on an arm 6 attached to the furnace as shown. The bell crank lever 4 has at its opposite extremity a socket 7 adapted to receive a handle 8 whenever the lever 4 is to be rocked in order to rock the grate bars. This handle has a pair of lugs 9, which lugs project sidewardly therefrom and are adapted to enter through openings 10, 10 provided in flanges 11, 11 carried by the side walls 12, 12 forming part of the arm 6. It will thus be seen that the handle 8 can only be introduced into the socket 7 and withdrawn therefrom when projections 9 register with the apertures 10. Thus whenever the handle is removed after operating the grate bars, the grate bars remain in their proper horizontal position as the handle can only be removed from the socket 7 at such times. There is thus an interlocking feature which prevents faulty operation of the grates and thereby leaving them in such a position that fingers do not project upwardly into the fire, whereby these fingers would be burnt off or otherwise mutilated. In order to prevent movement of the grate bars after the handle 8 has been removed and to prevent coal dust or other refuse from dropping into the handle socket, and also to act as an indication that the operator has performed his work, I provide an arm 13 having a finger 14 which during the shaking operation occupies the full position of Fig. 3 or the dotted position of Fig. 2, but which after the handle 8 has been removed is designed to occupy the full position shown in Fig. 2. The finger at that time projects into the socket 7 and prevents movement of the grate bars. An opening 15 leads from the socket 7 to permit dirt or other foreign substances to fall out.

Referring more particularly to Figs. 6, 7, 8 and 9, I show a plurality of grate bars 3 pivotally carried upon a trunnion or shaft 16. The furnace proper is provided with side frames 17 which are adapted to receive bearings 18 for the shafts 16, a complete bearing being shown in perspective in Fig. 8. This bearing has grooves 19 on its opposite sides which are adapted to interlock with webs 20 forming part of the side frames 17, thereby to hold the bearing portions 18 in place. It is furthermore seen that these bearings can be readily removed

by being merely lifted out of their position and a new one introduced by sliding it into place with the webs 20 entering the grooves 19, the entire bearing portion then resting
5 on top of the side frame 17 as apparent from Fig. 9. Bearings can thus very readily be renewed and individual grate bars can thereby be very readily taken out and replaced when such is necessary without taking
10 apart the entire furnace structure.

In Fig. 9, I show a sectional view of the bearing portion showing the curved bearing surface 21 engaged by the shaft 16. It will be seen that the bearing portion permits of
15 a longitudinal movement of the shaft 16, all in accordance with the structure disclosed in my co-pending application Serial No. 745,211, filed Jan. 30, 1913.

I have thus provided a very simple structure for mounting the grate bars together
20 with their bearings so that they can be readily taken apart and renewed as occasion demands. No bolts or other fastening means are required, the interlocking characteristics
25 of the bearing providing for this and preventing displacement during the normal operation.

From what has been described the nature of my invention will be clear to those skilled
30 in the art, but having however thus described one form which my invention may

take, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described the combination with a plurality of tiltable
35 grate bars, mechanism including a handle socket adapted when actuated to tilt said grate bars, a removable handle adapted for insertion in said socket, and a link having a
40 projection adapted when said handle is not in position to enter said socket to hold said grate bars in their central position.

2. In a device of the character described the combination with a plurality of tiltable
45 grate bars, mechanism including a handle socket adapted when actuated to tilt said grate bars, a removable handle adapted for insertion in said socket, a link having a
50 projection adapted when said handle is not in position to enter said socket to hold said grate bars in their central position, and interlocking mechanism cooperating with said
55 handle to permit its association and disassociation with said socket only when said socket is in a given position.

In witness whereof, I hereunto subscribe my name this 13th day of October, A. D. 1914.

GEORGE A. KOHOUT.

Witnesses:

E. GUSTAFSON,
H. A. JONES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."