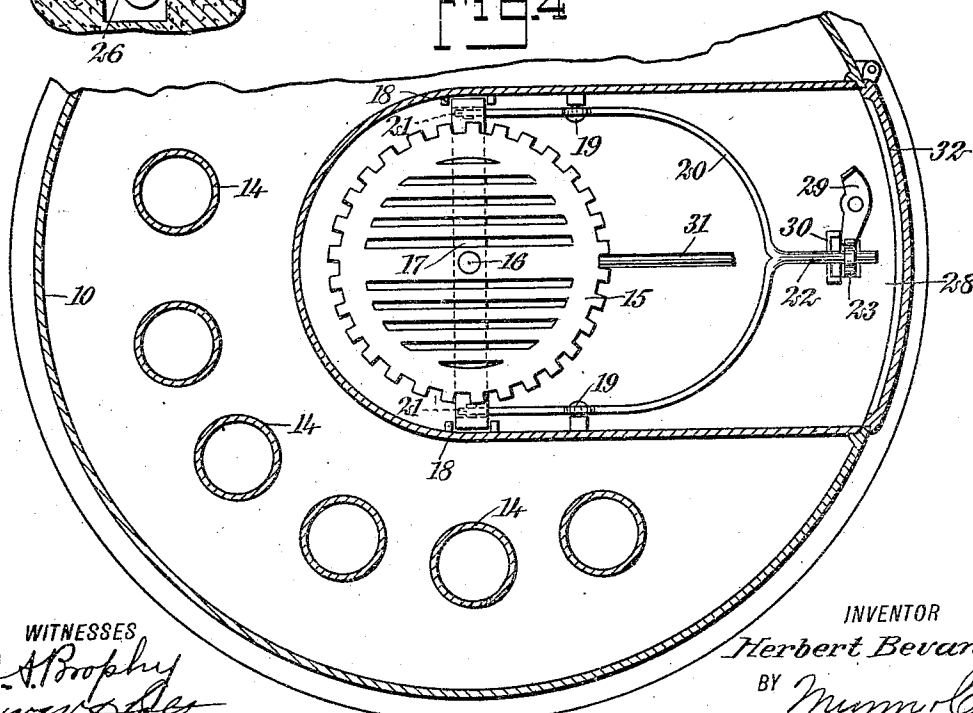
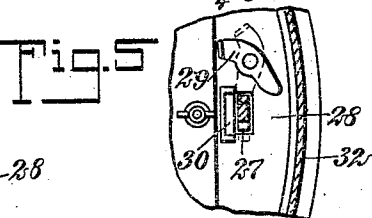
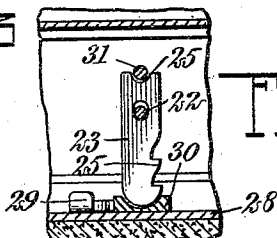
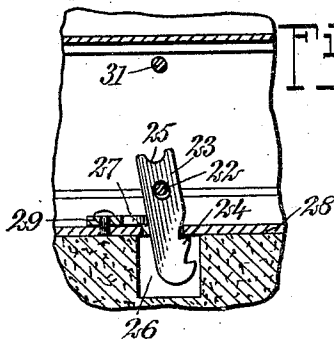
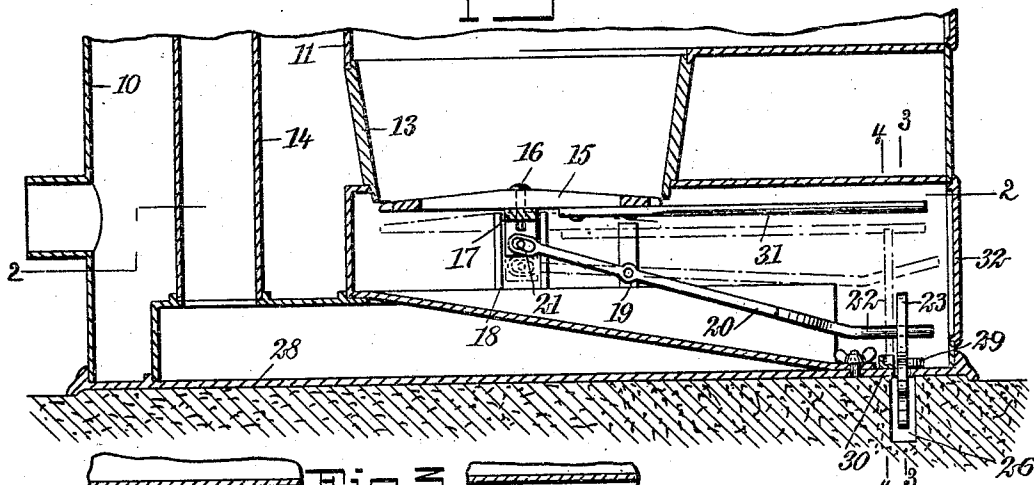


938,112.

Fig-1



WITNESSES
J. A. Brophy
W. V. S. S. S.

INVENTOR
Herbert Bevan
BY *Munn & Co.*
ATTORNEYS

Fig. 2

UNITED STATES PATENT OFFICE.

HERBERT BEVAN, OF BURLINGTON, NEW JERSEY.

FURNACE-GRATE-OPERATING MECHANISM.

938,112.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed December 19, 1908. Serial No. 468,278.

To all whom it may concern:

Be it known that I, HERBERT BEVAN, a subject of the King of Great Britain, and a resident of Burlington, in the county of Burlington and State of New Jersey, have invented a new and Improved Furnace-Grate-Operating Mechanism, of which the following is a full, clear, and exact description.

10 The invention is an improvement in the operating mechanism of furnace grates, more especially hot air furnaces of the character disclosed in Letters Patent Number 881,844, granted to me.

15 The invention has in view a grate depressible from the open bottom of the firebox to empty the latter and provide space for the insertion of a gas ring, as in the spring and fall of the year when it is desired to heat the house for only a portion of the day.

20 The invention further contemplates the locking of the grate when raised and the locking of the grate shaking means when the grate is depressed, to provide a fixed rest on which the gas ring may be slid to the position of use.

25 Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

30 Figure 1 is a central vertical section through the furnace above referred to, having my improved grate-operating mechanism applied thereto; Fig. 2 is a cross-section substantially on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 1 when the grate is locked in its normal elevated position; Fig. 4 is a section on the line 4—4 of Fig. 1 when the grate is depressed and the shaker thereof locked to serve as a rest for sliding the gas ring in place; and Fig. 5 is a sectional plan of the locking means.

35 For convenience of illustration I have shown my improvements applied to my heater above referred to, in which connection they will ordinarily be used, although not limited to this form of furnace since the invention may be applied to other furnaces with advantage. The heater shown comprises an outer shell 10 and an inner cylinder 11 forming the combustion chamber and arranged over the firepot 13. Between the shell 10 and cylinder 11 are vertical heating flues 14, all of which form features of my improved furnace.

The grate 15 is of a form, preferably circular, to close the open bottom of the firepot, and is journaled at its center on a pin 16 carried by a cross-bar 17, the latter constituting a slide and having its ends arranged in vertical ways 18 at the opposite sides of the ash-pit. Fulcrumed at the opposite sides of the ash-pit on pins 19 is a fork 20 having the extremities thereof slotted and engaging over studs or pins 21 projecting from the angular end portions of the bar 17. The fork has at its opposite and outer end a shank 22 passing through and suspending a locking and supporting member 23, which, as best shown in Figs. 3 and 4, is provided with teeth 24 on the lower portion of one edge, and at its top edge has a groove 25. In the base of the furnace a recess or pocket 26 is formed, and over this a slot 27, slightly less in length, is provided in the furnace base-plate 28. Through this slot and into the pocket the locking member 23 is adapted to project, and the teeth 24 thereof engage under the base-plate 28 and lock the grate in its raised operative position, accidental disengagement of the locking member with the base-plate being prevented when the grate is thus disposed, by a button or cam 29 pivoted to swing back and bear on the edge of the locking member opposite the teeth. A pillar block 30 is arranged adjacent to the slot 27 and has recesses in its upper face to receive the lower end of the locking member 23 when the latter is raised to depress the grate to empty the firepot, and provide a space between the grate and firepot for the insertion of a gas ring, such device being used in moderately cold weather for heating the furnace instead of heating by the burning of fuel in the firepot.

For shaking the grate, a bar 31 is rigidly attached thereto and is accessible through the ash-pit door, as is also the mechanism for adjusting the elevation of the grate and locking it in adjusted position. When the locking member is raised, as illustrated in Fig. 4, to lower the grate, the recess 25 in its upper edge engages with the shaker bar 31 and prevents it and the grate from turning on the pin 16. With the shaker bar 31 locked, it serves as a rest for sliding the gas ring to and from position under the firepot.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a furnace, a firepot, an ash-pit under the firepot having a door and provided with vertical ways at opposite sides, a cross-bar having angular end portions slidable in the said ways, a grate revolubly supported on the cross-bar, having an operating bar in connection therewith, a fork fulcrumed at the opposite sides of the ash-pit, having slotted end portions in engagement with the angular end portions of the cross-bar and provided with a shank, and a locking member carried on said shank accessible from the ash-pit door, having teeth on one edge to lock the grate under the firepot and having a recess in its upper edge for engaging the shaker bar of the grate and locking it and the grate from turning when the grate is depressed.

2. The combination of a firepot, a grate, means for shaking the grate, means for raising and lowering the grate to and from the open bottom of the firepot, and a device carried by the last mentioned means for locking the grate in an elevated position and engaging and locking the grate shaking means when the grate is depressed.

3. The combination of a firepot, a grate, a lever for raising and lowering the grate to and from the open bottom of the pot, a shaker bar in connection with the grate, and a locking member carried by the lever having teeth for locking the grate in an elevated position and a notch in its upper edge to engage with the shaker bar and lock the grate against shaking movement when the grate is depressed.

4. In a heater having an ash-pit provided with vertical ways at opposite sides, a cross-bar having its opposite end portions slidable in said ways, a grate journaled at its center on the cross-bar, a shaker bar connected to the grate, a lever for moving the cross-bar in the ways, and means for locking the lever and shaker bar together when the grate is in a depressed position.

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

HERBERT BEVAN.

Witnesses:

AGNES WATTS,
MARY G. DUDLEY.