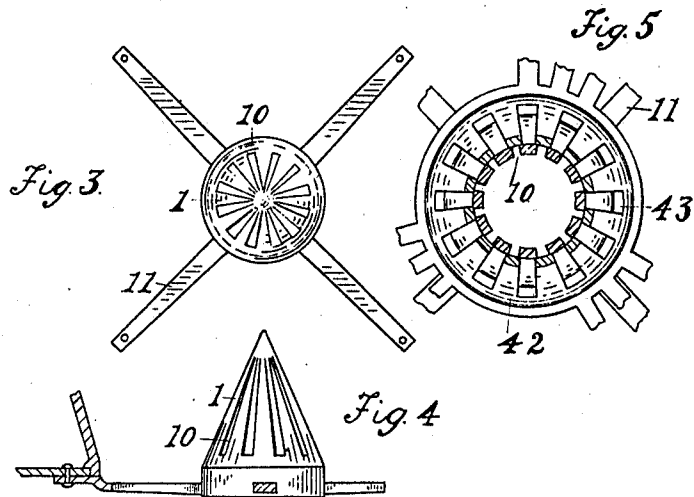
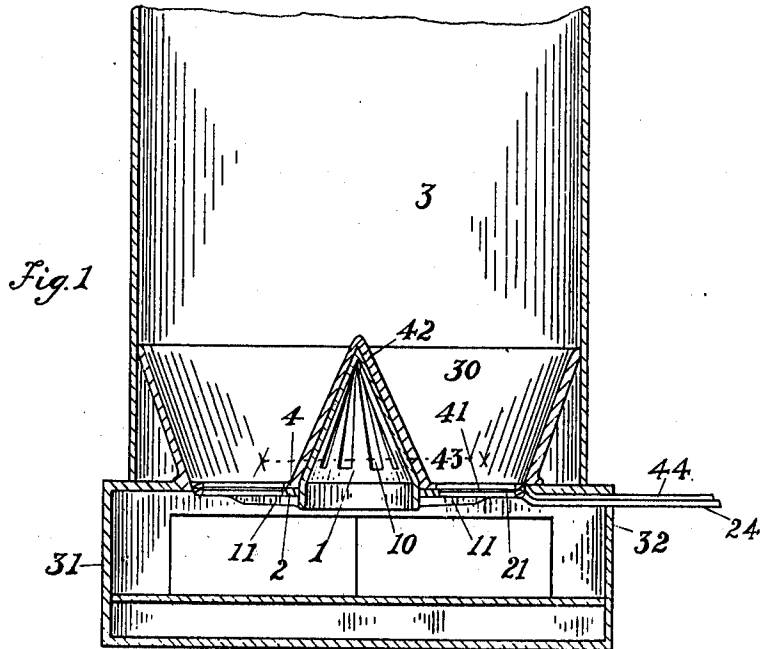


L. O. BREKKE.
STOVE AND FURNACE GRATE.
APPLICATION FILED APR. 28, 1910.

970,460.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.



Witnesses.
Alex. J. McKee
Earl Young

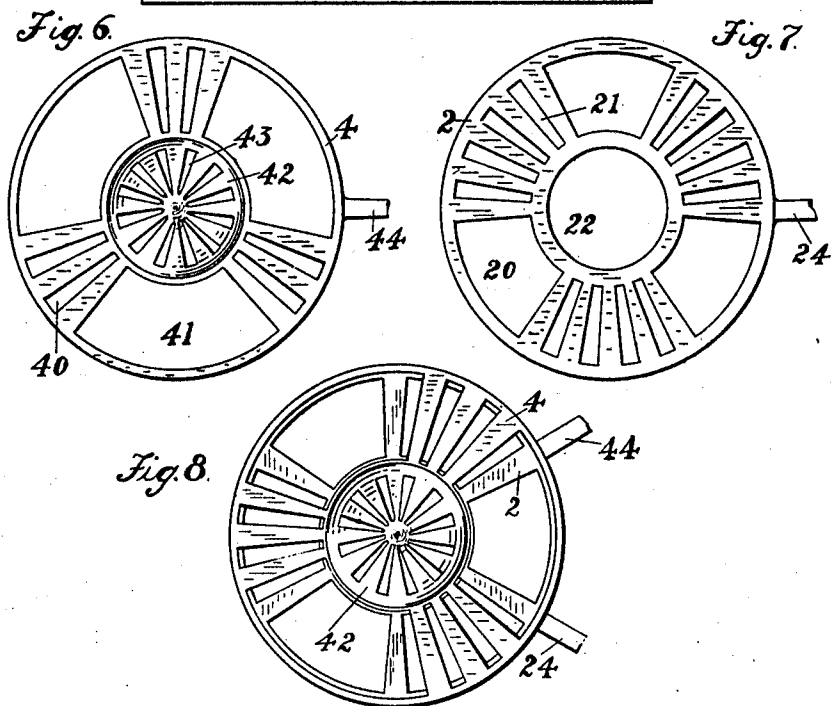
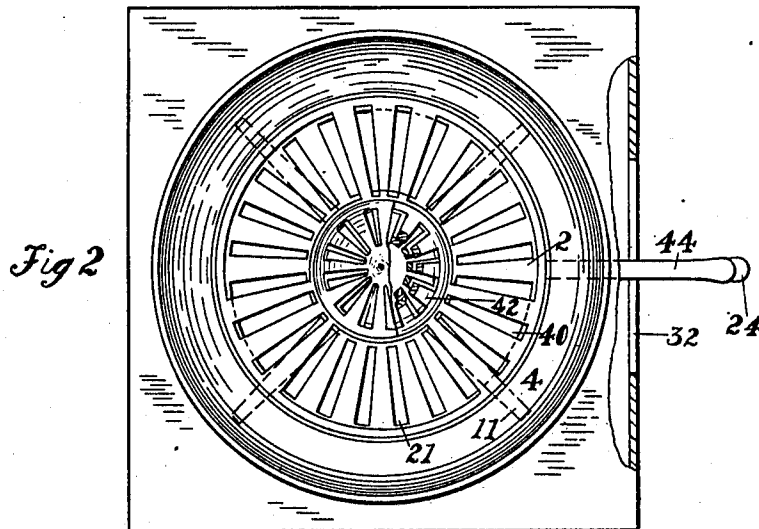
Inventor
Lewis O. Brekke
By Henry L. Reynolds,
attorney.

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UNITED STATES PATENT OFFICE.

LEWIS O. BREKKE, OF SEATTLE, WASHINGTON.

STOVE AND FURNACE GRATE.

970,460.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed April 28, 1910. Serial No. 558,308.

To all whom it may concern:

Be it known that I, LEWIS O. BREKKE, a citizen of the United States, and a resident of the city of Seattle, in the county of King and the State of Washington, have invented certain new and useful Improvements in Stove and Furnace Grates, of which the following is a specification.

My invention relates to an improvement in stove and furnace grates, and comprises the novel parts and combination of parts defined in the claims terminating this specification.

The object of my invention is to improve the construction and operation of stove and furnace grates.

In the drawings I have shown my invention embodied in the form which is now preferred by me.

Figure 1 is a central sectional elevation through a stove equipped with my grate. Fig. 2 is a horizontal section through the stove, mainly above the grate parts of the casing and of the central cones being broken away. Fig. 3 is a plan view of the fixed central cone and its supports. Fig. 4 is an elevation of the same. Fig. 5 is a horizontal section through the central cones upon the plane X, X, of Fig. 1. Figs. 6 and 7 are plans of the two movable grate members. Fig. 8 is a plan of the two movable grate members placed in position for discharge of clinkers.

There are three parts to my improved grate, a fixed central hollow cone having draft slots, and two annular grate members oscillatable about said cone and one provided with a slotted cone cooperating with the fixed cone.

The central fixed cone 1 may be supported in any suitable way, as by arms 11 which are secured to the body of the stove or furnace, and is provided with draft openings which preferably are in the shape of longitudinal slots tapering toward the apex. This fixed conical grate forms a pivoting member for the outer grate, and in addition, it co-acts with the oscillatable cone to control the amount of air admitted at this point. Next above this is the annular grate member 2, having a central hole 22 adapted to fit over the base of the cone 1, and having segments containing clinker-discharge openings 20 alternating with segments containing radial draft openings 21. It also has an operating

arm 24 which extends outwardly of the stove through a suitable slot 32, so that it may be engaged and oscillated about its center. Superposed on the grate member 2 is the grate member 4. The grate member 4 has an annular portion having segments provided with draft slots 40 alternating with segments containing the clinker discharge openings 41. The grate member 4 has a central cone 42 fitting closely to and over the fixed cone 1 and having corresponding slots 43 which are adapted to register with either the slots or ribs of the fixed cone 1, according as it is turned, thereby acting as a damper to control the amount of air which is admitted thereby. This grate member 4 also has an arm 44 extending through the slot 32 so that the grate may be oscillated.

By operating both grate members 2 and 4 at the same time, keeping the operating arms or levers 24 and 44 together, the ashes are sifted through the draft slots 21 and 40. By slightly shifting the relative positions of these levers the draft through the central opening may be controlled in amount or even cut off. By shifting the arms 24 and 44 so as to separate them, as is shown in Fig. 8, clinker discharge openings are made, through which all large particles may be discharged. With this form of grate the operator has a thorough control of the air admission and the cleaning of the grate. I have found that the central draft openings as provided by the cones 1 and 42, admit the air to the center of the fire where it will do the most good. There is a material advantage in having this central draft member in the form of a cone and in having the slots tapering with the small end up. As the body of the coal and clinker settles toward the grate it runs down the side of the cone to a part which is wide enough to admit their passage. By reason of these features of construction this part of the grate is self cleaning. The lower annular portions of the grate may become somewhat clogged up with clinkers and ashes, but the cone will keep clear, thus freely admitting the air to the center of the fuel body, which has the effect of directing the heat to the outer part of the fire where it will be most effective in heating the external air. The result is a cleaner and more perfect combustion as well as a hotter fire.

The parts are so constructed that they are cheap to manufacture, easy to put in place and easy to handle.

What I claim as my invention is:—

- 5 1. A grate comprising a fixed hollow cone having longitudinal draft slots therein, an oscillatable annular grate about said cone, a second oscillatable annular grate superposed on the first and having a hollow slotted cone fitting the other cone, said movable
10 grates having separate operating arms extending to the outside of the stove or furnace.
- 15 2. A grate comprising a fixed central cone having tapering longitudinal slots, two grate members mounted to turn independently and concentric with said cone, one of said grates having a cone similarly slotted and fitting on the fixed cone.
- 20 3. A grate comprising a fixed, hollow cen-

tral cone having draft slots, two concentric annular members having clinker-discharge openings alternating with segments having draft openings and movable about said central cone and relatively to each other; one
25 of the said annular members having a central cone superposed upon the fixed cone and provided with draft slots adapted to register or alternate with the draft slots in the fixed cone, said annular members having operat-
30 ing arms extending to the outside of the stove.

In testimony whereof I have hereunto affixed my signature at Seattle, King county, Washington, this 16th day of April, 1910. 35

LEWIS O. BREKKE.

Witnesses:

H. L. REYNOLDS,
E. BRYAN.