

F. H. ROOT.
Stove Grate.

No. 89,347.

Patented April 27, 1869.

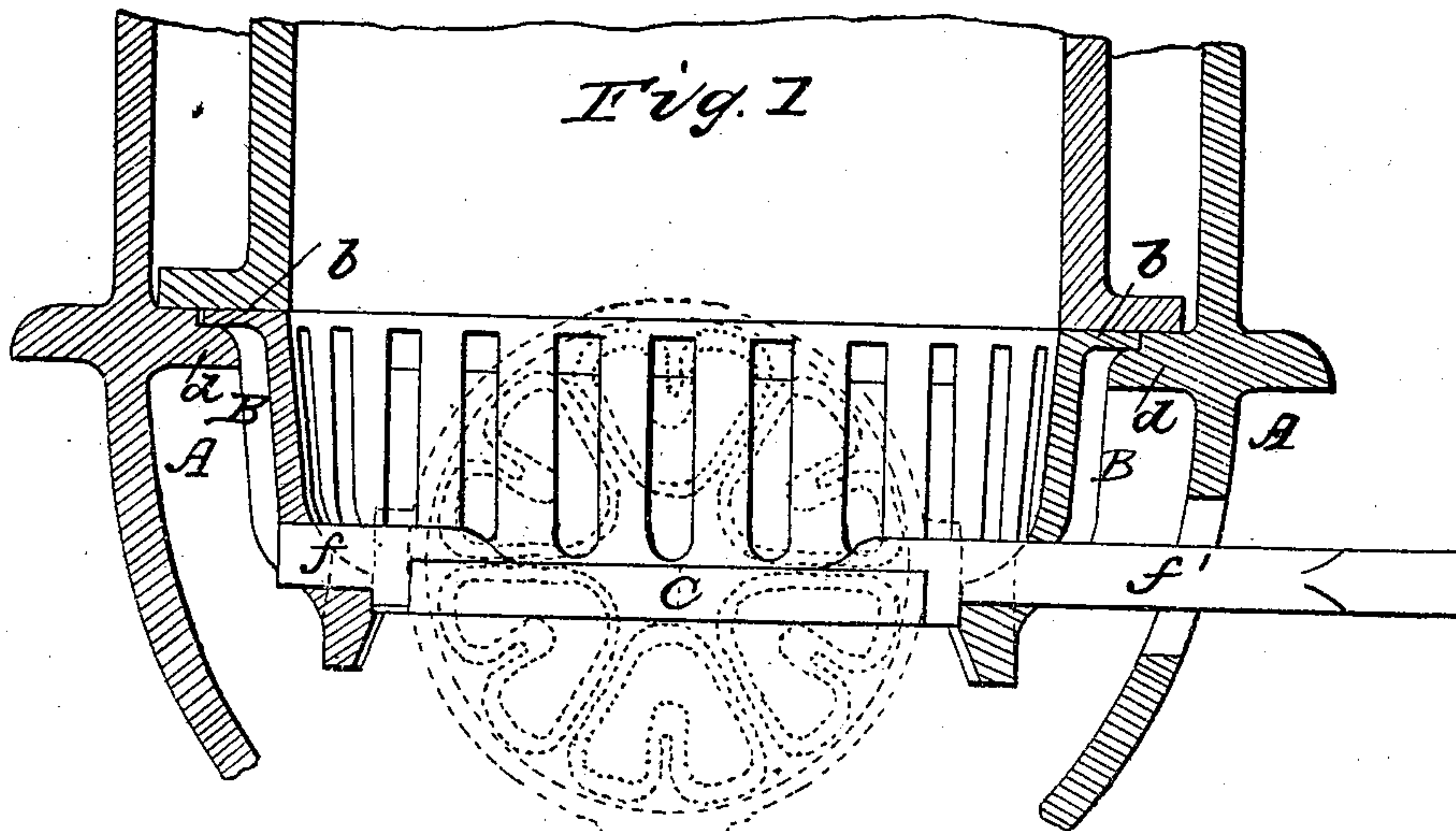
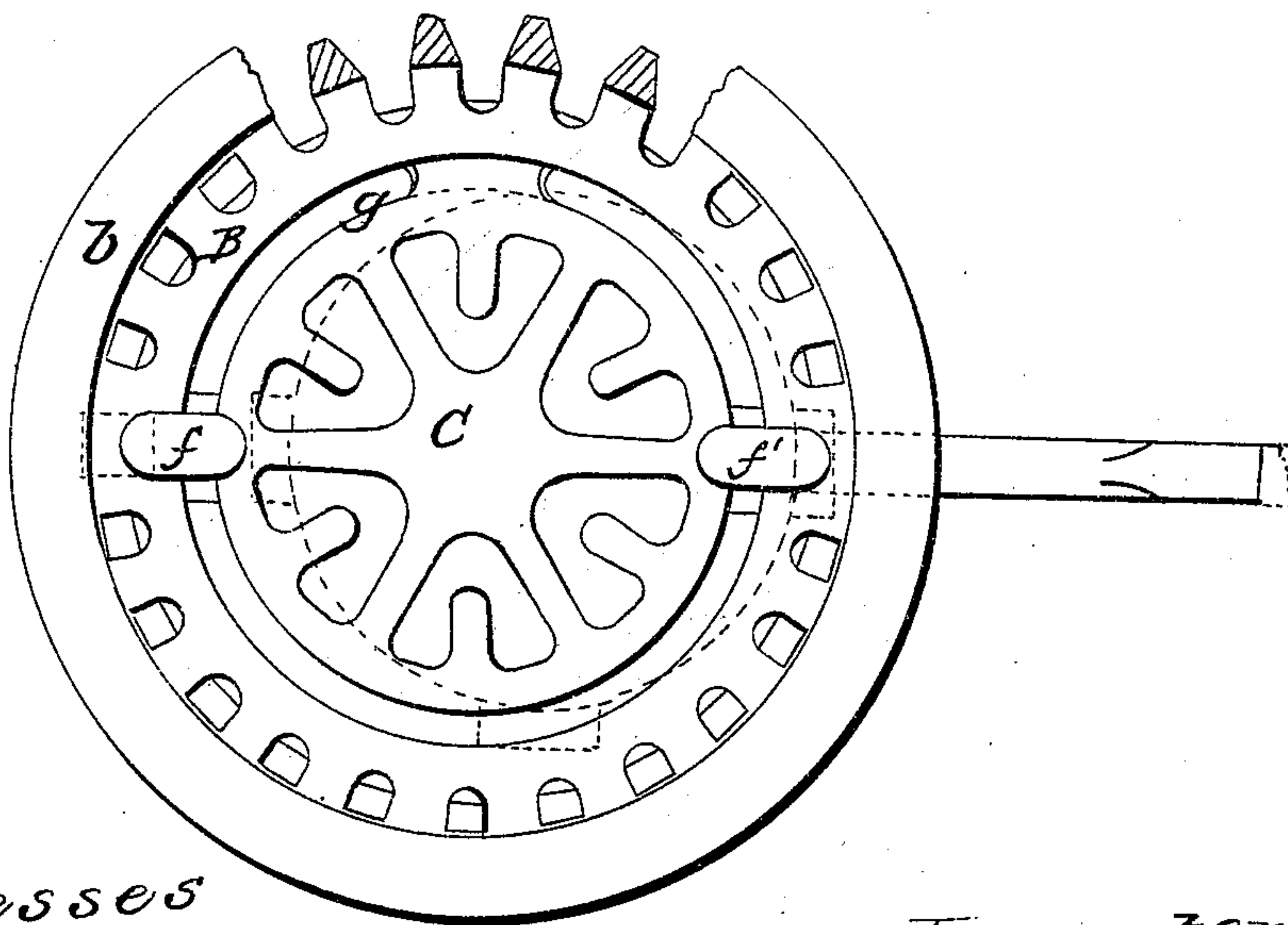


Fig. 2



Witnesses
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FRANCIS H. ROOT, OF BUFFALO, NEW YORK.

Letters Patent No. 89,347, dated April 27, 1869.

BASKET-GRATE FOR STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FRANCIS H. ROOT, of the city of Buffalo, county of Erie, and State of New York, have invented a new and useful Improvement in Basket-Grates for Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure I is a central vertical section of a stove provided with my improved grate.

Figure II is a plan of the grate detached.

Like letters of reference designate like parts in each of the figures.

In the manufacture of coal-stoves considerable attention has been given to the formation of the grate, which forms the bottom of the fire-pot, for the purpose of arriving at such a construction as will most effectually relieve the bottom of the fire of the ashes and cinders, which would otherwise obstruct the draught and fill up the fire-pot. This has led to a great variety of devices, all of which, so far as I am acquainted, are rotated or vibrated in some way, which jostles or shakes the contents of the fire-pot in contact with the grate, and causes the ashes and cinders to sift through into the pit beneath.

In using these stoves, the coal near the bottom of the fire-pot is found frequently to become so packed and stuck together, and to the sides of the fire-pot, as to support the mass above when the grate is agitated, and prevent it settling thereon.

At other times the coal will adhere to one side of the fire-pot, causing its contents to descend on the opposite side, and fill up the space under this mass of clinkers with comparatively fresh coal, leaving the burnt mass still adhering to and obstructing the fire-pot.

One of the effects of this adherence to the sides, is to require such a violent vibration of the grate as to shake fresh coal through at one side before the other is freed of its cinders, as well as to occasion an increased amount of dust and noise in the apartment.

To overcome these difficulties so far as possible, and to cause a separation of the cinders from the unburnt coal, with the least agitation of the grate, and to cause the contents of the fire-pot to settle evenly is the great object of my improvement.

The invention consists of a circular basket-grate, provided with a rocking or tilting-bottom, for dumping the contents of the fire-pot when the said basket-grate is constructed and arranged beneath the fire-pot, in such manner as to permit it as a whole to be vibrated substantially as hereinafter set forth.

In the drawings—

A represents a stove;

B, the side portion of my basket-grate; and

C, the bottom thereof, which together form a grate of the form of a circular basket, both sides and bottom being constructed with the usual openings for the passage of the draught and the discharge of the ashes.

The upper edge of the grate is formed with an outwardly-projecting flange or rim, *b*, which rests and vibrates on inwardly-projecting lugs *d d*, from the top of the lower bottom, as it is termed, of the kind of stove shown in the drawings, the grate fitting the bottom of the fire-pot, so as to be flush therewith on the inside.

It is evident that my improved grate can be readily applied to other kinds of stoves, such change being made in the method of supporting the grate, as circumstances may require.

The bottom C is supported within the lower edge of the side portion B on a central or nearly central axis, formed by casting it with gudgeons *f f'*, which fit in suitable holes formed in the part B.

One edge of the bottom, when in its normal position, rests on a lug, *g*, projecting inward from the lower edge of the basket, so as to prevent the tilting of the bottom except when required.

The end *f'* of the axis projects sufficiently beyond its bearing in front to enable a lever or handle to be attached, for either vibrating the basket as a whole, or for tilting the bottom when required for dumping the contents of the fire-pot, as shown by red lines, Fig. II.

The importance of my improvement lies in the fact that the vibrating of the sides of the grate causes an agitation and corresponding movement of those particles of the coal or cinders around the edge of the base of the fire, and in contact therewith, which motion is communicated to the coal above, and more especially to those particles in contact with the fire-pot, and which are inclined to adhere thereto.

It will therefore be readily perceived that the action of my improved grate will be to insure a detachment of the coal from the sides of the fire-pot, and its uniform descent therein, and consequently to prevent the clogging and filling up of the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

A circular basket-grate, B, provided with a tilting-bottom, C, when the whole is constructed and arranged so as to be capable of being vibrated, as set forth.

FRANCIS H. ROOT.

Witnesses:

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