J. W. KLINELINE.

Stove-Grate.

No. 225,706. Patented Mar. 23, 1880.

Fig. 1.

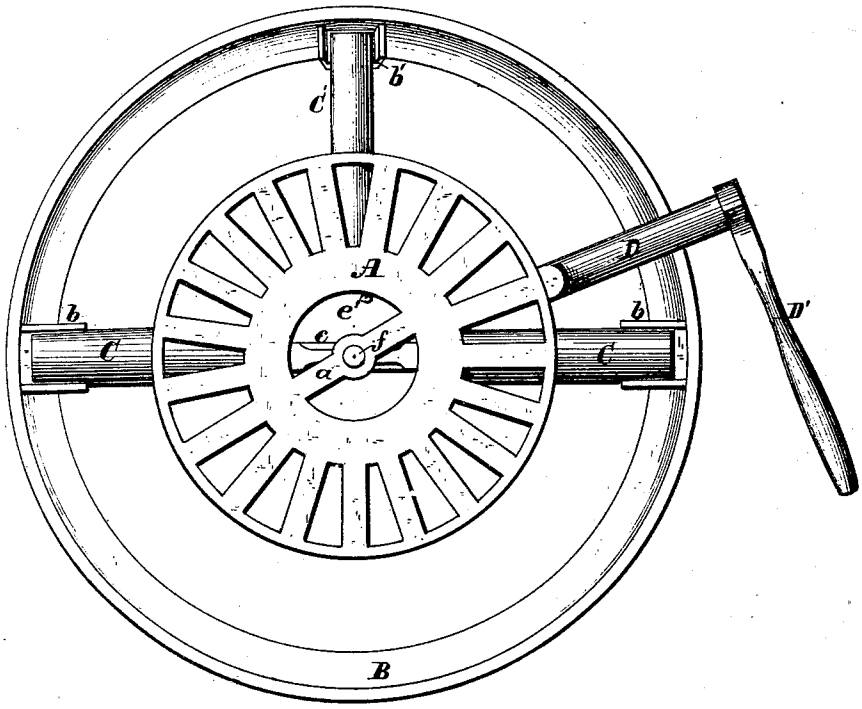


Fig. 2.

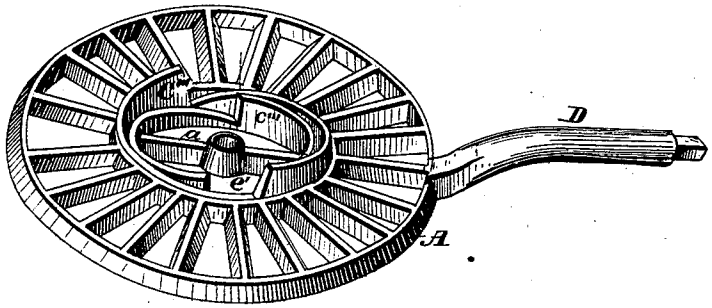
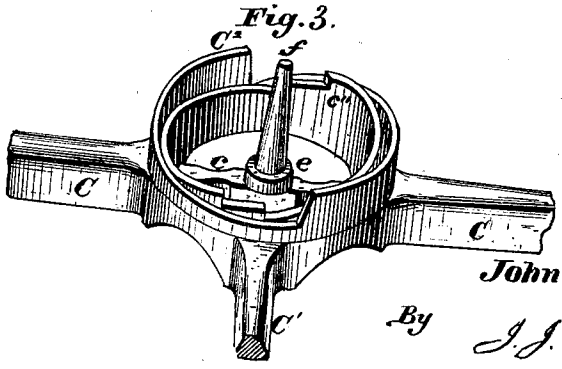


Fig. 3.



Attest:

J. Henry Kaiser.

Vinton Coombs

Inventor:

John W. Klineline

By J. J. Coombs,

Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. KLINELINE, OF MIDDLETOWN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ROBERT M. ZEARING, OF SAME PLACE.

STOVE-GRATE.

SPECIFICATION forming part of Letters Patent No. 225,706, dated March 23, 1880.

Application filed January 30, 1880.

To all whom it may concern:

Be it known that I, JOHN W. KLINELINE, of Middletown, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Improvement in Stove-Grates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same.

My improvement is especially applicable to magazine or base-burning stoves; and it consists in a novel mode of raising and depressing the grate without disturbing its horizontal position, together with means for shaking and dumping the same.

In the accompanying drawings, Figure 1 is a plan view of the grate in position in the ash-chute. Fig. 2 is a view of the grate removed and inverted; and Fig. 3 is a view of the central portion of the trunnion or rock-bar which supports the grate, with the helical seat on which the grate rests.

A is the grate. B is the ash-chute, or lower portion of the fire-pot. C is the rock-bar or trunnion which supports the grate, resting in semicircular journal-boxes *b b*, cast upon the inner surface of the ash-chute; and C′ is a bar extending from said bar C at right angles to the back part of the ash-chute, where it rests upon a stop, *b′*, when the grate is in a horizontal position.

D is an arm extending from the grate through the usual slot in the outer casing of the stove, (not shown in the drawings,) by means of which the grate may be raised, depressed, or shaken, and may be tilted to dump its contents when the detachable crank D′ is applied.

On the rock-bar C is a helical ring, C^2, cast with and forming the central part of said bar, and constituting the seat upon which a similar helical ring, C‴, on the lower side of the grate rests, and on which the grate turns to shake or raise or depress it.

The part *c* of the rock-bar C, which crosses the ring C^2, is reduced in size, so as to leave as large an open space, *e*, as practicable for ashes and cinders to pass through, and from the center of said part of the rock-bar *c*, which crosses the ring, rises a vertical pivot, *f*, on which the grate is mounted and turns. On the lower side of the grate there is also a helical ring, C‴, corresponding to that on the rock-bar, which forms its seat when the grate is in place. This ring is also open through the grate, leaving an open space, *e′*, except a small cross-bar, *a*, through which the pivot-pin *f* passes.

I have shown in the drawings double helices in the rings C^2 and C‴ on the rock-bar and grate; but the inner helices, *c″* and *c‴*, serve no purpose except when the grate is depressed to its lowest position, in which case they come in contact and serve to steady the grate in its seat. These inner helices incline in an opposite direction to the outer ones, and, not being absolutely necessary, may be omitted.

It will be seen that by moving the arm D to the right or left the grate will be partially rotated on its axis *f*, and will be elevated or depressed according to the direction in which the arm is turned. By this means the space between the grate and the fuel-cylinder may be increased or diminished at pleasure, and by depressing the grate the space for raking out clinkers is enlarged. It will also be seen that in shaking the grate it will have an alternately up and down motion.

When the arm D is on a line with the rock-bar C, by applying the crank D′ and pressing down upon it the grate is easily dumped.

I am aware that patents have been granted showing a grate mounted upon a screw turning in a screw-socket as a means of elevating and depressing the grate; but all such devices have proved impracticable, owing to the liability of the screw and its socket to warp and to become choked by ashes and dirt getting into the screw-thread. I do not therefore claim, broadly, the raising and depressing of the grate irrespective of the means by which the same is effected.

I am also aware of the patent No. 183,954, granted to A. McVean, October 31, 1876, which shows a grate supported in a surrounding ring, said ring being supported in helical or inclined bearings, so that by rotating the same it will be elevated or depressed, carrying the grate up or down without rotating the latter. I do not therefore claim the construction shown and described in said patent; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination of the rock-bar C, with its projecting arm C′, the grate mounted thereon, and the helical rings C^2 and C‴, the former on the rock-bar and the latter on the grate, all constructed, combined, and arranged to operate substantially as described.

2. In combination with the rock-bar and the grate, respectively, the double helical rings C^2 and C‴, each having an outer and an inner helix, inclined in opposite directions, as described.

3. In combination with the rock-bar C, having the helical rings C^2 c'', the grate mounted thereon, having the helical rings C‴ c''' and the open spaces e and e' through the grate and its seat on the rock-bar, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN W. KLINELINE.

Witnesses:

ALBERT H. NORRIS,

VINTON COOMBS.