

W^Y A. GREENE.

Improved Stove Grate.

No. 121,097.

Fig. 1.

Patented Nov. 21, 1871.

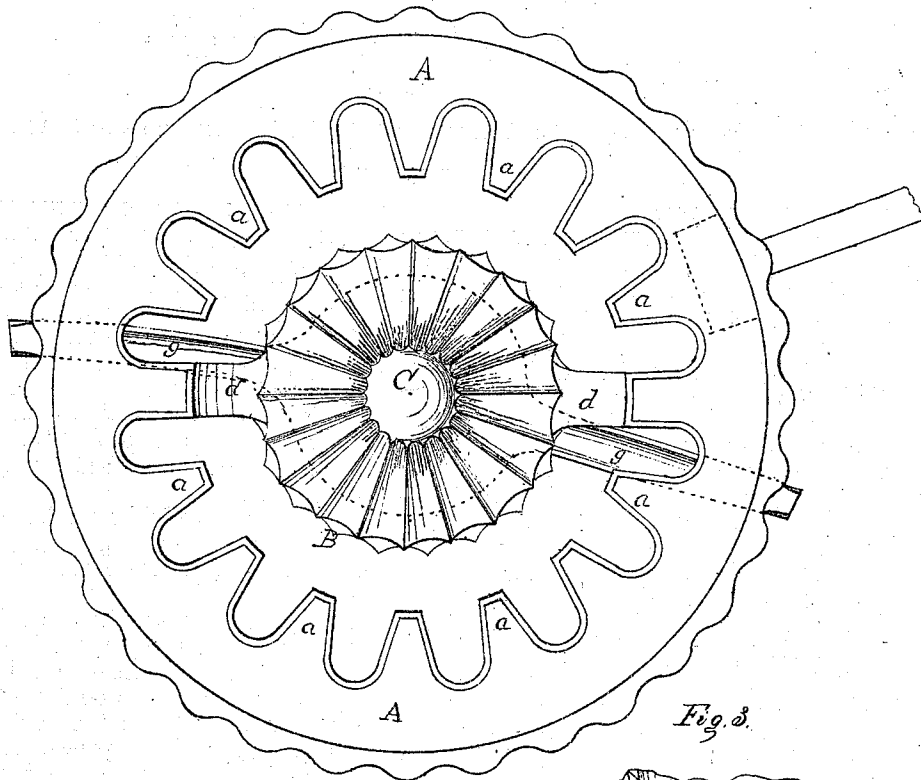


Fig. 3.

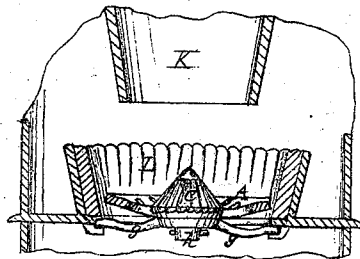
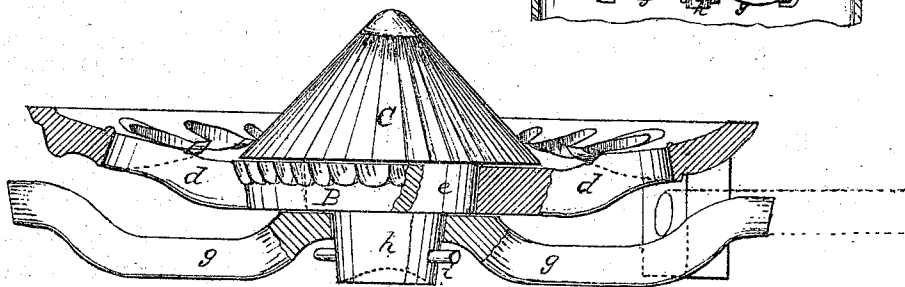


Fig. 2.



Witnesses:

J. Fraser
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Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM A. GREENE, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOHN H. BURTIS, OF SAME PLACE.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. 121,097, dated November 21, 1871.

To all whom it may concern:

Be it known that I, WILLIAM A. GREENE, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Grates for Stoves and Furnaces, of which the following is a specification:

The object of my improvement is to more effectually break and pulverize the cinders which accumulate from a coal fire, and especially to reduce pieces of slate and clinkers, which are liable to become fast between the grate and fire-pot as ordinarily made and obstruct its operation; and it consists in a solid conical center rotating freely on its vertical axis, having its surface fluted, in combination with a fixed collar underneath with correspondingly fluted or serrated edge.

As represented in the drawing, Figure 1 is a plan view, and Fig. 2 a vertical section, with the revolving center and a portion of the serrated collar shown in elevation; and Fig. 3, a section of the fire-pot and magazine, shown in connection with the grate.

I construct the bed portion A A in the ordinary manner, consisting of an annular rim with converging teeth *a a*, the top surface of which preferably inclines toward the center. This rim is united, by the bars *d d*, to a central collar, B, serrated on its periphery. Above this is the solid central cone C, its journal *e* passing through the collar and resting on the sustaining bar *g*, through which passes the stem *h*, which is keyed below by the pin *i*.

Both parts are so supported on the sustaining bar that either moves independently of the other. The rim A and collar B, when vibrated by the shaker, shown in dotted lines, does not move the cone-center C, which rotates only when actuated by a cinder or other obstruction falling between the two and set in motion by the vibration of the former. The inclined surfaces of both parts converge toward the open space, between and through which the ashes fall, and hence the cinders and heavier substances gravitate in that direction. Such pieces as are too large to pass through lodge between the teeth *a a* and the cone. The vibration of the rim causes these pieces to roll between these teeth and the cone, the latter rotating on its axis from their friction

precisely as a train of gears moves from its teeth meshing. This motion offers little resistance, and rapidly reduces the cinders until they drop through, and does not break or stop the motion of the grate by wedging fast, as do hard substances when the center or one part is fixed or stationary. The upper surface of C is made conical and fluted, as shown. Its base is of equal diameter with the collar, which is correspondingly fluted or serrated, and the effect of the rotary action here described brings the teeth or points of the flutes of one in an alternate position to the grooves of the other in consequence of these parts vibrating or rolling in opposite directions, so that the cinder is rapidly disintegrated.

This grate is especially adapted to use in magazine-stoves having shallow fire-pots, in which the solid cone, the sides of which are preferably formed at an angle of about forty-five degrees, has the effect to divide the coal as it falls from the magazine K above, preventing intense combustion at the center of the fire and intensifying that at the outside next the fire-pot L or radiating portion of the fire-chamber; and, by reason of its sides furnishing an incline for feeding from the magazine it prevents clogging, the formation of clinkers, and accumulation of ashes, and the consequent deadening of the fire.

I am aware that solid fixed centers have been used in grates of this kind; but such I do not claim, as the effect which they produce is the opposite of that described, in which the resistance is easily overcome by the freedom of the parts, admitting of a rolling or rotary motion.

I claim as my invention—

In combination with the central cone C having a fluted surface, the correspondingly-serrated collar B, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM A. GREENE.

Witnesses:

W. E. OSBORN,
A. H. OSBORN.

(154)