

Watson Sanford.
Impt^{to} in Stove and Furnace Grates

No. 121,733.

Fig: 1.

Patented Dec. 12, 1871.

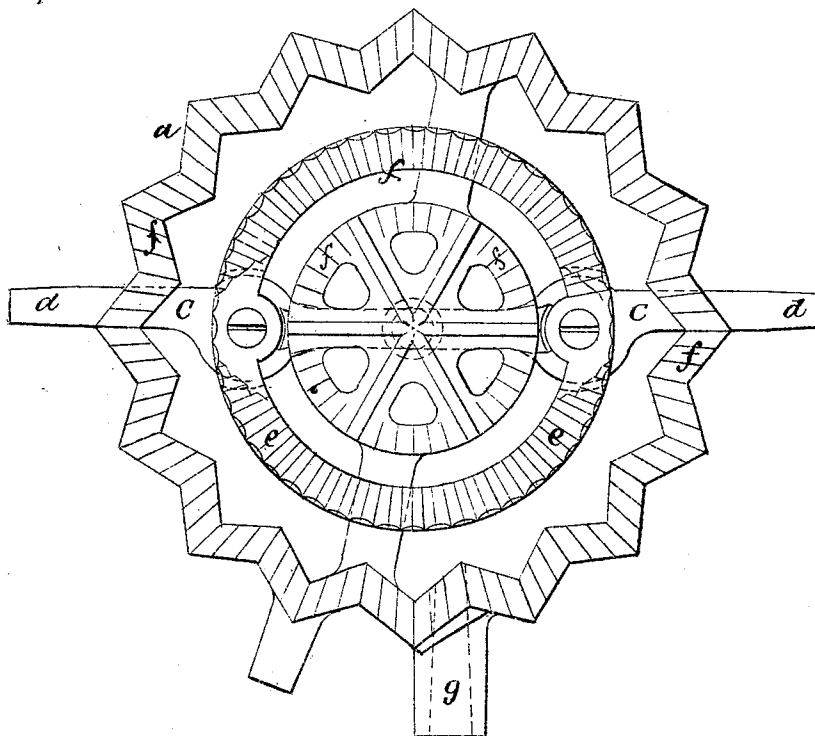


Fig: 2.

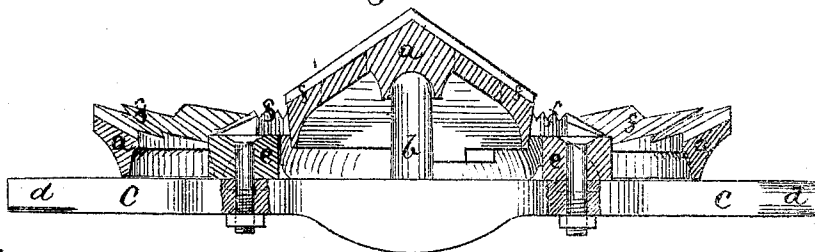
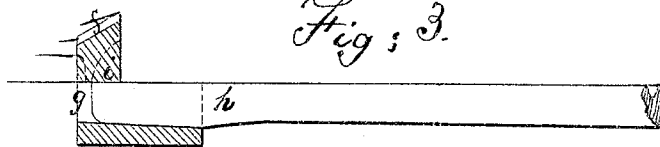


Fig: 3.



Inventor.

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Witnesses.

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UNITED STATES PATENT OFFICE.

WATSON SANFORD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. 121,733, dated December 12, 1871.

To all whom it may concern:

Be it known that I, WATSON SANFORD, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Stove and Furnace-Grates; and do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view; Fig. 2, a vertical section; and Fig. 3, a section of the socket and holder.

My improvements consist: First, in making the central section of the grate of conical or tapering construction until its incline or slope reaches that of the next ring, when the same angle of face is continued until the outer ring is reached, at which point the incline or slope is in the other direction to the outer edge of the grate, and in an independent section, arranged as set forth. Second, in corrugating or serrating the upper face of the grate surface. Third, in constructing the socket retaining the holder for raking in such a manner that when the grate is tipped such holder will detach itself readily to permit of the grate being fully dumped of its ashes and fire, if required.

a is a circular grate, placed upon a swivel-pin, *b*, at the center of the cross-bar *c*. This cross-bar is supported by trunnions at *d* to permit of the grate being turned and dumped of its contents. The central section of the grate is made independent or separate from the other portion, and on its upper face in a conical or tapering form, said face being at the same angle or pitch as the adjoining ring fixed stationary on the cross-bar, thereby forming a continuous declination. The face of the outer ring pitches in an opposite direction or inward. This central section and the outer section move simultaneously in one direction. As the fire burns down or the grate is shaken of its ashes the fuel will more readily spread over the surface of the grate toward the extreme edges, and cause, by the operating of these parts and their formation, to more readily break the clinkers and ashes, and

thereby giving to the fuel a better opportunity for obtaining a supply of air and admitting of a better radiation of the heat generated. *f f* are angles or saw-teeth placed upon the face of the grate-surface. Such serrations, it will be perceived, are not arranged on the parts so as to present a cutting-edge running in one direction all the way round each section, but after running in one direction a short distance they face the opposite way, and so on alternately. There is, therefore, a constant cutting and breaking up of the clinkers and ashes in the moving of the grate to and fro. *g* is the socket, in which is placed the holder *h*, used to tip the grate. By constructing the upper portion of the socket *g* with a side, *i*, projecting but a small distance out from the bottom of the socket, the rest of the upper side being uncovered, the holder will relieve itself more readily on the grate being dumped down in a forward direction a short distance, as the end of the holder then begins to bear against the rear end of the socket, and, meeting with little resistance on the upper side, turns completely out of it.

With this construction the holder does not interfere with but facilitates the ready dumping of the grate.

I claim as my invention—

1. The conical or tapering center piece, together with an outer and a central ring, when all are constructed and arranged so that the center piece and middle ring slope and form a continuous declination in an opposite direction to the outer ring, substantially as described.

2. The angled or saw-edge grate-surface when the serrations run in opposite directions a short distance alternately, substantially as described.

3. The socket *g*, constructed and arranged with the upper side nearly uncovered so as to enable the holder to be more readily released therefrom in the act of dumping, substantially as described.

WATSON SANFORD.

Witnesses:

A. B. MALCOMSON, Jr.,
JAMES H. HUNTER.

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