

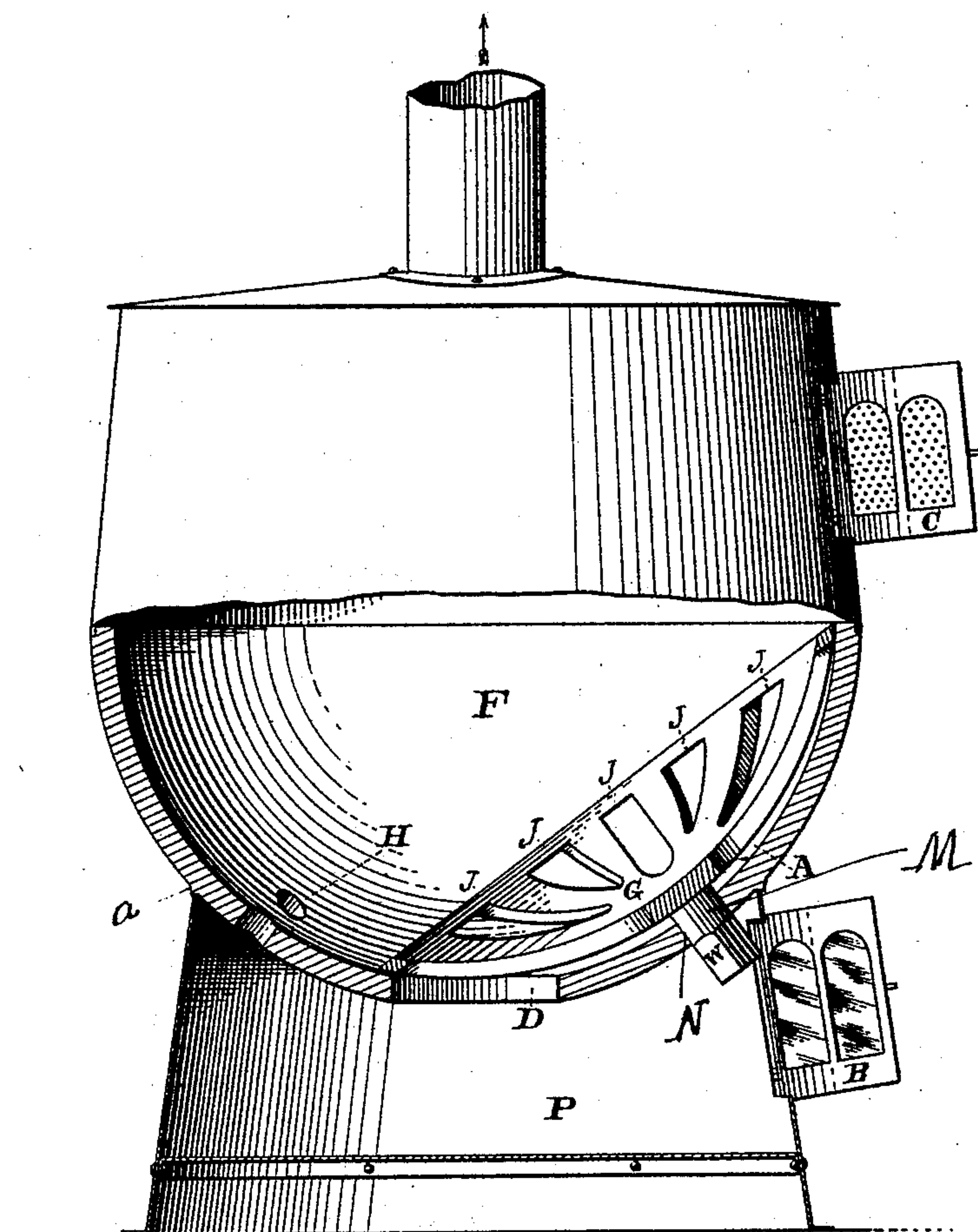
(No Model.)

L. MERRIMAN.

GRATE.

No. 285,425.

Patented Sept. 25, 1883.



Witnesses;

C. F. North  
E. P. King

Inventor;

Lewis Merriman

# UNITED STATES PATENT OFFICE.

LEWIS MERRIMAN, OF BELOIT, WISCONSIN, ASSIGNOR OF ONE-HALF TO  
JAMES H. REIGART, OF SAME PLACE.

## GRATE.

SPECIFICATION forming part of Letters Patent No. 285,425, dated September 25, 1883.

Application filed March 7, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS MERRIMAN, a citizen of the United States, residing at Beloit, in the county of Rock and State Wisconsin, have invented certain new and useful Improvements in Grates; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereof, making a part of this specification.

The drawing represents a side elevation of the device, partly in section.

My invention has for its object the complete combustion and consumption of coal, and is specifically suited for stoves, locomotives, stationary boilers, and other like mechanisms for burning soft coal; and it consists of a fire-box, preferably of hemispherical form, in which a grate is diagonally set, so that as the grate is rotated the fresh fuel will be caused to gravitate toward the bottom of the box, while the incandescent coals will be raised toward the top of the mass, whereby the gases will be consumed within the box, and comparatively little smoke escape therefrom, all as hereinafter particularly described, and then specifically defined by the claim.

In the accompanying drawing, the letter F indicates the fire-pot or box, of any suitable form, but preferably of hemispherical form, formed with an opening, D, in its bottom, for the discharge of ashes, and provided with holes H for the admission of air to aid in combustion, and provided with a door, C, for the introduction of fuel, which door may be perforated, and also with a door, B, for the removal of ashes from the ash-pit P, and, further, with an escape-flue at its top. Within the pot there is placed concave or dish-shaped grate G, which is provided with radial openings J, extending from near its center to near its rim, and with a pin, M, which passes through an opening, N, to the outside of the

pot, where it is provided with a square or shouldered end, W, for the attachment of a crank-arm to revolve the grate.

The grate is set obliquely across the pot, as shown, at an angle of about forty-five degrees, (more or less,) so as to cover the discharge-opening D and leave a space, A, between its under side and the side of the pot for the admission of air, and for the passage of ashes to the discharge-opening. The pot is provided, exteriorly, with a flange, a, which will fit around the top edge of the wall of the ash-pit, so as to hold the pot thereto.

When the grate is rotated, the coal in contact therewith will revolve with it and partially slide upon it, so that the ashes will pass to the bottom, while the live coals will slide to the opposite side of the pot, leaving a space over the grate for the reception of fresh coal; and, if the grate be further rotated, the coals between it and the rear wall of the pot will be crowded upward, so that the whole mass will be leveled at its top. During the rotation of the grate, as specified, the fresh coals will be carried downward toward the bottom of the pot, mingling with the live coals. Its gases and smoke will rise upward and be, to a great extent, consumed within the pot, whereby fuel is economized and the caloric utilized to a very great extent.

What I claim is—

The combination, with the fire-pot F, provided with discharge-orifice D and draft-holes H, of the dish-shaped grate G, set obliquely therein, and provided with pin M, extending through the wall of the pot, whereby the grate can be rotated to bring the fresh charge of coal beneath the surface of the fire, substantially as described.

LEWIS MERRIMAN.

In presence of—

C. F. NORTH,  
E. P. KING.