

W. McCLAVE & J. A. PRICE.  
Stove-Grate.

No. 202,449.

Patented April 16, 1878.

Fig 2.

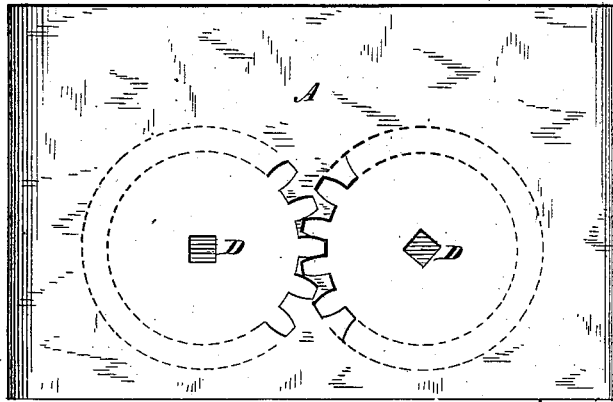


Fig 3.



Fig 1.

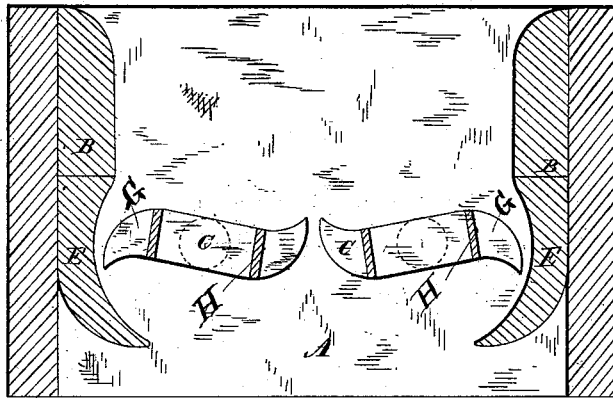


Fig 4.



Witnesses.

*Harry King*  
*Will. C. Johnston*

Inventors.—

*Wm. McClave*  
*John A. Price,*  
*By Hill & Ellsworth*  
*their attys.*

# UNITED STATES PATENT OFFICE.

WILLIAM McCLAVE, OF PITTSBURGH, AND JOHN A. PRICE, OF SCRANTON, PA.

## IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. 202,449, dated April 16, 1878; application filed February 21, 1878.

### *To all whom it may concern:*

Be it known that we, WILLIAM McCLAVE, of Pittston, and JOHN A. PRICE, of Scranton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Stove-Grate; and we do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse section of our improved grate. Fig. 2 is an end view, showing the gearing by which the grate is operated. Fig. 3 is a perspective view of the two grate-sections, one end being broken off.

Similar letters of reference in the accompanying drawings denote the same parts.

Our invention has for its object to improve the construction and operation of reversible stove and other grates, whereby their efficiency is greatly increased; and to this end it consists, first, in constructing the grate-sections of grate-bars having the same contour on each side, and connecting them together by longitudinal strips, so that when turned over they shall present like surfaces to the fire above.

It also consists in adapting two horizontal grate-sections of such construction to be reversed in the stove or furnace by means of gear-wheels attached to their journals, so as to present the same surface to the fire at each complete revolution.

It also consists in curved plates, fingers, or grates secured to the furnace or stove below the fire-bricks, in combination with the two reversible grate-sections, for the purpose of holding back the contents of the fire-chamber at the sides while the grate-sections are being reversed.

It also consists in the form and construction of the grate-bars, whereby their tendency to warp under the action of the heat is compensated for at each reversal of the grate-sections.

In the accompanying drawings, A represents a stove or furnace, having the fire-brick B upon the sides, and C C are the grate-sections, each constructed with ~-shaped grate-bars G, connected by the longitudinal strips H, so as to present the same grate-surface on each side. Both sections are journaled in the ends of the stove or furnace, with the ends of

the grate-bars G lying opposite each other, a short distance apart; through the center of the stove. Outside the stove, or between the stove-plate and a box-frame, they are connected by pinions or gear-wheels D D, and at the opposite end one of the journals is squared to receive a crank-handle for turning them.

E E are curved plates, grates, or fingers, secured to the sides of the stove beneath the fire-bricks B B, and extending downward below the outer edges of the grate-pieces, and projecting toward each other from opposite sides. These parts serve to hold back the contents of the fire-chamber at the outer edges when the grates are reversed.

We are aware that a vibrating grate has been hung within a concave or angular recess of a stove to prevent the fire from dropping down when the grate is vibrated on its journals; but this we do not regard as within the scope of our invention.

To operate our improved grates, the handle is turned partly around, causing the pinions to turn the grates so as to open downward at the center, thereby moving away from the fire, and obviating any considerable disturbance of the fire above. This discharges the clinkers and ashes at the bottom of the fire into the ash-pit below, while the outer edges of the grates rise and move inward to cut off the clinkers, &c., from the fire above, and, coming together at the center, form a grate-surface like that turned down. By this means every reversal of the grate-sections cuts off the fire and supplies a grate-surface of the same form for the fire above.

The grate-bars may be made wedge shape in cross-section, if desired, in which case a single pattern may be used for molding; or they may be so made as to require the use of a divided pattern. Any form of grate-bars, however, may be used, accordingly as taste or economy of construction may suggest.

It is well known among stove-manufacturers that the great heat given out during the combustion of anthracite coal will sooner or later warp the grate-bars, and so injure and eventually destroy them; and it is also well known that the direction taken by the warping of the bars is toward the fire. To overcome or avoid this difficulty, we propose to construct the

grate-bars G of the transverse form shown in Fig. 4, employing a divided or two-part pattern for molding. By this means the thick central part of the bars resist the tendency of the thin portions to spring upward, and, as each side of the grate is alternately presented to the action of the fire, the tendency of the grate-bars to warp is entirely overcome.

Having thus described our invention, what we claim as new is—

1. The revolving grate-sections, constructed with ~-shaped grate-bars, connected by longitudinal strips, substantially as described.

2. The combination, in a stove or furnace, of the two grate-sections, constructed, as described, of the ~-shaped grate-bars, connected together, and adapted to be reversed by gear-wheels attached to their journals, so as to pre-

sent like surfaces to the fire above at each complete reversal, substantially as described, for the purpose specified.

3. The curved plates, grates, or fingers, combined with the two reversible grate-sections, substantially as described, for the purpose specified.

4. The revolving grate-sections, constructed with ~-shaped grate-bars, connected by longitudinal strips, and made in cross-section, substantially as shown in Fig. 4, for the purpose specified.

WM. McCLAVE.  
J. A. PRICE.

Witnesses:

JOHN BARCLAY,  
WM. J. DAVIES.