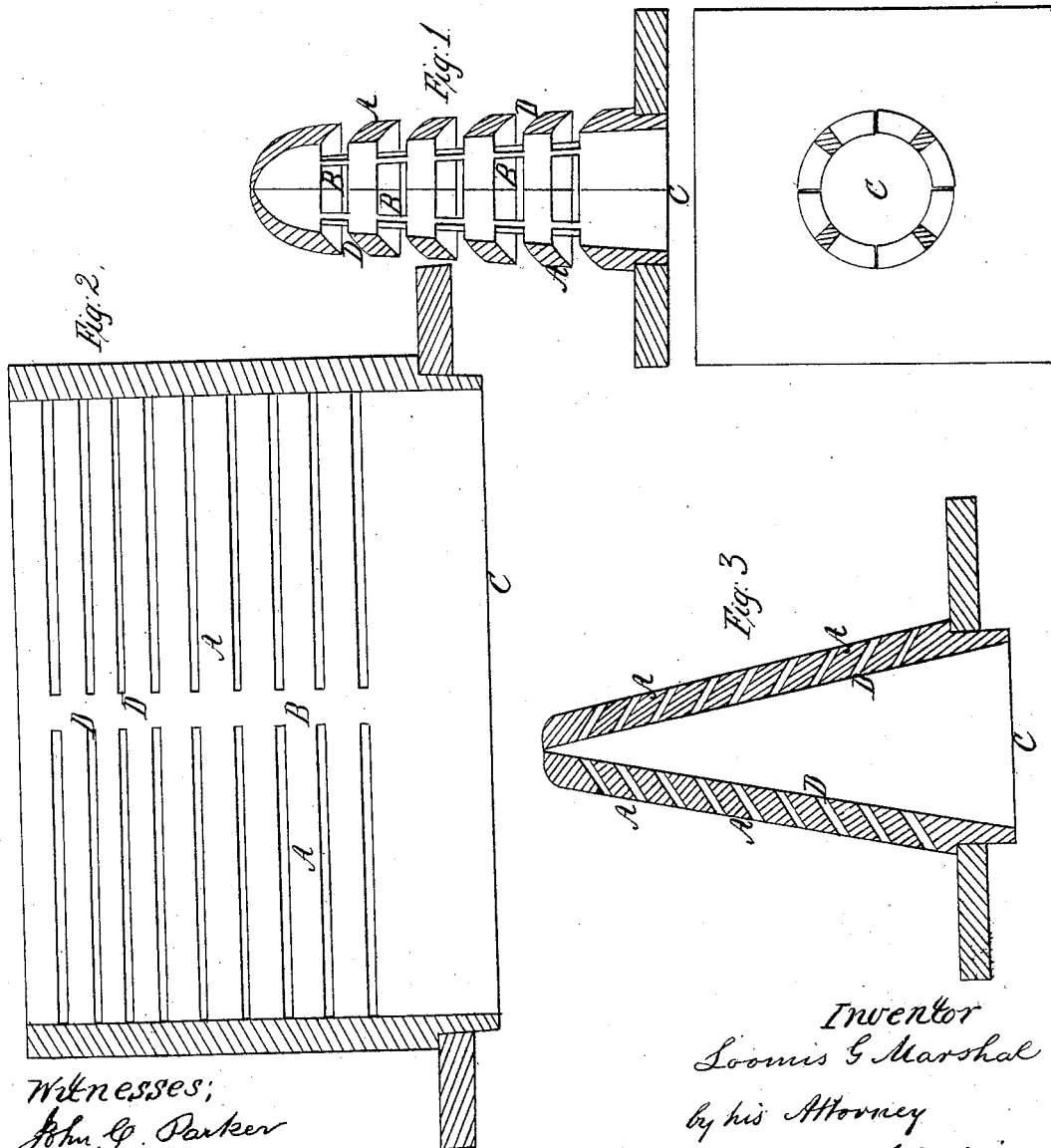


L. G. Marshall,

Furnace Grate.

N^o 45,948.

Patented Jan. 17, 1865.



Witnesses;
John G. Parker
J. Harper Day

Inventor
Loomis G. Marshall
by his Attorney
J. Franklin Reigart

UNITED STATES PATENT OFFICE.

LOOMIS G. MARSHALL, OF MOKENA, ILLINOIS, ASSIGNOR TO HIMSELF AND
F. W. HUGHES.

IMPROVED GRATES.

Specification forming part of Letters Patent No. **45,948**, dated January 17, 1865.

To all whom it may concern:

Be it known that I, LOOMIS G. MARSHALL, of Mokena, Will county, State of Illinois, have invented new and useful Improvements in Cone-Shaped Grates for Burning Coal-Dust; and I do hereby declare the following to be an exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention is the slats or bars of a conical or angular shaped grate, made to incline downward from the center, having a plate or base, with an aperture in the bottom, to allow the draft to pass upward and effectually burn coal-dust.

Figure 1 represents a sectional view of the hollow cone with its aperture underneath. Fig. 2 represents a side section of the angular-shaped grate. Fig. 3 represents a sectional end view of the angular shaped grate, showing the slanting bars or slats.

I make the grate an upright one, of cast-iron, either angular-shaped or conical, and when conical I use a series of cones in the fire-place of a furnace, engine, or stove; for the purpose of burning coal-dust.

I form the grates of slats or bars A A, sloping or inclining from the inside or center of the grate, to the outside, with intermediate stays, B B, to effectually prevent the coal dust from choking up the grate or falling through between the bars, while the aperture C at the

bottom plate or base admits the free access of air and a clear draft through the center of the grate, whose spaces D D, between the bars A, form downward slopes, so that the coal-dust cannot pass through, but must all be consumed in the fire-place.

Heretofore the coal-dust has filled up the draft holes or spaces of the grates, and the coal-dust fell through below or choked up the grates, without having sufficient draft to make the fire or keep it going, and the coal-dust, when burning, giving out, as it does, a greater flame than in lumps, soon destroys the grates, that are perpendicular bars and stationary, and the grate of one stove not fitting to any other stove makes the stove useless.

My grates are movable and made to suit any kind of a stove or fire-place, either round or square.

I am well aware that cone-shaped and cylindrical grates with holes have been used, but these I do not claim as my invention; therefore

What I claim as my invention, and desire to secure by Letters Patent, is—

A conical or angular shaped grate formed of bars sloping from the inside to outside, as herein described, and for the purposes set forth.

LOOMIS G. MARSHALL.

Witnesses:

GUY E. FARQUHAR,
IVANHOE S. HUBER.