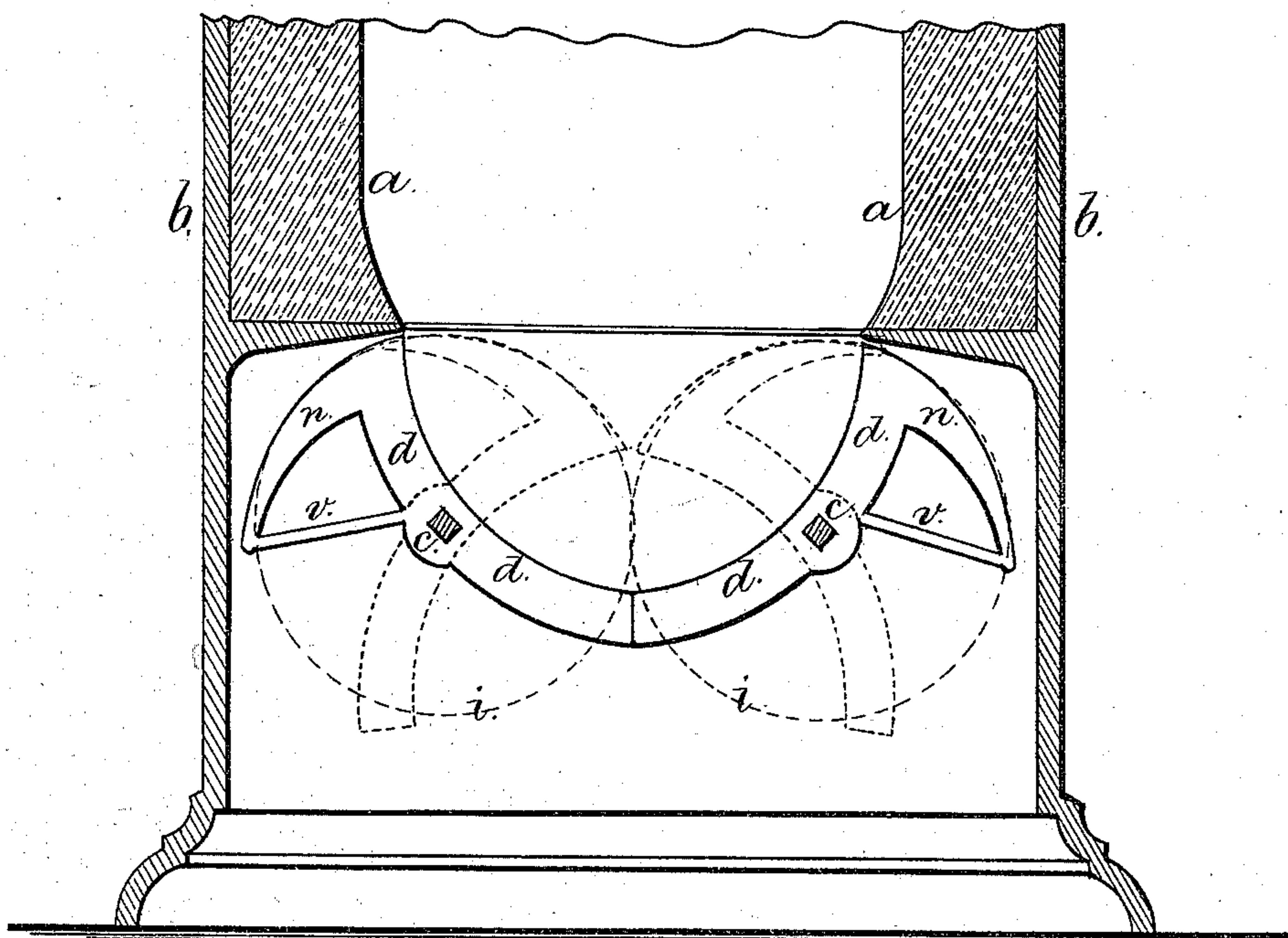


S. SMYTH.
Grates.

No. 143,856.

Patented Oct. 21, 1873.



Witnesses

Chas. H. Smith
Geo. T. Pinckney

Inventor

Samuel Smyth
per L. W. Perrell

att'y.

UNITED STATES PATENT OFFICE.

SAMUEL SMYTH, OF EAST BRIDGEWATER, PENNSYLVANIA.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. **143,856**, dated October 21, 1873; application filed July 19, 1873.

To all whom it may concern:

Be it known that I, SAMUEL SMYTH, of East Bridgewater, in the county of Susquehanna and State of Pennsylvania, have invented an Improvement in Grates for Stoves, Furnaces, &c., of which the following is a specification:

In Letters Patent granted to me June 24, 1873, No. 140,224, a grate is shown containing projections that pass through the fuel and support the same as the grate is revolved, and in so doing any clinker or foreign substance is removed and delivered into the ash-pit. My present invention is designed to accomplish the same purpose, but the means are different.

I make use of two swinging grates that, in a normal position, sustain the fuel and allow the fire to burn in the usual manner. When the fire is to be relieved of clinkers or slate the grates are partially revolved so as to close together above such foreign substances and open below them, thereby allowing them to fall out, but sustaining the fire in either position.

In the drawing I have represented my improvement by a vertical section.

a represents the fire-bricks, and *b* the metallic casing, of my stove or furnace, to which this improvement may be applied. *c c* are shafts running across the ash-pit and carrying the grate-bars *d d*, which may be cast together

or as separate bars threaded upon the shafts *c c*; and there are the usual openings between one bar and the next, so that the fire can be raked. Each grate is composed of the bars *d d*, that are concave, so that when set together in the form shown in the drawing they form nearly a semi-cylindrical basin for the fuel. The curved ends or *L*-pieces *n* to the grate are ordinarily below the grate, as shown; but when the bars *d* are partially revolved to shut the grate together in the upper part and open the under part, then these portions *n* are turned beneath the fuel, and the coal is sustained upon them until the bars *d* are turned back to place and the fuel falls down upon them. The shafts *c c* may be operated with one lever; but, when desired, they can be rotated simultaneously by connecting gearing, shown in dotted lines at *i i*. The braces *v v* may be applied to the respective grate-bars to strengthen them.

I claim as my invention—

The two-part grates *d* with the curved bars *n*, and each sectional grate mounted on a separate shaft and capable of being rotated, as and for the purposes set forth.

Signed by me this 16th day of July, A. D. 1873.

SAMUEL SMYTH.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.