S. SMYTH.

Stove-Grates.

No. 140,224. Patented June 24, 1873.

Fig. 1

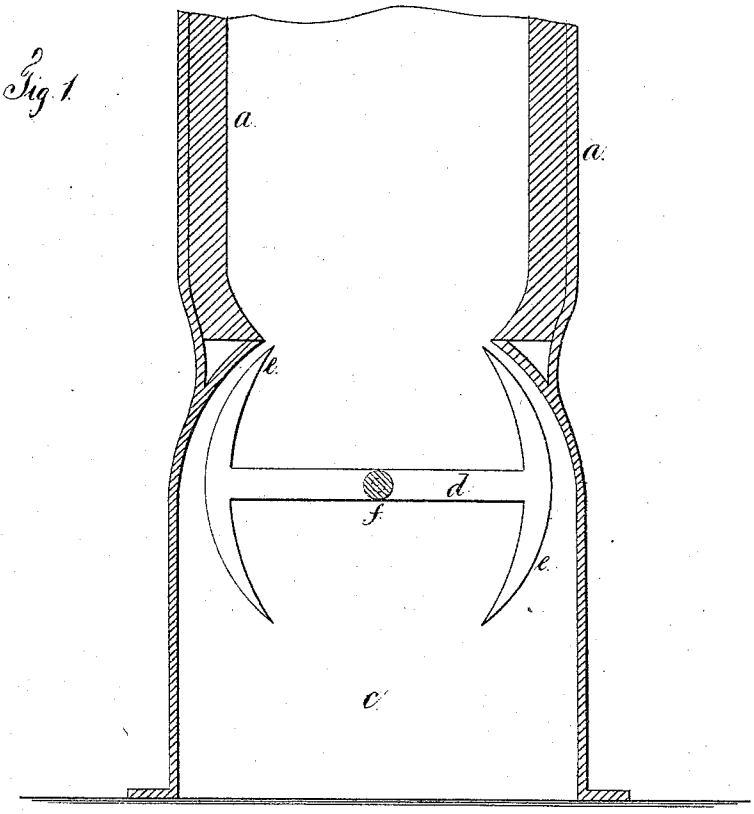
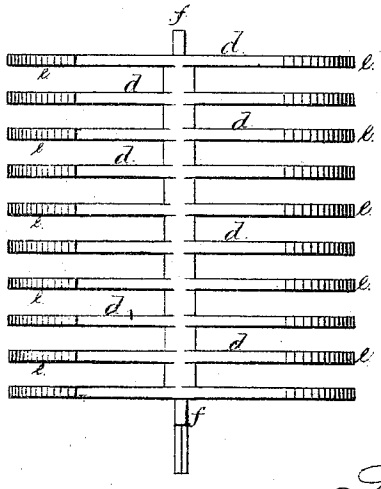


Fig 2



Witnesses

Chas. H. Smith

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atty.

UNITED STATES PATENT OFFICE.

SAMUEL SMYTH, OF EAST BRIDGEWATER, PENNSYLVANIA.

IMPROVEMENT IN STOVE-GRATES.

Specification forming part of Letters Patent No. **140,224**, dated June 24, 1873; application filed April 12, 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 a Grate for Stoves and Furnaces, of which the following is a specification:

The object of this invention is to allow the ashes and clinkers to be removed from beneath a fire in a stove or furnace without risk of extinguishing the fire. The invention consists of a grate composed of straight horizontal bars with segmental bars at the ends, projecting an equal distance above and below the straight bars. This grate is mounted upon trunnions, or a shaft at the ends of the horizontal grate, so that it may be revolved in either direction, and as it is revolved the side bars pass between the consumed and unconsumed portions of the contents, and by the further movement the ashes and other refuse are carried below and fall into the ash-pit, while the body of fire is held up by the side bars until the grate has nearly completed a half revolution, when the fire falls upon and is again supported by the horizontal grate-bars.

In the drawing, Figure 1 is a cross-section of the grate within the stove or furnace, and Fig. 2 is a plan of the grate detached.

a a are the sides of the fire-pot of the stove or furnace that are contracted toward the top of the segmental bars *e*, and *c* is the ash-pit. The horizontal part of the grate is made of the straight bars *d* that are connected together at their centers by or in line with the shaft *f*, and are provided at their ends with the segmental bars *e* extending in both directions. The segmental bars *e* and bars *d* together form baskets, and the lower part of the fire is held in the upper basket, and the grate may be used either side upward. The grate is mounted upon the trunnions or axis *f*, so as to be revolved. The exterior edge of each of the segmental bars *e* is nearly that of an arc of a circle, and their ends are sharp, so that they penetrate the ashes and clinker readily.

It will be seen that if the grate is partially revolved until the bars *d* are vertical, the segmental bars *e* will then be under the fire-space and will support the fire, and the further revolution allows the ashes previously separated from the fire by the bars *e* to fall away, and as the bars *d* reach the horizontal position the fire falls upon the bars *d*, as before.

I claim as my invention—

The horizontal bars *d* upon the shaft *f*, and provided with the segmental end bars *e*, in combination with the fire-pot contracted near the upper ends of the bars *e*, substantially as and for the purposes set forth.

As, witness my signature this 7th day of April, A. D. 1873.

SAMUEL SMYTH.

Witnesses:

BYRON O. CAMP,

A. H. MCCOLLUM.