

(No Model.)

J. T. SNYDER.

GRATE.

No. 300,522.

Patented June 17, 1884.

Fig. 1.

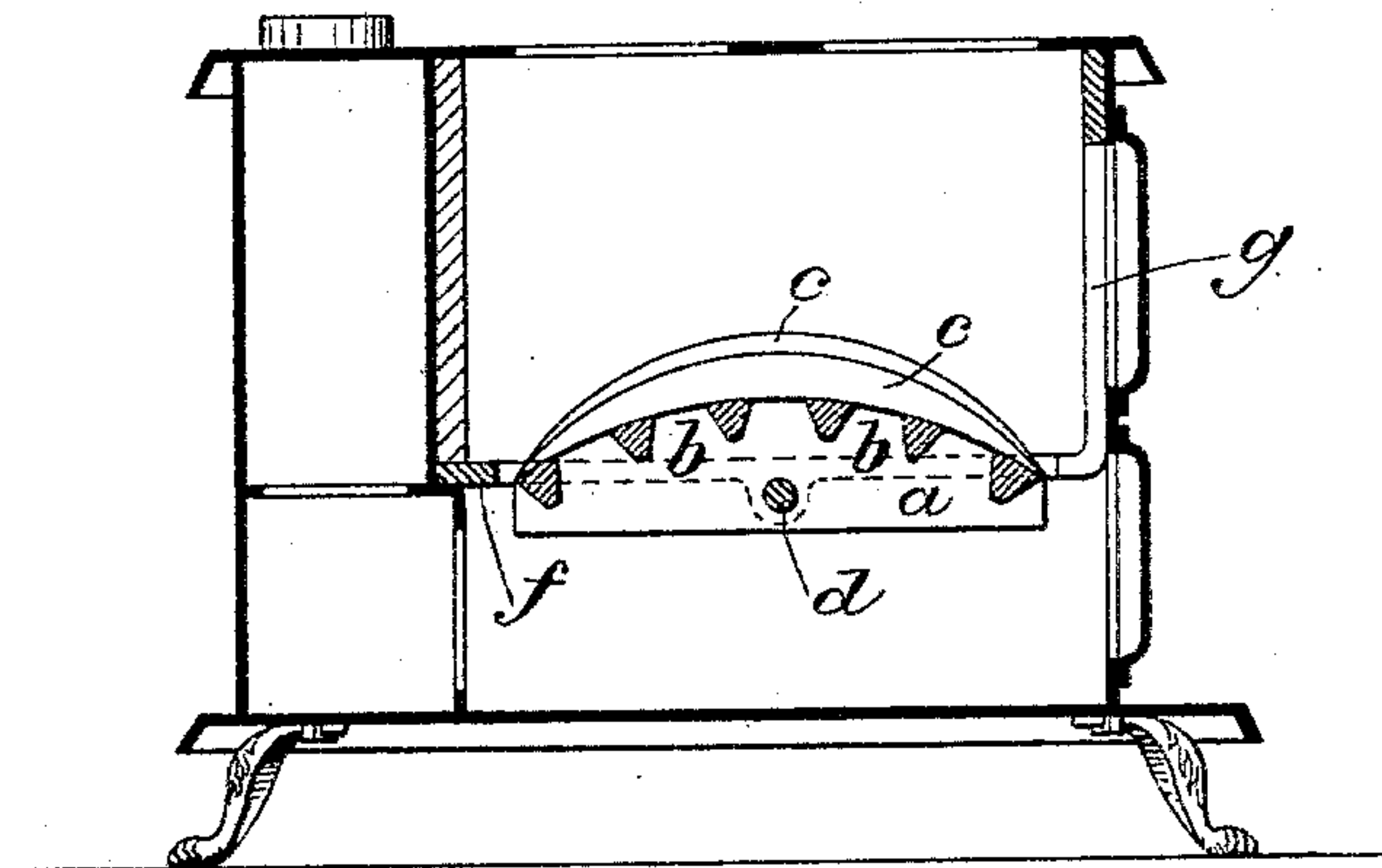


Fig. 2.

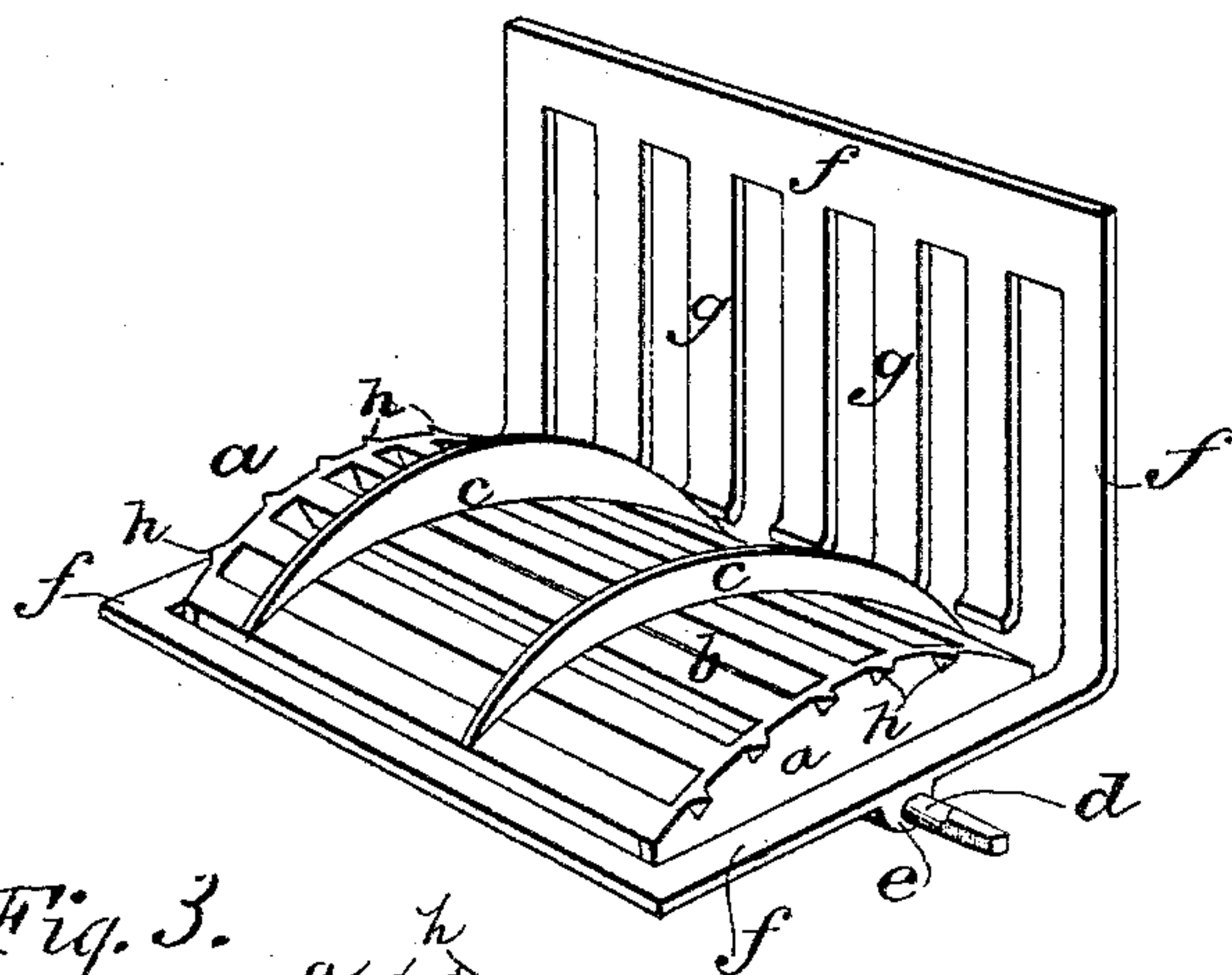
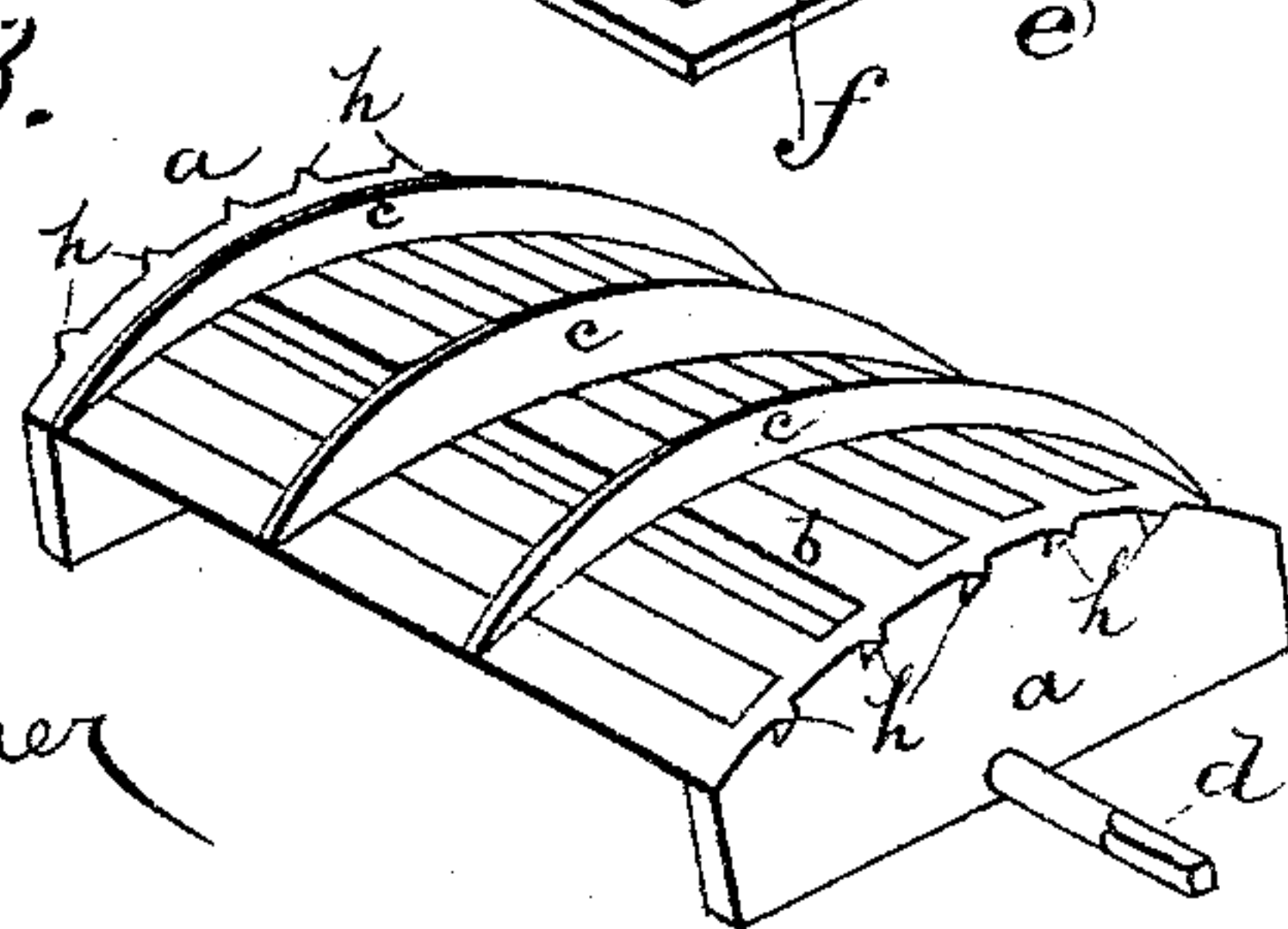


Fig. 3.



WITNESSES:

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JOHN T. SNYDER, OF LUZERNE, PENNSYLVANIA.

GRATE.

SPECIFICATION forming part of Letters Patent No. 300,522, dated June 17, 1884.

Application filed June 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SNYDER, of Luzerne, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Grate, of which the following is a full, clear, and exact description.

My invention relates to grates for stoves and furnaces, and has for its object to provide a grate capable of clearing the fire of clinkers automatically by the rocking of the grate on its bearings.

The invention consists in a grate of arched-top form, and having diagonally-positioned clinker-removing bars or sweeps secured above the grate-bars, said sweeps being preferably higher at the center than at the side edges of the grate, and also of increasing heights from one end of the grate to the other, or from the center to both ends, for better action on the clinkers, and the ends of the grate have projecting spurs or teeth for clearance of the fire at the ends of the fire-chamber or furnace, the whole making a simple and complete device for its purpose, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a cook-stove, showing my improved grate in end view. Fig. 2 is a perspective view of the grate set in its frame and removed from the stove or furnace; and Fig. 3 is a modification of the grate, showing it removed from its frame.

The grate is built up of end bars or plates, *a a*, of arched form at the top, and connected together by casting or bolting by the grate-bars *b*, over and to which, at the top and diagonally, I fix the clinker-sweeps *c*, which are preferably curved in a shorter radius than the arch top of the grate-bars, so that the sweeps *c* will be wider or higher at the center and tapered quite down to the grate at its side edges; and I propose to make the sweeps from one end of the grate toward the other end successively lower at the crown or center, as shown in Fig. 2; or the sweeps may be made successively lower from the middle to the ends, as shown in Fig. 3.

The axis or rock-bar *d* of the grate may pass

along beneath its top from one end plate, *a*, to the other, or may consist of a pin or stud projecting from each end plate, one end of the bar *d* being squared to receive any suitable lever or bar by which to rock the grate in or on its bearing *e* in its frame *f*, which frame is here shown of angular form, with the front grate-bars, *g*, of the fire-chamber formed on or secured to it; but my improved grate may have any suitable frame and setting as its particular size and use may require.

At the ends of the grate I form upon or secure to it the projecting teeth or spurs *h*, which overhang the end plates, *a*, over the space between these plates and the frame *f*.

The operation is as follows: As the grate is rocked on its axis *d*, the fire settles down by the passage of the fine ashes through the grate-bars *b*, and as the hard clinkers settle on the bars *b* the sweeps *c* tend to gradually carry them toward the edges of the grate, the sweeps acting somewhat after the manner of a screw-conveyer in urging the clinkers forward toward the ends and sides of the grate—the ends more particularly—where the clinkers are caught by the spurs *h* and crushed and thrust down through the space between the end plates of the grate and the frame to the ash-pit below, the arched form crosswise of the grate, together with the taper of the ends of sweeps *c*, facilitating the discharge of ash and clinker from the sides of the grate.

It is evident that the sweeps *c* would act well were they all of one height at the center; but by making them successively lower, as above described, a better effect is secured in moving large masses of clinker toward the end of the grate; and I may also use as many of the sweeps *c* along the grate as desired, depending on the size of the grate and the nature of the furnace in which it is set and the kind or size of fuel used.

My improved grate is thus easy to construct, is operated in the usual manner of rocking grates, and by automatically freeing the fire of clinker promotes a better regulation of the fire and a more economical use of fuel.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A rocking grate having the upper surface of its grate-bars provided with diagonal bars

projecting above the same to form clinker-sweeps, substantially as herein described.

2. A grate constructed with an arched top of ends *a* and bars *b*, and fitted diagonally with the clinker-sweeps *c*, substantially as shown and described.

3. The combination, with the grate *a b*, of clinker-sweeps *c*, ranging diagonally across the grate, said sweeps being tapered toward the ends, substantially as shown and described.

4. The combination, with the arched top grate, *a b*, of clinker-sweeps *c*, varying successively in height at the crown toward the end or ends of the grate, substantially as shown and described.

5. The combination, with the arched top grate, *a b*, fitted with clinker-sweeps *c*, of the end spurs, *h*, substantially as shown and described.

6. A grate constructed with arched top of ends *a* and bars *b*, clinker-sweeps *c*, rock-shaft or axis *d*, and end spurs, *h*, substantially as shown and described.

JOHN T. SNYDER.

Witnesses:

JOS. E. LAMPHEAR,
ELAULIN BEARD.