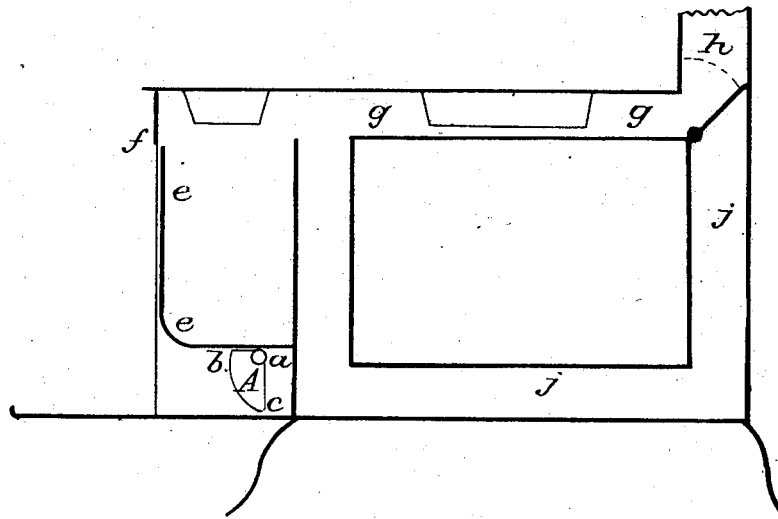


J. DUTCHER.

Grate.

No. 822.

Patented June 30, 1838.



UNITED STATES PATENT OFFICE.

JOSIAH DUTCHER, OF NEW YORK, N. Y.

MODE OF RAISING AND LOWERING THE GRATES OF STOVES.

Specification of Letters Patent No. 822, dated June 30, 1838.

To all whom it may concern:

Be it known that I, JOSIAH DUTCHER, of the city of New York, in the county and State of New York, have invented an Improvement in the Mode of Raising and Lowering the Grates of Stoves for the Burning of Coal or other Fuel; and I do hereby declare that the following is a full and exact description thereof.

10 The object in view is to graduate the height of the grate so as to adapt its position to the burning of different quantities of fuel, and to cause it to approach near to, or be removed from, such cooking utensils as
15 may be placed above it.

The apparatus by means of which I raise, or lower the grate consists of two cams upon a shaft which crosses the stove under the grate; each end of the grate resting
20 upon one of these cams, so that by turning the shaft by means of a winch, the desired effect may be produced. The grate may be used in stoves of various kinds, either with or without ovens, the particular construction of the stoves being so varied as to adapt
25 it to the raising grate.

The accompanying drawing represents a vertical section of a stove, from front to back, having an oven behind the grate, with
30 flues surrounding it, as in many other stoves.

A, is one of the cams for raising the grate; this cam I make in the form of one quarter of an oval; *a*, being the center, or shaft upon which it turns. By revolving
35 this shaft it may be made to rest upon the points *b*, or *c*, the length of the quadrant

being such as is equal to the greatest rise required, and these different elevations being all that will be found requisite for useful purposes. The bottom edge *d*, of one
40 end of the stove is shown as resting on one of the flat sides of the cam; *e*, *e*, are the grate bars, the upper portion of which pass up behind the front plate, or breast of the stove
45 *f*, when it is raised, thus insuring the passage of the draft through the coals. Cooking utensils are placed over the fire in the ordinary way; *g*, *g*, is a flue above the oven leading directly to the smoke pipe *h*; when
50 the damper *i*, is placed in the position represented in the drawing, the draft passes in this direction, but when it is raised it closes the flue *g*, *g*, and passes around the flue *j*, *j*,
at each end of, and under the oven.

What I claim as my invention is—

The raising and lowering of the grate by means of cams upon a revolving shaft, which cams are one quarter of an ellipsis, or oval, and operates in the manner herein described.
60

It is distinctly understood that I do not claim to be the first who has made a grate to raise and lower, this having been done by racks and pinions; chains and weights, and in other modes.
65

I claim only the manner of effecting this as devised and described by me.

JOSIAH DUTCHER.

Witnesses:

LINTON THORN,
C. M. WILTBERGER.