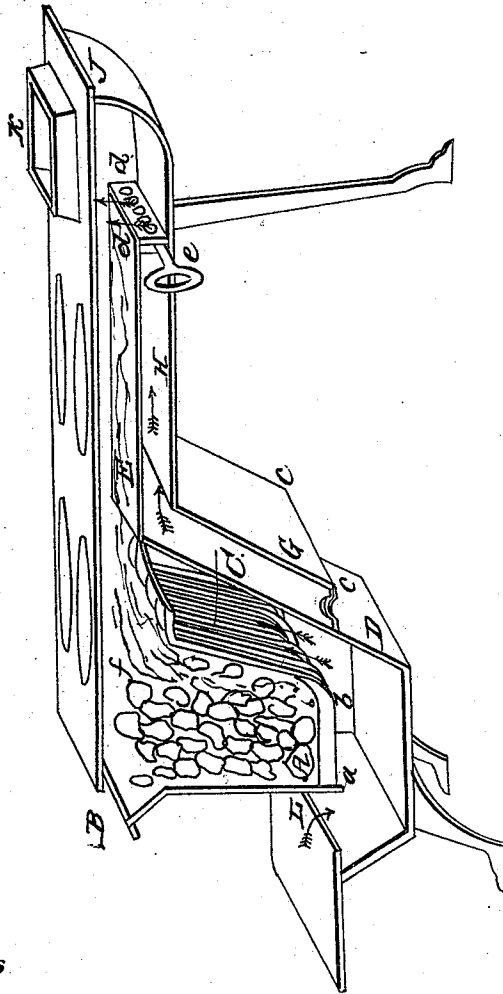


S. T. SAVAGE.
Cooking Stove.

No. 19,796.

Patented March 30, 1858.



Witnesses

E. J. ...
Chas. ...

Inventor.

S. T. Savage

UNITED STATES PATENT OFFICE.

S. T. SAVAGE, OF ALBANY, NEW YORK.

STOVE.

Specification forming part of Letters Patent No. 19,796, dated March 30, 1858; Reissued December 18, 1866, No. 2,425.

To all whom it may concern:

Be it known that I, SILAS T. SAVAGE, of the city of Albany, State of New York, have invented a new and useful Improvement in the Construction of Stoves for the Burning of Bituminous Coal; and I declare the following specification, with the drawings here-
to annexed as part thereof, to be a full and perfect description of the same.

10 The object of my invention is to accomplish in stoves for the burning of bituminous coal the following results. 1. The regulation and control of the quantity of fuel to be kept in ignition at any one time. 2. The
15 preparation or coking of the fuel preparatory to combustion. 3. The combustion as far as may be of the unconsumed gases and fuliginous matters that pass over from the fire chamber into the flues.

20 The figure in the drawing represents the body of a cooking stove, of a form well known, with the right hand side plates removed to show its interior arrangements.

The fire chamber A has a close front and
25 sides, with a feeding door at B. The grate C is placed in reverse of the usual position, that is, with the open bars in the rear, leaving an air space between them and the back plate D of the fire-chamber, the coal lying
30 between the grates and the front plate of the stove. The bottom of the grate is solid for some inches from *a* to *b*, this space being regulated by the proportion of the mass of coal in the grate, that it is wished to keep
35 ignited at one time. The upper ends of the grate bars after curving or sloping upward and backward are at their tops bent short backward for (say) an inch or two and then terminated against the bottom plate E of
40 the flue.

The smoke exit flue is at K and in the drawing is meant to represent the flange for the adaptation of an elevated oven, for which kind of cooking stoves, this arrangement is very advantageously adapted.

Operation: The fire-box being filled with coal and ignited the draft of air is supplied through the hearth register at L, when (as shown by the feathered arrow) (»→) the air passes under the grate and up into the air channel, between the grate and the back plate, so through the grate bars creat-

ing an upright draft through the coal, operating in the line *b, f*, and producing an active combustion of the fuel lying between it and the grate-bars. Although the ignition of the coal will extend, as experience has fully shown, but little if any back of *b. f.* yet the heat of the burning coal will distil out from the mass of coal lying back of that line, for a couple of inches or more the bituminous matter and gas, coking and preparing it for burning when it is pressed forward next the grate-bars. This process burns up most of the fuliginous matter and gases in the fuel, nevertheless portions will escape highly heated but not inflamed. As these pass over the upper ends of the bars they encounter some of the air, which may not have been drawn within the grates from the air chamber, producing a further combustion of these matters, and almost wholly freeing the flue of them.

Although this my invention is peculiarly adapted and intended for the burning of bituminous coal, yet it is to be used for the consumption of any sort of fuel that can be used advantageously with the stove. It is also intended to be employed with any fuel consuming apparatus, such as boilers of steam boats or any analogous matters.

I am aware that stoves have been constructed with grates open all around, or basket wise, so as to use the radiant heat from the back of the fire for roasting or other cooking, but that arrangement does not affect either one of the objects of my invention as above stated, and I therefore disclaim any such construction or arrangement of grate and stove, but

I claim—

In furnaces or stoves the employment of a receptacle for the fuel, closed at front and partially at bottom, with open grate bars for a part of its bottom, and for the rear, opening into an air or draft chamber between them and the back plate of the fire chamber, substantially as described in the within specification, and for the purposes set forth therein.

S. T. SAVAGE.

Witnesses:

E. J. MILLER,
RICH. V. DE WITT.