

S. PIERCE.
Cooking Stove.

No. 112,377.

Patented March 7, 1871.

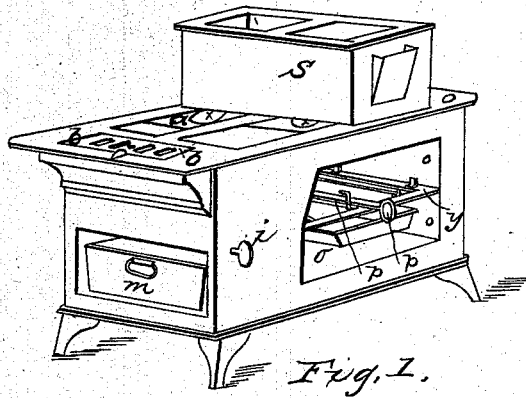


Fig. 1.

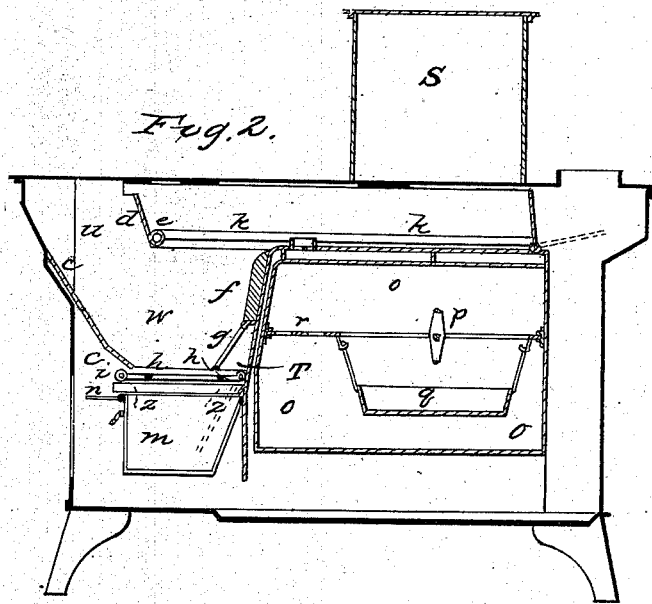


Fig. 2.

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Fig. 3.

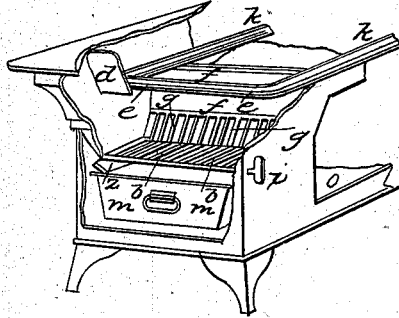


Fig. 4.

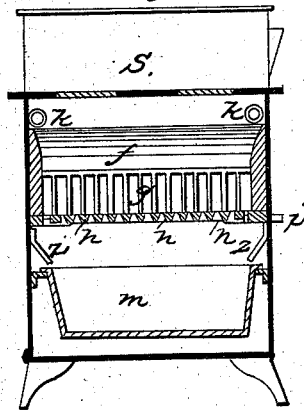
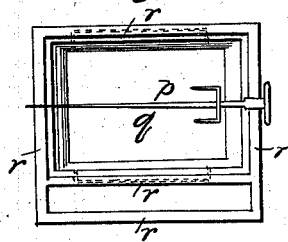


Fig. 5.



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SAMUEL PIERCE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 112,377, dated March 7, 1871.

To all whom it may concern:

Be it known that I, SAMUEL PIERCE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Cooking-Stoves, of which the following, when taken in connection with the accompanying drawing, is a full and exact specification.

Nature and Objects of the Invention.

My invention consists—

First, in the provision of certain top plates or covers, sliding back under a reservoir, as hereinafter described.

Second, in a coking-chamber or fuel-reservoir and a bridge to separate this from the gas-combustion chamber behind it, in combination with the main fire-chamber and with back and bottom grates adapted to cause an active combustion of the fuel at the rear part. This part of my invention is especially, though not exclusively, valuable for burning bituminous or soft coal.

Third, in a feeding-chamber and a register in the upper part thereof, combined with the fire-box, as hereinafter described.

General Description.

In the accompanying drawing, Figure 1 is a sketch of a stove embodying my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a sketch of a portion of the inside of the stove, showing the position of the ash-pan and flanges, the grates, the water-bridge, &c. Fig. 4 is a cross-section of the stove. Fig. 5 is a plan of the spit and its surroundings.

a a are sliding plates, (each with its cover *a*), sliding back under the reservoir *S* when desired. This is intended as a convenience in keeping the fire for a length of time, the method being to close all drafts and to push back the sliding plates *a a* as far as may be desirable. This is much better than the old method of leaving the covers partly off, as they are liable to fall back into place, and do not open in the best position. The water-reservoir *S* affords a convenient place beneath it for the reception of the plates *a a*.

m is the ash-pan, exactly beneath the grate, sliding in and out by means of grooves *n*, inclosed in the stove and concealed by the lower door.

Upon either side of and behind the ash-pan *m* are flanges *z*, projecting over the sides and back of the ash-pan, guiding the ashes and cinders into the ash-pan *m*. These flanges *z* effectually prevent any dirt or ashes from falling outside the pan.

o is the oven. *p* is a roasting-spit, resting in the shelf *r*, and suspended over the pan *q*, which is hung from hooks upon the shelf *r*. That part of the spit *p* which rests in the shelf *r* is square-shaped, and is fitted into the shelf *r*, so that the spit is kept firm in its place and cannot turn less than a quarter round.

w is the fire-box. *f* is the fire-brick, and *g* is a grate behind the fire.

I am aware that a grate has been arranged to take the place entirely of the fire-brick behind the fire. Such an arrangement would be fatal to my purpose. My grate extends about one-half the distance up from the lower grate, *h*. I thus obtain a draft from behind the lower part of the fire, the direction of the draft being from the rear to the front. To admit air at the upper part of the fire, as would be the case with an entire back of grate, would neutralize the effect entirely.

h is the lower grate, hinged at the back *T*, and held in place by means of the rod *i*. To let the grate *h* down, the rod *i* is drawn out, and the grate swings down in the direction indicated by the dotted lines in Fig. 2.

u is the feeding or coking chamber. *c* is a plate, forming a portion of the front of the fire-box *w* and extending up to the feeding-chamber *u*. *d* is the plate which forms the back of the feeding-chamber *u* and divides it from the fire-box *w*. *e* is a water-bridge attached to the rear side of the dividing-plate *d*. *k* is the pipe leading to the bridge *e*. *b* is the feed-door, opening at the top of the stove into the feeding-chamber *u*. *v* is a register in the feed-door *b*, through which air may be obtained.

In practical operation the bituminous coal is placed in the feeding-chamber *u* through the feed-door *b*, and as fast as may be necessary is pushed into the fire-box *w*. While the coal in the fire-box *w* is being consumed (the draft coming through the grates *h* and *g*) the coal in the feeding-chamber *u* is undergoing a coking process, and the gas and smoke produced from the coking coal, finding no other place of exit, are being drawn directly through

the bed of coal in the fire-box *w*, and are for the most part consumed. To insure a more perfect combustion of the smoke and gases, air may be let in through the register *v* to meet the gases over the burning coals in the fire-box *w*. By this means a more perfect combustion of the smoke and gases is obtained, and the great objections to bituminous or soft coal are removed.

I consider this arrangement as the most practical method ever known of combining a feeding-chamber with a fire-box.

Of course, anthracite or hard coal may be used in this stove, and the advantage of a feeding-chamber, as well as soft coal.

By means of the peculiar shape of the fire-box *w* the grate *h* can be let down and the cinders removed without disturbing the fire. The plate *c* and grates *h* and *g* can be all one piece and one casting, if desired.

When using the grate *g* the grate *h* may be dispensed with entirely, and a solid bottom inserted, without seriously injuring the draft.

The above-described arrangement of the feeding-chamber and fire-box can be applied to boilers or any other like heating apparatus.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The sliding plates *a a*, when arranged to slide under the reservoir *S*, as and for the purposes hereinbefore described.

2. The combination of the coking or fuel chamber *u*, the fire-chamber *w*, the hinge or deflecting plate *d*, the inclined or curved front plate, *c*, the rear grate, *g*, and the bottom grate, *h*, all constructed and arranged to operate as and for the purposes set forth.

3. The combination and arrangement of the fire-box *w*, feeding-chamber *u*, and register *v*, all constructed and arranged as and for the purposes hereinbefore set forth.

SAMUEL PIERCE.

Witnesses:

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