CHAMBERLAIN & CROWLEY.

Cooking Stove.

No. 91,520. Patented June 22, 1869.

Fig. 1,

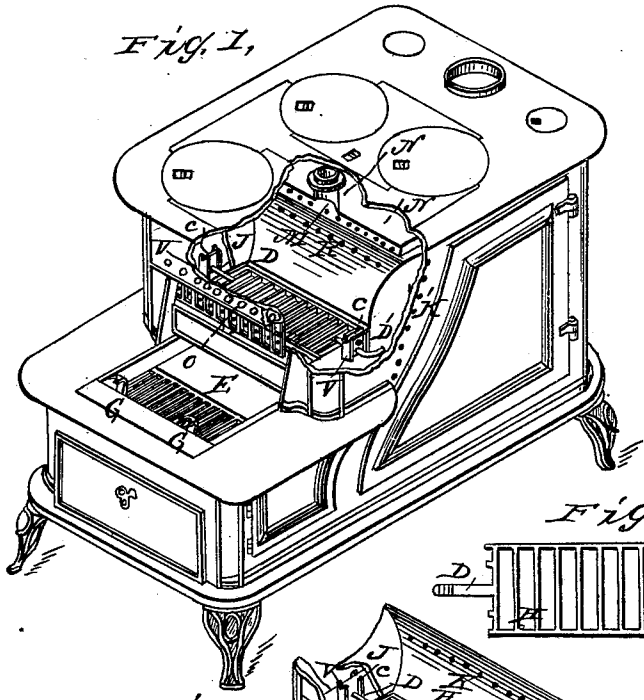

Fig. 5,

Fig. 2,

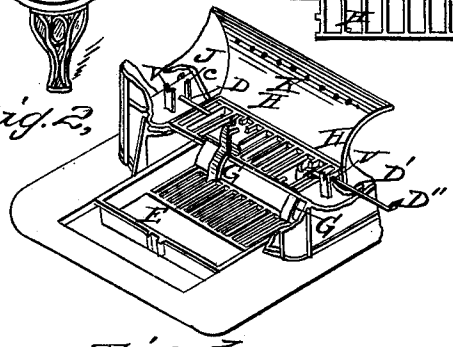

Fig. 3,

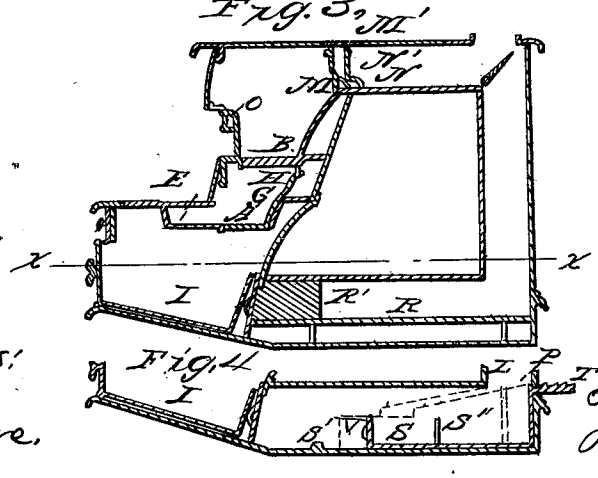

Fig. 4,

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United States Patent Office.

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Letters Patent No. 91,520, *dated June* 22, 1869.

COOKING-STOVE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, ADDIS E. CHAMBERLAIN and J. B. CROWLEY, of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a certain new and useful Improved Stove; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view of our improved stove, having a portion of the top torn away, so as to show our new mode of swinging and adjusting the grates.

Figure 2 is a perspective view of the front of the stove, showing the grates A and B adjusted.

Figure 3 is a vertical section through the centre of the stove, showing the plate R for limiting its draught.

Figure 4 is a vertical section of the part of the stove below the line *x x*, fig. 3, and showing the pan S.

Figure 5 is a plan of the grate B, showing the handle D′ and shoulders *f f* thereon.

The objects of our improvements are—

First, to provide a stove that will answer equally well for burning hard or soft coal, or wood.

Second, greater cleanliness in its use, together with a more convenient mode of removing the ashes from the front; both of which are accomplished by the adjustable swinging grates A and B.

Third, a new and improved apparatus for broiling.

Fourth, improved combustion, by the admission of air through the holes M.

In order that others skilled in the art may understand our invention, we will proceed to describe its construction and mode of operation.

B is the grate at the bottom of the fire-box. It rests by two rods or pins, D D, attached to its ends respectively, which pass through bearings in the pendants C C. Each of said pendants C C is suspended and swings loosely in a pair of standards, V V, by means of pins, portions of the pendants, in bearings in the top of the standards. One of the rods D is extended, so as to form a handle, B′, outside of its standards and pendant.

A lever, D″, fig. 2, may be used for the purpose of shaking the grates A and B. When the stove is heated, the rod D′, being inside the stove, will be too hot to be caught by the hand for that purpose. The lever D″, the side door of the stove being opened, can be put through the hole shown in the upper part of the pendant, figs. 1 and 2, when the grates may be shaken, so as to free them of ashes, by virtue of the connection between said grates, hereinafter described.

The shoulders *f f* on the handle D′ are placed at right angles to each other, in order to give a point of resistance to the pendants at any point to which it may be turned, without putting on rings, which would require inconveniently large holes or bearings in the pendants.

A is a grate, which is ordinarily immediately underneath the grate B, and which slides freely in appropriate bearings, formed in the pan E.

G G are pieces attached to the rear side of the grate A, and extending up to a point immediately below the grate B.

The ends of said pieces G G nearest the grate A are forked, as shown in fig. 2, and the fork of each piece G embraces a pin, H, which extends down from the rear side of the lower surface of the grate B, so that when the grate B is shaken by the handle D′, the same motion is imparted, by means of the pins H H and forked pieces G G, to the grate A, thereby lowering the ashes out of sight, into the pan I, as fast as they fall from the fire.

The pan E may be reversed, so that the grate A will be clear of the grate B, as shown in fig. 1. In this position it may be used to broil meats, by filling it with live coals, and placing a broiler, containing the meats, horizontally over it.

J J are plates, partly cut away in the drawings, for the purpose of showing other parts of the stove, which fit in the interior of the fire-box, respectively at the ends of the grate B, and inside the pendants C C, and standards V V.

K is a series of holes through the stove, and through which air passes to the interior, but is kept from getting immediately into the fire-box by the plates J J, and passes under the back plate K, keeping the said plate cool, from whence it passes through the series of holes shown in the plate K, and becoming commingled with the partially-burned gases as they go toward the flue, thereby aiding in the consumption of such gases.

N is a hollow box, placed on top of the back plate K, and which receives air by means of the air-hole M′.

On the top of the stove, through the tube N′, there is a series of holes, M, through the front of the box N, through which such air passes, to further aid in the combustion of the partially-consumed gases.

Between said holes M and the point in the interior of the box N, where the air enters from the tube N′, there is a plate, fig. 3, parallel with said line of holes, to prevent the air from passing out of said holes immediately after its entrance from the tube N′.

The air passes around said plate before its exit, in order to prevent the surface of said box from being consumed by the intense heat to which it is subjected.

There is a series of holes, O, through the front plate, which connects with a chamber, O′, whose ends open respectively into chambers formed by the plates J J and the sides of the stove.

From said last-mentioned chambers, through the chamber O′, and through the series of holes O, there

is a constant current of air, which tends to cool the inner plate of the chamber O′, and prevent it being burned.

The flues or channels underneath our stove, of which there are three, do not differ, except as herein shown, from other stoves, and hence the side-channels are not shown in the drawings.

In fig. 3 there is a plate, R, shown, which fits neatly in the middle channel, lessening its depth. It is on a plane with the floors of the side-flues or channels, but its height may be regulated at pleasure, depending upon the amount of draught requisite.

R′ is a piece attached permanently to and at right angles with the plate R. Its length is measured by the distance provided for the communication of the side flues with the main or middle flue. Its height is, as shown, the distance between the plate R and the bottom of the oven. Its purpose is to prevent the currents from the side flues meeting, and thereby impeding the draught of the central flue. The plate R, with its central partition, is removable at pleasure.

When it is desired to use the stove for burning anthracite coal or wood, the plate R should be used, and there will be sufficient draught; but when it is desired to burn soft coal, a greater draught will be necessary, and the plate R will have to be removed.

S, fig. 4, is a pan, of the form shown in the drawings.

S′ is a stop, against which the pan strikes when it is drawn out to the extent of wholly stopping the draught through the central or main channel in which it is placed.

T is a handle, which protrudes through the back of the stove, for the purpose of adjusting said pan at pleasure.

The purposes of said pan are, first, the regulation of the draught; and, second, the collection of soot, and cleaning the upper surface of the flue or bottom of the oven.

When the pan is placed, as shown in dark lines in fig. 4, that is, back to the point P, the stove will then have a full and free draught; but by drawing it toward the front of the stove, as shown in red lines, the draught is decreased; and if it is drawn forward until its back plate is at the point L, the draught will be wholly stopped.

One important function which this device fulfils, is in adapting the stove to any quality of (chimney) flue—a purpose, which experience has shown, is not answered by dampers.

Another important function of the pan S, is to draw the flame passing through the flue up to the bottom of the oven, which office is facilitated by the bridge S″, which is of the same height as the front edge of the pan. Although but one bridge is here shown, more of them may be used if deemed necessary.

Said pan also catches the soot that otherwise would fall on the bottom of the channel; and when it is desired to empty it, the pan may be drawn out by the handle V. The back edge of the pan, in its progress out, will scrape the accumulated soot from the under side of the oven into the pan.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the standards V V and pendants C C, as and for the purpose described.

2. The forked pieces G G, with the pins H H, as and for the purpose described.

3. The adjusting of the grates A and B, so that both will be operated, as described, by the same motion.

4. The pan E, containing the grate A, reversible in the stove, as and for the purpose described.

5. The chamber O′ and series of holes O O, as and for the purpose described.

6. The combination of the plate O and box N, as and for the purpose described.

7. The vertical partition R′, as and for the purpose described.

8. The pan S, as and for the purpose described.

9. The shoulders *f f*, at right angles to each other on the handle D′, as and for the purpose described.

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