

CROWLEY & CHAMBERLAIN.

2 Sheets—Sheet 1.

Cooking Stove.

No. 111,517.

Patented Feb. 7, 1871.

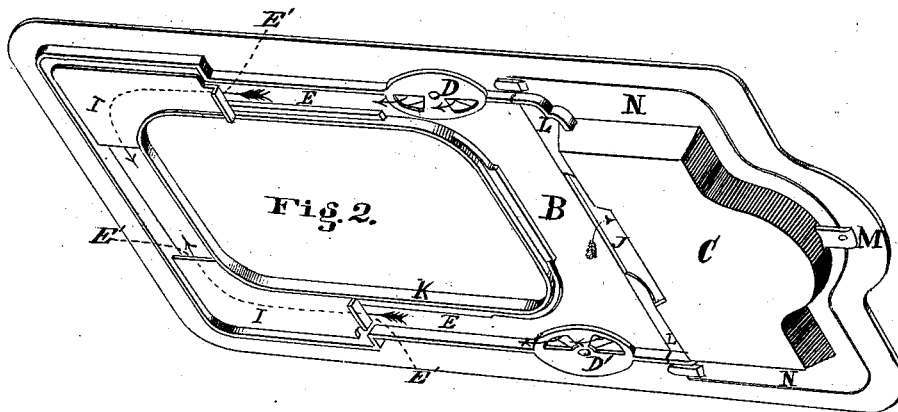


Fig. 1.

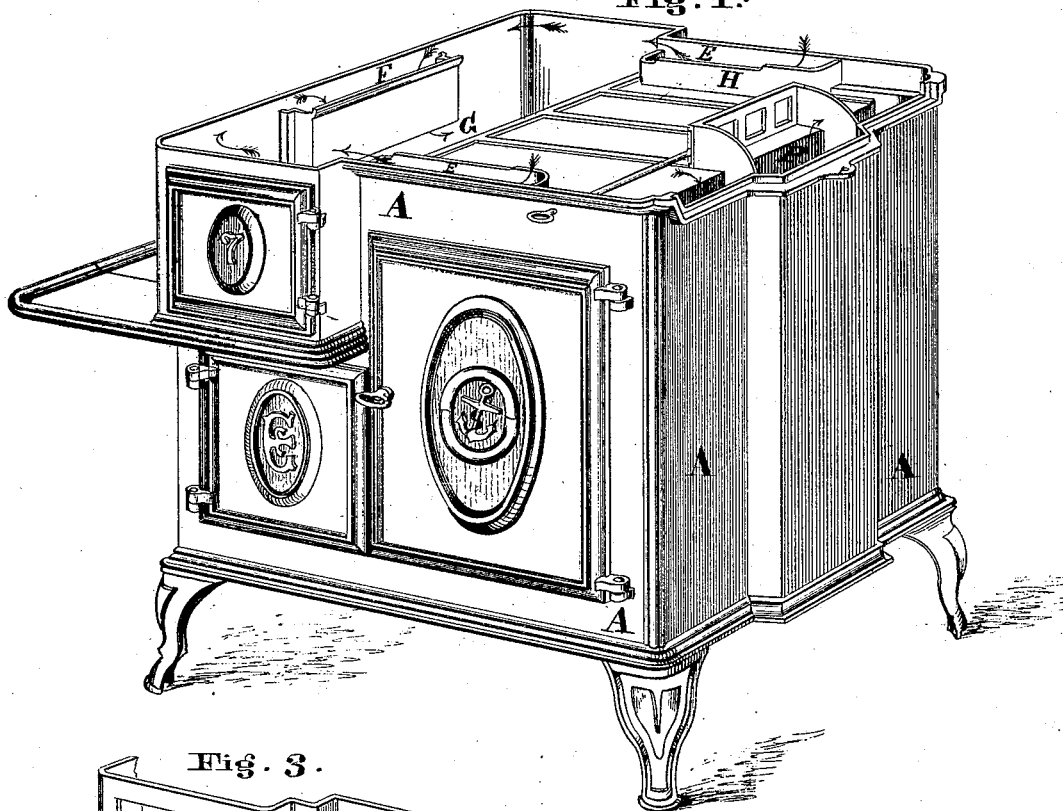
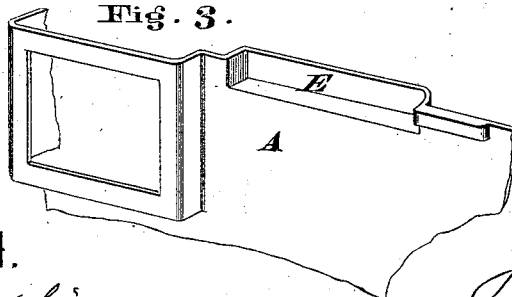


Fig. 3.



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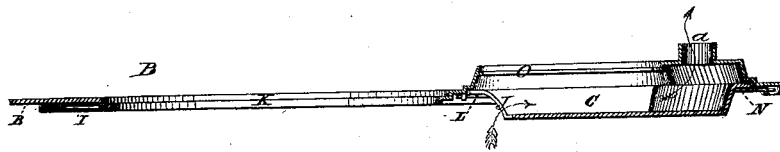
Cooking Stove.

2 Sheets—Sheet 2.

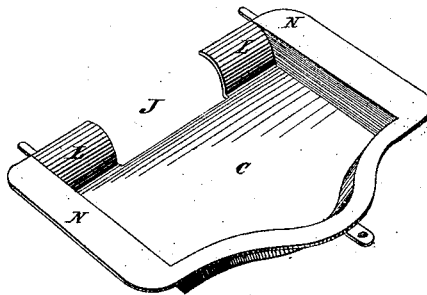
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*Fig. 4.*



*Fig. 5.*



Witnesses

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# United States Patent Office.

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ASSIGNORS TO CHAMBERLAIN & CO., OF SAME PLACE.

Letters Patent No. 111,517, dated February 7, 1871.

## IMPROVEMENT IN COOKING-STOVES.

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

We, JOHN B. CROWLEY and ADDIS E. CHAMBERLAIN, both of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain Improvements in Stoves, of which the following is a specification.

Our invention relates—

First, to a novel manner of constructing and arranging flues for supplying hot air to the fire-box or chamber; and

Second, in an improved manner of constructing a rear extension of the stove for supporting a water-reservoir or boiler.

Figure 1 is a perspective view of a stove having our improvements embodied therein, the top being removed.

Figure 2 is a perspective view of the top lifted from the body and turned up, so as to expose the under side.

Figure 3 is a perspective view, showing a modified form of the air-flue.

Figure 4 is a longitudinal section of the top of the stove detached, showing the rear extension and the smoke-box attached thereto.

Figure 5 is a perspective view of the box detached from the top.

In the drawing—

A represents the body of the stove, which, in its general construction, may be the same as any one of those now in use.

In the forward part of the body is the usual fire-chamber, G, the front side of which is formed by the vertical front plate of the stove.

On or against the inner side of the said front plate is a box or chamber, F, open at both top and bottom.

Against each inner side of the body at the top, and just in rear of the fire-box, a flange, H, is made, as shown in fig. 1; so as to form a box or chamber, E, at each side of the stove, said chamber being open at the top.

In the drawing the bottom of chamber E is formed by the top plate of the oven; but in some instances, where the oven is differently located, it will be necessary to cast a bottom in said chamber.

B represents the top plate of the stove, provided on the under side with suitable flanges, to fit over the upper edges of the body A, the box F, and the flanges H.

The top, when applied to the stove, closes the upper side of box F and chambers E.

In each side of the top plate is a register, D, which, when the top is in place, communicates with the corresponding chamber E, so as to admit cold air from the room into said chamber.

Under each front corner of the top B is a flat L-shaped plate, I, having its inner edge secured to a de-

pending flange, K, on the under side of the top plate, as shown in figs. 2 and 4. These plates are arranged parallel with the top, but a little below the same, so that an air-space, E', is left between the plate and top.

When the top is applied to the body the forward ends of plates I fit against the ends of box F, which is cut away so as to admit air from the space E' over the plates. The rear ends of the plates fit in like manner against the front ends of chambers E, so that a continuous passage extends from each register D, along the side and across the front of the body, to the box F.

The space between the outer edges of plates I and the top are closed by the vertical plates of the body, which extend up past the edges of the plates I.

When the registers D are opened air passes through them into chambers E, and thence along over plates I, down through box F, and out into the fire-chamber.

As the chambers or flues through which the air thus passes are subjected to the direct action of the fire, the air in its course becomes heated to a very high temperature, and is introduced into the fire-chamber in that state, thus materially aiding combustion therein.

The stove is, of course, provided with the usual doors or dampers at the front for admitting air from the room directly to the fire. When starting the fire these doors are opened and the registers D closed; but as soon as the stove becomes heated the doors are closed and the registers opened.

Instead of placing the registers in the top they may be placed in the sides of the body; or, instead of using registers, the chambers E may be cast in one piece with the side of the body, as shown in fig. 3, with their outer side left open to admit air.

Besides serving to conduct the air the plates I and flanges H protect the top plate from the direct action of the fire, so that the top is not liable to "burn out" or to crack from being suddenly heated or cooled, as is the case in stoves of ordinary construction.

The supplying of heated air to the fire is, we are aware, an old idea; but by our method of construction we are enabled to heat the air to a higher temperature than can be done by other stoves, and, at the same time, to reduce the cost of manufacturing this class of stoves.

The construction of the rear extension is as follows:

The top plate B is made of such length as to extend a considerable distance behind the body, and is formed with a neck, a, to receive the smoke-pipe, and also with an opening, O, of suitable size and form, to receive the bottom of the water-vessel.

A shallow box or pan, C, having laterally projecting flanges, L and N, around its upper edges, is also

provided, as shown in fig. 5, and placed against the under side of the extension of the top, as shown in figs. 2 and 4.

This pan is supported in place by resting its front flanges L on the upper edge of the back of the stove-body, and passing a screw, M, through its rear edge, or a lug thereon, into the top plate, as shown in figs. 1 and 3.

An opening, J, is made through the front of box C, so that, when the pan is in position, this opening will communicate with the smoke-flue P of the stove, and thus the smoke and flame be carried through the box C in their passage from the stove, as indicated by the arrows in figs. 2 and 4.

The box or pan C is made of such size as to extend laterally beyond the sides of opening O for the water-vessel, so that, when the latter extends downward through the hole, the heat and flame will act not only upon its bottom, but also upon the sides of the vessel below the top plate. In this manner a larger heating surface is obtained, and the heat applied with more economy and advantage than usual.

Another advantage of our plan of construction is, that it permits the top plate and its pan to be made

of such width as to receive a boiler of the full or a greater width than the body of the stove.

Our method of constructing the extension and the pan C, and of attaching the latter, we have found to be very cheap, strong, and advantageous, and in many respects superior to all others in use.

Having thus described our invention,

What we claim is—

1. The flues E, E', and F, arranged substantially as described, whereby the inflowing air is heated on its passage to the fire-chamber, as set forth.

2. The extension-pan or plate C, having its front flange L, resting on the vertical plates of the stove-body, substantially as described.

3. The extension-pan or plate C, having its side flanges N, projecting laterally beyond the vertical sides of the stove, substantially as and for the purpose set forth.

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