

Cooking Stove.

Patented June 22, 1858.



UNITED STATES PATENT OFFICE.

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COOKING-STOVE.

Specification of Letters Patent No. 20,682, dated June 22, 1858.

To all whom it may concern:

Be it known that we, GEORGE G. RICHMOND and GEORGE W. PITTOCK, each of the city of Troy, in the county of Rensselaer and State of New York, have jointly invented a certain new and useful Improvement in Cooking-Stoves; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical drawing of our improved stove; Fig. 2 a transverse sectional elevation of the same through the middle of the fire pot; Fig. 3 a longitudinal sectional elevation at the line $z y$ in Fig. 2; and Fig. 4 an isometrical drawing of the hot-air flue-slide upon which the upper tier of articles to be baked are set.

The same letters refer to like parts in all the figures.

The red arrows indicate the course of the gases of combustion, and the black ones the course of hot air through the stove.

Our invention in the cooking stove herein described relates to its construction in regard to the introduction of hot air into the oven thereof with a view to promote the baking of bread and other articles therein.

A is the cylindrical cast-iron fire-pot of the stove.

B is the ash-box.

C is the oven.

K is the usual slide upon which the upper tier of articles are baked.

D is a separate hot-air chamber surrounding the fire-pot.

The flame and hot gases of combustion first pass laterally from the top of the fire-pot along the top of the hot-air chamber D,—then in the flue, a , over the top of the oven, then down the flue or flues, b , back of the oven, then forward under the oven to its front,—then back under the oven and up its back side in the flue d into the smoke pipe.

The hot-air chamber D is formed of the fire-pot A, and suitable plates connecting the same with the body of the stove, as, the plate E, which forms the top of the said hot-air chamber and fits close to and supports the top of the fire-pot,—the plate F, which supports and fits close to the bottom of the fire pot,—the plates, f , f , which, with the plate F, separate the hot-air cham-

ber from the ash box,—the plates g and h which form the back of the chamber D,—the bottom plate i and side plates j , j , of the stove, and the front plate G, having doors k , k ,—one of which is open and mostly broken away in Fig. 1.

Air is admitted into the hot air chamber through openings o , near its bottom. The draft through the grate is controlled by the hearth-slide H fitting against the front edge of the plate F, or by an equivalent device.

I is the open space opposite to the fire-pot between the back plate of the hot air chamber and the front plate of the oven; through which space the air of the apartment in which the stove is used may circulate, openings m , m being left in the side plates of the stove. This open space, (I,) prevents the front of the oven from becoming too hot and keeps its front-plate, h , from warping or being burned out.

We make flues or air-passages, J, J, from the hot air chamber D through the cold-air-space, I, into the front side of the oven, C, just below the slide or plate K, as shown by Fig. 3. We also provide the flues J, J, with valves c , c , by which the admission of the hot air is controlled. So that when the bottom of the oven and the slide are both covered with pans of bread or other things to be baked, as shown in Fig. 3, we open the valves c , c , (the doors k , k , being closed,) and thus let the hot air from the chamber D into the oven, only between the two tiers of baking articles, in order that the top side of the lower tier, and the bottom side of the upper one may be baked as fast as the bottom side of the lower tier and the top side of the upper one; which latter sides are directly exposed to and consequently most strongly heated by the hot plates of the oven. When the hot air is not required in the oven the valves c , c , may be closed; and the doors k , k , may be opened when the heat is desired in the room. If the oven becomes too hot, it may be cooled by leaving the valves and doors both open.

To more fully confine, distribute, and equalize the action, of the hot air introduced into the oven through the passages J, J, upon the adjacent sides of the two tiers of articles baking we employ the removable hollow plate or flue L to support the upper tier, the said flue L having open-

ings p, p , which fit the ends of the flues J, J, where they enter the oven, and, holes s, s , along the back side for the final escape of the hot air into the oven, as shown by Figs. 4 and 1. An opening, q , may be made in the oven plate for the escape of gases into the smoke flue and to promote the draft of hot air into the oven through the flues J, J.

The upright plate M causes the flame from the fire-pot to move laterally under the pot-holes, O, O. In order that a greater amount of caloric shall be abstracted from this passing flame and communicated to the air in the chamber D, to increase the heat of the oven, while the same means shall promote the draft of the gases of combustion and facilitate the feeding of coal into the fire-pot through the lateral pot-holes, O, O, we make the top-plate E of the hot-air chamber D with a hollow and bevel, t , upon each side of the coal-pot, A, as shown by the annexed drawings:—which form not only prevents the accumulation of ashes upon the said plate, but also causes the flame, as it sweeps laterally from the fire-pot, to keep closer to the top of the hot-air chamber than it would if the top-plate E was flat and extended horizontally from each side of the fire-pot.

We are aware that in many cooking stoves hot air has been admitted from a chamber surrounding or back of the fire box or pot into the front of the oven above the slide upon which the upper tier of articles are baked, for the purpose of ventilating the oven, as in the stoves described in No. 7193 of United States patents, and A. A. Lincoln's application rejected April 8, 1850; and that in some stoves the hot air has been admitted from a chamber surrounding the fire pot into the oven through large openings having doors or dampers and reaching from the top to the bottom, or nearly so, of the front of the oven,—so that roasting may be done in the oven; and that in others air passages have been made from the ash box, or a chamber back or around the fire-pot, into the oven through its bottom or the lower part of its sides,

for the purpose of ventilation. But the object accomplished by our improvement is not secured by any such arrangements of the hot-air passages. We are furthermore aware that in some stoves heretofore made the rim of the fire-pot has covered an air-chamber and been beveled, as described in G. W. Davis's application withdrawn Feb. 19, 1857; but we are not aware that in any such previously made stoves the beveling of the rim of the fire pot has hastened the baking of those sides of the two tiers which are not directly opposite to the strongly heated top and bottom plates of the oven. But in our improved stove the form given to the top of the hot-air chamber D does expedite the baking of those sides of the two tiers of articles in the oven; and also facilitates the introduction of coal into the fire-pot through the front pot-holes of the stove.

Having thus fully described the construction and operation of our improved cooking stove, what we claim therein as our joint invention or improvement and desire to secure by Letters Patent is—

1. The arrangement of the passages J, provided with dampers c , with the hot-air chamber D, and slide K or L in the oven C, as herein described, whereby the intensely hot air of the chamber D may be directly applied to the otherwise insufficiently heated under side of articles baking upon the slide, and to the upper side of those on the oven bottom.

2. And we also claim, in combination with the fire-pot A, plate M, chamber D, passages J, and slide K or L in the oven C, arranged together in the stove as described, the topplate, E, of the oblong hot-air chamber D, constructed substantially as herein represented, whereby the heat of the air admitted into the oven between the two tiers of articles baking is augmented.

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Witnesses:

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