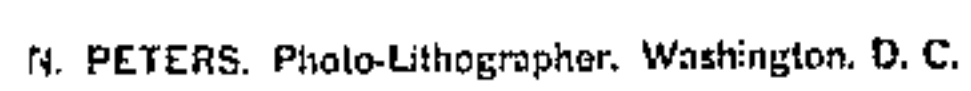


Cooking Stove.

Patented Nov. 23, 1858.



UNITED STATES PATENT OFFICE.

RICHARD M. HERMANCE, OF STILLWATER, NEW YORK.

COOKING-STOVE.

Specification of Letters Patent No. 22,121, dated November 23, 1858.

To all whom it may concern:

Be it known that I, RICHARD M. HERMANCE, of Stillwater, in the county of Saratoga and State of New York, have invented
5 a new and useful Improvement in Cooking-Stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction, operation, and distinguishing features of the same, reference being
10 had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved stove,—some parts being broken away to show the arrangement of the flues;
15 Fig. 2, a plan of the same, the top-plate being removed; Fig. 3 a horizontal section at, and plan of the parts below the line $z\ y$ in Fig. 4,—a part of the bottom plate of the oven being broken out; and Fig. 4 a vertical
20 transverse section, at, and elevation of the parts back of the line $x\ w$ in Figs. 2 and 3,—the back plate of the oven being mostly broken away.

The same letters refer to like parts in all
25 the figures; and the arrows indicate the courses of the gases of combustion through the stove.

My improvement relates to the arrangement of the flues which conduct the gases of
30 combustion from the fire-box, A, about the oven, B, to the exit or smoke-pipe, C, in such stoves only as have the fire-box located at the front end of the upper part of the stove, the oven placed under and back of the
35 fire-box, and the exit pipe at the back end of the top of the stove, substantially as represented in the annexed drawings.

In my improved stove the gases of combustion pass from the fire-box A into the
40 chamber D over the oven, and then wholly or mostly down the flues E E' which are arranged upon the sides of the stove back of the fire-box and in front of the side-doors, F, F', of the after part of the oven; then
45 through suitable flues first under the forward part and afterward under the back portion of the oven, and finally up the back end of the oven into the exit pipe C.

From the bottom of the descending flues,
50 E, E', the gases of combustion may, as shown in the drawings, wholly, or mostly, first pass along the sides of the oven-bottom, G, to its front end, through the flues, H, H', which are between the vertical flue-strips
55 I I' and the side-plates J J' of the stove; thence back under the middle of the for-

ward part of the oven through the flue K which is between the two flue-strips I, I'; and in a broad sheet under the after portion of the oven bottom through the space L
60 which extends from one side J to the other J' of the stove; and then finally up the back end of the oven through the flue M into the exit pipe C.

N, N' are openings so arranged in the flue-strips I I' as to allow a small portion of the
65 gases of combustion to pass from the bottom ends of the descending side-flues, E, E', directly back into, so as to increase the heat of, those parts of the broad flue-space L
70 which are at the sides of the main current from the flue K to the flue M. The strips I, I', may well be of a curved form as indicated by the red lines at v, v' , in Fig. 3.

P P' are vertical flues or passages arranged at the back corners of the stove with
75 their lower ends open to the flue-space L, and with apertures Q Q' at their upper ends into the flue-space D; so as to allow a small portion of the intensely heated gases of combustion in the chamber D to pass directly
80 down through the flues P P' into the flue-space L and thereby increase the heat of the back corners of the oven. O is a damper, which, when open, allows a direct draft from
85 the chamber D into the exit-pipe C. But my improvement or invention is not limited to the use of the described arrangement of the flues H, H', K, L and M; much less to the employment of the auxiliary openings
90 N, N', Q, Q' and flues, P, P'. For other arrangements of flues for conducting the gases of combustion from the lower ends of the flues E E' first under the front, and then
95 under the back portion of the oven, and finally up its back end so as to heat those parts properly may be used; and will readily occur to any person skilled in the construction of the various kinds of cooking stoves
100 in use.

I arrange the descending flues E E' at the sides of the stove as described, in connection with the fire-box A and chamber D arranged as shown and the described or any
105 equivalent arrangement of main flues under and back of the oven to the exit pipe, for the purpose of securing more heat at the front end of the oven, so that the oven may be extended farther under the hearth, S, than could be the case if the gases descended,
110 as most usual, at the back end of the oven; also, to heat, at the same time, the sides of

the oven where the doors thereof usually meet together; and, in order that the heat taken from the gases in their descent shall be radiated into the apartment in which the stove is used, from the sides of the stove, where there is generally a large body of air opposite which is required to be warmed, and where persons when cold can freely approach and conveniently warm themselves; instead of from the front end of the stove where the hearth projects and the fire-box intervenes, or from the back end of the stove which is almost invariably set back opposite to the chimney-place or wall of the room which is not required to be especially warmed, and which, with the smoke-pipe, generally prevents persons from standing or sitting back of the stove.

T T' are flue-strips in the chamber D which reach vertically from the top-plate U of the oven to the top-plate V of the stove, and extend inward and backward from those parts W, W', of the sides of the stove which are between the upper ends of the flues E, E', and the ends of the fire-box A, to near the middle of the front edges or thereabouts of the back pot-holes, R, R', so as to make the flues X and Y, Y'; through which, the gases of combustion must pass, in going from the fire-box, A, into the flues E E', substantially as shown by the annexed drawings. I thus arrange the flue-strips T T'

in my improved stove, for the purpose of conducting the gases of combustion over the back part of the oven, B, and under the back pot-holes, R, R', to increase the heat at those places; as well as to reduce the heat of the gases before they reach the oven-bottom by the flues E E'; and also, in order to give support to the top-plate, V, where it is intensely heated; and to draw the flame away from the ends of the fire-box A, and thereby lessen the liability of the top-plate, (V,) to break at those places from unequal expansion occasioned by the edges *c c'* being strongly heated and the opposite ones, *d d'*, being in the open air—the plate V being of cast-iron, like the others of the stove.

Having thus described the construction and operation of my improved cooking stove, what I claim as new therein and desire to secure by Letters Patent is—

The arrangement of the flue-strips, T, T', in the chamber D in combination with the fire-box, A, descending flues, E, E', upon the sides of the stove and oven, flues under and back of the oven, and exit pipe, C, arranged and operating together substantially as and for the purposes herein set forth.

RICHARD M. HERMANCE.

Witnesses:

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