

H. L. PALMER.

Heating and Cooking Ranges.

No. 135,356.

Patented Jan. 28, 1873.

FIG.

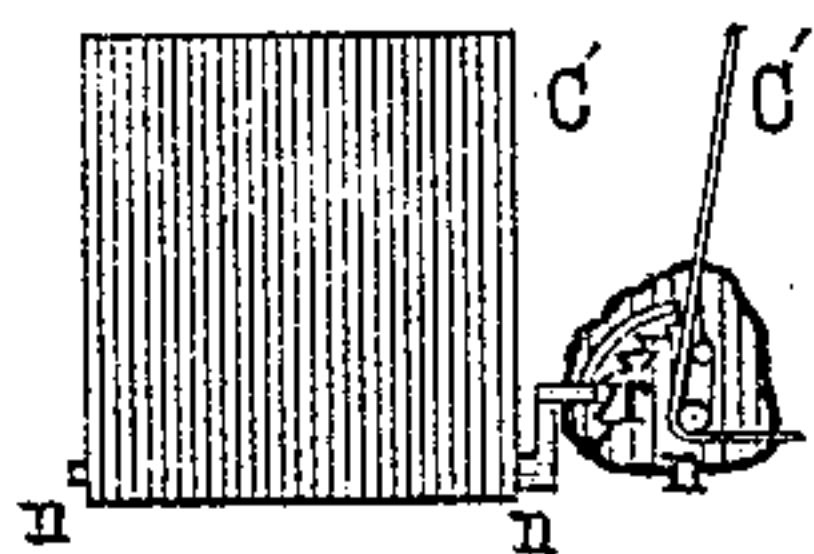


FIG. 1.

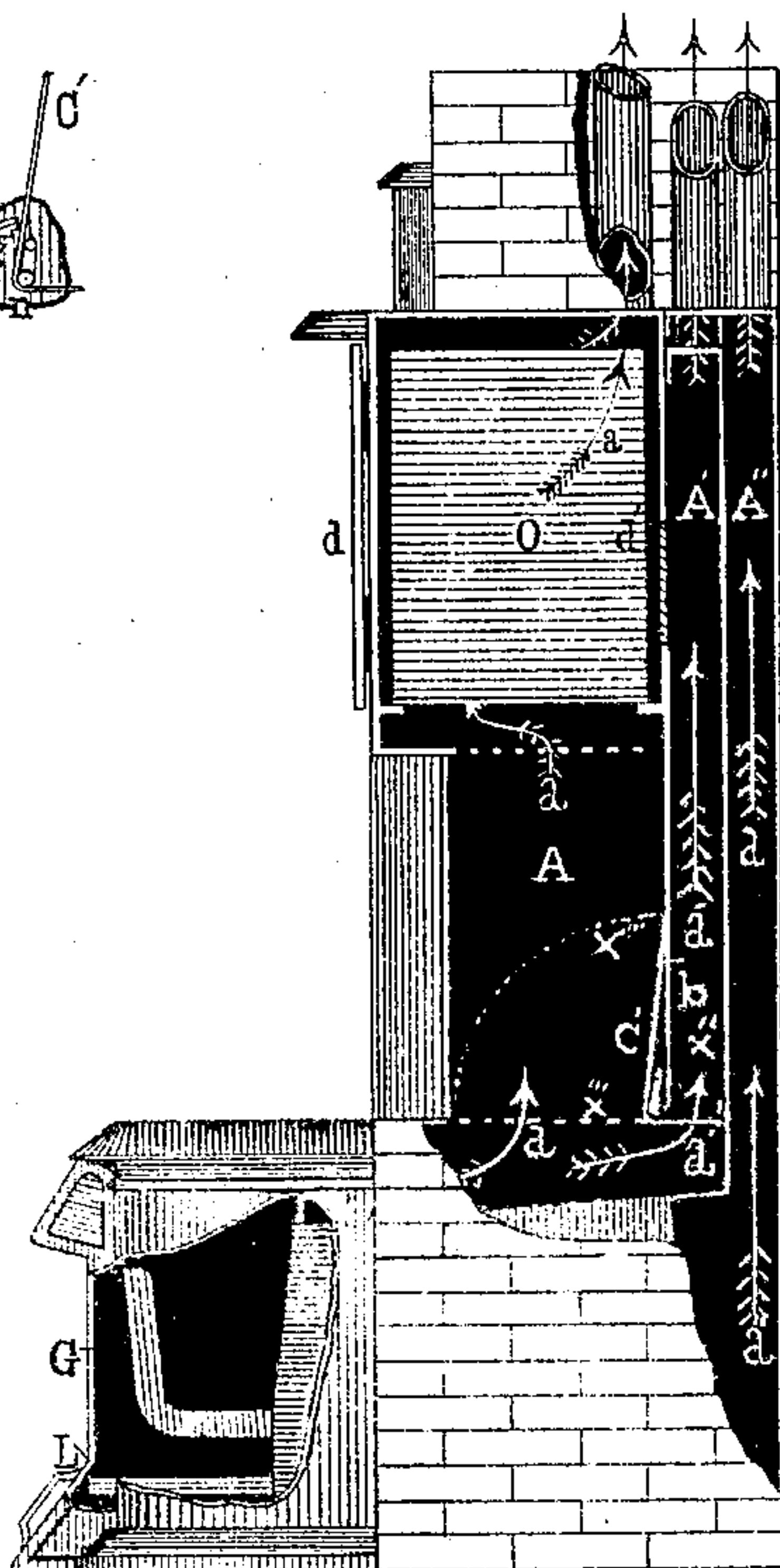
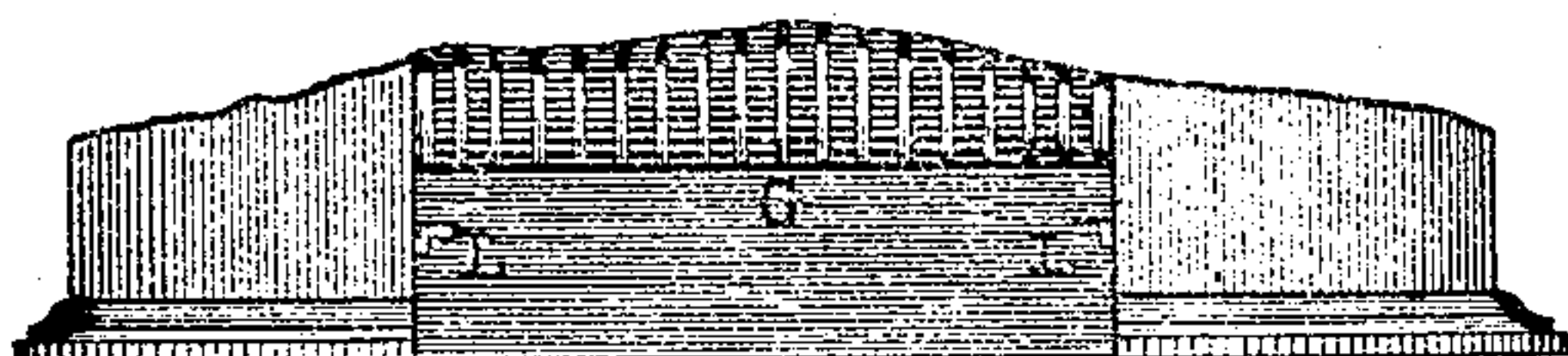


FIG. 2.



Witnesses.

James A. Skilton.  
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# UNITED STATES PATENT OFFICE.

HENRY L. PALMER, OF NEW YORK, N. Y.

## IMPROVEMENT IN HEATING AND COOKING RANGES.

Specification forming part of Letters Patent No. 135,356, dated January 28, 1873.

### DIVISION A.

*To all whom it may concern:*

Be it known that I, HENRY L. PALMER, of the city, county, and State of New York, have invented certain Improvements in Heating and Cooking Ranges, of which the following is a specification:

My invention consists in improvements of the kind of cooking-ranges in which the products of combustion are carried up from the fire-bed under the pot-hole plate, flues, and dampers to a center flue, which conducts it to a central point underneath the elevated bake-ovens; and after heating the bake-ovens the draft is conducted into the chimney or flue. My invention relates specifically to such modifications of this range as shall permit the deflection of the draft from under the pot-hole plate, at will, into an independent back flue or flues, at around or outside of which an additional chamber may be made, forming an air-heating chamber, wherein cold air is introduced, either from the kitchen itself, a cellar beneath, or a cold-air box, for the purpose of being heated on its way to an upper room or rooms for the purpose of warming the same. It relates also to the kind of damper or valve whereby, at one and the same operation, the front center draft-flue leading to the bake-ovens may be closed and the back draft-flue opened, or vice versa. This may be called a two-way damper. It relates to a provision for access in order to clean the back draft-flue by a door opening into the back draft-flue extending up and back of the ovens. There are two main objects sought to be accomplished by the first and chief part of my invention. The first is to give such control over the products of combustion as shall remove the objection now constantly met with in elevated oven-ranges, that they throw out heat into the kitchen constantly from the oven part, at some seasons of the year, to such an extent as to become exceedingly objectionable. This heat is radiated into the room at or near the level of the face of the cook employed about the range, and in the summer season becomes oppressive. The second is to secure more economical results from the coal thus consumed. The combination of the currents of heated air circulated under the pot-hole plate in a center flue for distribution to the

oven above is recognized as the better method—superior to the side-flue method; and by my improvements the same advantages are secured in a heating-range, which is so contrived as to become, at will, either a cooking or a heating range, or both together, when made with a center draft-flue.

Figure 1 is a side elevation of the range, partly in perspective and partly in section. Fig. 2 is a perspective front elevation of a portion of the fire-box, grate, and ash-pit with ledges secured to the walls thereof. Fig. 3 is a front and edge view of damper C'.

A is the front center draft-flue. A' is the back draft-flue, which may be extended up centrally or over the whole surface of the rear of the ovens in such a way that none of the cold air admitted to the heating flue or chamber can come in contact therewith. A'' is the hot-air flue or chamber. *a a a* are arrows indicating the course of the hot air and gases when passing up through the front center flue about the ovens, and thence into the chimney-flue. *a' a'* are arrows indicating the course of the hot air and gases by the back flue A' when the front center flue A is closed. *a'' a''* are arrows showing the course of either the cold or heated air on its way to the apartments above. *b* is the back plate of the front center flue A, and the partition between the two flues A and A'. C' is a two-way damper, bent at right angles at its point of suspension, which alternately opens and closes the flues A and A'. *d* is an oven-door. *d'* is a door in the rear center of the oven-chamber to allow of access to the flue A' for cleaning the same. G is the grate of the range. L L are the ledges for sustaining the broiler underneath the grate. *n n* is the pin, shaft, or pivot, provided with a crank-arm, of the damper C'. O is the oven or oven-space. *r'* is a toothed segment or ratchet arranged to engage and detain the cranks or handles of the dampers. *x''* is a dotted line showing the arc described by the back edge of the damper C' in opening and closing the flues A and A'. *x'''* is a dotted line showing the position of the damper C' when dropped so as to close the front center draft-flue A. *x''''* is a dotted line showing the arc described by the edge of the damper C'



when being dropped into the position indicated by the dotted line  $x'''$ .

The crank-arm of the dampers may be made to engage a ratchet,  $r'$ , and thereby detain the valve or damper at either extreme of its motion, or at any intermediate point, if it be desired at any time to divide the draft and send portions of it by each flue.

When the front center draft-flue A is closed by the damper C', evidently the heat from the fire will be thrown into contact with the back plate of the flue A', through which it will be communicated to the air in the heating-chamber A'', and, at the same time, the oven part of the range will be kept comparatively cool; and in summer the excess of heat may be conducted away without injury or annoyance to the cook; or it may, at will, be thrown into the oven-flues for baking or other purposes.

The damper C' is bent nearly at right angles at its point of suspension. When its forward part is dropped into the position indicated by the line  $x'''$  its rear part moves upward, its back edge describing the arc indicated by the dotted line  $x''$ , and, coming in contact with the plate  $b$  in conjunction with the other part of the damper, effectually closes the front center draft-flue A, and, at the same time, opens the back draft-flue A', or vice versa. The method of opening and closing the flues A and A' preferred is by what may be called two-way dampers, or dampers which operate in closing one flue to open the other. It is evident that this general object may be accomplished by making separate and independent

dampers for each flue; but I have not shown such dampers for the reason that I consider that which is shown as preferable.

I claim as my invention—

1. A second and alternative draft-flue, A', in an elevated oven-range placed back of the oven and front flue, and arranged to conduct the draft into the chimney independently or without passing around the oven.

2. A center front flue, A, for leading the draft into the oven-chamber, in combination with a back flue, A', for conducting the draft back of the oven when alternately opened and closed by a two-way damper.

3. The double damper C' having its two parts placed at right angles to each other, and operating as described.

4. A front center draft-flue, A, a back draft-flue, A', and an air-heating flue, A'', in combination.

5. A back draft-flue, A', provided with a door or opening,  $d'$ , for access in cleaning the same.

6. A back draft-flue, A', arranged to conduct the draft back of and away from the oven in an elevated oven-range, in combination with a back heating flue or chamber.

7. The combination and arrangement of front center flue A, back draft-flue A', air-heating flue A'', and damper C' with an elevated oven, O, as herein shown.

HENRY L. PALMER.

Witnesses:

THOS. J. McDONOUGH,  
GEO. W. MORSE.