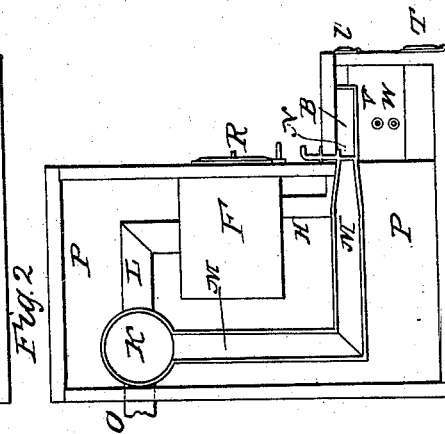
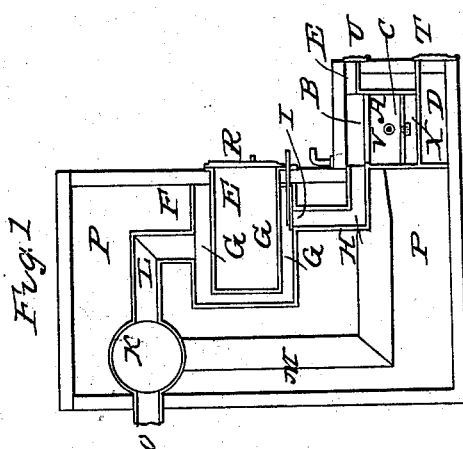
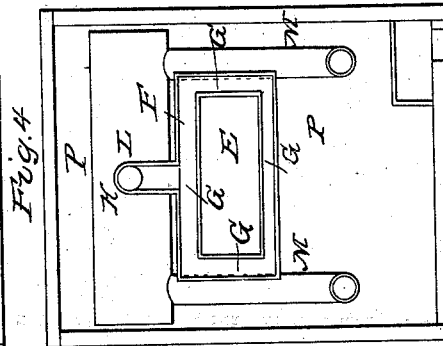
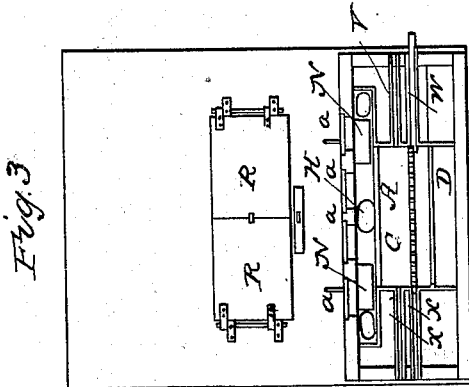
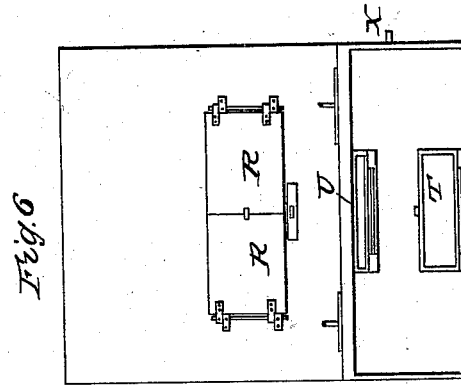
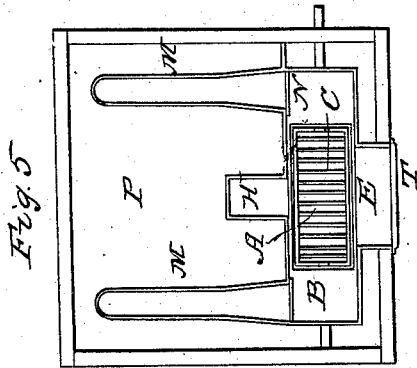


E. EDWARDS.

Heating and Cooking Range.

No. 47,706.

Patented May 16, 1865.



WITNESSES

R. H. Hale Jr.
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INVENTOR

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By his attorney

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UNITED STATES PATENT OFFICE.

EBEN EDWARDS, OF BOSTON, MASSACHUSETTS.

HEATING AND COOKING RANGE.

Specification forming part of Letters Patent No. **47,706**, dated May 16, 1865.

To all whom it may concern:

Be it known that I, EBEN EDWARDS, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Range for Culinary Purposes and for Heating Air for Warming Apartments; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical and transverse section of it, the plane of section being at the middle of the oven and fire-place. Fig. 2 is another such section, the plane of which is through one of the lateral conduits of the smoke-chamber of the fire-place. Fig. 3 is a longitudinal section of the fire-place. Fig. 4 is a longitudinal section taken through the oven and exhibiting the radiator above and in rear of the same. Fig. 5 is a horizontal section taken through the smoke-chamber. Fig. 6 is a front elevation.

In the said drawings, A denotes the fire-place or fuel-chamber, which is surmounted by a smoke-chamber, B, which projects horizontally over or beyond each end of the said fire-place in manner as shown in Fig. 3, and has a series of holes, *a a a a*, arranged in its top plate, such holes being for the reception of boilers or vessels to be heated. The fire-place is provided with a grate, C, and is situated over an ash-chamber, D. There is a shallow throat, E, leading out of the front and middle of the smoke-chamber B. Above and in rear of the fire-place is the oven F, which is situated within a chamber, G, of larger dimensions, the said chamber extending around the top, bottom, two ends, and rear part of the oven, and so that there may be a free space, G, between it and such parts. This flue-space communicates with the fire-place by means of a pipe, H, which leads out of the middle of the smoke-chamber, and has at its entrance into the space above the oven, a damper, I. A hollow drum or radiator, K, is arranged above and in rear of the oven-flue chamber, and communicates therewith by means of a pipe, L, leading out of the top of the flue-space and into the middle of the radiator. Furthermore, from each of those parts of the smoke-chamber which projects beyond the fire-place a conduit or radiating-pipe, M, is led toward and into the radiator K, the same being as represented in Fig. 2, such conduits

serving to convey smoke from the chamber into the radiator. Each of these conduits, where it opens into the smoke-chamber, should be provided with a damper, N. An escape-flue, O, leads out of the back part of the radiator and serves to discharge the smoke therefrom.

The whole fire-place, ash-chamber, oven, oven-flue, chamber, radiator, and the lateral conduits, as above described, are situated within an air-heating space or chamber, P, which should be provided with conduits for the ingress and egress of air, to be warmed by contact with the external surfaces of the fire-place, the oven, flue-case, the radiator, and the lateral conduits. The smoke-chamber is also sunk within the air-heating space or chamber, and contributes toward heating the air thereof. The oven opens through the front wall of the air-heating chamber, and has doors R R applied to it in the usual manner. There is also a door, T, to the ash-chamber, and one, U, to the throat of the smoke-chamber. Furthermore, at one end of this fire-place two tubes, V W, are led horizontally to and through the end wall of the air-chamber. One of these tubes is arranged over the other, and both are in a plane passing vertically through the middle of the grate. Opposite the said tubes V W there are in the opposite end of the fire-place bearings *x x* for the reception of a journal projecting from the grate, the other journal of the grate being made square and to rest in a corresponding socket or notch formed in one end of a shaft, X, which is extended through one of the tubes V W. In other words, the connection of the grate with the shaft should be such as not only to enable the former to be readily disconnected from the latter, but to cause the shaft while being revolved to revolve or turn the grate more or less, as circumstances may require in order to discharge coals or ashes therefrom into the ash-chamber.

While the tubes V W and the bearings *x x* enable the grate to be arranged at different elevations in order to either increase or diminish the capacity of the fuel-holding space, the said tubes serve other useful purposes—that is to say, while that one of them on which the shaft may be placed operates to prevent ashes from being discharged from the fire-place into the air-chamber, the other

tube will answer as a means of supplying air to the fuel while in a state of combustion.

From the above it will be seen that my invention consists, mainly, in a peculiar arrangement of parts whereby air received into a chamber surrounding such parts may be warmed to good advantage before being drawn into one or more apartments connected with such air-chamber by means of pipes. I do not pretend that either of the parts involved in such an arrangement is new, and therefore I lay no claim to any such part. The arrangement is one by which the range, while being capable of performing ordinary culinary operations of boiling and baking, is able to heat air to excellent advantage and with much economy.

I claim as my invention—

1. The above-described arrangement of the lateral conduits M M, the radiating-drum K, the air-heating chamber P, the fire-place A, the smoke-chamber B, the over and its flue-space G, connected with the fire-place and the radiator, as specified.

2. The combination of the tubes V W, leading out of one end of the fire-place and through the air-chamber, with the grate-shaft, the fire-place, and the journal-bearings *x x* at the opposite end of the fire-place, the whole being substantially as specified.

EBEN EDWARDS.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.