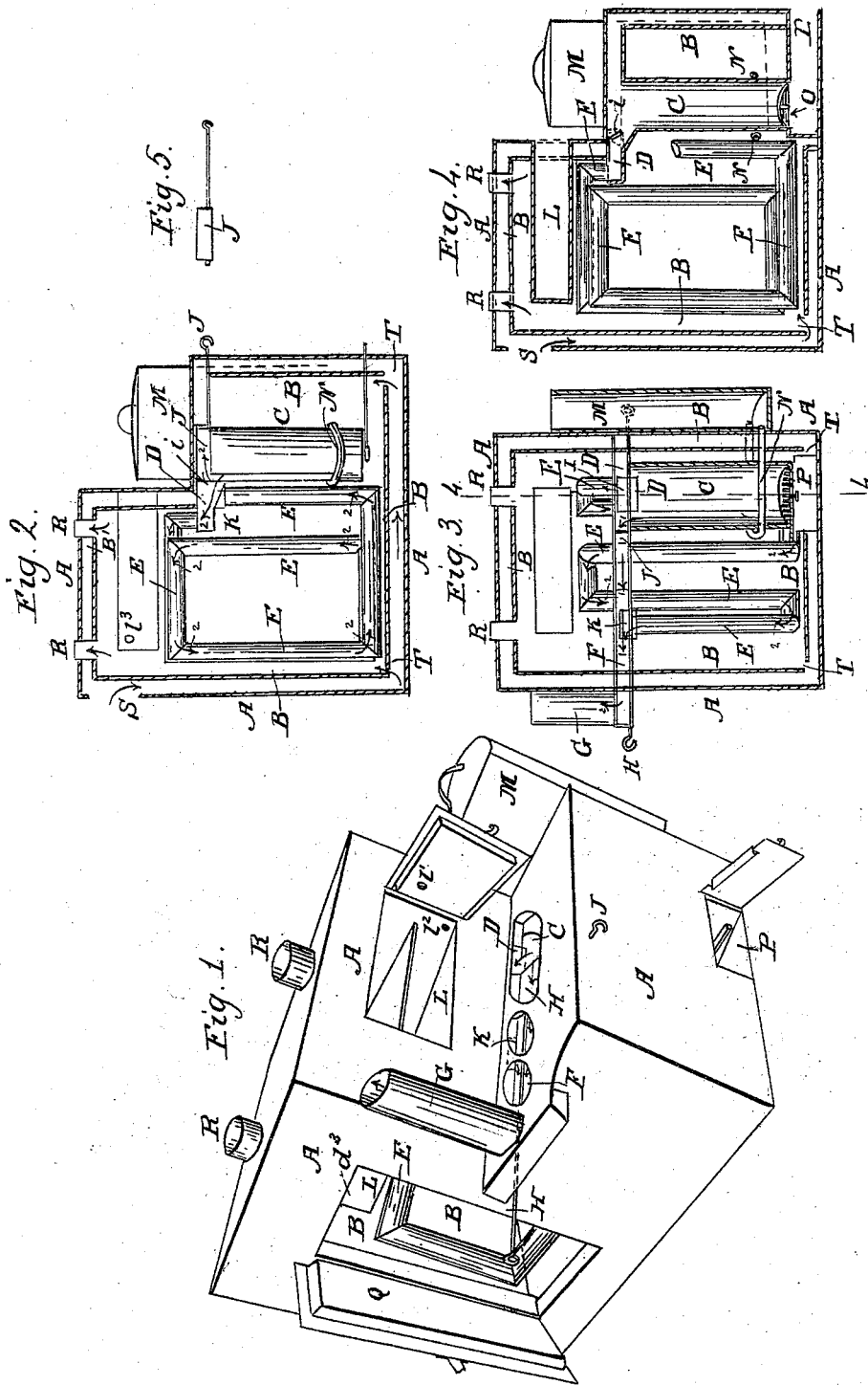


E. T. BEERS.
Cooking Range.

No. 7,231.

Patented April 2, 1850.



UNITED STATES PATENT OFFICE.

ELIAS T. BEERS, OF HONESDALE, PENNSYLVANIA.

COOKING-RANGE AND HEATING AIR.

Specification of Letters Patent No. 7,231, dated April 2, 1850.

To all whom it may concern:

Be it known that I, ELIAS T. BEERS, of Honesdale, Wayne county, State of Pennsylvania, have invented a new and Improved Cooking-Range and Heater; and I do hereby declare the following to be full and exact description of the same.

The nature of my invention consists in the arranging and combining a hot air chamber, with a range, and the flues thereof in such a manner as to obtain a compact, economical and portable cooking range and oven, and hot water and air heater or stove. To accomplish this I make a suitable chamber having its outer wall of bricks, and cased on the inside throughout its entire surface, with a casing of tin as a reflector. Between the wall and the tin casing is a space for the admission of cold air, which passes through openings in the casing into the hot air chamber, from whence it is discharged in a heated state through proper conducting pipes to any part of the building. In the front part of the chamber a furnace is inserted, to be used for the range, having suitable arrangements of dampers for changing the direction of the gas. At the back of the furnace is connected a heating or radiating pipe, which passes back into the hot air chamber, which it crosses several times when it enters the direct flue, (from the furnace to the smoke pipe) to allow the gas to escape. At the side of the furnace forming the range, are two pot holes for cooking purposes, and on the opposite side attached to the end of the range is a water heater. In the lower part of this heater, is inserted the ends of a coil of pipe to communicate with the water in it. This pipe coils around, and in contact with the sides of the furnace cylinder, so as to take up a portion of the heat from the cylinder to heat the water in the pipe, thereby causing a rapid and free circulation of the water in the reservoir or boiler at the end of the range. Within the hot air chamber is an oven, having its mouth opening on the front of the range and thereby combining a baking, cooking and warming operation all within one arrangement. But to describe my invention more particularly I will refer to the accompanying drawings, the same letters, referring to the same parts whenever they occur.

Figure 1, is a perspective view of the range; Fig. 2, an end view, having one face

or side removed; Fig. 3, a front view having the face or front end removed, and also showing a cut section of the furnace cylinder and grate; Fig. 4, a vertical section through the line (4—4 Fig. 3,) showing the valve or damper I, as a cut off in the mouth of the flue D; Fig. 5, detached view of the damper J.

Letter A, the outer wall made of brick or other suitable material, B, the casing of the hot air chamber, made of tin or other proper substance for reflecting the heat radiated from the pipes in the chamber, C, furnace, set in the front part of the heater, which is lowered so as to form a range, and is set within the hot air chamber, D, flue from the back side of the furnace, to which is attached the end of the radiating pipes in the hot chamber, E, radiators, or pipes extending throughout the hot air chamber for the passage of the gas from the furnace, F, direct action flue, passing off at the left of the furnace to the chimney, G, smoke pipe or chimney, H, damper for covering the mouth of the furnace, when cutting off the direct action of the draft, and turning it through the radiating pipes, letter I, regulating damper for the draft through the flue D, in the back of the furnace, J, cut off damper across the duct action flue F, for the purpose of directing the entire escape of the gas from the furnace through the radiators, K, exit port or flue from the radiators in the back (and near the chimney) of the direct action flue, L, oven, and V , V^2 , and V^3 , ventilators for the escape of steam from the oven, and circulation of currents of hot air through it, M, water heater, or reservoir, N, water pipe, coiled around the outside of the furnace and in contact with it, and having its ends inserted into the lower part of the water reservoir, O, grate, P, ash pit and p^2 ash pit door, Q, hot air chamber door, R, flues or ports for carrying off the hot air, S, cold air passage in the back of the wall, T, vents in the casing for the ingress of the cold air from between the wall and casing to the hot air chamber. The operation of the several parts are that when fire is placed in the furnace the damper I, is turned down so as to cover the lower half of the mouth of the flue D, in the back of the furnace, and the damper J, opened; the gas from the furnace escapes in the direction of the arrows (marked ') to the chimney G; but, when the heat of the

furnace is to be thrown into the hot air chamber, the operation is reversed; that is, when the damper J, is closed, and that of I is opened, or turned up so as to close the
5 upper half of the flue D, and H, is shoved in over the mouth of the furnace, the smoke and gas from the furnace is caused to pass through the lower half of the flue D, into the radiating pipe E in the direction of the
10 arrows (marked 2) to the exit flue K, and thence into the direct action flue F, to make its escape from the chimney G. During this operation the water in the coil of pipe around the cylinder or furnace takes up a
15 portion of its heat and thereby causes a rapid and constant circulation of the water in the reservoir in consequence of the difference of temperature always existing between that in the pipe and the greater volume in the
20 reservoir; and at the same time allowing of various operations of baking and cooking

to go on, without subtracting materially from the effectiveness of the heating operation of the hot air chamber.

Having now described my invention and 25 its operations I will proceed to state what I claim and desire a patent for, premising, that I do not claim the making of the hot air chamber, or radiating pipes, nor furnace and water reservoir individually; but 30

What I do claim is—

The employment and use of the combination of the furnace and oven in the hot air chamber, with the radiating pipes E, flues and dampers D and I, and H, J, K and F, 35 for the purposes substantially as herein set forth.

ELIAS T. BEERS.

Witnesses:

JOHN F. ROE,
H. A. WOODHOUSE.