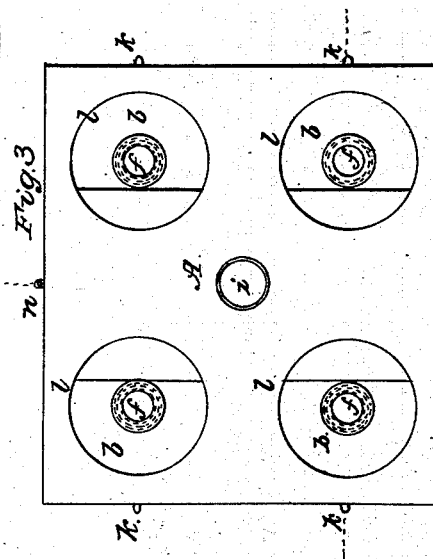
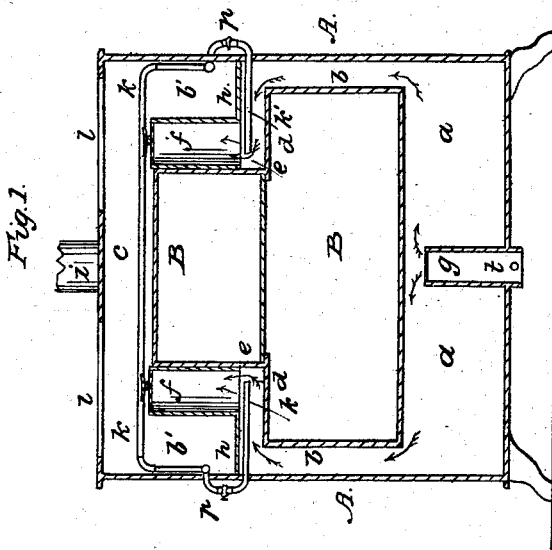
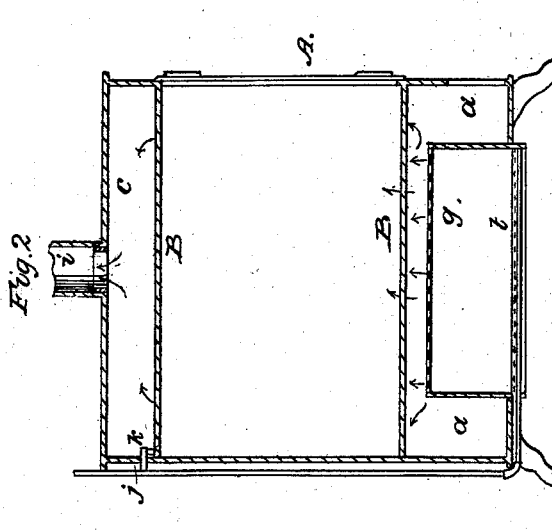


E. A. LELAND.
Gas Cooking Stove.

No. 47,650.

Patented May 9, 1865.



WITNESSES

J. W. Coombs

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UNITED STATES PATENT OFFICE.

EDWIN A. LELAND, OF NEW YORK, N. Y.

IMPROVED GAS COOKING-STOVE.

Specification forming part of Letters Patent No. 47,650, dated May 9, 1865; antedated April 26, 1865.

To all whom it may concern:

Be it known that I, EDWIN A. LELAND, of 117 Broome street, in the city, county, and State of New York, have invented a new and useful Improvement in Gas-Stoves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figures 1 and 2 are vertical sections at right angles to each other of a stove constructed according to my invention. Fig. 3 is a plan of the same with the lids of the boiler-holes removed.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to gas-stoves for cooking purposes; and it consists in a novel arrangement of burners and heating-passages, and novel form of the oven, to provide for the heating of the oven at the bottom, sides, and top, and for the use of waste heat from the oven-heating burner or burners, for boiling and other cooking operations which can be performed on the top of the stove.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the outer portion of the stove, consisting of a box of sheet or cast iron of parallelo-pipedal or other convenient form. The oven B extends from back to front of this box, but has spaces *a b b'* and *c* (see Fig. 1) between its bottom, sides, and top and the bottom, sides, and top of the box, such spaces serving as flues and communicating with a chimney, *i*, on the top of the stove. The upper portions of the sides of the oven are set in, as shown at *d e* in Fig. 1, to make room for the upper burners, *f f*, which are used for boiling and other cooking operations that are performed on the top of the stove. This setting in of the upper part of the sides of the oven also permits the gas and heat from one or more burners, *g*, arranged below the oven, to act in a downward direction through the portions *d d* upon the contents of the lower part of the oven.

The several burners *f f* and *g* may be of any kind suitable for heating purposes, provided they are open at the bottom for the free passage of air through them. The upper burn-

ers *f f* are each situated directly under one of the holes *l l*, provided in the top of the stove for the reception of the kettles, boilers, and other utensils, and directly over the portions *d d* of the oven, and the bottom of each of said burners is set into one of two horizontal partition-plates, *h h*, which are placed across the spaces *b' b'*, between the upright upper portions, *e e*, of the oven and the sides of the outer portion of the stove, and at a short distance above the horizontal portion *d* of the oven. The only outlet from the space *b* below the plate *h* is through the burners *f f*. The oven-heating burner *g* is situated directly under the middle of the oven. The several burners are supplied by branch pipes *j k k t* from the service pipe *n*.

The branches *k k*, which supply the upper burners, *f f*, are furnished with separate cocks *p p*, to provide for shutting off the gas from either or all of those burners without affecting the supply to the lower or oven heating burner, *g*.

When the stove is used for baking only, the gas is shut off from the burners *f f* and only supplied to the burner *g*. The products of the combustion, together with any undecomposed air which passes through the latter burner, circulate laterally in opposite directions through the space or flue *a* under the oven, and thence upward through the spaces or flues *b b* at the sides of the oven over the parts *d d* of the oven, and through the burners *f f*, whence they pass through the space or flue *c*, over the top of the oven to the central chimney, *i*. These heated products not only heat the whole of the bottom, sides, and top of the oven, but the horizontal portions *d d*, from which heat is radiated downward onto the contents of the lower part of the oven, and hence all the said contents are heated both at the bottom, top, and sides.

For boiling or other cooking operations on the top of the stove, the upper burners may be used while the lower or oven-heating burner is in use, the air necessary for combustion on the upper burners being supplied through the lower one and through the flues *a a b b* in a heated state.

The supply of air through the oven-heating burner may be regulated either by a damper below or by one in the chimney, so that it

may be sufficiently in excess of what is necessary for that burner to promote combustion on the upper burners.

In many cases cooking operations may be performed on the top of the stove by the escaping heat from the oven-heating burner passing through the upper burners without using any gas in the latter—as, for instance, in continuing the operations of boiling or stewing after the contents of the vessels have been brought to the boiling-point.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The employment in a gas cooking-stove of one or more burners arranged directly under the oven, in combination with flues below, at the sides, and on the top of the oven, substantially as herein specified.

2. In combination with the burners under the oven, and the flues under and at the sides thereof, the setting-in of the upper part of the oven, substantially as shown at *d e* in Fig. 2, whereby the heat is enabled to be radiated

downward onto the contents of the lower part of the oven, as herein set forth.

3. The employment of a system of burners so applied in the lower and upper parts of a gas cooking stove containing an oven that the products of combustion from the lower burner or burners pass through the upper burner or burners, and the latter is or are supplied with air through the former, substantially as herein specified.

4. The arrangement of the upper burners and the partition *h* in relation to each other and to the set in upper portions, *d e*, of the sides of the oven, substantially as herein described, whereby the products of combustion from the lower burner are caused to pass over the horizontal parts *d* of the said set in portions, and so as to produce a downward radiation of heat on the contents of the lower part of the oven, as herein set forth.

Witnesses: EDWIN A. LELAND.

J. W. COOMBS,

G. W. REED.