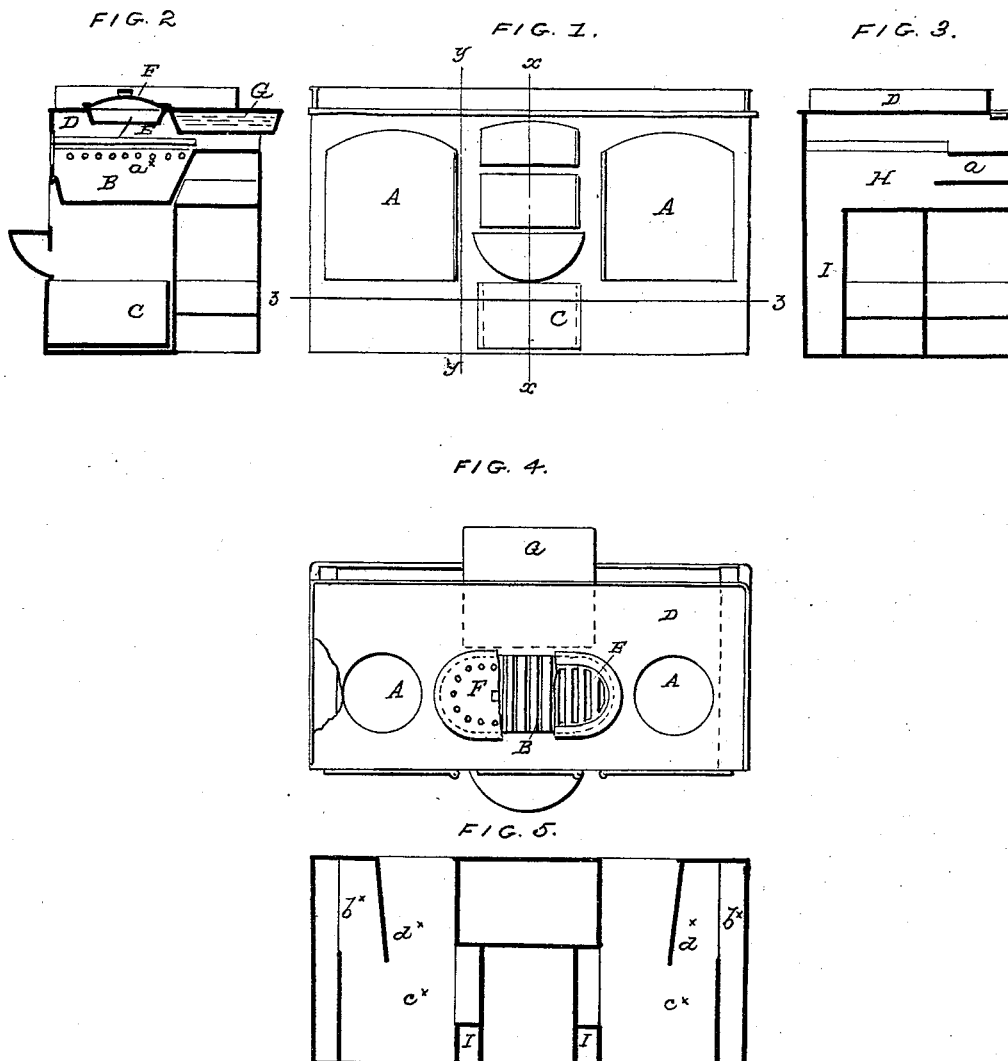


E. G. NILES.
Cooking Range.

No. 48,712.

Patented July 11, 1865.



WITNESSES:

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att'y

UNITED STATES PATENT OFFICE.

E. G. NILES, OF CINCINNATI, OHIO.

IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. 48,712, dated July 11, 1865.

To all whom it may concern:

Be it known that I, E. G. NILES, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Cooking-Ranges; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a front view of my invention; Fig. 2, a transverse vertical section of the same, taken in the line *x x*, Fig. 1; Fig. 3, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 4, a plan or top view of the same, partly in section; Fig. 5, a horizontal section of the same, taken in the line *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements in cooking-ranges, whereby air may be heated for warming apartments other than that in which the range is placed, and an economical water-heating attachment obtained, and perfect control over the fire so as to economize in fuel and to heat perfectly the ovens for baking purposes.

The range, externally, may be of the usual form, provided with two ovens, A A, between which the fire-chamber B is placed, the ash-drawer C being at a considerable distance below the fire-chamber, which is between the upper parts of the ovens.

D is the top plate of the range, which is a short distance above the tops of the ovens, and is provided with an oblong opening directly over the fire-chamber, in which a supplemental grate, E, of basket form, is fitted to receive charcoal. This supplemental grate is provided with a perforated cover, F.

G is a water-chamber, cast with the top plate, D, at its rear part, and directly back of the upper part of the fire-chamber, and extending beyond the back plate of the range, as shown in Figs. 2 and 4.

At each side of the fire-chamber B, between it and the ovens A A, there is a chamber, H, into which cold air, either from the cellar or from the outer side of the building, is admit-

ted through passages I I. The air is heated in the chamber H, and the heated air may pass directly from H through passages *a* directly into the apartment in which the range is placed, or be conveyed through other pipes into other apartments for heating the same. The air-heating chamber H is perforated at its sides adjoining the fire-chambers, as shown at *a*^{*}, for the purpose of admitting air in small jets over the fire in the fire-chamber. (See Fig. 2.) By this arrangement the inflammable gases are all consumed and the greatest possible amount of heat utilized from the coal.

The charcoal in the supplemental grate E is ignited by the heat from the fire-chamber, the fuel in E being supplied with air through perforations in the cover F. This supplemental grate E causes the air that passes through the perforations *a*^{*} to be subjected to a requisite degree of heat to insure the combustion of the inflammable gases when it mingles with them, while the water in chamber G will be properly heated. The two fires also cause counter-currents, which admit of the heat being under perfect control and capable of being carried to the parts where desired.

When the ovens are to be heated the products of combustion pass down side flues, *b*^{*} *b*^{*}, into flues *c*^{*} underneath the ovens, the flues *c*^{*} being provided with partitions *d*^{*} in order to give a sinuous route to the draft. (See Fig. 5.) By this arrangement the ovens will be evenly heated throughout.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The supplemental fire-grate E, fitted in the top plate of the range, directly over the fire-chamber B, arranged substantially as and for the purpose specified.

2. The water-chamber G, cast with the top plate, D, and placed in relation with the fire-chamber B and supplemental grate E, substantially as described.

3. The arrangement of the flues *b*^{*} *c*^{*}, provided with partitions *d*^{*}, substantially as and for the purpose specified.

E. G. NILES.

Witnesses:

SYLVESTER HAND,
JOSEPH WHITEHOUSE,