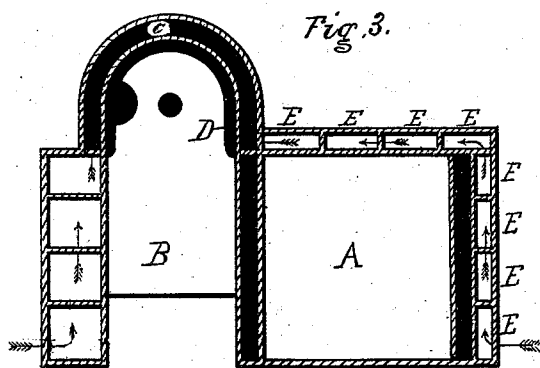
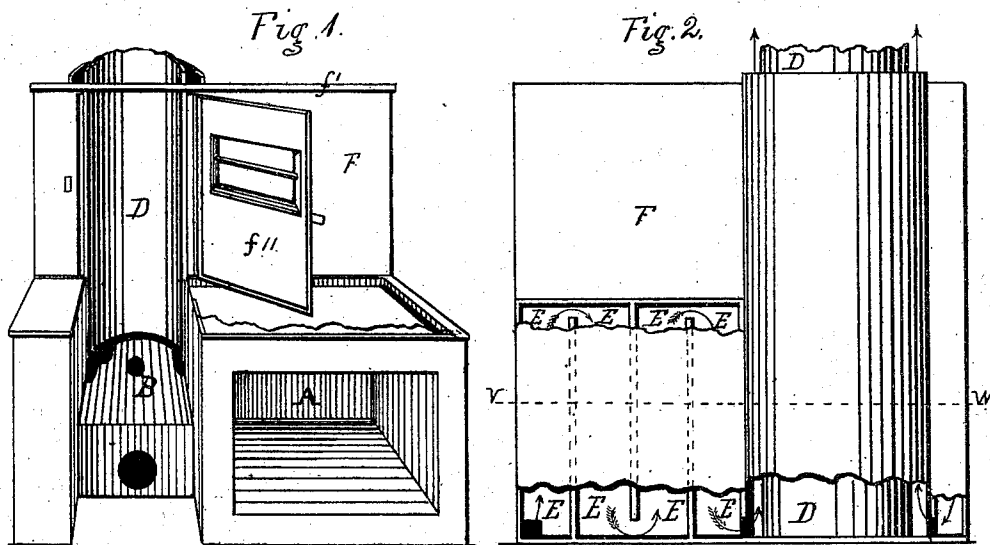


W. HOPKIN, Jr.
Cooking-Ranges.

No. 143,762.

Patented Oct. 21, 1873.



WITNESSES:

Benj. Morrison
Wm. H. Morrison

INVENTOR:

William Hopkin Jr

UNITED STATES PATENT OFFICE.

WILLIAM HOPKIN, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. **143,762**, dated October 21, 1873; application filed March 5, 1873.

To all whom it may concern:

Be it known that I, WILLIAM HOPKIN, JR., of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Air-Heating Ranges, of which the following is a specification:

My invention relates to the combined arrangement of a series of rising and diving flues for the passage of fresh air through the same, so as to be warmed by the heated side and back plates of the oven or ovens of a range, in connection with an air-heating space partly surrounding the chimney, into which space the warmed air of the rising and diving flues, before named, enters and passes upward for the supplying of warm air to the rooms in which it may be desired, through the usual register-plate openings, the object of my invention being to render available for warming other rooms than the one in which the range is located the heat which is usually radiated into the latter room, where it is generally not wanted, and is sometimes objectionable.

Referring to the drawings, Figure 1 is a perspective view of a range embodying my invention, part of the top plate of the oven, the grate, fire-bricks, and doors being removed, with the exception of the door for closing the vertical boiler-chamber and chimney. Fig. 2 is an elevation of the rear side or back part of Fig. 1, portions of the rising and diving flues, and of the flue around the chimney, being broken out in order to show the positions of said flues. Fig. 3 is a horizontal section, showing the different parts below the dotted line *v w* of Fig. 2.

The drawing represents the range as having only one oven, A, and the opposite side of the fuel-chamber B as fitted with diving and rising flues communicating with the flue-space C around the rear portion of the chimney-flue D, thus providing a series of air-warming flues on that side of the fuel-chamber B where a single oven only is desired; but when a double-oven range is desired, another, like A, is intended to be used instead of the series shown as in direct contact with the side plate of the fuel-chamber B. The rising and diving flues E E, at the side and rear of the oven A, are produced by vertical partitions *e' e'*, arranged at equal distances apart from each other at both the side and rear of the oven, and either cast on or secured air-tight to the vertical plates which form between them the two air-

spaces, and so also as to leave alternating open spaces at their ends, whereby the air, which enters at the lower end of the front or first rising flue through a suitable opening in the bottom or side plate, will be compelled upward in said flue, then downward in the next one, and so on, alternately upward and downward through the succeeding flues E E, into the lower end of the space C, and thence upward to whatever register-openings may be opened for the discharge of the thus heated air. See the arrows in Figs. 2 and 3.

It will be understood, without any further description, that by my said construction and arrangement of the flues E E, in connection with the space C, the heat heretofore radiated by the plates outside of the oven—the side and rear plates—into the open space of the room or kitchen in which the range is located, will be utilized by sending it to the register-openings communicating with the flue C, as described, and thus relieving the kitchen from the usual excess of heat, and rendering it available for heating other apartments of a building.

The brick wall heretofore required between the range and the chimney-flues I dispense with by means of the cast-iron plate F. This plate is cast with the mantle *f'*, as part of the same, and is to be secured by screw-bolts or otherwise, in a vertical position across the rear part of the range, the hot-air flue C being afterward secured, by screw-bolts or otherwise, to the back of said plate F, so as to convey the heated air upward between it and the chimney D.

The door *f''* is intended to give access to a vertical boiler (not shown) as patented by me September 17, 1872. It will be seen that this plate, whether there be a vertical or horizontal boiler used, will be much less costly than the old brick wall, more easily applied in setting the range, and afford more room for the range.

I claim as my invention—

The combined arrangement of the fresh-air flues E E and hot-air flue C, with an air-heating range, the said flues being constructed to operate together, substantially as and for the purpose hereinbefore set forth.

WILLIAM HOPKIN, JR.

Witnesses:

BENJ. MORISON,
WM. H. MORISON.