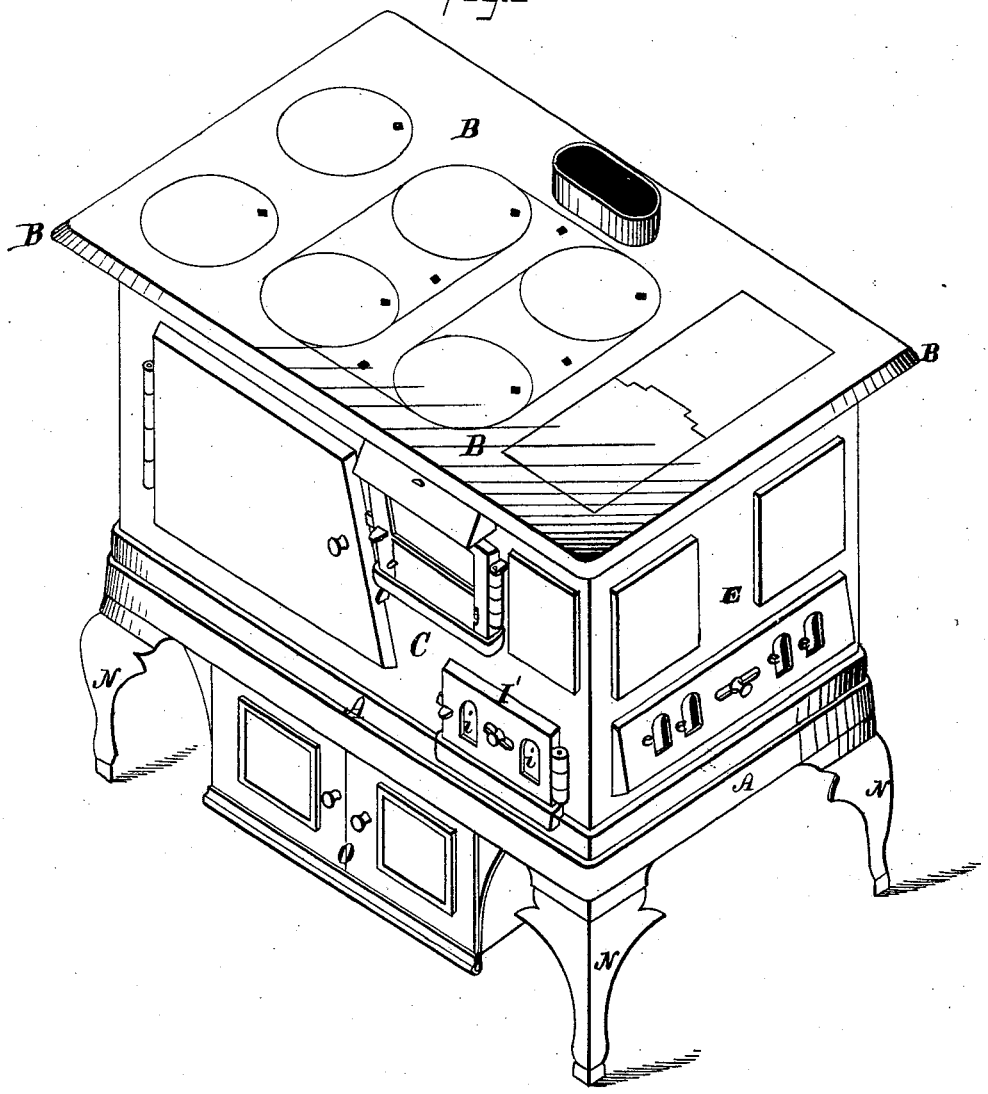
4 Sheets—Sheet 1.

N. A. BOYNTON.

Cooking-Range.

No. 200,247. Patented Feb. 12, 1878.

Fig. 1



WITNESSES:
Jas. R. Hutchinson,
H. C. Hazard

INVENTOR.
N. A. Boynton, by
Prindle and Le Grand his attys.

4 Sheets—Sheet 2.

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Fig. 2.

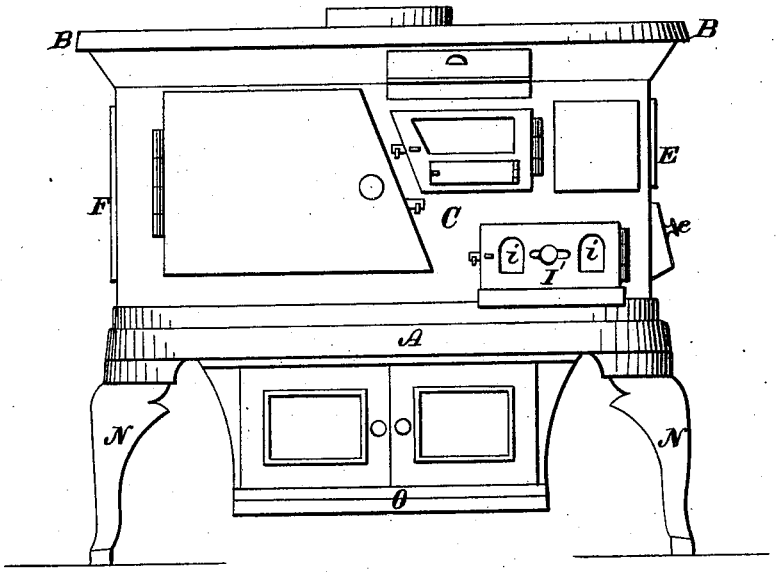
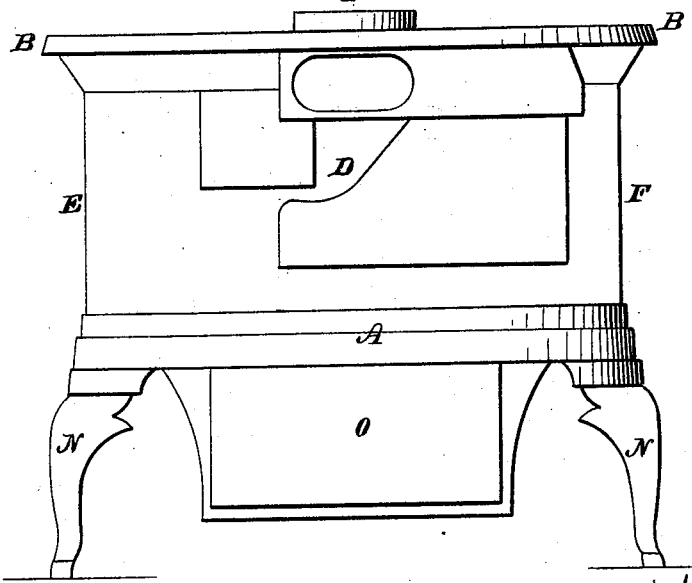


Fig. 3.



WITNESSES
Jas. E. Hutchinson
H. C. Hazard

INVENTOR.
N. A. Boynton, by
Prindle and Co., his Attys

4 Sheets—Sheet 3.

N. A. BOYNTON.

Cooking-Range.

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Fig. 4.

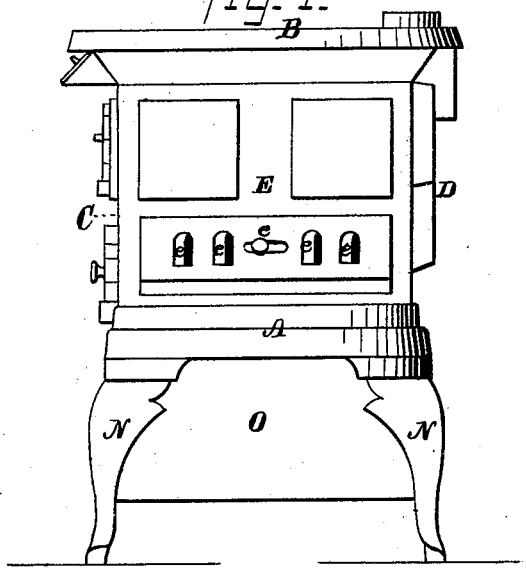
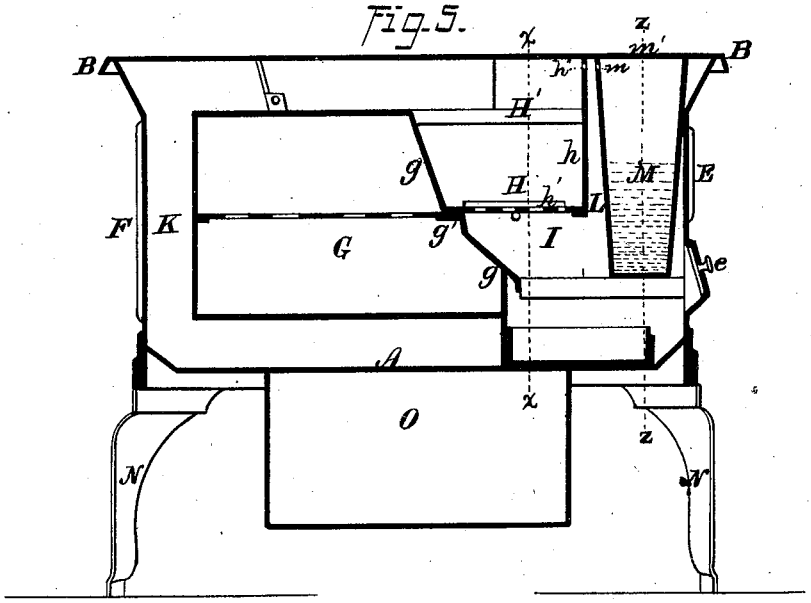


Fig. 5.



WITNESSES:

Jas. E. Hutchinson.

H. C. Hazard

INVENTOR.

N. A. Boynton. by

Prindle and Lothrie Attys

N. A. BOYNTON.

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Fig. 6.

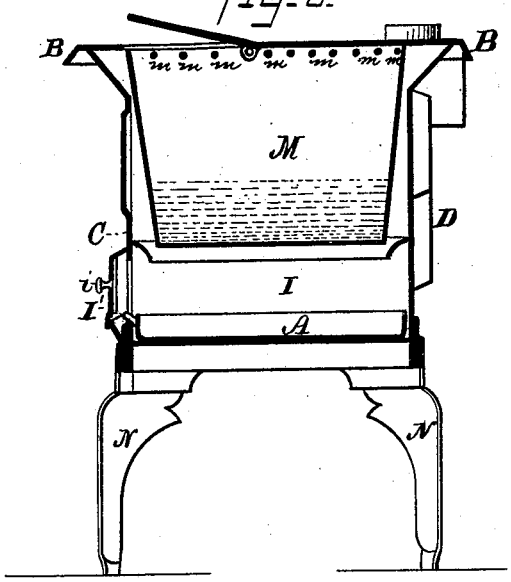
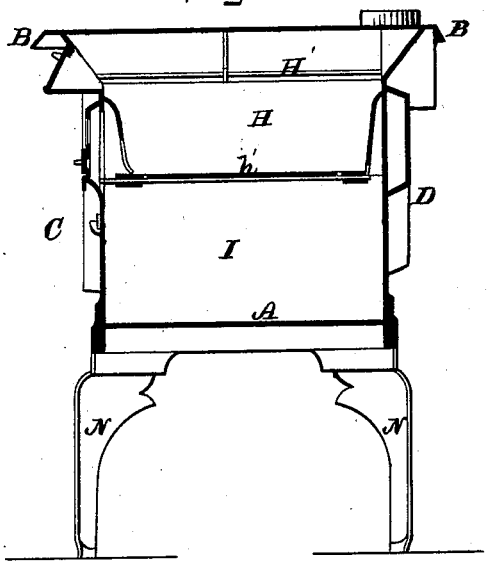


Fig. 7.



WITNESSES:
Jas. E. Hutchinson.
H. G. Hazard.

INVENTOR.
N. A. Boynton, by
Prindle and Lothrie Attys

UNITED STATES PATENT OFFICE.

NATHANIEL A. BOYNTON, OF NEW YORK, N. Y.

IMPROVEMENT IN COOKING-RANGES.

Specification forming part of Letters Patent No. **200,247**, dated February 12, 1878; application filed August 5, 1876.

To all whom it may concern:

Be it known that I, NATHANIEL A. BOYNTON, of New York city, in the county of New York, and in the State of New York, have invented certain new and useful Improvements in Cooking-Ranges: and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved range. Figs. 2 and 3 are, respectively, elevations of the front and rear sides of the same. Fig. 4 is an elevation of the front end of said range. Fig. 5 is a vertical central section of the same upon a line passing from end to end; and Figs. 6 and 7 are transverse sections upon lines *x x* and *z z*, respectively, of Fig. 5.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the capacity and efficiency of a class of cooking-stoves known as ranges; and to this end it consists principally in a range having a chamber which contains a stationary reservoir and is contained within the same inclosure as, and is in unobstructed communication with, the ash-pit, substantially as and for the purpose hereinafter shown.

It consists, further, in a range having its reservoir-chamber, which contains a stationary reservoir located above and in unobstructed communication with the ash-pit, substantially as and for the purpose hereinafter set forth.

It consists, further, in the employment of a supplemental draft-damper, for the purpose of cooling the reservoir, when desired, substantially as is hereinafter set forth.

It consists, further, in the arrangement of the main and supplemental draft-dampers with relation to the fuel-chamber and reservoir, substantially as and for the purpose hereinafter shown and described.

In the annexed drawings, A represents the bottom plate; B, the top plate; C and D, the front and back plates, respectively; E, the front-end plate, and F the rear-end plate, of a range, that is provided with an oven, G, fuel-chamber H, combustion-chamber H′, and ash chamber or pit I, arranged as shown.

The oven G extends from the rear vertical flues K and K′ forward about two-thirds the length of the range, and at the upper portion of its front end are located the fuel and combustion chambers H and H′, which are separated from said oven by means of a downward and forward inclining plate, *g*, while below said fuel-chamber said plate *g* extends horizontally forward a distance equal to the thickness of the fire-brick employed in the former, and from thence inclines forward and downward to the front limit of said oven, and thence extends vertically downward to the bottom plate A.

Upon the horizontal ledge *g′* formed by the horizontal portion of the plate *g* rest the rear fire-brick of the fuel-chamber, and also the rear side of its grate-frame.

From the plate *g* to the front-end plate E, the space between the bottom of the fuel-chamber H and the bottom plate A constitutes the ash-chamber I, while between the front side of said fuel-chamber and the combustion-chamber, (which is formed by a vertical plate, *h*,) and said end plate E, the space inclosed, L, is employed for containing a water-reservoir, M, which reservoir has somewhat less horizontal dimensions than said space or chamber, is inserted through a corresponding opening in the top plate, and is supported entirely by or upon said plate.

As seen in Fig. 5, the upper side of the ash-chamber I and the lower side of the reservoir-chamber L communicate with each other, so that the heat of the plates, or the ashes and cinders contained within the former, are radiated directly to and assist in warming the reservoir M, while the heated air within said ash-chamber circulates freely around said reservoir, and also aids in producing the desired result.

The lower portion of the reservoir M projects into the ash-chamber sufficiently to enable it to receive radiated heat directly from the fuel-grate *h′* without in any manner interfering with the ordinary office of said chamber.

Air for the ordinary purpose of combustion is admitted to the ash-chamber I through a sliding damper, *i*, that is placed within its

door I′, said door being located at the front end of said chamber, within the front plate C; but, in order that the inward-flowing current of cool air may be employed, when necessary, for the purpose of lowering the temperature of the reservoir, a second damper, *e*, is located within the end plate E, at or near the lower end of said reservoir, and extends nearly or quite across said plate.

The damper *e* has a downward and outward inclination, so as to prevent ashes from falling outward or lodging upon said damper so as to fall out when the same is moved.

The air passing inward through the damper *e* will strike against the lower portion of the reservoir M, and lower the temperature of the same, and passing onward to the fuel-chamber, will carry with it the heat thus received, and operate as a hot-blast to increase the efficiency and intensity of the fire.

In order that steam arising from liquid contents of the reservoir may be prevented from escaping into the open air, and may be utilized by aiding in the combustion of the heated gases within the combustion-chamber, one or more openings, *m*, are provided in the wall of said reservoir contiguous to said combustion-chamber, and corresponding opening *h*″ is formed in and through the front wall *h* of the latter, by which means a constant draft upon the interior of said reservoir is created, which draft is supplied by steam generated as described, and by air which passes through the openings around the cover *m*′.

If desired, an inclosed flue may furnish direct communication between said reservoir and combustion-chamber, instead of having such communication effected through the reservoir-chamber.

Beneath the bottom-plate A, between the legs N which support the range, is placed a hot or warming closet, O, which closet is suspended by its upper side from said bottom plate, and has no contact with the floor or with said legs.

The upper side of said closet is open, so that when placed against said bottom plate the latter forms a covering for the former, and its heat is radiated directly into the same.

The front side of the closet O is provided with an opening, through which access to its interior may be had, and said opening is inclosed by suitable doors, preferably constructed so as to slide.

As thus constructed and connected with the range, the closet O does not, in any manner, interfere with the use or functions of other portions of the same, and may be connected with or disconnected from said range with but little trouble and in a very short time.

The term "stationary" is applied to my reservoir because it is a fixture in the stove, and is not arranged to be removed or tilted for the purpose of discharging its liquid contents, such fixedness being essential to a proper control of the draft of the stove, which could not be had if the opening for the reception of said reservoir was occasionally uncovered, or the walls of the reservoir-chamber were hinged to permit of a tilting motion.

Having thus fully set forth the nature and merits of my invention, what I claim as new, is—

1. A range, having a stationary reservoir, M, inclosed by a chamber, L, which is contained within the same inclosure as, and is in unobstructed communication with, the ash-pit I, substantially as and for the purpose shown.

2. A range having its reservoir-chamber, which contains a stationary reservoir, located above, and in unobstructed communication with, the ash-pit, substantially as and for the purpose set forth.

3. In combination with the reservoir M, the supplemental draft-damper *e* arranged within the end plate E at or near the lower end of said reservoir, substantially as and for the purpose set forth.

4. The arrangement of the main and supplemental draft-dampers *i* and *e*, respectively, within the side and end of the range and with relation to the fuel-chamber H and reservoir M, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of August, 1876.

NATHANIEL A. BOYNTON.

Witnesses:
HENRY T. RICHARDSON,
JAMES B. TAYLOR.