3 Sheets—Sheet 1.

W. V. BRADDICK.

Cooking-Stove.

No. 218,109. Patented Aug. 5, 1879.

Fig. 1.

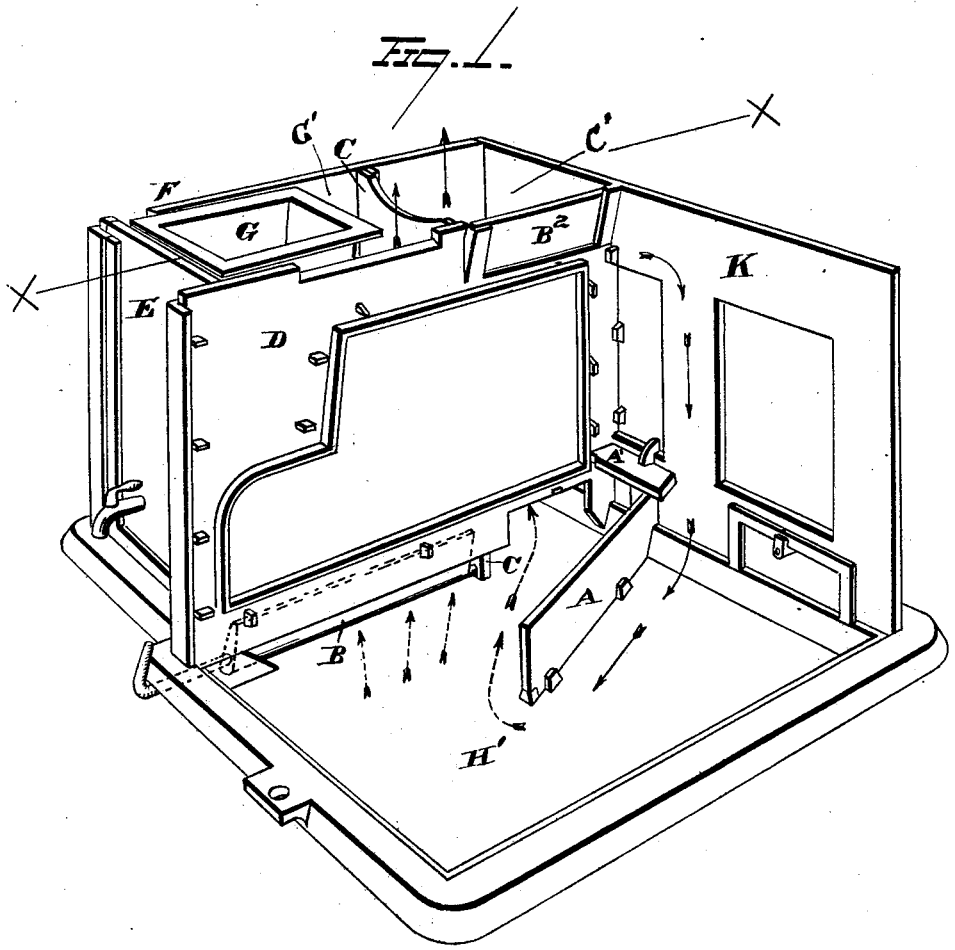

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Fig. 2.

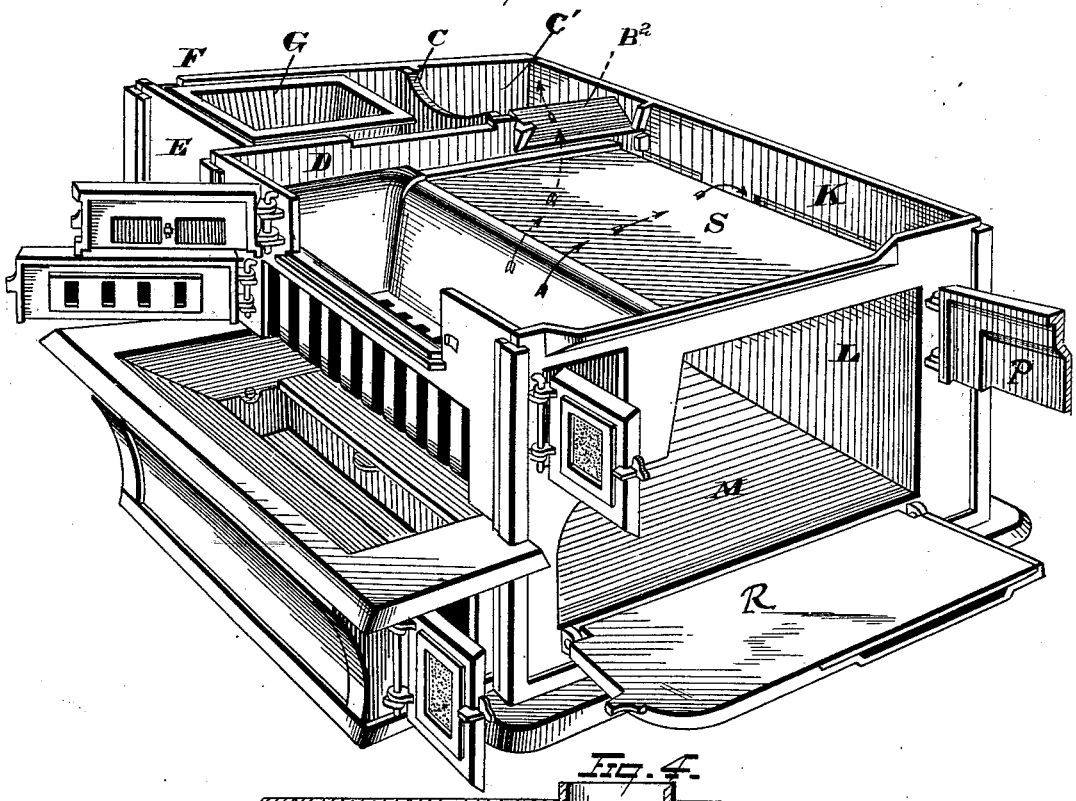
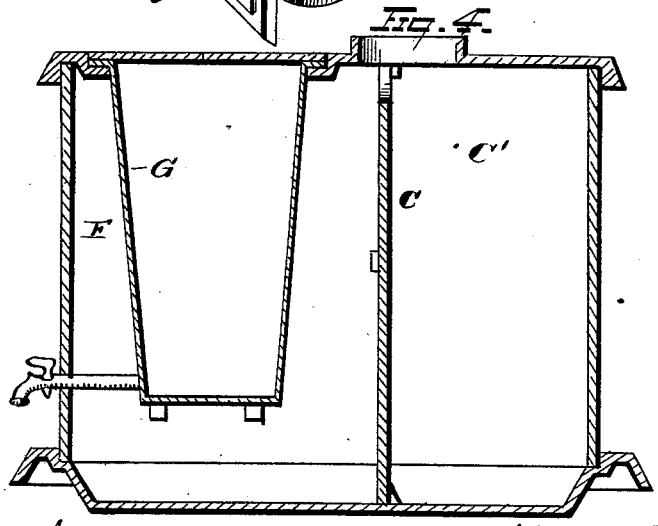


Fig. 4.



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3 Sheets—Sheet 3

W. V. BRADDICK.
Cooking-Stove.

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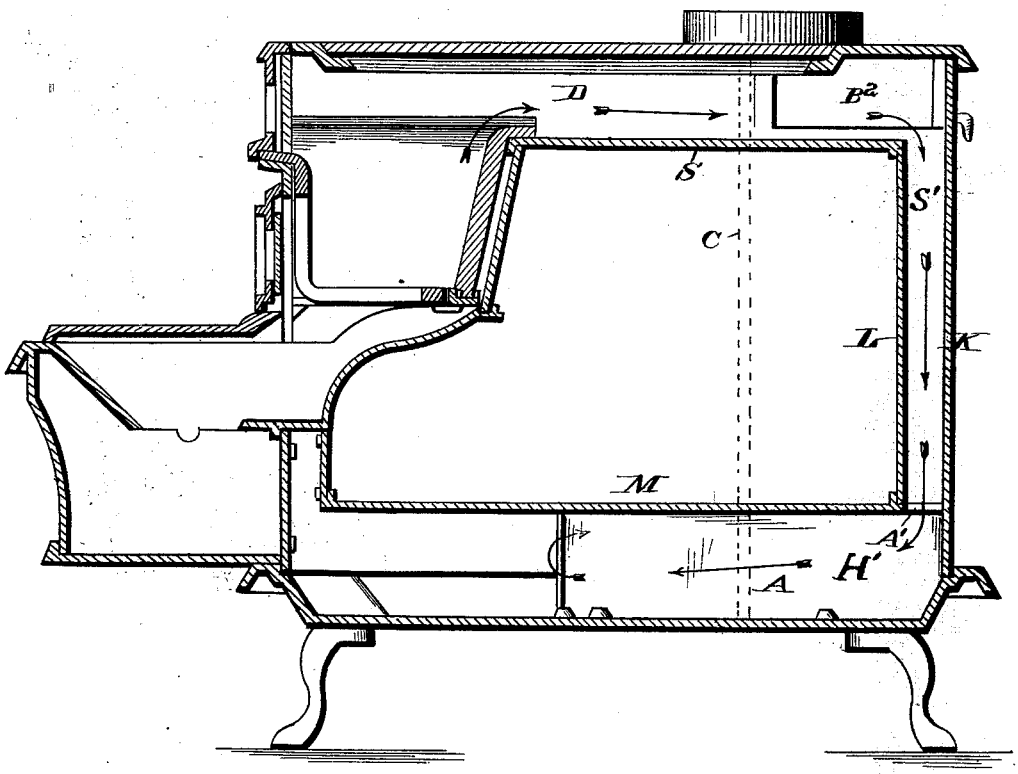
Fig. 3.



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UNITED STATES PATENT OFFICE.

WENDELL V. BRADDICK, OF NORTH BELLE VERNON, PENNSYLVANIA.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **218,109**, dated August 5, 1879; application filed March 1, 1879.

To all whom it may concern:

Be it known that I, WENDELL V. BRADDICK, of North Belle Vernon, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Cooking-Stoves or Ranges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to cooking-stoves or ranges; and it consists of the parts and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a dissected view of a portion of my stove, showing the relation and arrangement of parts therein indicated. Fig. 2 is a perspective view of my device with the top removed, showing its construction. Fig. 3 is a view in longitudinal section of my stove. Fig. 4 is a vertical sectional view through line *x x* of Fig. 1.

The solid and broken arrows in the drawings are intended to represent the direction of draft under different conditions, as will hereinafter appear.

Inasmuch as the construction of stoves is an art so well known, I do not deem it essential to specify definitely the manner of construction of each individual part of my device, but consider it sufficient to combine a description of its operation with such a specification of its arrangement and construction as follows:

I prefer placing the hot-water tank G on one side of the stove, as indicated in the drawings, and when this and the other parts are arranged as shown in Fig. 1 of the drawings the direction of the draft will be as follows: Starting from the grate or combustion-chamber it passes over the top oven-plate, S, thence down the flue S′ between the end plate, K, and the back oven-plate, L. It is then thrown slantingly across the bottom flue, H′, as shown by reference to the bottom flue-plate, A, in Fig. 1. This insures an effectual and even heating of the bottom of the oven.

It will be observed that the bottom flue, H′, is formed between the bottom of the oven and the bed-plate of the stove, and communicates with the rear flue, S′, which latter is formed between the back end of the oven and the rear end plate of the stove.

From the end of the flue-plate A the draft is toward the flue G′ surrounding the hot-water tank G. When it is desired to heat the water in said tank, the bottom damper, B, should be opened. This will admit the major portion of the products of combustion into the indirect smoke-flue G′, in which tank G is placed, from whence the draft will proceed up on the front side of the upright flue-plate C. If it is desired not to heat the water in the tank G, then the damper B is closed, and thus the draft and hot air will be cut off from the said tank G and go up the flue C′ between the end plate, K, and upright flue-plate C. The upright flue-plate C is placed at or near the middle portion of the stove-pipe collar or exit-flue; and this constitutes an important feature of my invention, for the reason that when water is to be heated in the tank G, by opening the damper B, as before specified, I will get nearly all of the products of combustion on the front side of the upright flue-plate C, directly adjacent to the hot-water tank G, as this is the most direct passage of escape when the damper B is open.

It will be observed that the hot-water tank G is incased by back plate, F, division-plate D, small front plate, E, and upright flue-plate C, thus making a smoke-flue, G′, which surrounds the water-tank on all sides.

The division-plate D does not go down entirely to the bottom of the stove, as will be seen in the drawings.

The broken arrows indicate the direction of the draft beneath said plate; and it will be observed that the lower portion of this plate, which is included between the upright flue-plate C and the end plate, K, is cut so as to make the passage which leads into flue C′ of greater vertical dimension than the passage which leads into flue G′.

My reason for this construction is to provide a larger opening for the products of combustion to pass out in free draft when it is not desired to heat the tank, for at such times the damper B is closed, thus shutting the opening under the division-plate D, which com-

pels the draft to go the other way. The hot-water tank G does not extend quite to the bottom edge of the division-plate D.

My reason for having it so is to provide a protection for said tank by not permitting the flames to strike it, as they will strike the division-plate D first, thus breaking the flames without any material loss of heat. This provision also enables me to get all my heat on the up-draft, which, so far as I am aware, is not obtained in the hot-water tanks of other stoves. This is an advantage in my estimation, as more heat can be had on an up-draft than on a down-draft. Not only this, but the water in the tanks of other stoves, so far as my knowledge goes, absorbs a great amount of the heat before it gets around the oven, thus unnecessarily interfering with baking—an objection overcome by my device, as the heat in my stove travels around the oven before reaching the water-tank; and at the same time the water-tank is sufficiently away from the flames to escape their injurious action, yet at the same time receive sufficient heat.

I have increased the baking capacity and function of my device above ordinary stoves that have two independent oven-doors, which admit a great amount of cold air to the oven, which is only heated from the front, top, back, and bottom.

A range or stove having but one oven-door is an improvement over the old multiple-door stove; but still they are not heated from any more sides than the old stove, unless by a flue running up the back.

My stove or range has but one oven-door, and is heated from the front, the top, the end, bottom, and back, making in all five sides.

The small plate A′ shuts the opening between the division-plate D and the bottom flue-plate, A. This provision is made to compel the products of combustion to come upon the side of the flue-plate indicated by the arrows; otherwise they would pass down upon the other side of the bottom flue-plate, A, and go directly up and out through the exit-flue.

B^2 is the direct-draft damper, and when a direct draft is wanted this damper should be opened. The solid-line arrows in Fig. 2 of the drawings, however, will show the direction of draft when the damper B^2 is closed.

The peculiar form of oven-door shown in the drawings does not constitute any part of the invention claimed in this patent; and I reserve the right to hereafter make a separate application for patent thereon.

What I claim is—

1. The combination, with the rear flue, S′, and the bottom flue, H′, provided with the diagonal plate A, of the vertical return-flue C′ and the flue G′, in which the water-tank is located, substantially as set forth.

2. The combination, with the rear vertical flue, S′, provided with the horizontal plate A′, and the bottom flue, H′, provided with the diagonal plate A, of the vertical return-flue C′ and the flue G′, in which the water-tank is located, substantially as set forth.

3. The combination, with the rear flue, S′, and the bottom flue, H′, provided with the diagonal plate A, of the flue G′, in which the water-tank is located, and which is provided at its lower portion with the damper regulating its communication with said bottom flue, substantially as set forth.

4. The combination, with the bottom flue, H′, and the flue G′, in which the water-tank is located, of the vertical flue C′, whose lower portion communicates with the bottom flue in indirect draft, and whose upper portion has damper communication in direct draft with the top flue, substantially as set forth.

5. The combination, with the bottom flue, H′, of the flue G′, in which the water-tank is located, and the flue C′, said flues G′ and C′ opening directly into the final exit-flue of the stove or range, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WENDELL VICTOR BRADDICK.

Witnesses:
J. C. HASSON,
JOHN S. HENRY.