G. G. Wolfe.

Cooking-Stove Tank.

No. 76292 Patented Mar. 31, 1868.

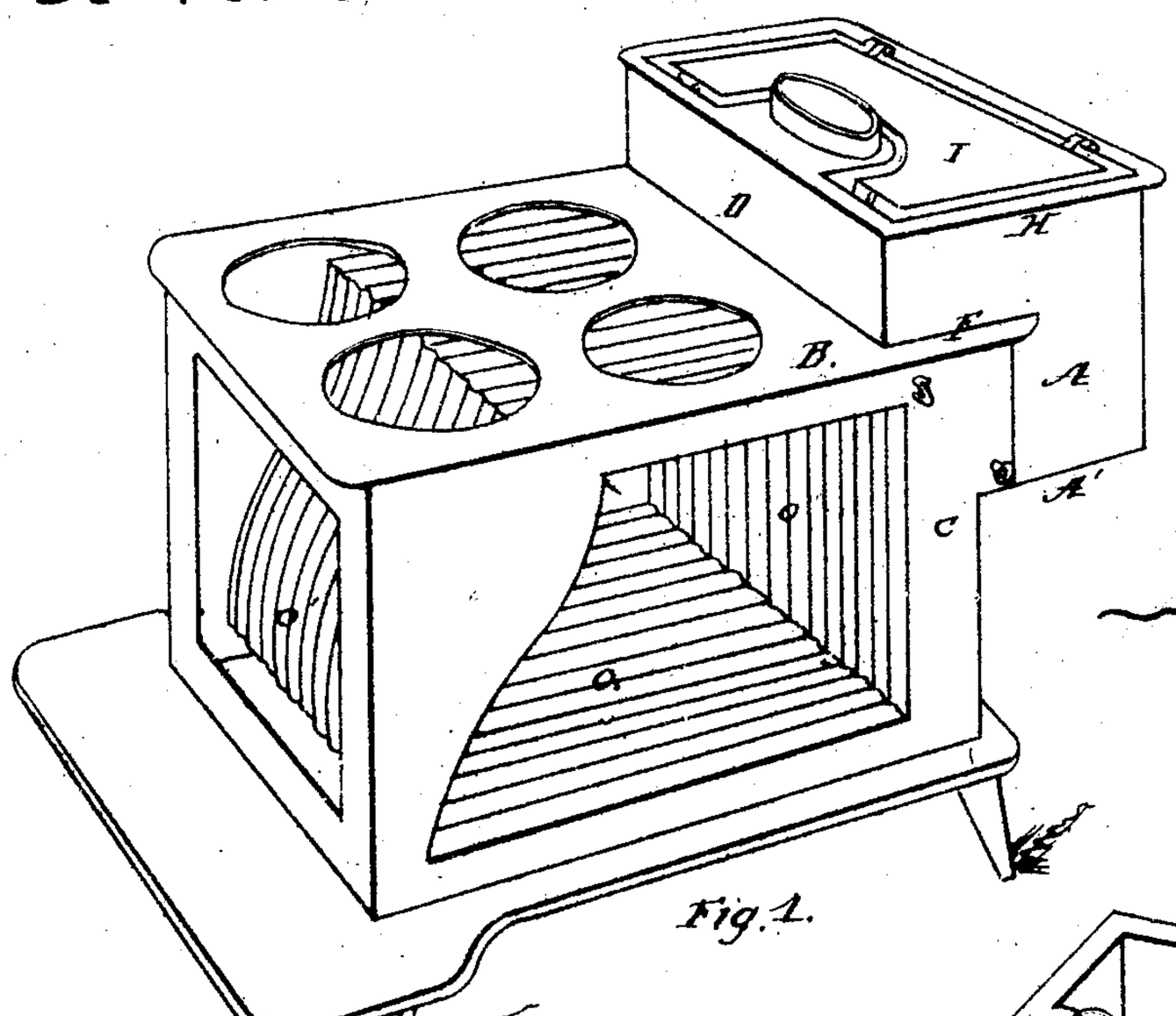

Fig. 1.

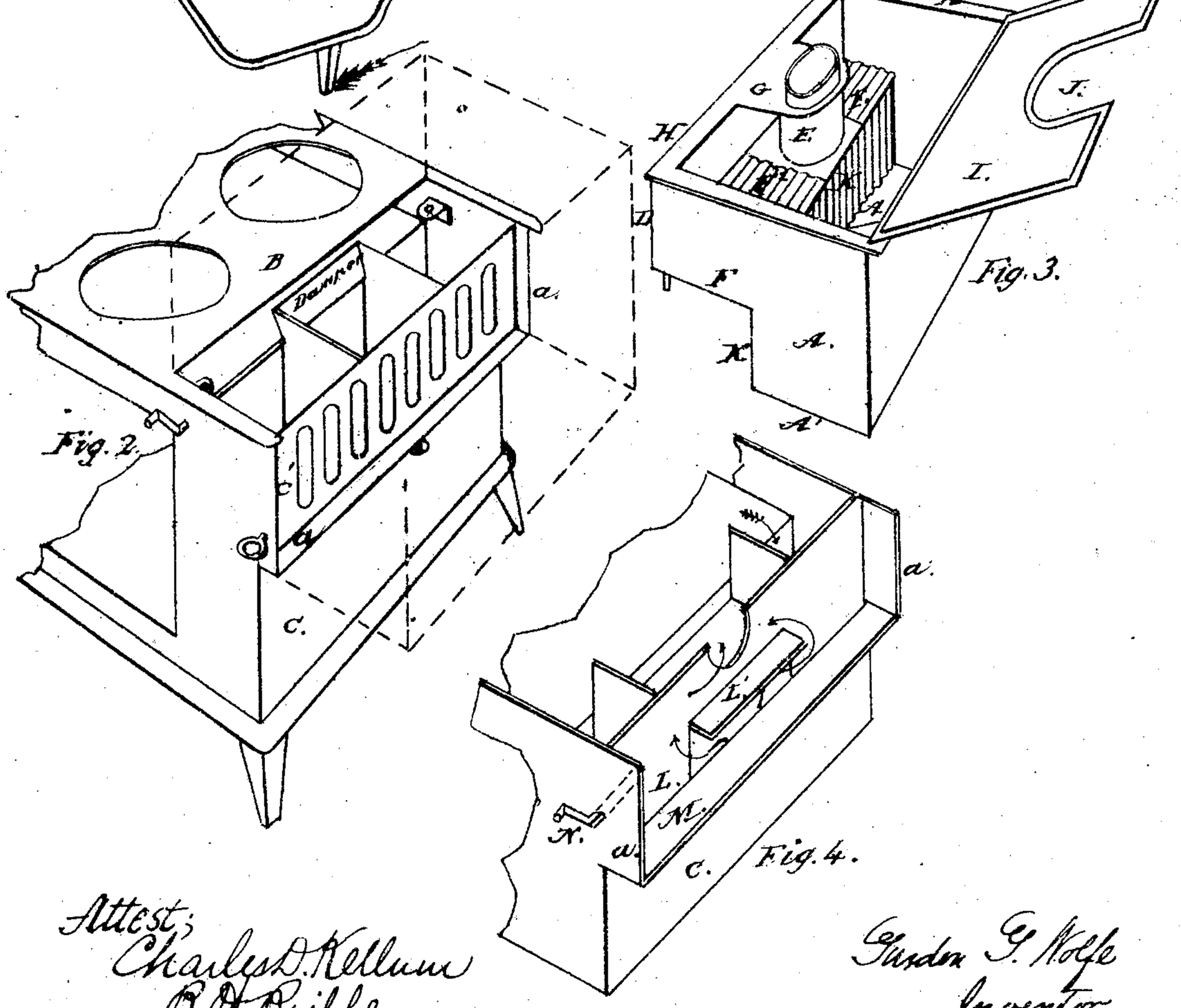

Fig. 2.

Fig. 3.

Fig. 4.

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GURDON G. WOLFE, OF TROY, NEW YORK.

Letters Patent No. 76,292, *dated March* 31, 1868.

IMPROVEMENT IN COOKING-STOVE TANKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN;

Be it known that I, GURDON G. WOLFE, of the city of Troy, in the county of Rensselaer, and State of New York, have invented new and useful Improvements in Cooking-Stoves, and in Reservoirs or Water-Tanks for Cooking-Stoves, and in the mode or manner of attaching or combining the same with cooking-stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction, arrangement, and operation of the same, reference being hereby had to the accompanying drawings, and to the letters of reference marked thereon, which form and make a part of this specification.

Like letters represent and refer to like or corresponding parts.

Figure 1 represents in perspective a view of a cooking-stove containing my improvements in the construction of the plates of the oven of cooking-stoves, also my improved reservoir or water-tank combined therewith, and each more fully described hereinafter.

Figure 2 represents a section of a cooking-stove, showing the manner in which my said reservoir or water-tank is arranged and combined therewith.

Figure 3 represents my said boiler, reservoir, or water-tank, showing the construction thereof, and more fully described hereinafter.

Figure 4 represents another mode of combining my said reservoir with a cooking-stove, and hereinafter described and set forth.

The nature of my said invention and improvements consists in so constructing, arranging, and combining, with a cooking-stove, a reservoir or water-tank for such stoves, that a part thereof shall fit into and form a part of the top plate of such stove, and at same time rest and remain over and upon the flue or flues in the rear end of such stove, as well as over the flue passing from the fire-chamber over the oven to the exit-flue in the rear end of said stove, while at same time a part or portion thereof shall extend downward from the top plate aforesaid, and against the rear end vertical plate of such stove, or against a damper therein, in case it should be deemed best to make such damper-openings in such vertical end plate, thereby heating the bottom and side in part of such reservoir, in the manner substantially as herein described and set forth.

It also consists in the employment and combination, with the oven of a cooking-stove, of corrugated plates upon the bottom, front, and rear parts thereof, in the manner and for the purposes substantially as herein described and set forth.

It also consists in the arrangement of a damper in the rear and vertical end plate of a cooking-stove, and the combination of the same with the reservoir or water-tank of a cooking-stove, in the manner and for the purposes substantially as herein described.

It also consists in constructing a reservoir or water-tank for a cooking-stove, with a part or portion of the bottom thereof raised up or elevated within the said reservoir or water-tank, with the exit-pipe arranged in such part or portion in the manner substantially as shown at fig. 3 of accompanying drawings, and substantially as and for the purposes herein described and set forth.

It also consists in the removing of a part or portion of the rear end of the top plate of a cooking-stove, so as as to form an opening of sufficient capacity to receive and to contain a part of the bottom of a reservoir or water-tank, substantially as shown at fig. 2 of the accompanying drawings, and herein described and set forth.

It also consists in the employment of a hot-air chamber, of the size of that part of such reservoir or water-tank hanging below the top plate of such stove, which shall communicate with the flue or flues in the rear end of said stove, by means of a flue-opening and flue-plate, in the manner substantially as shown at fig. 4 of the accompanying drawings, and in the manner and for the purposes substantially as herein described and set forth.

Having thus described the nature of my said invention and improvements, I will now and here proceed to describe the construction, arrangement, and operation of the same, which is as follows, to wit:

I construct my said reservoir or water-tank of tin, lined with copper, or of other suitable material, and in size to correspond with the cooking-stove where the same is to be used. The back part or portion of such reservoir projects and continues downward below the bottom of the front part thereof, in the manner substantially as shown at figs. 1 and 3 of accompanying drawings. The said reservoir or water-tank may be seen in perspect-

ive at fig. 3. A is that part of said reservoir which projects downward from and below the top plate, B, of the stove, and against the rear vertical end plate C, containing the damper C′, and which may thus be continued downward to any distance desired. D is that part of such reservoir which is fitted into the top plate B, at the rear end thereof, a sufficient portion thereof being removed so as to receive and contain such water-tank, in the manner substantially as shown at fig. 2, and thereby permitting that portion of the bottom of said reservoir which receives and contains the exit-pipe E, fig. 3, to cover the flue or flues in the rear end of the cooking-stove, as well as to cover some part or portion of the flue over the top of the oven, if found expedient so to do, and at same time filling up the said opening in said top plate, so as to expose that part or portion of the bottom of said reservoir which is raised up and above the bottom part A, and marked F, figs. 1 and 3. The bottom itself of this part of my said boiler may be seen at F′, fig. 3, and it may be corrugated, as shown in said figure, which is for the purpose of increasing the heating-surface of said bottom part of the said reservoir, or it may be constructed of an entirely smooth surface. In this elevated part of said bottom of my reservoir, I arrange and construct the exit-pipe E, which, when said reservoir is in its place upon said cooking-stove, is directly over the centre flue in the rear end of such stove, if there be three or more flues used therein. If but two flues are thus constructed, then said exit-pipe will be over one of said flues, or some part or portion thereof. The upper part of such exit-pipe, E, is supported by a bracket, G, extended out from and cast with the rim or cast-iron plate H, extending around the outer edges of said reservoir, and to which the reservoir-cover, I, is hinged, substantially as shown at figs. 1 and 3, which cover has and contains a recess, J, as shown at said fig. 3. From the upper bottom, F′, to the lower bottom, A′, is constructed a plate, K, cast with said reservoir. This plate or part, K, is that part or portion of my said reservoir which comes against or in contact with the damper or damper-opening C′, shown at fig. 2, as aforesaid, and which part is constructed to fit the end plate C, or any flanges cast thereon, as seen at *a*, figs. 2 and 4.

My said reservoir is constructed in form, shape; and with the respective plates or parts, substantially as shown at fig. 3, and when it is applied to, arranged, and combined with, a cooking-stove, it will be substantially as shown at fig. 1. The flues at the top, in the rear end of the said stove, are exposed, and a part of the top plate, B, corresponding to that part of said reservoir to be fitted thereto, is removed, and the damper and damper-openings C′ in the vertical and rear end plate, C, of such stove are each and all constructed, arranged, and combined substantially as seen at fig. 2. Another form of arranging my said reservoir upon and with a cooking-stove, as aforesaid, will appear upon an inspection of the accompanying drawings, at fig. 4 thereof. With the exception of the employment of said damper, C′, I use an elongated flue, L, with a flue-plate or strip, L′, immediately over such flue-opening, substantially as seen at said fig. 4. This opening, L, permits the hot air to pass from the rear end of the said stove into a chamber, M, outside of the rear end of the stove, one side of which is formed or completed by means of that part of said reservoir which comes against the flanges or jambs *a*, when said reservoir is applied to the said stove, as aforesaid, while the bottom part, F′, covers the upper part of said chamber, M, when fitted and applied to and with the top plate B, substantially as aforesaid. To control the passage of the heat into said chamber M, I use the damper N, same figure.

When my said reservoir is applied to a stove, substantially as shown at fig. 1, the damper C′ may be open or closed. If it should be necessary, for the rapid heating of water in my said reservoir, to bring more heat to bear upon such reservoir, then said damper may be open, but for the usual and ordinary purposes of heating water it will not be necessary that said damper, C′, should be open, for the action of the heat against that part of said reservoir which fits into a recess in the said top plate of the stove, and over said flues, as aforesaid, together with the action of heat upon the exit-pipe E, will be sufficient for all practical purposes, without the use of said damper, and yet if more heat should be desired against the said reservoir for rapid heating of water in said reservoir, then said damper will be opened; otherwise it will remain closed, which is done by means of a corresponding slide, in the usual way of opening and closing sliding dampers.

I prefer to construct my said reservoir wholly of cast iron, but it is manifest that, as I have hereinbefore stated, it may be constructed of tin, copper, or other sheet metal, with one or more thicknesses, casting only the rim H and cover I.

By constructing a reservoir substantially as aforesaid, I am enabled to get more surface for heating of the water therein, at same time making a reservoir of more strength and utility than any heretofore made, and also greatly economize room for the use of such stove, for it will at once appear, on examination of said drawings, that at least one-half of the thickness of the reservoir is saved. I also greatly economize the use of fuel, as more surface is exposed to the action of the heat upon said reservoir. It is also more convenient to pour water into such reservoir or to dip therefrom, than it would be were the whole reservoir above the top plate of the said stove. Water in said reservoir may be heated very hot, more so than I have any knowledge or information of concerning any other kind of reservoir or tank, and differently combined and arranged with the cooking-stove. A warming-closet may be arranged underneath said bottom part, A, of said reservoir, in the usual way and manner. The plate, K, may be corrugated in the same manner as the upper bottom plate F′, if deemed best so to construct the same, and thus give more heating-surface.

At fig. 1 may be seen the inner plates, O, of the oven. The bottom plate O, the rear end plate O′, and the front plate O″ are each and all constructed with corrugations, as shewn at said figure, and its accompanying section marked Figure 1′. These plates are thus constructed for the purpose of obtaining more heating or baking-surface. It is manifest that such corrugations will largely increase such surface of said plates, and thus facilitate baking or roasting. At the same time such plates thus constructed are much more strong than were they constructed even or smooth, in the usual way, and of course they may be cast of less thickness, and thereby save in the use of iron, and give a stronger plate, as well as one that will permit the heat to pass through the same quicker than it would were it thicker, and thereby render the oven ready for use in much less time.

Having thus described the nature, construction, and operation of my said invention and improvements, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The reservoir or water-tank A, constructed with an upper bottom, F′, and a lower bottom, A′, and intermediate plate K, and exit-flue E, each being arranged and combined in the manner and for the purposes substantially as herein described and set forth.

2. I also claim the combination of the reservoir or water-tank A, constructed substantially as herein described, with a cooking-stove, having a part or portion of the rear end of the top thereof removed, substantially as shown at fig. 2 of the accompanying drawings, so as to receive and contain the upper part or bottom, F′, of said reservoir, in the manner and for the purposes substantially as herein described and set forth.

3. I also claim the employment of the damper C′ in the upper part of the rear and vertical end plate of the cooking-stove, in combination with the vertical flues in the rear end of the stove, and with that part or portion of said reservoir extending below the top plate of said cooking-stove, as seen at fig. 1 of accompanying drawings, and in the manner and for the purposes substantially as herein described and set forth.

4. I claim the employment of the flue-opening L, flue-plate L′, and flue-chamber M, in combination with the reservoir A, in the manner substantially as herein described and set forth.

5. I claim the employment and arrangement of a reservoir or water-tank with a cooking-stove, so that a part thereof shall be above the top plate of the stove, and over the vertical flue or flues in the rear end thereof, and a part below such top plate, in the manner substantially as shown at fig. 1 of the accompanying drawings.

In testimony whereof, I have hereunto set my hand, this 5th day of February, A. D. 1868.

GURDON G. WOLFE.

Witnesses:

CHARLES D. KELLUM,

MARCUS P. NORTON.