2 Sheets--Sheet 1.

R. M. HERMANCE.

Reservoir Cooking-Stove.

No. 164,735. Patented June 22, 1875.

Fig 1

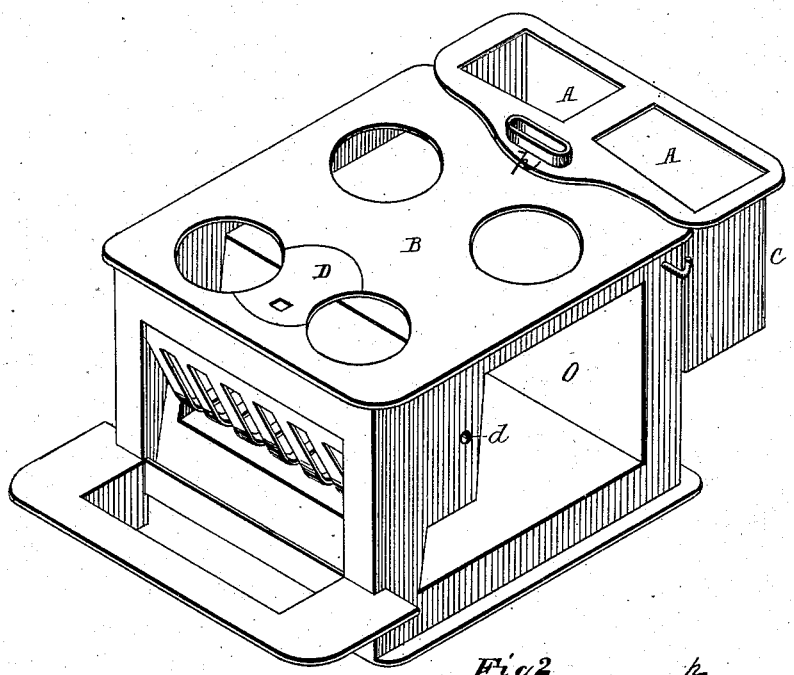
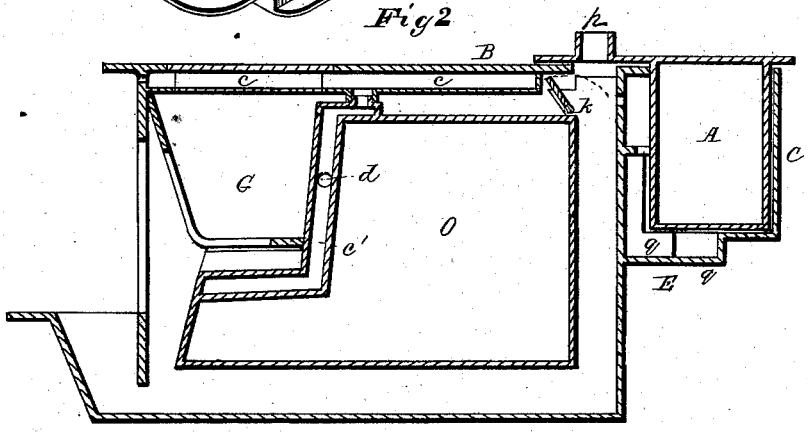


Fig 2



WITNESSES

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2 Sheets--Sheet 2.

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Fig 3

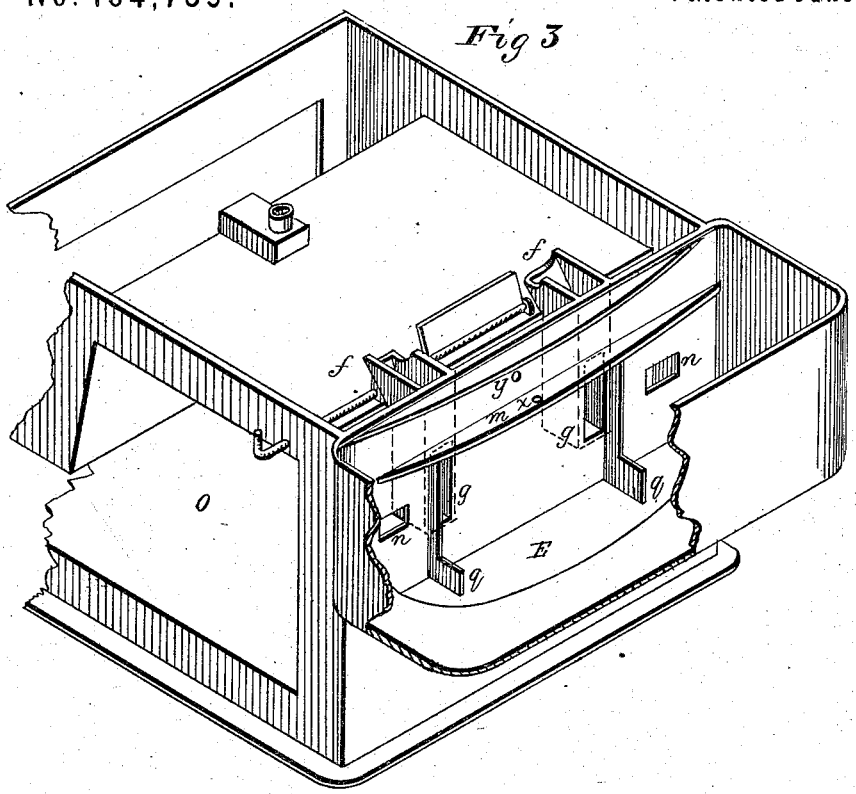
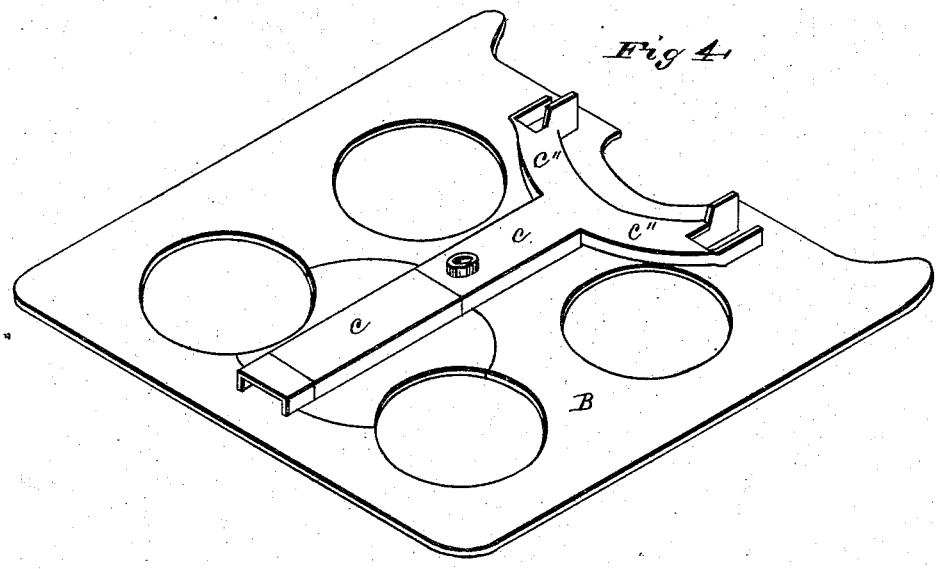


Fig 4.



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UNITED STATES PATENT OFFICE.

RICHARD M. HERMANCE, OF HALF MOON, ASSIGNOR OF ONE-HALF HIS RIGHT TO ANDREW B. FALES, OF TROY, NEW YORK.

IMPROVEMENT IN RESERVOIR COOKING-STOVES.

Specification forming part of Letters Patent No. **164,735**, dated June 22, 1875; application filed May 20, 1875.

To all whom it may concern:

Be it known that I, RICHARD M. HERMANCE, of Half Moon, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Cooking-Stoves, of which the following is a specification:

The objects of my present invention are, first, to provide means for heating the reservoir in an effective and economical manner by hot air, in contradistinction to smoke or the products of combustion; and, second, to utilize the walls of the ducts or flues for this hot air as ribs or strengthening portions for the top plate of the stove and its adjuncts; to accomplish all of which the invention consists, first, in the combination of a hot-air flue passing through the center of the top sheet-flue of the stove, a reservoir located in rear of the ordinary pipe-collar, and a reservoir-casing provided with outlets for the heated air, which are located beneath the plane of the top plate of the stove; second, in the combination of a hot-air flue passing through the center of the top sheet-flue of the stove, a reservoir-casing situated in rear of the rear flues, and the descending flues, into which the air escapes after imparting its heat to the reservoir; third, in the combination of a hot-air flue passing through the center of the top sheet-flue of the stove, a reservoir-casing located in rear of the rear flues and provided with division-strips, and the descending flue, into which the heated air escapes; fourth, in the combination of a hot-air flue passing through the center of the top sheet-flue of the stove, a reservoir-casing located in rear of the rear flues and provided with division-strips, and a port or ports leading from said casing, and permitting the air to escape at a point below the top plate of the stove; fifth, in the combination of the bridge or part D and its subjacent hot-air flue; sixth, in the combination of the hot-air flue passing through the center of the top sheet-flue of the stove, carrying heated air to the reservoir-casing, and the protecting-chamber located between the oven O and fire-box G; seventh, in the combination of the reservoir-casing and bifurcated hot-air flue leading from the front of the stove to said casing, and passing the draft-damper; eighth, in the combination of the flues *c c′ c″*, casing B, and strips *q q*.

In the drawing, Figure 1 is a perspective view of an ordinary three-flued cook-stove, having the parts with which my improvements are connected assembled for use. Fig. 2 is a longitudinal section through the ascending flue. Fig. 3 is a rear view, showing in perspective the arrangement of different parts, with the top plate and reservoir removed. Fig. 4 is a perspective view of the top plate inverted, showing the hot-air flue and its connections.

A is the reservoir, the contents of which are to be heated. B is the top plate of the stove, beneath which is located the hot-air duct or flue *c*, which flue passes through the center of the ordinary top sheet-flue of the stove. C is the reservoir-casing, adapted to contain the reservoir, and provided with channels for the heated air. Connecting with the flue *c*, which leads to the front of the stove, and takes air from beneath the molding surrounding the top plate, is the flue or chamber *c′*, extending beneath and behind the fire-box, affording an air-space between said fire-box and the oven, thus effectually preventing the too rapid or over heating of the oven at this point. Air is admitted to this chamber *c′* through inlets in the side plates as at *d*. The draft-damper *k* being located above the oven, and so as to close the receptacle or exit-flue, I cause the air-duct to separate into two branches, *c″ c″*, Fig. 4, on each side of said damper. These branches connect with the flues *f f*, which lead to the reservoir-casing, having their outlets at *g g*, through the back plate of the stove. The air-flue *c*, whether cast with the top plate or made separate and attached thereto, forms a good support therefor, preventing warping and breaking in a very effective manner, and this function of the flue is specially advantageous in respect to the bridge or part D, beneath which it also extends. In order to thoroughly heat the reservoir and its contents, I form a depression, E, in the casing, and allow the air to circulate beneath a portion of the bottom of the reservoir before passing out of the casing, and for

the complete accomplishment of the object intended by such circulation I place division or flue-strips *q q* within this depression or recess. When the reservoir is in place it rests upon these strips, and against their upward extension into the air-space between the front wall of the reservoir and the back plate of the stove, forming with such strips air-channels, to be specified. In order to confine the air further to the lower portion of the reservoir, at which point its heating properties are most advantageously expended, I place a horizontal strip, as *m*, in the vertical air-space. When the fire is built and the reservoir in place, it will be seen that the heated air enters the reservoir-casing at *g*, is caused to pass around the strips *q*, and thence out at *p*, a small opening into the descending flues. The plate *m* is provided with an aperture, *x*, and the back plate of the stove with a similar opening or port, *y*, through which the air may be allowed to escape into the ascending flues, under the reservoir, or through the ascending flue into the pipe. In either case the heated air finds its exit at a point below the plane of the top plate of the stove—an important feature of my invention, and one which enables me to apply my improvements to many reservoir-stoves now in use, with but slight and inexpensive alteration or addition, rendering them more efficient and less objectionable than at present.

Dampers may be applied at the inlet and outlet ports of the casing, as well as at the inlets for the hot air at the front of the stove, and a connection between the oven and the hot-air flue may be employed for the purpose of ventilating the oven.

From the foregoing it will be seen that air may be introduced through either or both of the air-passages about the fire-pot, and also that the construction herein embodied is applicable to all classes of cooking-stoves and ranges. When the invention is applied to ranges, the heated air is taken from the front of the fire box, and the reservoir is secured at one end of the range, or opposite to the fire-box, the pipe-hole being on one side. It will also be evident that two or more of the hot-air flues may be employed for taking the hot-air to the reservoir.

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

1. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir located in rear of the ordinary pipe-collar, and a reservoir-casing provided with outlets for the heated air, which are located beneath the plane of the top plate of the stove.

2. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing situated in rear of the rear flues, and the descending flue, into which the air escapes after imparting its heat to the reservoir.

3. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing located in rear of the rear flues and provided with division-strips, and the descending flues, into which the heated air escapes.

4. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing located in the rear of the rear flues and provided with division-strips, and a port or ports leading from said casing, and permitting the air to escape at a point below the top plate of the stove.

5. The combination, substantially as before set forth, of the bridge or part D and its subjacent hot-air flue.

6. The combination, substantially as before set forth, of the air-flue passing through the center of the top sheet-flue, carrying heated air to the reservoir-casing, and the protecting-chamber located between the oven O and fire-box G.

7. The combination, substantially as before set forth, of the reservoir-casing and the bifurcated air-flue leading from the front of the stove to said casing, and passing the draft-damper, as described.

8. The combination, substantially as before set forth, of the flues *c c' c''*, casing B, and flue *f*, formed by the strips *q q*.

In testimony that I claim the foregoing I have hereunto set my hand.

RICHARD M. HERMANCE.

Witnesses:

GEO. H. MORRISON,

FRANK W. MACKIE.