2 Sheets—Sheet 1.

W. HAILES.

Cooking Stove.

No. 110,230. Patented Dec. 20, 1870.

Fig. 1

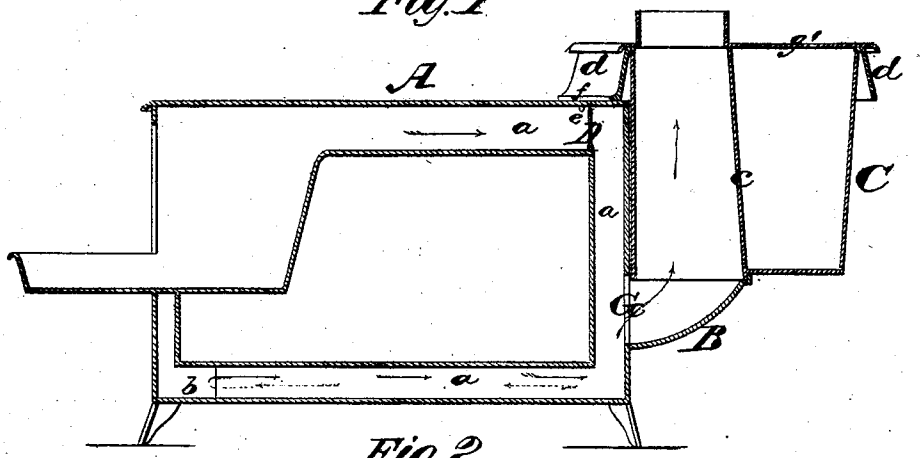


Fig. 2

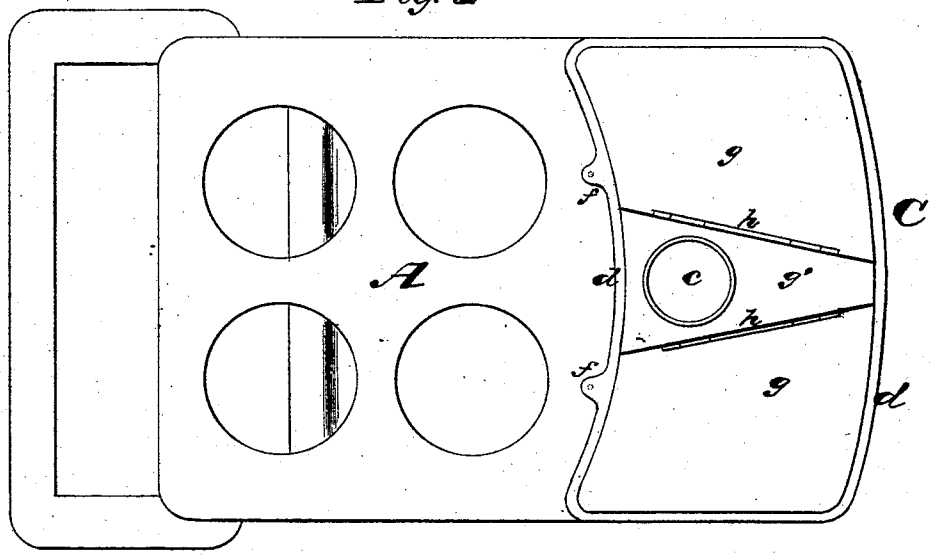
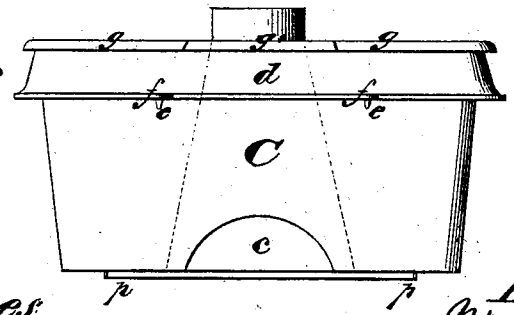


Fig. 3



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2 Sheets—Sheet 2.

W. HAILES.

Cooking Stove.

No. 110,230. Patented Dec. 20, 1870.

Fig 4

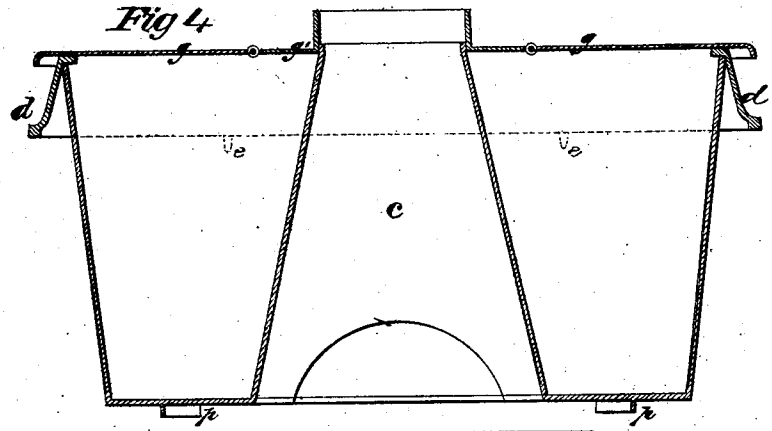


Fig 5

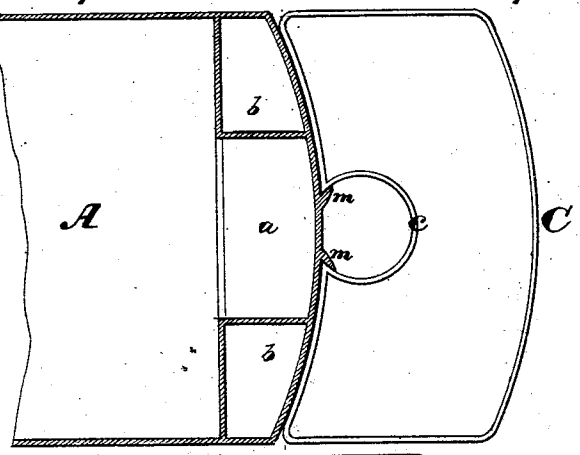
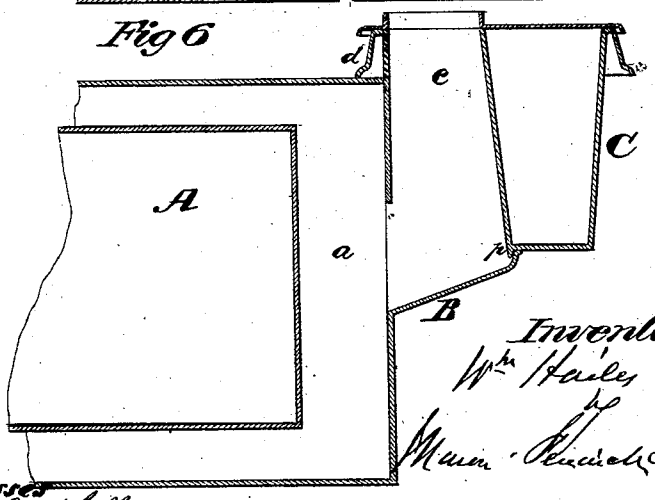


Fig 6



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UNITED STATES PATENT OFFICE.

WILLIAM HAILES, OF ALBANY, NEW YORK.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. **110,230**, dated December 20, 1870.

To all whom it may concern:

Be it known that I, WILLIAM HAILES, of the city and county of Albany and State of New York, have invented a new and Improved Boiler Attachment for Cooking-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1, Plate 1, is a sectional view of a cook-stove, showing the improved boiler attachment. Fig. 2, Plate 1, is a top view of the stove and boiler attachment of Fig. 1. Fig. 3, Plate 1, is a front view of a boiler detached from a stove. Fig. 4, Plate 2, is a section taken vertically through the boiler. Figs. 5 and 6 show a modification of the attachment.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain improvements on the construction of boiler attachments to cook-stoves, wherein the products of combustion pass off through the boiler, whether there be a direct or indirect draft.

The nature of my invention and improvements consists, first, in a reservoir for cook-stoves, wherein a smoke-flue passes vertically through it, one wall or side of which constitutes one of the walls of the reservoir, in combination with a concave bracket or shelf, which is formed on the back wall of the stove, and which constitutes the entire horizontal outlet-flue of the stove, as will be hereinafter explained; second, in a rim or upper flange, which is cast separate from the reservoir, and adapted to serve as a means for attaching the reservoir to the stove at its upper end, and also as a skirting for retaining heat about the upper wall of the reservoir, as will be hereinafter explained; third, in constructing the bridge or fixed cover of the reservoir with oblique edges, to which the principal covers are hinged, whereby nearly the entire superficial area of the top of the reservoir can be exposed, to allow free access to the interior thereof, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will explain its construction and operation.

In the accompanying drawing, Figs. 1 and 2, A represents a well-known form of single-oven cook-stove, having a central flue, *a*, arranged between the two side flues *b b*, and with a damper, D, which, when shut, will cause the products to take an indirect course through the flue-spaces of the stove before passing off. When damper D is open the products take the shortest course to the exit-passage.

Through the back wall of this stove is an exit-flue, G, which is in common with the direct and indirect draft, and which is arranged below the level of that portion of the flue *a* which is between the top plate of the oven and the top plate of the body of the stove. Beneath this opening G, and external to the stove, is a concave bracket or shelf, B, which is intended as a support for a water-reservoir, C, and also as an external communication between the flue *a* of the stove and a vertical flue, *c*, which passes up through the body of said reservoir C. The reservoir C is adapted to fit snugly against the back wall of the stove, and to rest upon the bracket or shelf B, to which it is fitted by means of a flange, *p*, cast on the bottom of the reservoir.

Through the body of the reservoir passes a flue, *c*, which forms a communication between the exit-opening G of the stove and the chimney-flue. This flue *c* is an integral part of the reservoir, and is constructed with it in such manner that part of this flue forms part of that wall of the reservoir which impinges against the back plate of the stove; or, as in Fig. 5, hereinafter to be described, the back plate of the stove forms part of the wall of the flue *c*.

The objects of thus constructing the flue *c* will be hereinafter explained.

Surrounding the upper edge of the reservoir is a flange, rim, or skirting, *d*, the front portion of which rests upon the top plate of the stove, and is connected thereto by studs *e*, which are cast on the flange *d*, and which extend down from offsets *f* and enter holes made through the said top plate. In this manner the reservoir is secured to the stove above the bracket or shelf B without the aid of nuts and bolts.

The rim *d* forms a skirting for the top of the boiler, and extends below the upper edge thereof; and with this rim or skirting is cast a bridge, *g'*, which tapers backward, and

which has an opening through it, surrounded by a pipe-collar, to receive the stove-pipe flue *c*, so as to preserve the continuity of flue. The bridge-wall *g'* is tapered backward, and has hinged to it the covers *g g*, which are at their hinged edges also beveled, as shown in Fig. 2. By this means nearly the entire area of the top opening of the boiler will be exposed when the covers *g g* are raised, thereby affording better access to the interior of the reservoir than is afforded where the hinges and the edges of the top bridges of reservoirs are parallel or in line with the length of the stoves.

In Figs. 5 and 6 the front portion of the flue *c* is open from its lower end to a point which is on a level with the top plate of the stove, and this flue receives the wings or beveled ribs *m m*, which are cast or otherwise applied to the back wall of the stove. This forms a kind of dovetail attachment of the reservoir to the stove above the supporting-bracket or flue-shelf B, and is considered the equivalent of the attachment first described.

In the boiler attachment to a cooking-stove which was patented to George H. Phillips on the 2d day of February, 1869, a depressed boiler is shown, which is supported upon a concave bracket at its base, and which is attached above to the top plate of the stove by means of screw-fastenings. In this boiler attachment the flue which passes through the boiler is isolated from the side walls thereof, and passes through the central bridge of the boiler. The lower end of said flue also forms part of the horizontal flue leading from the main flue of the stove.

I do not claim as my invention anything which is shown in the patent of Phillips above referred to. I do not claim a depressed boiler attachment, nor a flue passing through a boiler which is applied to the back of a cook-stove; nor do I claim a concave shelf on which to support a boiler at the back of a cook-stove.

I have constructed a boiler for a cook-stove having a concave shelf, B, which has a flue passing through the boiler, one part of the wall of which flue is in direct contact with or forms part of the flue of the stove, by which means the boiler can be practically made and furnished to the market at a reasonable cost.

I construct the top of the boiler separate from the body thereof, and in such manner as to form a skirting, which extends downward and outward, and serves to support the body of the boiler upon the top plate of the stove, to afford a firm and substantial attachment of the boiler to the stove, and also to arrest the heat rising from the boiler externally. This rim, flange, or skirting is constructed with the tapered bridge *g'*, and also with the pipe-collar, to receive the upper end of flue *c* and the external stove-pipe.

I desire to be understood by the words "depressed reservoir" a reservoir which is wholly or partially arranged below the top plate of the stove.

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

1. The depressed water-reservoir C, having a vertical flue arranged in direct relation to the back wall of the stove, and with the concave shelf B, in combination with the rim or skirting *d* and studs *f*, substantially as described.

2. The rim *d*, made of one piece in the form of a skirting, with a bridge, *g'*, and with pipe-collar, in combination with a depressed reservoir, C, and vertical flue *c*, as shown and described.

3. The bridge *g'* of flange *d*, when it is tapered on opposite sides of its pipe-collar, as described, for the purpose set forth.

WILLIAM HAILES.

Witnesses:
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WM. J. DUNN.