

W. HAILES.
Cooking Stove.

No. 104,021.

Patented June 7, 1870.

Fig. 1

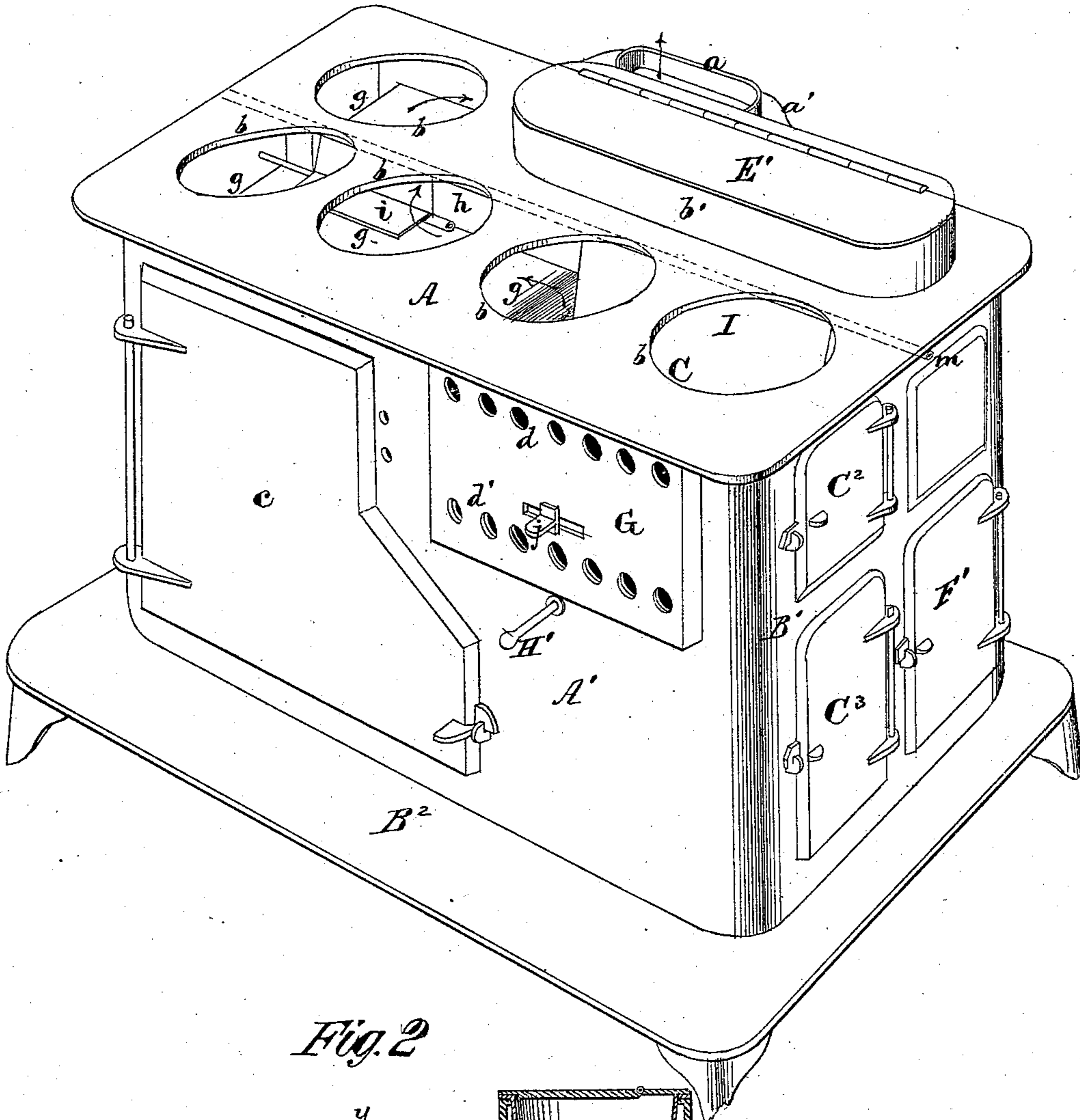
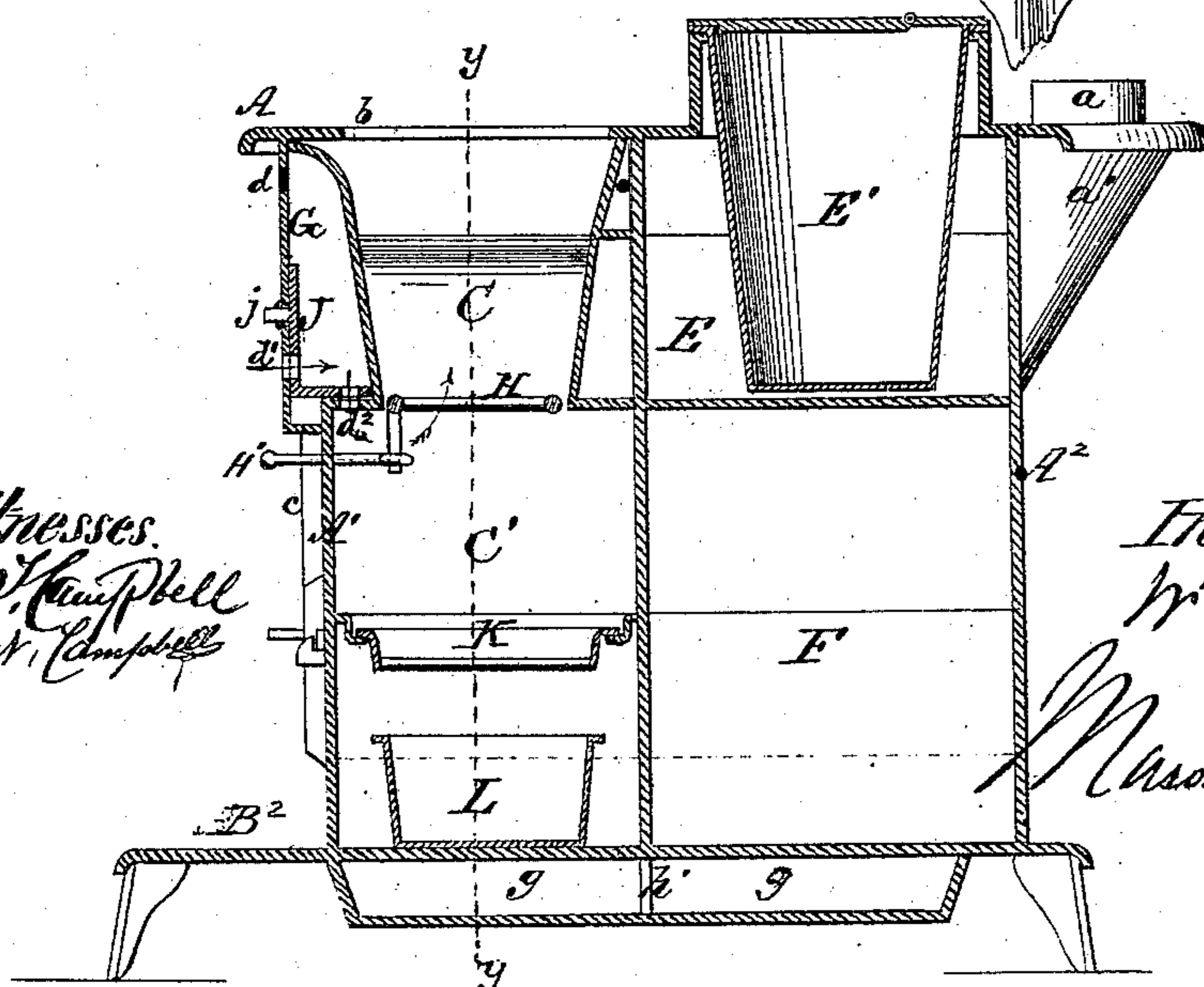


Fig. 2



Witnesses.
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2 Sheets—Sheet 2.

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Fig. 3

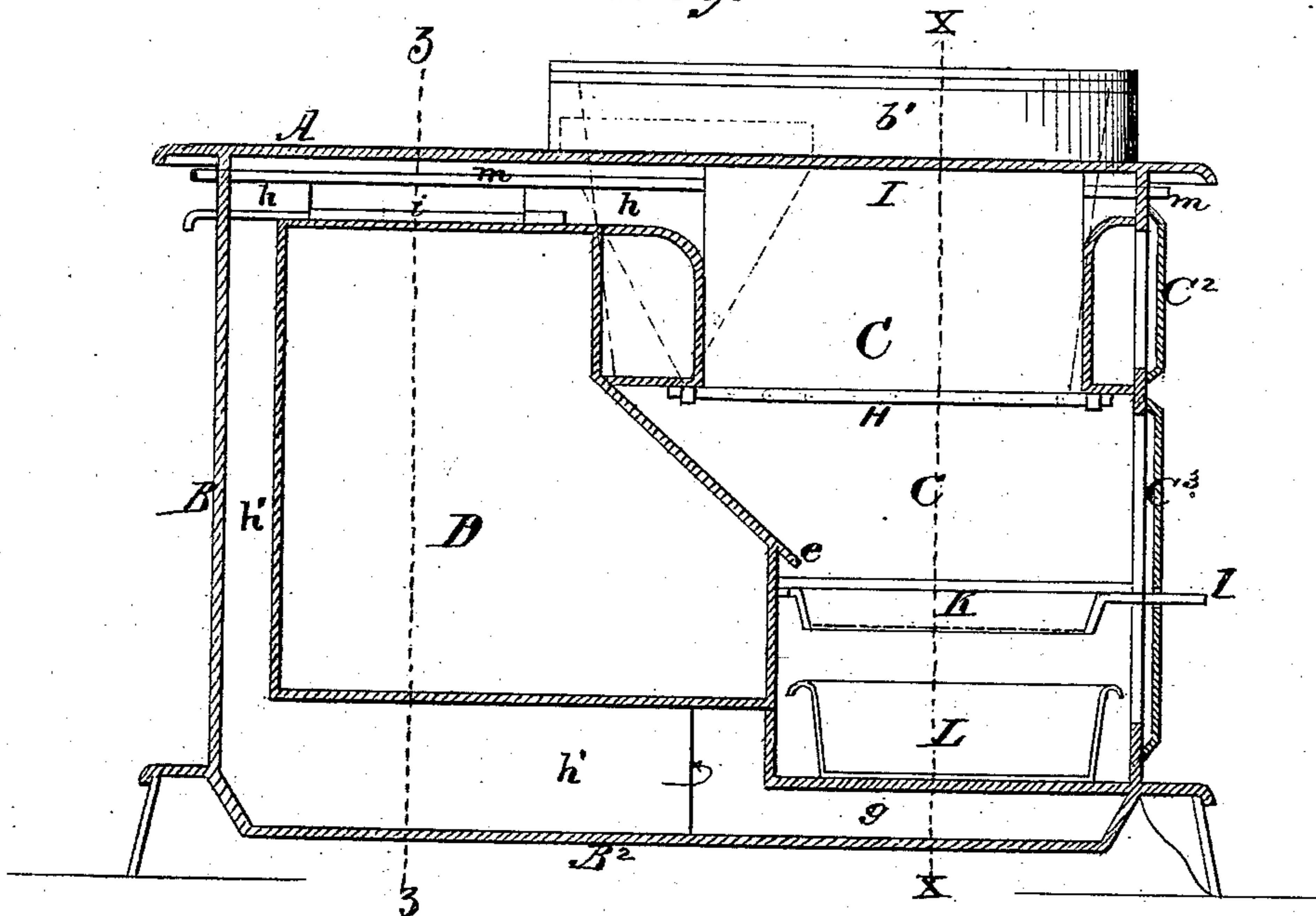
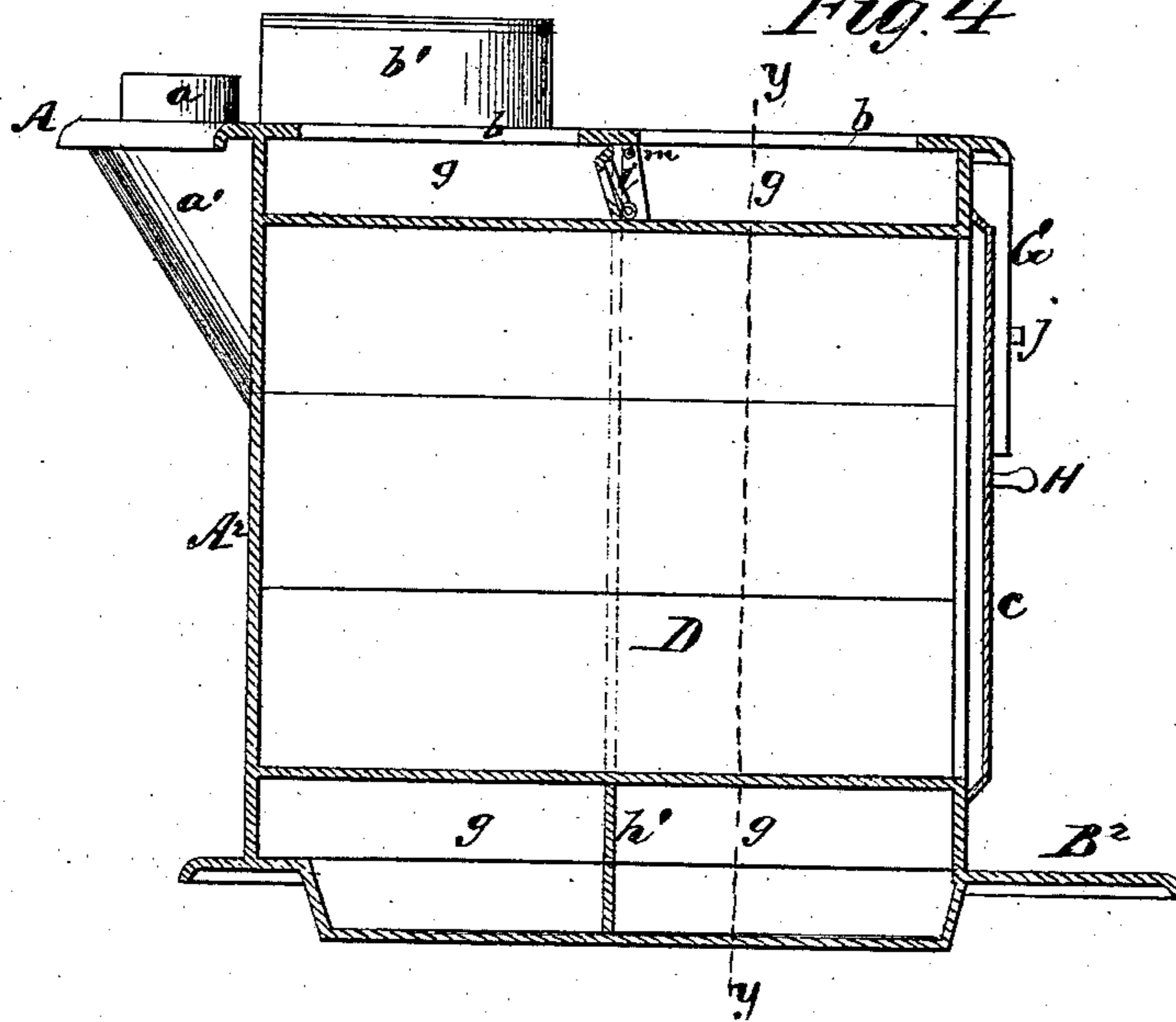


Fig. 4



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United States Patent Office.

WILLIAM HAILES, OF ALBANY, NEW YORK.

Letters Patent No. 104,021, dated June 7, 1870.

COOKING-STOVE.

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, WILLIAM HAILES, of the city and county of Albany and State of New York, have invented certain new and useful Improvements on Cook-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 perspective view of the front of the stove.

Figure 2 is a vertical section, taken transversely through the stove, in the plane indicated by dotted lines *x x* in fig. 3.

Figure 3, plate 3, is a section through the stove, taken in the vertical plane indicated by dotted lines *y y* in figs. 2 and 4.

Figure 4 is a transverse section through the stove, taken in the vertical plane indicated by dotted line *z z* in fig. 3.

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

This invention relates to certain novel improvements on the cook-stove for which Letters Patent of the United States were granted to me on the 24th day of May, 1869, numbered 90,358.

The object of my invention and improvements is to combine and arrange an oven, a warming-closet, and a water-tank or reservoir about a fire-chamber, in such manner as to obtain a very compact, convenient, and economical stove, for culinary purposes.

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

In its general form the stove is rectangular, presenting a top plate or wall, *A*, a front wall, *A*¹, a back wall, *A*², and two end walls *B B*¹, supported upon a bottom plate, *B*², a portion of which extends out to form a hearth, as shown in figs. 1 and 2, and a portion is depressed to form an enlarged bottom flue-chamber.

Internally will be found fire-chamber *C*, ash-chamber *C*¹, oven *D*, chamber *E* for receiving the portable water-reservoir *E*¹, the warming-closet *F*, and the flue-spaces, which conduct the products of combustion from the fire-chamber *C* to the smoke-escape pipe *a*.

The top plate *A* is perforated, to form several pot-holes *b b*, which are arranged, some over the fire-chamber and others over the oven.

Behind the holes *b b*, over the fire-chamber, is an elliptical elevated ledge, *b*¹, on which rests the top flange of the portable water-reservoir *E*¹, which is received into the chamber *E*, through which the products of combustion circulate on their way to the escape-pipe *a*.

The front plate *A*¹ has hinged to it the oven-door *c*, which closes the front of the oven *D*. This oven oc-

cupies nearly one half of the stove, and is inclosed, on its top, bottom, and outer side, by double walls, which form the flue-spaces *g*, for the passage of the heated products from the fire-chamber *C* to the reservoir-chamber *E*, as indicated by the course of the arrows in the drawing. The other wall, or that which is next to the fire-chamber, separates the oven from this latter chamber; also, from the ash-pit, the reservoir-chamber, and the warming-closet.

The flue *g* is carried off horizontally from the fire-chamber down the end wall of the oven, and beneath the oven. By means of a vertical partition, *h*, in which there is a damper, *i*, and an L-shaped partition, *h*¹, which is continuous with *h*, the flue-space around the oven is divided, so that, when damper *i* is shut, the products will pass over, down one side, and beneath the oven, to the terminus of the L-shaped partition. Thence the products will return, ascend, and pass off on the opposite side of the partition *h*. If the damper *i* is open, the products will pass directly over the oven to the chamber *E* and exit-pipe *a*.

In front of the fire-chamber *C* a hot-air chamber, *G*, is applied, into which air is admitted through two rows of holes *d d*¹. The lower row *d*¹ is provided with a sliding perforated register-plate, *J*, shown in fig. 2, which is moved by the handle-piece *j*. This plate *J* is, in cross-section, rectangular, and its lower wing is also perforated, and adapted for opening or closing holes *d*², which, when open, conduct air, for supplying combustion, from the chamber *G* downward into the ash-pit *C*¹, from which latter the air rises, through the grate *H*, into the fire-chamber *C*. Thus, it will be seen that the air for draught passes into the chamber *G*, is there heated and expanded, and thence flows, through the ash-pit, into the fire-chamber, to supply combustion. The draught is regulated by moving the double damper *J*.

The fire-chamber *C* has a water-back, *I*, with a pipe, *m*¹, leading from it, for the purpose of warming water, and conveying the same to a bath-room.

The grate *H* is hung, at its ends, by pivots, made long enough to allow this grate to be oscillated, and, also, to be shaken laterally by means of the handle *H*¹, which extends through the front wall of the stove.

The end wall *B*¹ is provided with three doors, one of which, *C*², leads into the fire-chamber, when the end piece of this chamber is removed, and thereby allows this chamber to be supplied with wood, when necessary, without removing the covers to holes *b b*.

The door *C*³, below door *C*², is the ash-pit door, and the door *F*¹ leads into the warming-closet *F*.

The ash-pit contains a sliding ash-sifter, *K*, arranged beneath inclined lips *e*, and above an ash-pan, *L*. The handle *l* of the sifter passes through an opening made through the door *C*³, when this door is shut, so that

the sifter can be worked without the escape of ash-dust into the room.

The warming-closet F, which is behind the fire-chamber, receives heat directly through the back wall of this chamber; also, through the bottom wall; also, through the wall separating it from the oven; and, finally, through the top wall separating it from the reservoir-chamber E.

The escape-pipe or pipe-collar *a* rises from the top of a smoke-chamber, *a'*, formed on the back wall of the stove, leading directly out of the reservoir-chamber E.

It will be seen, from the above description, that I have improved the stove patented to me, May 25, 1869—

First, by so arranging the door F', at the end wall B' of the stove, that access can be obtained to the warming-closet F when the stove is set close to the chimney-flue, whereas the stove patented, as above stated, must be set off some distance from the chimney-wall to obtain access to the door of the warming-closet;

Second, by applying, in front of the fire-chamber, an air-heating chamber, which is provided with a double damper, and combining with such an arrangement a door leading into the fire-chamber, for supplying thereto the wood fuel;

Third, by applying the ash-pit door to the end wall

of the stove, instead of, as hitherto, to the front wall; and

Fourth, by extending the flue *g* beneath the warming-closet, so that this closet receives heat from four of its walls.

By these means I apply the same general principle set forth in my Letters Patent No. 90,358 to a single-oven stove.

Having described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the warming-closet door F', at one end of the stove, in combination with the fire-chamber, ash-pit, oven, and reservoir-chamber, arranged as described.

2. The flue *g*, extended beneath the warming-closet and ash-pit, in a stove constructed as described.

3. In a cook-stove, substantially as described, the combination of the air-heating chamber, having the inlet *d'* and outlet *d''*, with the single damper, which opens and closes both of said inlets, substantially as described.

WILLIAM HAILES.

Witnesses:

WM. J. DUNN,
CHAS. A. KING.