

B. F. JOHNSON.

Cooking Stove.

No. 103,621.

Patented May 31, 1870.

Fig. 1

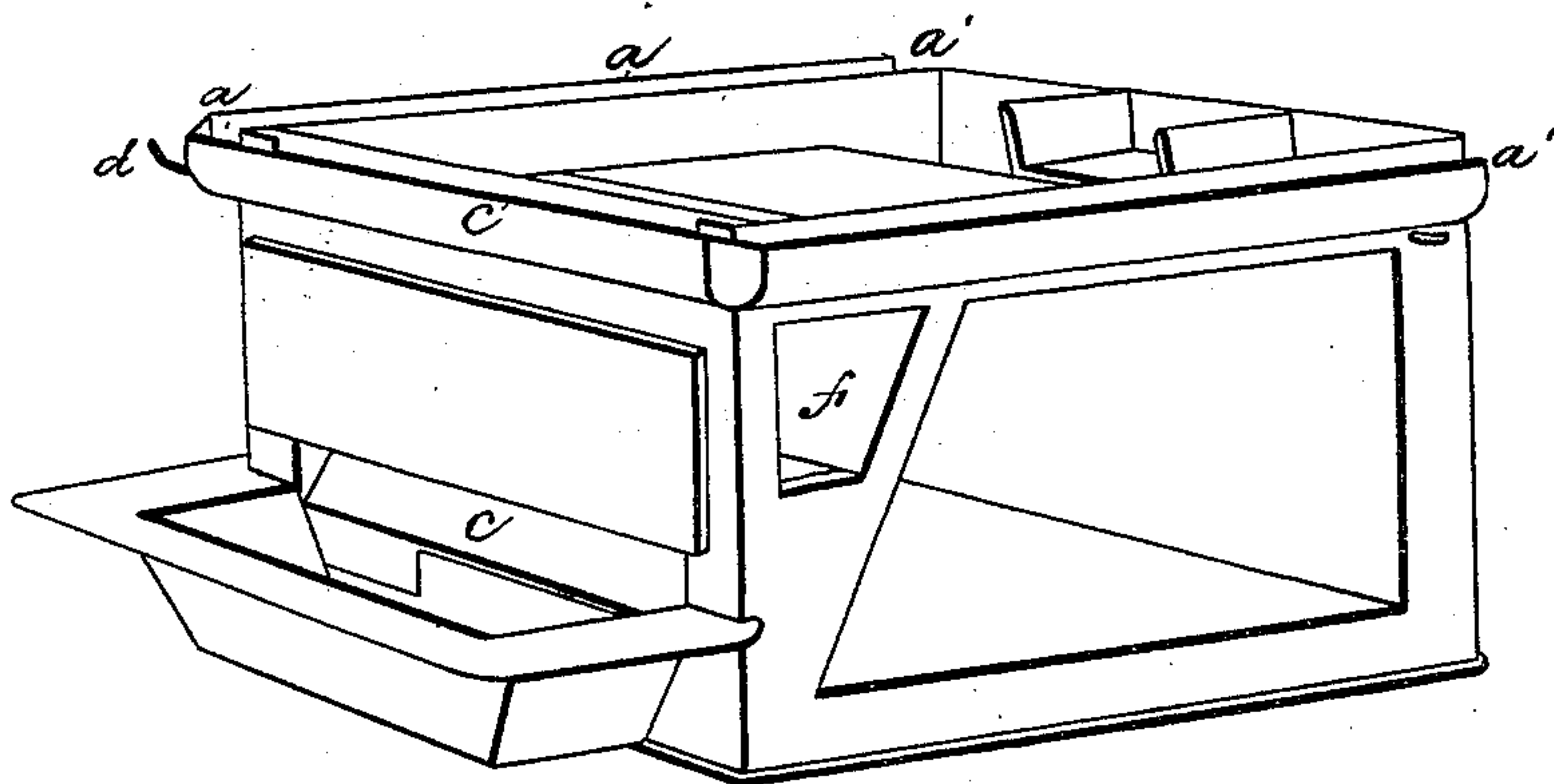
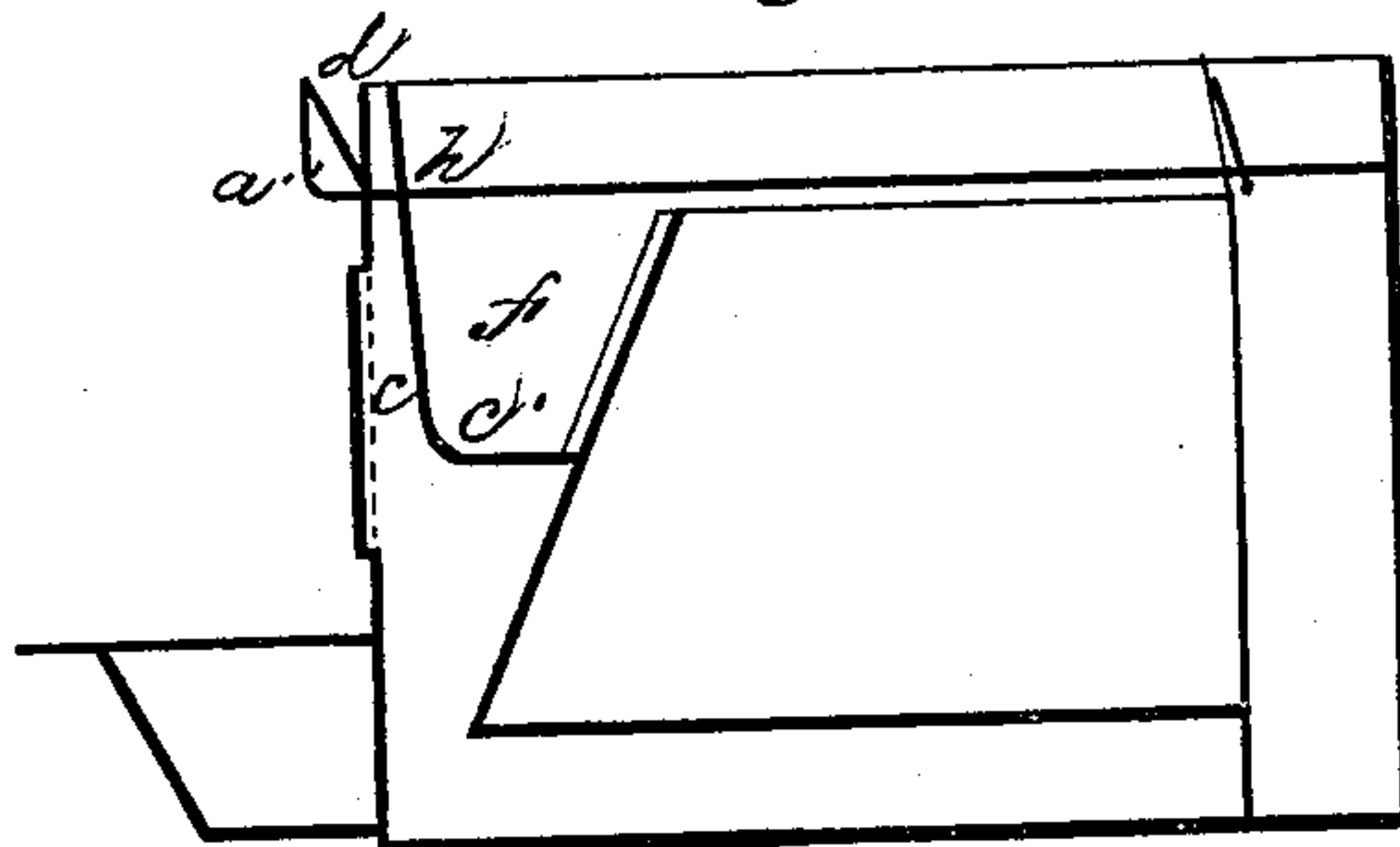


Fig. 2



Witnesses

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BENJAMIN F. JOHNSON, OF TROY, NEW YORK.

COOKING-STOVE.

Specification forming part of Letters Patent No. 103,621, dated May 31, 1870.

To all whom it may concern:

Be it known that I, BENJAMIN F. JOHNSON, of the city of Troy, and county of Rensselaer, and State of New York, have made a new and useful Improvement in Stoves; and I hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My said improvement has respect to making provision for heating the air for uses in aid of combustion by taking it from parts of the stove where it is not needed for other purposes, and thereby utilizing the heat from such part of the stove, and at the same time benefiting the part of the stove from which said heat is taken by taking the heat therefrom.

In the accompanying drawings, Figure 1 represents the body of the cooking-stove to which my improvement is attached, with the top of the stove removed to show the air-flues and their connection with the chamber in the front of the stove, and also the damper *d*, by which the currents of air through the air-flues *a a a* are regulated and controlled. Fig. 2 is a section through the front plate of the stove, extending through the fire-box, for the purpose of showing the location and formation of the chamber between the front plate of the stove and the fire-box, where the air is to be further heated preparatory to introducing it underneath the grate for the purpose of aiding combustion.

In Fig. 1 the air-flue is seen surrounding the top of the sides and end of the stove, and is marked *a a a*. The sides of the flue extend to the top plate of the stove, and the top of the air-flue is formed or covered by the top plate of the stove. This air-flue extends along both sides of the stove and across the front end of the same, opening out to the atmosphere through the back of the stove, as seen at *a' a'*. This air-flue is so constructed that it communicates with an air-chamber in the front of the stove *c* and between the front plate of the stove and the front of the fire-box, except that a separate plate, *h*, of greater or less width, extends from the top plate of the stove downward toward the bottom at pleasure. It is contemplated to carry out a further improvement

by increasing the width of the plate *h* by extending it toward the bottom of the stove. This air-flue *a a a* may be shut off from the air-chamber in front by means of the damper *d*. (Seen in Fig. 1.) When this damper is closed, then the air-flue extends continuously across the front of the stove and across the two connected sides, forming a dead-air chamber, except so far as a slight circulation takes place depending upon currents about the point of communication with the outer air.

The benefits resulting from this improvement are of a twofold character: first, as respects heating a volume of air to aid in keeping up combustion in the fire-box or on the grate, and taking the heat for that purpose from the top of the sides and front of the stove, and from that portion of the top plate of the stove which covers these air-flues, where the heat is of no value for any other purpose, and thus economizing its use. The second advantage of this air-flue thus located is that it tends to protect the top of the sides, and also of the top plate of the stove, from becoming so highly heated as to injure them by burning or warping.

The air-chamber in front, formed as above described, is valuable in the present structure of my improved stove as an additional means for heating the current of air passing into the fire under the grate through the air-flues *a a a*; and, in addition to my present use of the air thus heated, I contemplate using it for the purpose of cooking or baking by means of an oven or other apparatus attached in front of the front plate of said chamber. It is with a view to such a use that I contemplate widening the plate *h* by extending it downward toward the bottom of the stove.

The damper *d* is placed at the top of the front chamber, *C*, for the purpose of controlling the currents of air entering the fire through the air-flues *a a a*, as by closing such damper the current of air is entirely cut off. When the damper *d* is open, it is designed to exclude all air from the grate *c'* except what is passed through the air-flue *a a a* and the chamber *C*.

Having thus fully described my said improvement, I will now proceed to set out what I claim as my invention and desire to secure by Letters Patent—

1. The air-flues *a a a*, located at the top of the sides and front of a stove, and communicating with a chamber, C, substantially in the manner and for the purposes herein described.

2. The damper *d*, for the purpose of commanding the communication between the flues *a a a* and the front chamber, C, in combination with such flues and chamber, for the purposes described.

3. The plate *h*, of whatever width used, when used for the purpose herein described.

B. F. JOHNSON.

In presence of—

JOEL TIFFANY,

FRED R. TIFFANY.