(No Model.)

2 Sheets—Sheet 1.

E. W. ANTHONY.

STOVE.

No. 265,361. Patented Oct. 3, 1882.

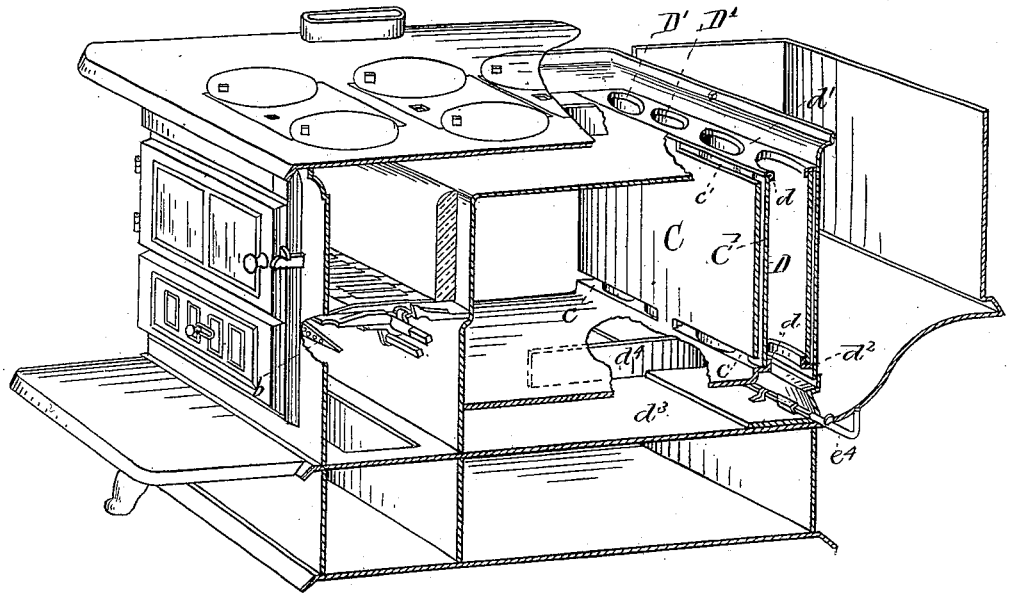

Fig. 1.

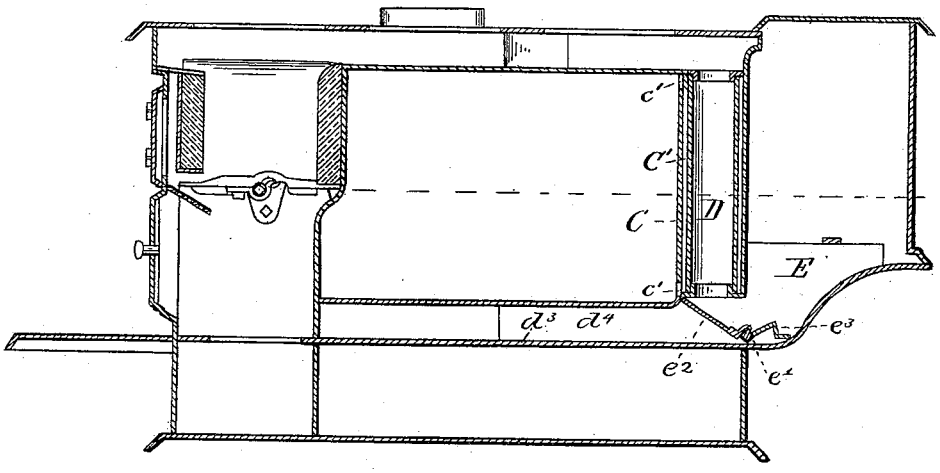

Fig. 2.

WITNESSES

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Fred. Haines

INVENTOR

Edgar W. Anthony

by his attys

Clarke & Raymond.

(No Model.) 2 Sheets—Sheet 2.

E. W. ANTHONY.

STOVE.

No. 265,361. Patented Oct. 3, 1882.

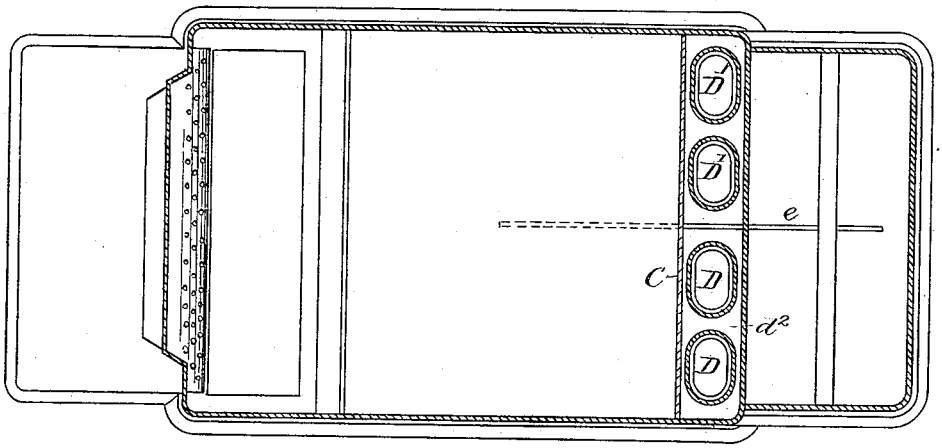

Fig. 3.

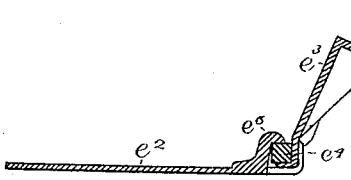

Fig. 5.

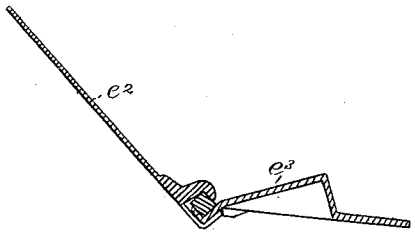

Fig. 6.

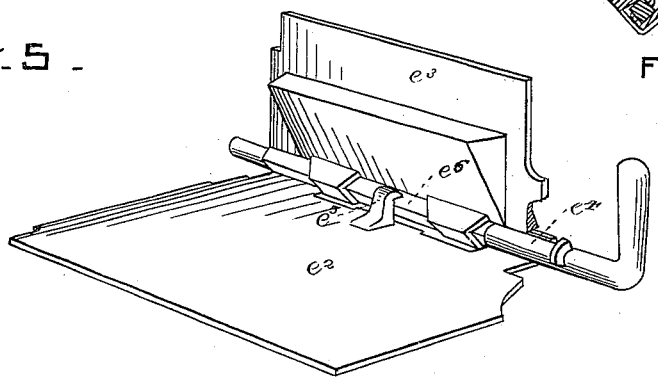

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDGAR W. ANTHONY, OF BOSTON, MASSACHUSETTS.

STOVE.

SPECIFICATION forming part of Letters Patent No. 265,361, dated October 3, 1882.

Application filed May 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDGAR W. ANTHONY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature, in which—

Figure 1 represents in perspective (a portion of the top and all one side being removed) a cooking-stove embracing the features of my invention. Fig. 2 represents a vertical central section of the stove. Fig. 3 is a horizontal section of the stove. Figs. 4, 5, and 6 illustrate the construction of a double damper, hereinafter referred to.

The invention relates, first, to the manner and means of obtaining a circulation and equalization of heated air in the oven; second, to the form and arrangement of the downtake and uptake flues at the rear of the oven; third, to a double damper arranged in relation to the down and up take passages, as hereinafter specified, to turn the heat into the chamber under the water-tank.

To provide for the circulation and equalization of heat in the oven, I have arranged in front of one of the vertical flue-plates of the oven (shown in the drawings as the rear) an auxiliary plate, C, which is set out from the flue-plate sufficiently to form a passage or chamber, C′, between them, and which passage or chamber opens into the oven-space at the bottom at *c* and at the top at *c′*; or, in other words, the auxiliary plate C, except for the purposes of support, does not extend to the bottom or top of the oven, but very nearly so, leaving narrow apertures for the passage of air between the oven and the chamber it forms. The effect of this construction is that the air between the auxiliary plate and the flue in the narrow chamber between them is heated to a higher temperature than the air of the oven proper, and consequently it ascends in the chamber quite rapidly and enters the oven-space by means of the opening or passage *c′*, and thereby drives down the heated air of less temperature in the oven, displacing it and causing it in its turn to enter by the aperture or passage *c* into the space between the auxiliary plate and the flue-plate of the stove, where it is heated, as before stated, to a greater temperature, and ascends and enters the oven at the top. Of course the heating of the air between these two plates also assists to establish a current by drawing air from the lower part of the oven, so that there is a double force acting to cause the circulation, one being displacement caused by the extra heated air and the other being the drawing of the air from the lower part of the oven into the chamber, caused by the escape of the heated air therefrom into the upper part.

It is obvious, of course, that the air in the oven is kept moving constantly, and that the temperature must become as nearly uniform as it is possible to get it.

To provide an increased radiating-surface to the rear flue-plate of the oven, I may make it corrugated, with the corrugations extending vertically, or I may use the construction illustrated in Figs. 1, 2, and 6—namely, oval or circular flue-boxes D D′. These boxes are preferably made of sheet metal, although they may be cast or formed in any other way, and they are adapted to fit upon collars or flanges *d*, upon the upper plate, d', and lower plate, d^2, which flanges surround holes in the plates corresponding to the holes in the flue-boxes. The two flues D are the downtake-passages, and the products of combustion of course pass through them into the front part of the space or chamber d^3, below the oven-plate, and then pass into the rear portion thereof, the chamber being partially divided by means of the flue-plate d^4 into the uptake-flues D′.

In order that the heat from combustion may be used beneath the water-tank, I have arranged below the same the chamber E, which is partially divided by the flue-plate *e*, and have provided the double damper *e′*, one, e^3, of which is adapted to close the direct passage under the oven-plate immediately below the down-flues D, so that the heat shall be diverted into the chamber E under the tank, instead of into the chamber d^3, and the other, e^3, of which is adapted to close the passage connecting said downflues D with said chamber E. Both these damper-plates are operated by the same damper-rod, e^4; but as the damper e^2 is wider than the damper e^3, and as it has a shorter space in which to travel in order to open its

passage and close the other, it is necessary that it should be so attached to the rod e^4 as to permit the rod and the other damper to be moved after it has come to rest in its horizontal position, and this is accomplished by shaping the lugs e^5 which fasten the damper e^2 to the damper-rod e^4, in such a manner that the damper-rod shall have a limited extent of movement in relation to the damper e^2 without operating it. Of course when the upper surface, e^6, of the damper-rod comes in contact with the under surface of the front lug e^5 the parts are so united that a further movement of the damper-rod in the same direction will cause it to lift the damper e^2, and likewise upon the reverse movement of the damper-rod the damper e^3 will be operated without causing the damper e^2 to be moved. This effect is partly accomplished by the front lug, e^5, and by rounding the rear lugs, so that they do not take hold of the damper-rod, while they partially embrace it and serve to hold the damper e^2 thereto. The heat from combustion, when used beneath the water-tank, passes from the downtakes into the front of the chamber E about the rear of the flue-plate e and into the uptake-flues D′.

Of course these improvements are applicable to stoves of different construction from that herein described.

I may not use in the oven the auxiliary plate C, and may still use the separate flue-boxes or the corrugated flue-plate above spoken of; but when plate C is used to form the passage or chamber between it and the flue-plate or wall of the oven it on some accounts is a better construction to have the flue-plate corrugated or made of separate flue tubes or boxes, as specified, in order that a greater heating-power shall be provided at one end of the oven than at the other to more effectually obtain the circulation.

Of course the flues D D′ may also be used in stoves having an uptake-passage at the back of the stove or at any other part thereof, in which event the flues D′ would be downtake-passages instead of uptake-passages.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a stove, the combination of the oven with an independent passage or chamber, C′, upon one side thereof and adjoining a flue-plate, which passage or chamber opens at the top and bottom into the oven-space, all substantially as and for the purposes described.

2. In a stove, the combination of the auxiliary plate C with the flue-plate of the oven, the said plate C being so shaped and arranged in relation to the flue-plate as to provide a passage or chamber, C′, between it and the flue-plate, which opens into the oven-space at the top and bottom thereof, all substantially as and for the purposes described.

3. In a stove, the separate down flues, tubes, or boxes D and up flues, tubes, or boxes D′, arranged at one end or side of the oven, all substantially as and for the purposes described.

4. In a stove, the combination of the down-flues D, the chamber d^3, the flue-plate d^4, the upflues D′, and the perforated plates d' d^2, all substantially as and for the purposes described.

5. In a stove, the combination of the perforated plates d' d^2, having collars d, with the flue-boxes D D′, all substantially as and for the purposes described.

6. In a stove, the combination of the down-flue D of a stove, the chamber E, the upflue of the stove, the chamber d^3, and the double damper e', one blade of which is adapted to be moved a greater distance than the other, all substantially as and for the purposes set forth.

7. The combination of the damper-rod e^4 with the damper-plate e^2 e^3, arranged in relation to the downflue D and the chamber E to operate substantially as described.

8. The combination of the auxiliary plate C with a vertically-corrugated or rounded oven-wall flue-plate, the said plate C being shaped and arranged to provide a passage or chamber, C′, between it and the flue-plate, which opens into the oven-space at its top and bottom, all substantially as and for the purposes described.

EDGAR W. ANTHONY.

Witnesses:
F. F. RAYMOND, 2d,
WILLARD C. FOGG.