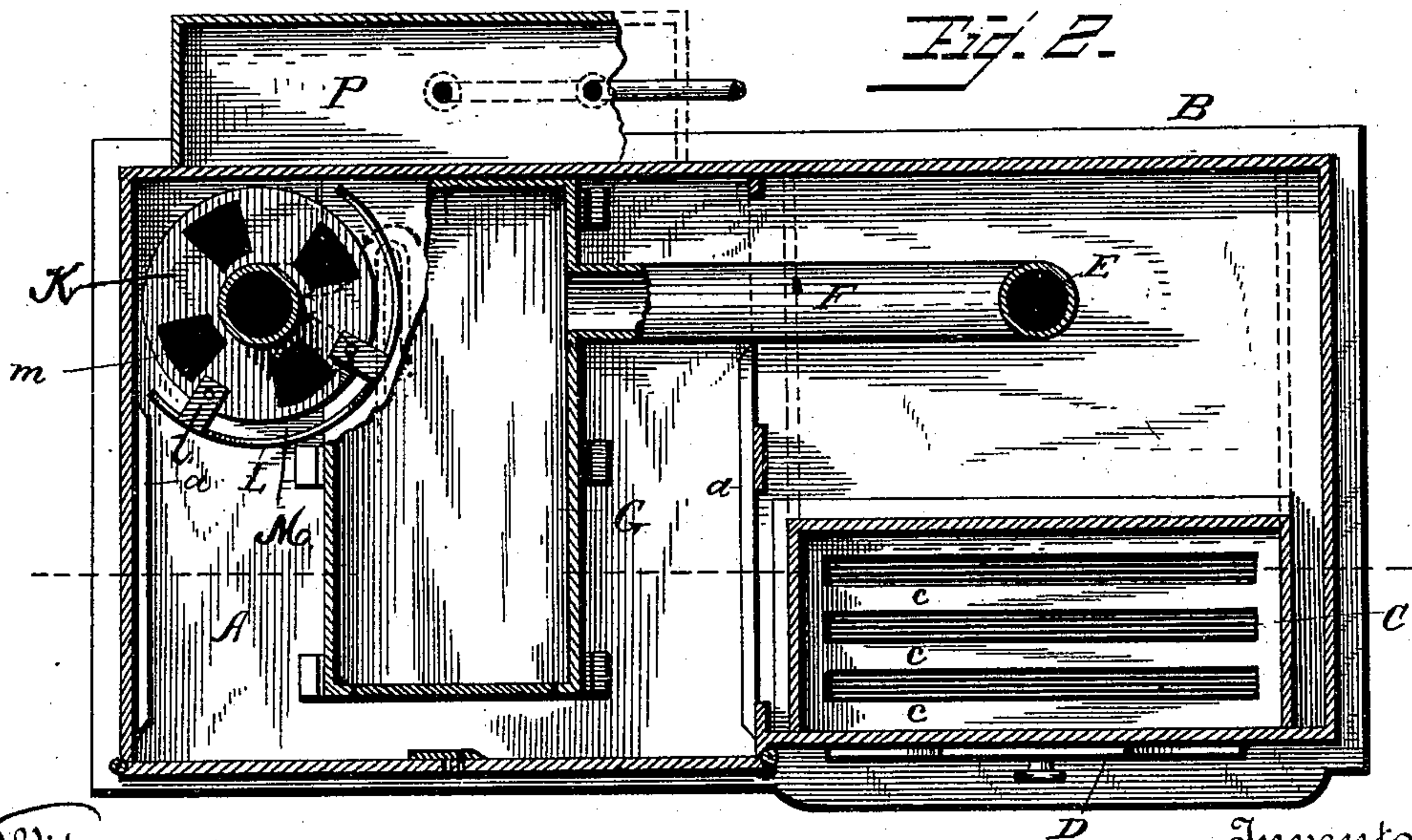
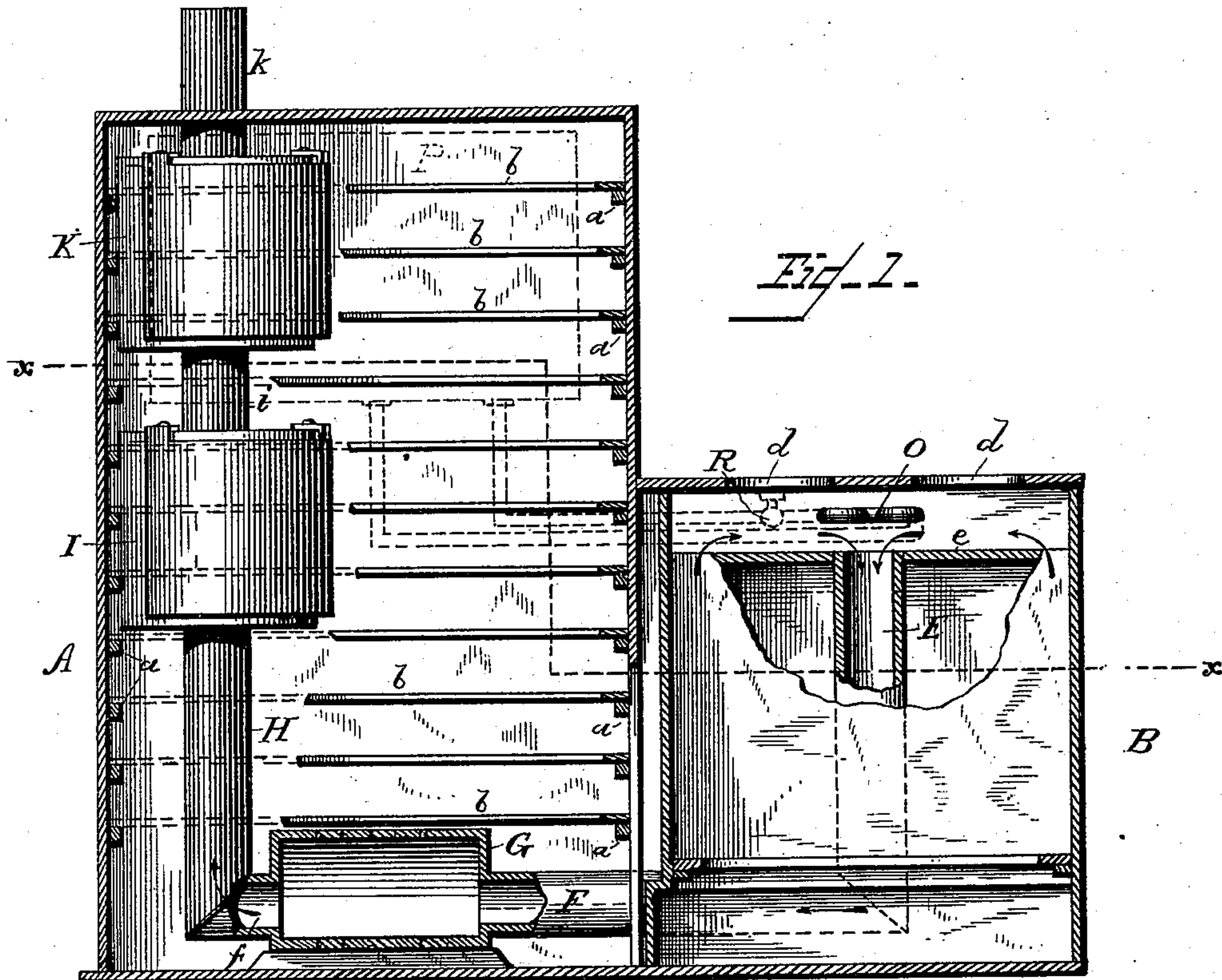


(No Model.)

E. C. FROST.
RANGE.

No. 353,024.

Patented Nov. 23, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

ELI C. FROST, OF ELMIRA, NEW YORK.

RANGE.

SPECIFICATION forming part of Letters Patent No. 353,024, dated November 23, 1886.

Application filed April 14, 1884. Serial No. 127,858. (No model.)

To all whom it may concern:

Be it known that I, ELI C. FROST, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Ranges, of which the following is a description.

This invention has relation to improvements in combined heaters and ovens; and the object of my invention is to provide for the more even distribution of the heat in the oven and to utilize all of the products of combustion for heating said oven.

The invention consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claims.

In ordinary cooking-stoves the bottom of the oven will often burn the bottom of the article being baked, while the upper portion thereof will remain uncooked; or if the article is placed near the top of the oven the top will become burned before the lower portion is cooked. Again, things near the door of the oven will not bake in so short a time as those near the back of the oven, or vice versa. By my construction and arrangement the heat within the oven is so equalized that the top and bottom of the article will be equally baked, no matter in what part of the oven it is placed.

In the accompanying drawings, Figure 1 is a vertical section of my improved device with parts broken away. Fig. 2 is a horizontal section of the same, taken on the line *xx* of Fig. 1.

The letter A designates the oven, upon the inner side of the side walls of which are secured in any convenient manner the ribs or racks *a*, which support the shelves *b*, which may be of any desired number, and are removably supported on said ribs, so that more or less may be used, as occasion may require.

B is the stove or heater having the usual inner and outer walls, as shown.

C is the fire-box. *c* is the grate, D a door, and *d* pot-holes to the stove, all of which may be made of any well-known form.

Instead of allowing the products of combustion to pass off from the combustion-chamber around and over the oven, as heretofore, I arrange a vertical flue, E, preferably near the

rear of the heater, as shown in Fig. 2, and provide no outlet for the products of combustion, except through this flue. The products of combustion from the fire-pot pass upward over the sheet-iron top *e*, and, finding no other exit, pass through an opening in said top into the flue E and downward therethrough, as indicated by the arrows. A horizontal pipe, F, connects the bottom of the flue E with a radiator, G, arranged within the oven near the bottom.

At a distance from the bottom of the oven, preferably about half-way, the flue H connects with a drum, I, from the top of which extends a pipe, *i*, communicating with the bottom of another drum, K, leading from the top of which is a pipe, *k*, leading out through the top of the oven, where it is connected with a chimney or flue. The products of combustion pass through the pipe H into the drum I, from which the heat is radiated, so as to heat the central portion of the oven. The products of combustion from the drum I pass through the pipe *i* to the drum K, where the heat is radiated and heats the upper portion of the oven. The smoke, &c., pass out through the pipe *k* into the chimney.

To prevent the heat from the drum from radiating enough heat to burn the articles on the shelves, I provide each drum with a shield or jacket, L, supported by any suitable means to hold the shield from the drum to form an air-space, M, as shown in the drawings. These drums are made with vertical flues *m* at top and bottom, as shown, so that the cold air entering the bottom of the oven in passing through said flues will become heated, as will be readily understood.

I attach importance to my construction and arrangement of the parts above described, as the products of combustion are forced to pass through the oven, thereby heating the same more quickly and uniformly than where they pass around it, and the articles being baked are baked the same throughout, no matter in what part of the oven they are placed. A water-back, O, for heating water is arranged near the center of the heater B, and is connected with a water-tank, P, attached to the back part of the oven.

R is a faucet for drawing the hot water when desired.

Having described my invention, what I claim is—

5 1. The combination, with the combustion-chamber B and oven, of the vertical flue E and one or more radiators arranged in the oven, as and for the purpose specified.

10 2. The combination, with an oven and with a fire-pot for heating the same, of an auxiliary

heating apparatus comprising a radiator, as G, located in the bottom of the oven, and having connections with a pipe leading from the fire-pot, and with an escape-flue and drums, also within the oven, as set forth.

ELI C. FROST.

Witnesses:

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