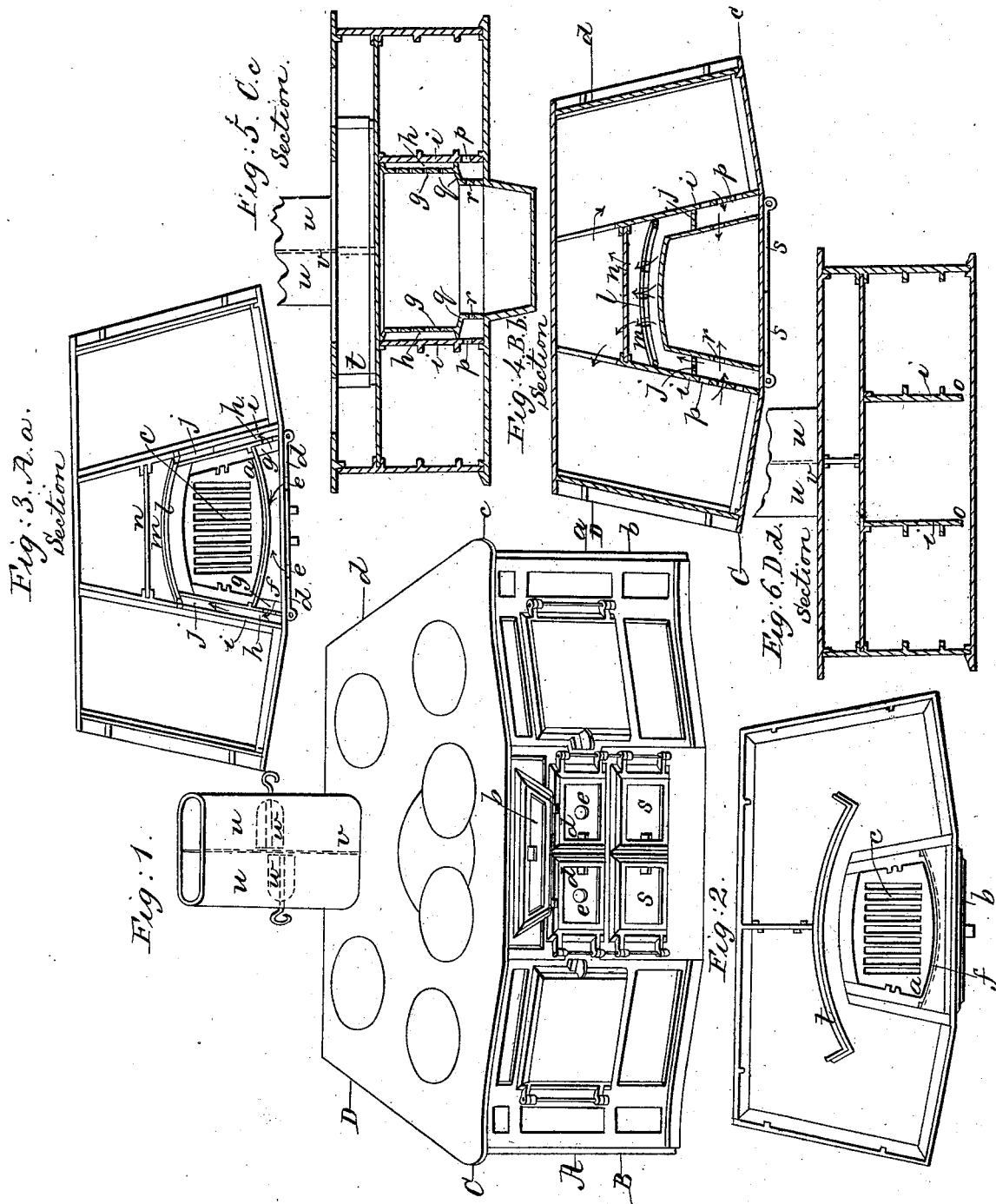


S. PIERCE.
Hot Air Cooking Range.

No. 5,248.

Patented Aug. 21, 1847.



UNITED STATES PATENT OFFICE.

SAMUEL PIERCE, OF TROY, NEW YORK.

COOKING-RANGE.

Specification of Letters Patent No. 5,248, dated August 21, 1847.

To all whom it may concern:

Be it known that I, SAMUEL PIERCE, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Hot-Air Cooking-Ranges, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front perspective view of the range; Fig. 2, a plan with the top removed; Fig. 3, a horizontal section taken at the line (A, *a*) of Fig. 1; Fig. 4, a like section taken at the line (B, *b*) of Fig. 1; Fig. 5, a cross vertical section taken at the line (C, *c*) of Fig. 1; and Fig. 6, a like section taken at the line (D, *d*) of the said Fig. 1.

The same letters indicate like parts in all the figures.

The nature of my invention consists in heating the oven or ovens by means of currents of air which are heated in passing through chambers surrounding the fire place, and which after passing through the oven or ovens are discharged into the closed ash pan to supply the combustion in the fire chamber.

In the accompanying drawings (*a*) represents the fire chamber which is provided with a door (*b*) for the supply of fuel to the grate (*c*). The two roasting doors (*d*, *d*) in front are provided with apertures (*e*, *e*) for the admission of cold air from the room, which on entering impinges on a plate (*f*) in front of the fire which heats the air and deflects the currents and carries them in opposite directions, as indicated by the arrows. At each end the currents pass through holes in the side plates (*g*, *g*) of the fire chamber into the spaces (*h*, *h*) between the plates (*g*, *g*) and the oven plates (*i*, *i*), where they receive more heat, and thence they pass down into a small chamber (*j*) at the back and near the bottom of the fire chamber, and from this the air still more heated passes through holes in the back plate *l* of the fire chamber into a chamber (*m*) in which it ascends, receiving heat from the back plate of the fire chamber until it passes over the top of a vertical partition plate (*n*), back of which it descends in two currents in opposite directions, each entering

one of the ovens through apertures (*o*, *o*) in the side plates thereof, and after circulating through to heat the ovens they pass out through apertures (*p*, *p*) near the lower edge of the side plates (*i*, *i*) of the ovens and below the horizontal partition flanches (*q*, *q*) into the upper part of the ash pit (*r*) to supply combustion in the fire chamber, the ash pit being made close by means of well fitted doors (*s*, *s*) to prevent the entrance of the external air, except when kindling the fire, or when it is not desired to heat the ovens. It will be obvious that these currents in their passage through the ovens not only heat the ovens by circulation therein, but at the same time carry out the vapors or gases evolved from the articles under treatment. The fire chamber should be lined inside with soap stone, fire brick, or other refractory earthy substances to protect the metal plates from the injurious action of the fire.

The flame and other products of combustion from the fire chamber, pass up on each side over the ovens around the ends of a partition plate (*t*) to the two divisions (*u*, *u*) of the exit pipe (*v*) which is provided with a damper (*w*) in each division for the purpose of regulating the heat to be communicated to either of the ovens or to shut it off entirely when required. The division of the pipe and the dampers is represented in Fig. 1 by dotted lines. The range constructed as above described is set in masonry so as to leave a tight air chamber at the bottom, back, and ends to prevent the escape of heat.

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

Heating the oven or ovens by the passage through it or them of a current or currents of air heated on its or their way to the oven or ovens by passing through chambers surrounding the fire chambers, substantially as described, when this is combined with the discharge of the current or currents from the oven or ovens into a closed ash pit to supply the combustion in the fire chamber, as described, whereby the combustion insures the passage of the current or currents through the oven or ovens, substantially as described.

SAMUEL PIERCE.

Witnesses:

J. J. GREENOUGH,
J. M. THAYER.