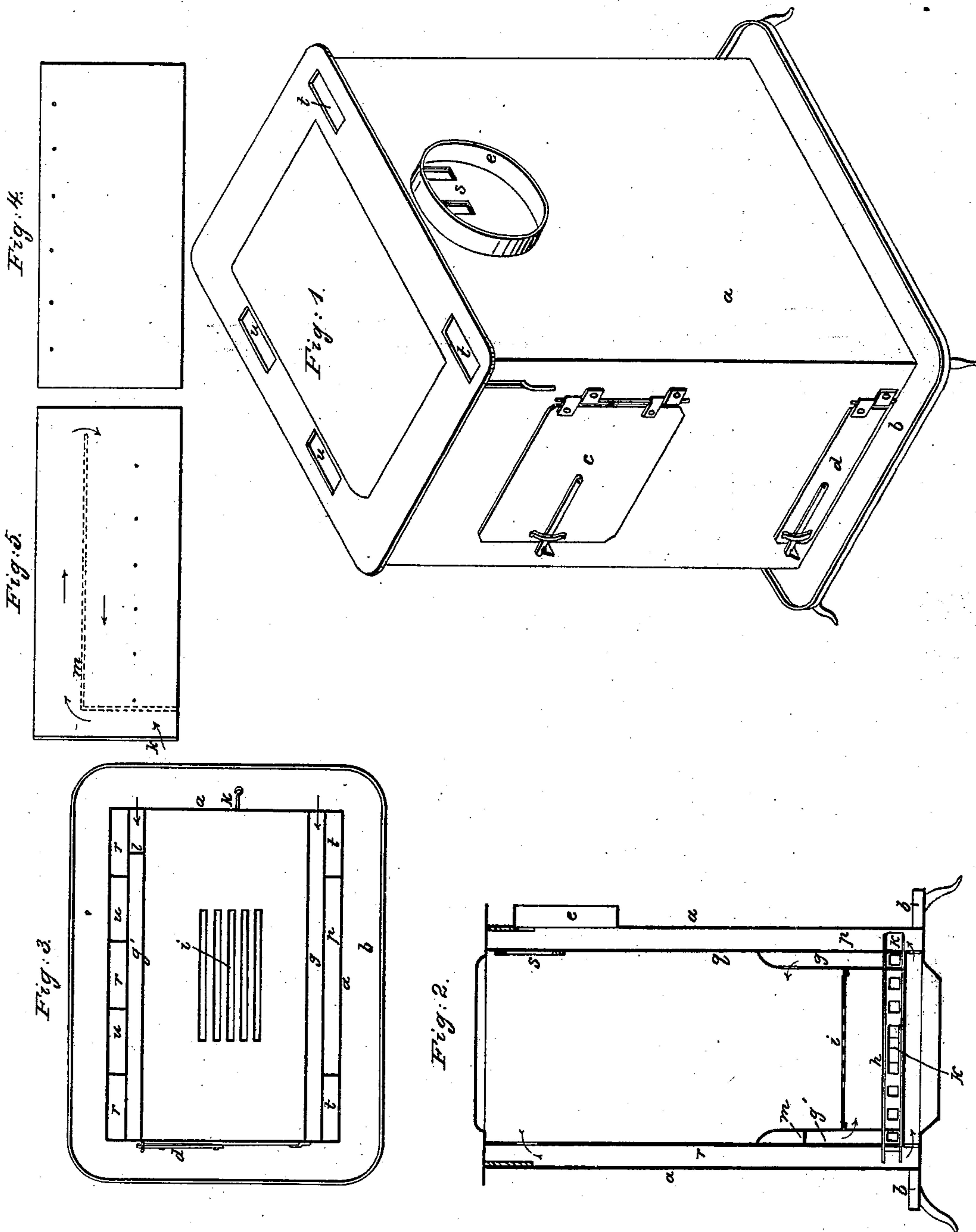


S. PIERCE.

Stove.

No. 4,598.

Patented June 27, 1846.



UNITED STATES PATENT OFFICE.

SAMUEL PIERCE, OF PEEKSKILL, NEW YORK.

STOVE.

Specification of Letters Patent No. 4,598, dated June 27, 1846.

To all whom it may concern:

Be it known that I, SAMUEL PIERCE, of Peekskill, in the county of Westchester, in the State New York, have invented a new and useful Improvement in Stoves for heating Apartments, and that the following is a full, clear, and exact description of the principle or character thereof, 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 perspective view of the entire stove; Fig. 2 a vertical cross section, and Fig. 3, a horizontal section.

The same letters indicate like parts in all the figures.

The nature of my invention consists in providing the sides of the fire place with a chamber on each side provided with apertures to receive atmospheric air from the room, which after being highly heated by circulation is discharged in small jets from one of them through apertures into the fire chamber above the fuel to consume the combustible gases evolved from the fire while in a highly heated state, and from the other below the grate to supply heated air for the combustion of the fuel, and also in combining therewith a damper or register to admit cold air under the grate to regulate the combustion.

In the accompanying drawings (*a*) represents the external plates of the stove, resting on the bottom plate (*b*), and provided with one door (*c*) for fuel, and another (*d*) to give admission below the grate, and a smoke pipe (*e*) for the discharge of the products of combustion. On each side of the fire place (*f*) there is a chamber (*g*, *g'*) that extends from end to end and from the bottom of the ash pan (*h*) to a short distance above the charge of fuel. One of the plates of these chambers (*g*) is provided with a range of small holes (see Fig. 4, representing an elevation of the inside) near the top for the discharge of air into the fire place after it has been heated by circulation, and the other (*g'*) (see Fig. 5 which is the opposite of Fig. 4) is provided with a like set of holes near the bottom to discharge the heated air into the ash pan (*h*) below the grate (*i*), as shown by the arrows in Fig. 2. The air is admitted to the lower part of

these chambers through a register (*k*); in the one (*g*), the air after being heated ascends to, and is discharged through the apertures at top, and in the other (*g'*), it is carried up by the vertical partition (*l*) see Fig. 3 (represented by dotted lines in Fig. 5) along the upper part by the horizontal partition (*m*,) (also represented by dotted lines), and around the end thereof to the lower part to be discharged through the holes below the grate. The sliding register (*k*) is situated opposite the door (*d*) and is provided with three or more openings, the two end ones to admit air to the chambers (*g*, *g'*), and the other to admit air directly below the grate without being previously heated; and as these divisions are in the same plate, when the apertures leading to the chambers (*g*, *g'*) are open the aperture (or apertures) leading to the space below the grate is closed, and vice versa.

There is a flue (*n*) between the bottom of the ash pan and the bottom plate of the stove which communicates on one side with the vertical flue (*p*), leading to the smoke pipe, and formed by the outside casing of the stove and the inside plate (*q*) of the fire chamber, and on the other side with three flues (*r*, *r*, *r*) see Fig. 3, formed in the same manner, but the three latter instead of communicating directly with the smoke pipe, connect with the fire chamber at top; so that when the register (*s*) is opened the draft passes directly into the smoke pipe, but when this register is closed the products of combustion pass down the three flues (*r*, *r*, *r*), through the horizontal flue (*n*) at bottom, and thence up the flue (*p*) to the smoke pipe.

On each side of the flue (*p*) there is a flue (*t*), open at top and bottom, through which the air of the room circulates to be heated, and between the three flues (*r*, *r*, *r*) there are also two similar flues (*u*, *u*) for a like purpose. But these flues, as also the vertical flues (*p*, *r*, *r*, *r*) and the horizontal flue (*n*), may be dispensed with and yet retain the principle of my invention, which consists in supplying heated air below the grate for the combustion of the fuel, and above the fuel for the combustion of the products of combustion by means of the arrangement of the perforated chambers on each side of the chamber of combustion; and in combining with this the means of intro-

ducing cold air below the grate when it is desired to do so to regulate the intensity of the fire.

5 Instead of a single register with several divisions for regulating the admission of air to the fire chamber and the chambers (*g g'*) by the side of it, separate dampers, valves or registers may be substituted. And it will be obvious from the foregoing that the
0 chambers (*g g'*) instead of being on two opposite sides, may extend entirely or only partly around the fire chamber, as may be desired.

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

1. Combining with the fire chamber of a

stove a chamber or chambers pierced with small holes to discharge the air that is highly heated in passing through them, below and above the fire, for the purpose and
20 in the manner substantially as herein described.

2. And I also claim in combination with this mode of supplying heated air to the fuel and products of combustion, the damper or
25 register for admitting cold air to the fuel when desired, to regulate the combustion, as described.

SAMUEL PIERCE.

Witnesses:

A. P. BROWNE,
WM. H. BISHOP.