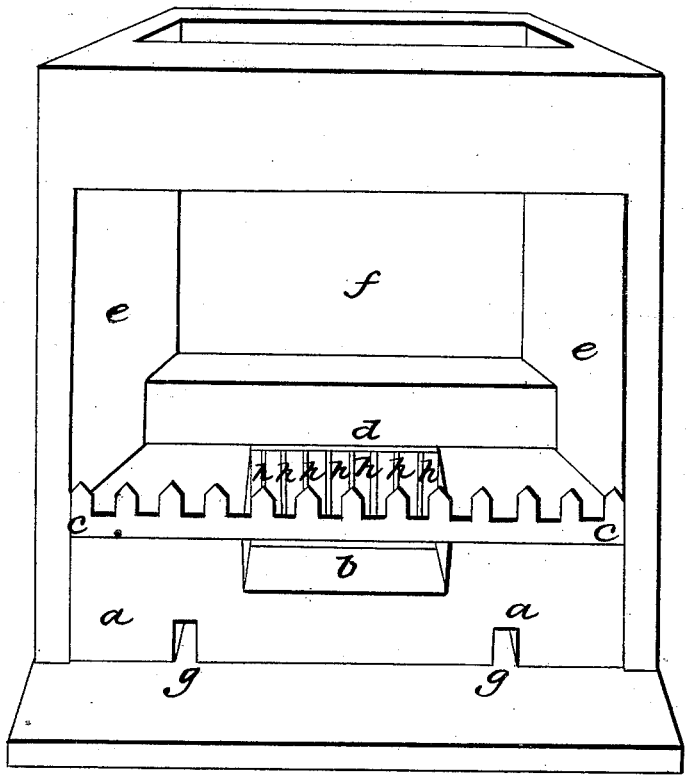
S. HAMMOND.

Fire Place.

No. 1,197. Patented June 25, 1839.



WITNESSES

John H. Keene
C. Hammond

INVENTOR

Sarah Hammond

UNITED STATES PATENT OFFICE.

SARAH HAMMOND, OF BALTIMORE, MARYLAND.

CONSTRUCTION OF FIREPLACES.

Specification of Letters Patent No. 1,197, dated June 25, 1839.

To all whom it may concern:

Be it known that I, SARAH HAMMOND, of the city of Baltimore, State of Maryland, have invented a new and Improved Mode of Preventing Chimneys from Smoking, Saving Fuel, and Securing a Greater Amount of Heat Generated; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in constructing upon the base of the fire-place, a hearth elevated to the required height, for the purpose of heating the air in the throat of the chimney, and provided with a flue of appropriate dimensions for conducting a current of air to the base of the fire thereby increasing the draft of the chimney.

By means of my elevated hearth I enlarge the field of radiation and, by consuming the fuel in an open fireplace I secure all the reflection that jambs and back are capable of, and thereby avoid an unnecessary expenditure of fuel.

My improvement differs from the common fire place in having an elevated hearth furnished with a flue. Its advantages over the common fire place are, that by the elevated hearth, the field of radiation and reflection are enlarged, thereby increasing the quantity of appreciable heat, by the combination of a flue a more regular, and a larger supply of oxygen is conveyed to the fuel in combustion, rendering that process more complete, disengaging a larger quantity of heat, lessening the quantity of smoke and soot and preventing the chimney from smoking. The danger of burning brands falling out upon the floor is completely avoided by means of a small fender used in the front of the elevated hearth, and from this fact wood may be burned without the aid of dog or andirons.

This invention differs materially from the coal-grates in common use in its having an elevated hearth at the base of the flue, by means of which elevated hearth the supply of oxygen through the flue to the wood in combustion is so regulated, as to prevent the rapid consumption of fuel which takes place when wood is burned in a common grate. This elevated hearth nevertheless, does not prevent any of the advantages to be derived from the flue in combination with it, as has been described. It differs also in its consuming its fuel above and not in the flue, thereby avoiding the unnecessary waste and consumption of wood burned in a coal-grate. Besides, it possesses the advantages of an open area or field, in which the sides of radiation are multiplied and all the angles of reflection brought into operation. These advantages the grate does not possess. My invention possesses combined in a comparatively perfect mode all the advantages of the open fire place and the grate without the defects of either, which have never before been claimed by any inventor. Also the bars on the top of the flue are intended to prevent broken or partially consumed fuel from falling into the flue, and thereby measurably obstructing the free passage of the air to the fire over the flue and upon the elevated hearth.

To enable others to build and use my invention I will proceed to describe its construction.

Upon the base of a common fire place I construct of bricks or stone and mortar, of metal castings or other durable metal or material a raised hearth marked *a*, *a*, in the drawings, elevated according to the height of the fire-place intended to be improved, making the elevation a fourth, more or less, according to the draft of the chimney. This hearth I make lower in the center by carrying up the ends, which ends I connect by placing iron bars across from one to the other on which bars or grate I place the fuel, the space between the top of the center of this hearth which is lower than the ends and the bars or grate forming a raised flue for the passage of the air to support combustion. The more the hearth is elevated, the greater will be the draft in the flue marked *b*, in the drawings, which flue is made of appropriate dimensions depending upon the same contingencies as the height of the hearth, the larger the flue the less will be the draft, the flue to open toward the fire.

To prevent the wood from falling into the flue bars marked *h*, *h*, of metal or other durable material should so cover it and be so formed as to permit the ashes to pass through. To prevent the wood or burning brands from falling or rolling forward off the hearth a small fender marked *c*, *c*, of metal three inches high more or less should be attached to the front and upon the edge of the raised hearth.

The openings marked *g*, *g*, in the base of the hearth are designed to admit andirons as ornaments, being no further useful, and

may be used or dispensed with according to the wish of the builder.

Mode of operation: By elevating the hearth and consequently the fire; the air in the throat of the chimney is heated to a greater degree, rendering it specifically lighter and producing a greater draft. The field or area of radiation and reflection is increased and consequently the amount of appreciable heat is made greater than it can be when the fire is made upon the base of the fire place, by which a greater amount of heat generated is secured or made subservient to the purpose of heating the apartment. The flue by conducting a current of air to the base of the fire, supplies a larger amount of oxygen thereby facilitating and rendering combustion more complete than it otherwise could be, the air is consequently more heated in the throat of the chimney, the quantity of smoke and the grosser parts forming soot lessened and the liability of either to descend diminished. The bars are intended marked *h*, *h*, *h*, *h*, to prevent the wood or coals from falling into and choking the flue as also to permit the ashes to descend.

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

1. The constructing of a hearth, on the base of an ordinary fire-place, of the form herein specified, by which means a raised flue is formed between the top of the center of this hearth which is lower than the ends and the bars or grate on which I place the fuel, all as herein described.

2. I claim the placing of the bars, for supporting the fuel, on the top of this raised hearth, from end to end across the said flue as herein described.

3. I claim the placing of the fender *c*, *c*, along the front of the upper edge of this raised hearth from jamb to jamb across the said flue as herein described.

4. I claim the said hearth fire-grate and fender in combination all as herein specified.

SARAH HAMMOND.

Witnesses:

WILLIAM STEUART,

JNO. J. HEY.