S. E. HEWES.

Improvement in Heating-Stoves.

No. 115,958. Patented June 13, 1871.

FIG. 1.

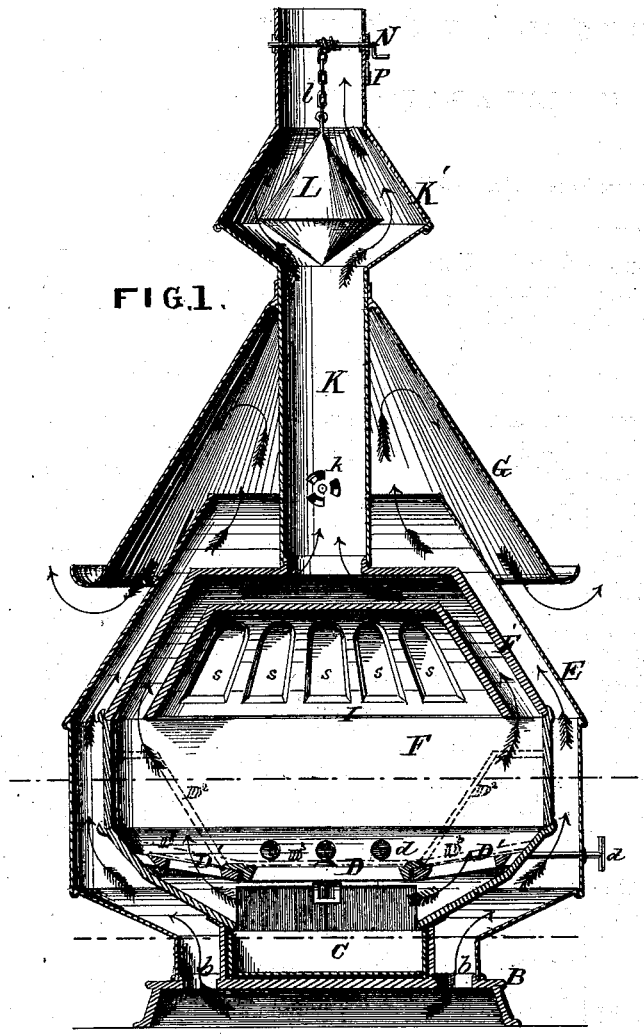


FIG. 2.

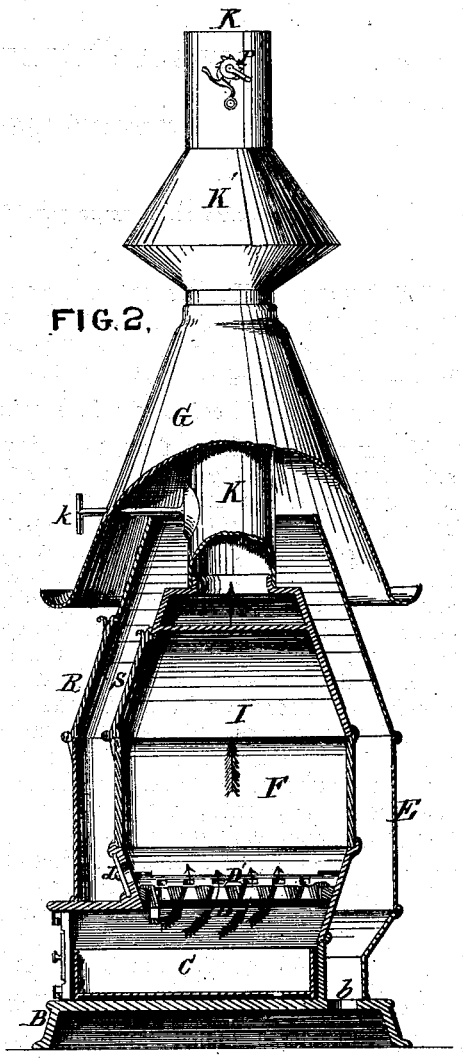


FIG. 3.

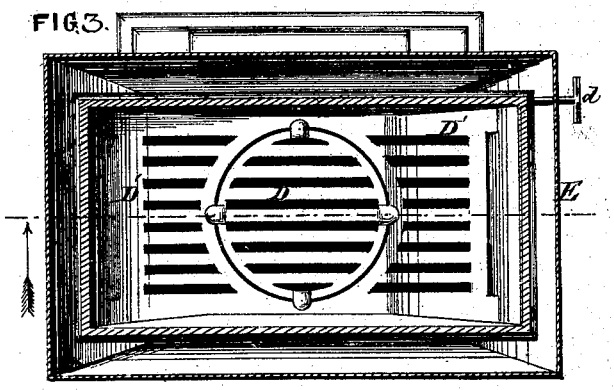
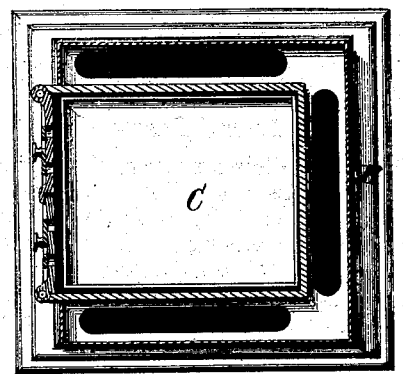


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

SHUBAEL E. HEWES, OF ALBANY, NEW YORK.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 115,958, dated June 13, 1871.

I, SHUBAEL E. HEWES, of the city and county of Albany and State of New York, have invented a new and useful Heating-Stove, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates, first, to a novel construction of the grate, which may be adapted for burning either anthracite or bituminous coal or wood; second, to a crown-piece surmounting the fire-chamber, as hereinafter described; third, to the combination of a casing surrounding a fire-chamber of peculiar construction; fourth, to a hood applied over and projecting below the upper end of the casing to cause a reverberation of the heated air, as hereinafter described; fifth, to the combination, with the aforesaid hood and casing, of a register by which air may be admitted from the space beneath the hood into the interior of the smoke-flue; sixth, to a peculiar construction of smoke-flue, in combination with a valve applied within it to deflect the gaseous products of combustion and to regulate the strength of draft, as may be required; seventh, to the combination of double illuminated doors with the peculiar furnace hereinafter described.

Description of the Accompanying Drawing.

Figure 1 is a vertical longitudinal section of a stove illustrating my invention. Fig. 2 is a vertical transverse section of the same, the upper part being shown in external elevation. Fig. 3 is a horizontal section thereof at *x x*, Fig. 1. Fig. 4 is a horizontal section of the same at *y y*, Fig. 1.

General Description.

B is the hollow bottom of the stove, formed with openings *b* to allow the passage of air from a duct beneath into the air-heating chamber within the casing E. C may represent the ash-pit, and D the circular central portion of the grate, on each side of which are grated wings D^1, adapted to form an extended fire-surface for use in burning bituminous or soft coal. To contract the fire-place to proper dimensions for burning hard or anthracite coal, and at the same time cause the whole draft to pass through or in contact with the burning fuel, partitions of substantially the form indicated by dotted lines at D^2 in Fig. 1 are introduced. For burning wood the partitions D^2 are omitted and flat plates (shown by dotted lines at D^2, Fig. 1) are placed over the whole extent of the grate D D^1 D^1, and air to support combustion is admitted through the register *d*. Above the fire-chamber is a crown, I, within which the gases are caused to reverberate and mingle with the air so as to insure their complete combustion. F represents the walls of the main fire-chamber, and F′ the upper part thereof, surrounding and surmounting the crown I, and communicating with the discharge-flue K, the upper part of which is enlarged at K′ to receive within it a spindle-shaped or conical valve, L, which is supported therein by a chain, *l*, from a crank-shaft or winch, N, by which the said damper may be raised or lowered in order to regulate the strength or force of draft, as required. These parts may be secured in any position to which they are set by a pawl or ratchet, P, or other adequate means. The form and location of this damper within the enlargement of the flue cause it to deflect the smoke and gases so as to insure their parting completely with their heat before their final discharge. By this means I effectually prevent the waste of heat which commonly occurs by the gases being carried through the flues, without such agitation and mingling as will insure the contact of all parts with the metal through which the heat is transmitted. The top of the casing or external shell E is open, and is surmounted by a hood, G, the upper part of which is closed tightly around the flue K, while its expanded lower end extends below the top of the casing E at sufficient distance therefrom to allow the passage of the heated air in the manner indicated by the arrows. *k* represents a damper on the flue K, by opening which air may be admitted into the said flue from the space beneath the hood G in order to assist in regulating the draft, or to insure the more perfect combustion of the evolved gases, if necessary, or for the purpose of drawing off vitiated air from the room. The conformation of the fire-chamber F F′ and the casing E around it are such as to insure a perfect combustion of all the fuel and the gases rising therefrom, and the absorption by the air of all the heat produced. R is a door in the external casing E, and S a door in corresponding position in the crown I. The doors are for the purpose of

introducing fuel. They may be connected so as to be opened together, or may be disconnected. The inner door S is made slightly shorter than the outer one, R, so that it may open freely into the aperture within which the latter fits. Both these doors are furnished with windows *s*, Fig. 1, for illumination, said windows being in corresponding positions, so that the light may shine through both.

Claims.

I claim as my invention—

1. The extended grate D D^1, constructed and adapted for use in manner substantially as and for the purposes described.

2. The combination of the fire-chamber F and the crown I, when constructed and arranged as specified.

3. The combination of the oblong fire-chamber F and the surrounding casing E, substantially as described.

4. The combination of the casing E, open at top, and the conical hood G, constructed and arranged substantially as and for the purposes described.

5. The combination of the register *k* with the flue K, casing E, and hood G, substantially as and for the purposes set forth.

6. The double conical valve L, constructed and applied substantially as described within the enlargement K′ of the discharge-flue.

7. The combination of the two doors R and S with the crown I, air-casing E, and fire-place F F′, as described.

S. E. HEWES.

Witnesses:

OCTAVIUS KNIGHT,

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